

International Contribution by Japanese Railroad Technology

~Japanese New style Technology Import to Developing Countries~

5101 Satoshi Okada

Abstract

Japan's population continues to decline. If Japan's population continues to decline, Japanese railroad companies will be short of funds in the future. Nowadays, there is a growing trend to actively export Japan's high technology overseas. However, since only developed countries can afford to pay for it, we have not been able to spread the technology to developing countries. Thanks to railroads, many people can travel comfortably. They can also carry a lot of things. If cargo railroads are built in developing countries, those countries will be richer. As a result of my research, I found out that cargo railroads are necessary for cargo transportation in Africa. Africa is rich in natural resources. However, due to colonial rule, cargo transportation facilities were not built. This has hindered exports in Africa. Africa is generally perceived as poor. However, there are great opportunities in Africa. cargo railroads will help them. I also suggest a mixed cargo-passenger system. Thanks to this system, many people can travel comfortably. In this paper, I have described my specific plan for the realization of this system.

1 Introduction (Backgrounds and Method)

It has been a long time since Japanese society became a super-aged society. According to the Cabinet Office, "Japan's population is expected to enter a long-term process of decline. It dropped below 120 million in 1963 and continued to decline until it fell below 100 million in 1960, at 99.13 million, and 86.74 million in 1972, so we can see that Japan's population is not only aging, but also declining." I believe that there is one area that will be greatly affected by the decline in population. This is the transportation sector, especially the railroad companies. The accuracy and safety of Japanese railroads are considered to be the best in the world, and even the United Kingdom, the birthplace of railroads, has asked for Japanese technical guidance. We must avoid a situation in which such advanced and historic technology is not effectively utilized because of the declining population. For this reason, it is necessary for the Japanese Railroad Company to export Japanese systems overseas. This thing is also claimed by many people. I read some Japanese statements and one of them said this. "我が国の鉄道システムを海外に輸出することは相手国の経済、社会の発展や二国間関係の強化につながることはもとより、地球環境問題にも大きく貢献するものである。また、今後成長が見込まれる海外市場における競争を通じて、技術力やコスト競争力を向上させていくことは、我が国の鉄道産業の維持発展や鉄道技術の維持・発展の観点からも重要である" (2011 Eguchi) It concluded that Japanese companies must work on exporting their technologies overseas in order to drive the Japanese economy in the future.

As a method, I researched some data based on the information we received from the International Affairs Division of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the Japan Overseas Labor Network (JOLN), which were scheduled

to cooperate with me during our visit in 2019. I gathered useful data by making rational judgments based on multiple sources. I also checked the Internet and books. I found the Ministry of Land, Infrastructure, Transport and Tourism's Overseas Infrastructure Development Plan. I used a lot of data from them when I wrote this paper.

2 Discussion and implications

First of all, one of the current problems is that Japan's technical assistance is limited to vehicle exports to developed countries and some emerging countries in Southeast Asia, and it has not been able to provide support for developing countries. Japan has been struggling in price competition with China, which has overwhelming financial power. According to the Ministry of Land, Infrastructure, Transport and Tourism's Overseas Infrastructure System Action Plan 2019, China's medium-sized vehicles have been improving for many years. In China, based on technology transfers from overseas, China North Car and China South Car have expanded their influence as leading rolling stock manufacturers against the backdrop of the huge domestic railroad market, and in 2015, the two companies merged to become the world's largest rolling stock manufacturer. With their overwhelming price competitiveness and full government support, they are aggressively expanding their overseas operations in high-speed rail, commuter rail, and tramway models, and increasingly competing with Japanese rolling stock manufacturers. I also wanted to know China's opinion. I read 「China's Eagerness to Export Its High-speed Rail Expertise to ASEAN Members (HONG YU March 2015 Copenhagen Journal of Asian Studies 32:13) It said "Japan is the biggest country in the method of Chinese Rail Road Expanding. China is especially eager to participate in the construction of high-speed railroads with ASEAN members." Exporting technology to Southeast Asia is a solid option, but it will be difficult to show China the overwhelming difference in market share. Therefore, Japan was given a research commission to develop new markets outside of Southeast Asia and consider ways to utilize Japan's advanced railroad technology for the development of developing countries. In this research, I looked for solutions to the problem from the economic aspect. In terms of the economy, considering the future potential of management, the African region, which is rich in natural resources but lacks the means of transportation and economic infrastructure to fully utilize them, could be a major target. For this reason, I propose the construction of railroads. The African region, which has different economic zones due to the differences in the countries governed in the past, lacks an efficient form of transportation. Another advantage of this proposal is its excellent energy efficiency. It was found that there are currently two regions in Africa that do not have a well-developed freight transport system. In the regions that are well organized, truck transportation is mainly used, and at a time when there are called for measures to combat global warming by reducing greenhouse gas emissions, there is also the problem of polluting the air with a large number of trucks. On the other hand, according to the JR Freight website, the carbon dioxide emissions of cargo trains are about 1/11th of that of truck transportation, which is a significant environmental advantage. In areas where transportation facilities are not in place, the road conditions are poor, and the roads (just piled up with soil) often collapse whenever there is heavy rain or abnormal weather. There are no high standard roads for trucks, and goods are still transported by bicycle or human power. Since it is difficult for everyone to obtain a driver's license, it goes

without saying that it would be more beneficial to build railroads as a means of mass transportation than to build roads and provide cars in such areas.

In addition to this, I thought it would help to solve Japan's diplomatic problems. Based on data from the Ministry of Economy, Trade and Industry (METI), we compiled a list of countries that have direct flights to Japan by region. While one-third of the countries in Asia have direct flights, only one country in Africa has direct flights. This could be a major blow to Japan's ability to play a major economic role in the world as a developed country. It could also put Japan at a disadvantage in the competition with China, which has great economic power. It is clear that there are great advantages to laying a railroad in Africa.

In order to implement this strategy, we must first resolve the economic issues. First, this could be done as part of the Japanese government's Official Development Assistance (ODA). According to the Ministry of Public Management, Home Affairs, Posts and Telecommunications, about 60% of Japan's ODA is in the area of infrastructure projects, and Japan has a track record in the area of exporting railroad technology. Expanding this to a wider area and promoting diplomatic relations between African countries and Japan is expected to give Japan an advantage in future projects and diplomatic relations. There is also the idea of receiving funding from the United Nations Bank for Reconstruction and Development (UNBRD), like Japan's Tokaido Shinkansen and Tomei Expressway, so cooperation with international organizations is essential.

I would like to discuss the profitability of the project in Africa. In Africa, cocoa beans are produced mainly in the west, and an iron ore is exported from the south. Replacing truck transportation with this type of transportation will provide a stable income. In addition to this, the country will be able to export more agricultural products, which will lead to economic development. crops can be transported quickly and safely, and the scope of international aid will expand. However, one question that arises here is whether or not to handle passengers. If passenger service is used, the cost of manufacturing coaches will increase, which may cause financial problems. Therefore, we propose a mixed-cargo system. Although there is no example of this in Japan, passenger transport using cars without seats on the JR Wadamisaki Line was once used, and it is believed that there is no safety problem in carrying passengers. In economically poor countries, it is difficult to require all citizens to obtain a driver's license, so passenger transportation should be provided even for a small number of people. From this point of view, it can be assumed that this plan is very useful.

3 Conclusion

From these various perspectives, my proposal shows that exporting Japan's railroad technology overseas will be very beneficial for making the future of the Japanese economy brighter. In the African region, there are many countries with underdeveloped driver's license systems, etc., and many people are looking for a stable means of transportation. The introduction of a mixed version train cargo system will help meet the demands of both cargo and passengers. This type of technological contribution can be done by only Japanese companies. Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has also stated that "車両調達に保守業務を加えたパッケージ案件において質の高い保守サービスの評価が受注に結びついた事例が生じる等、我が国鉄道の保守や運行に係る技術に対する海外からの期待の高

まりがある” “日本の鉄道は、高い輸送密度にもかかわらず、際立って高い安全性を誇っている。” ”今後、トップセールスの推進や政策支援ツールの効果的な活用等の戦略的な取組を推進していくことで、政府目標の実現に貢献してまいります。” As one way to achieve this, it would be very effective to actively export Japanese railroad technology to developing countries in the format I have proposed.

4 References

“Overseas High-Speed Rail Project C&C Business Office”

(Engineering Planning Department, General Engineering Headquarters,
JR Tokai HP 2020)

”Overseas Infrastructure System Action Plan”

(International Affairs Division, Railway Bureau, Ministry of Land, Infrastructure, Transport and Tourism 2019)

”China's Eagerness to Export Its High Speed Rail Expertise to ASEAN Members”

(Hong Yu National University of Singapore 2015)

”Japanese and Chinese infrastructure development strategies in Central Asia”

(Timur Dadabaev University of Tsukuba 2018)

”Japanese Colonialism and Korean Development”

(STEPHAN HAGGARD University of California 1997)

”The Current Status of Overseas Expansion of Japan's Railway Systems”

(Shuji Eguchi 2011)

”Cargo railroad carbon dioxide emissions”

(JRcargo Co. 2021)

Improving Public Peace With “Broken Windows Theory”

~Create Clean And Safe Cities~

5102 Shinichiro Katsuyama

Abstract

In recent years, the number of recognized crimes is decreasing, but the number of them was too high. In Particular, the numbers of the largest cities such as Tokyo and Osaka, called Five major cities, is higher than local Prefectures in Japan. How can we create a livable, safe, and secure city in the future? Rudolph Giuliani, Former Mayor of New York City, has faced the same problems as Japan in recent years. He utilized one of the theories of criminal psychology, “Broken Windows Theory” to peace-keep in the city. That theory is for example, if there is a building with one broken window in a town, then the morals of the inhabitants will be able to swoop and some misdemeanor will happen. Finally, If they happen more frequently, the morale of the residents will further decline, leading to the occurrence of serious crimes. As a result, just by leaving one house with a broken window, the security of the area will deteriorate. Applying this theory, this study has shown that it is possible to improve public safety by improving the landscape and thoroughly cracking down on petty crimes.

1 Introduction

According to the Metropolitan Police Department (esp. Tokyo), the number of criminal offenses recognized in Tokyo and Osaka Prefecture in 2018 was 114,492 and 95,558, respectively. They are very high numbers when compared to other prefectures, and is one of the major problems facing Japan today. Causes of these incidents have some reasons. For example, according to a public opinion poll in Japan, the percentage of those aged 20 and over who think that the morals in society are going down has increased. The number of recognized criminal offenses was changed by criminal offenses by the people living there, so it's hard to say that urban cities are more dangerous than local ones, but considering these dates, we preferentially have to solve this problem.

2 Discussion and implications

Rudolph Giuliani, the former mayor of New York City, reduced graffiti in the metro. As a result, he was able to improve public peace in the city. This is one good result with “broken windows theory”. This theory means that if people don’t repair it, the public peace will become worse than in the past because the morals of residents will become worse, too. On the other hand, if we solve the smallest problems perfectly, morals will rise and crime will fall. I wondered if this theory could be applied to Japan. And in my opinion, based on this precedent, the number of criminal offenses in Tokyo and Osaka could be reduced if the police started to solve minor crimes.

3 Conclusion

I studied three steps on the internet. First, I researched the ratio of criminal offenses to the population by each prefecture. Second, I looked at local activities that have been undertaken by local governments to improve public peace. Finally, based on these two pieces of information, I am considering a program to improve them. As a result of this study, according to figures provided in the White Paper on Crime, in areas such as Hyogo, Tokyo, and Okinawa, the ratio of arrests for crime was high. On the contrary, the number of them in the rural areas such as Iwate, Kagoshima, and Nagano was lower than urban areas. From the above information, we can say that cities are actually less safe than rural areas.

Next, I examined the activities that have been conducted and I was able to discover several activities based on the broken window theory.

In Kyoto's Minami Ward, the local government took the lead in preventing petty crime in the community. According to the Kyoto Prefectural Government's website, in Minami Ward, the residents' association was erasing graffiti in the underpass. This activity is based on the theory.

In Susukino, Hokkaido's entertainment district, volunteers solved illegal parking. The number of incidents of on-street parking have decreased and the crime rate in Susukino has also declined.

In Adachi Ward, Tokyo, conducted an activity called the Beautiful Windows Movement. Mainly they cleaned up the city by planting flowers and actively patrolling. They had a good outcome. They've also created a safety map, too.

I suggest that in areas such as urban areas where the crime rate is high, there should be an active campaign with local residents to thoroughly crack down on petty crimes. Specifically, the police have to work by local residents to regulate on-street parking and smoking, and remove graffiti from underpasses.

The important point is to work together with community residents, because the idea was based on that theory. By working together with members of the community, we can reduce manpower and save money and it also helps to keep morale down.

The problem for the future of this research is that it is difficult to achieve specific results. I am now looking to the world to see if I can apply this theory to other countries. According to the "Institute for Economics and Peace," South Africa is not a safe country, and even developed countries such as the United States are considered unsafe. In my future research, I would like to focus on these areas.

4 References

[1]What is the Broken Window Theory? Glossary of Business and Psychology Terms: Meanings, Explanations, etc. <https://onl.la/LTpqtvc>

[2]White Paper on Crime, Edition, Volume 2, Chapter 1, Section 1, <https://onl.la/wpmW5uM>

[3]Crack-window theory" practice movement/Kyoto prefecture homepage <https://onl.la/wEb1SxA>

[4]Broken Window Theory/Criminal Complaint and Acquisition Support Center <https://onl.la/k1XrR9s>

[5]Beautiful Windows Movement/ Adachi <https://onl.la/sp6fZzq>

[6]Institute for Economics and Peace - Analyzing peace and quantifying its economic value

All references above are viewed on March 23, 2021 . <https://onl.la/gM7x8im>

Reducing Plastic Waste

~Effective use of new materials~

5103 Hayate kiyohara

Abstract

Now, the plastic waste problem is one of the most serious problems in the world. So, I think I can solve the problem using new materials. I researched about "Aqua Material". I found that aqua materials have some disadvantages, such as evaporation at temperatures below 0°C and above 100°C, and that both terminal dendronized polymers are expensive, but they have many advantages, such as being environmentally friendly without using petroleum, self-healing, and non-flammable since they are made of water. However, it has many advantages such as being environmentally friendly without using petroleum, self-healing, and non-flammable since it is made of water. So, I think using Aqua Materials to Create Alternatives to Plastic Products.

Discussion and implications

The reason why I chose this theme was because I thought it was a very timely topic, as it is related to the recent introduction of plastic bag charges. The Sustainable Development Goals (SDGs), which were signed in 2015, address this issue and set targets for improvement and solutions by 2030. I thought that plastic waste was a large part of this problem. I then researched for new materials that could be used to combat ocean pollution. In the process, I found something called "Aqua Material". We thought that this could be a solution to the problem of marine plastic waste. As a method, we read papers on similar topics in Google Scholar and researched on the Internet.

Introduction

The total amount of plastic waste in the world today is increasing, and it is said to exceed 12 billion tons by 2050. As a byproduct of this disposal method, there is also an increase in marine post-plastic waste. Marine plastic litter refers to plastic waste that drifts into the ocean from our daily lives and economic activities, or is dumped directly into the ocean or rivers, and eventually drifts into the ocean. Plastic products are strong and long-lasting, so once they are washed into the ocean, they hardly decompose at all, which has a negative impact on the marine ecosystem and our lives. It is also a waste of resources, as petroleum is used to manufacture the plastic in the first place. The purpose of my research was to use a new material called aqua material to replace existing plastic products, and I wanted to use it mainly as a substitute for plastic bottles.

Research Method

The research method that I am considering for this project is to use the Internet and to read the papers of previous studies that are suitable for this topic in Google Scholar.

Flow of the research and experiment

Gathering information using the Internet

2, Target

Websites and articles about the research team at the University of Tokyo's Faculty of Engineering on aqua materials.

3. Preparation

Learn basic information about aqua materials (hydrogel).

Read the paper on Google Scholar.

4, Be careful when doing research and experiments

Make sure to add your own thoughts and ideas so that this is not just a research study.

Do experiments and research that you can do.

Conclusion

First of all, we found out that some countries and regions in the world have started to charge for plastic bags earlier than others. In particular, the U.S. has been an early adopter, with San Francisco starting in 2007 and Washington D.C. in 2010. The decision to charge for plastic bags was made by the Group of Seven (G7), and is now being implemented in 69 countries. The objective is to create a circular economy, an economy in which products and raw materials that have been "discarded" without being used in the conventional linear economic system of "take", "make", and "waste" are regarded as new "resources", and in which no waste is produced. The goal is to create an economy that recycles resources without producing waste. It is also related to international trends such as the addition of plastic waste to the list of wastes under the Basel Convention's 14th Conference of the Parties (COP14). Aqua materials have some disadvantages, such as evaporation at temperatures below 0°C and above 100°C and the high cost of both terminal dendronized polymers, but they also have many advantages, such as being environmentally friendly, self-healing, and non-flammable. However, it turned out to be difficult to substitute the plastic bottles, which was the original plan. Therefore, we would like to come up with an alternative to other plastic products.

One of the issues is that the awareness of aqua materials is low, so I wanted to let more people know about it. I would also like to think of ways to deal with the expensive materials mentioned in the disadvantages. Also, since the aqua material itself was developed recently and there is a problem of recognition, I now understand that it is necessary to spread the material to as many people as possible.

References

IDEAS FOR GOOD,

What is Ocean Plastic Pollution? (What is Ocean plastic pollution?) (in Japanese)

<https://ideasforgood.jp/issue/plastic-ocean/>

Chem-Station February 1, 2010

More than 95% water material: Aqua Materials, March 22, 2021

<https://www.chem-station.com/blog/2010/02/95.html>

A good thing starts here. November 10, 2020

What is the current status of marine plastic waste? Countries with high spills and what we can do about it

https://gooddo.jp/magazine/oceans/marine_pollution/plastic_garbage/4972/

A Measure to Make Students' Model United Nations a Success

~Usage of Laughter and Mood~

5104 Shiryu Kuwahara

Abstract

This article investigated what needs to be done to increase the self-esteem of school children. To achieve this, past research indicates that four components, “Group Work,” “Success,” “Cross-cultural Communication,” and “Laughter” play an important role. The Model United Nations(MUN) can include all of these components and is the solution to increase children’s self-esteem. MUN has been held by some schools as an English learning or some other learning activity. This study suggests to schools to adopt more MUN activities so that they can increase their students’ self-esteem. In addition, to achieve the goal of “Success,” creating the achievement into MUN that is named “Entertainer-prize” will be an appropriate solution. Owing to this, students will get not only success but also can fill their esteem needs, which would make students more comfortable.

1 Introduction

Recently, Japanese students’ self-esteem has been decreasing. According to the Japan and Some Countries Young People’s Attitude Survey(Japan Cabinet Office, 2019), the score of Japanese highschool students’ self-esteem and many other topics related to it is extremely lower than many other countries' students’. The target of this study is to suggest specific activities to improve students’ self-esteem permanently. Because I study as a high-school student and live in Japan, the first study’s research-question is “How to improve Japanese high-school students’ self-esteem?.”

This article adopted this procedure:

1. List some educational activities which can improve students' self-esteem
2. Clarify the activities' characteristics
3. Show some educational activities which are easy to adopt into schools or already adopted, based on "2".
4. Demonstrate points of these activities

In addition, the question I showed was solved and the conclusion is that MUN would be able to improve their self-esteem(Described later). Therefore, I started the next study, "How to make students' MUN a success?."

The second goal adopted this procedure:

1. Search the examples of MUN and clarify common points and problems
2. Solve the problems and submit the way of implementation

Both studies are about students' self-esteem. There is some previous research about the theme. According to Sosuke MIYAUCHI(2012), in Japan, the friendship network size of young people relates to self-esteem and is clearer than that of America. Furthermore, Taku Kondo, etc(2016) says that group activities can improve students' self-esteem. From these articles, there are many perspectives in the area of self-esteem. This study stands on the area of education and showed a concrete approach to the improvement of self-esteem.

2 Discussion and implications

This study proposes MUN as a way of improving the self-esteem of students. First of all, this study summarizes the three points of activity which can improve students' self-esteem.

1. Group Work

In a writing, Taku KONDO, etc(2016) says that group activities can improve self-esteem and showed it with an experiment. Recently, many Japanese schools are adopting some group work activities. Considering that, this component is easy to be

adopted or already done.

2. Universal Experience

According to Yasuko AOTO, Maki MURASE(2012), one of factors which improves part-time high school students' self-esteem is "Students group that each have generous characteristics and shared experience." However, this study is not about part-time schools, so hereinto, I use the fact as "participate in one activity with a group."

3. Multicultural Transaction

As stated above, Japanese students' self-esteem is lower than other countries'. To solve this, I expect that multicultural transactions would fill a gap between students.

4. Success

As Taku KONDO's study shows, many articles use some activities which have succeeded. Therefore, this study set this term as a hidden element from articles.

This study suggests MUN as a solution that fills three of the four terms above. First, MUN is absolutely a "Group Work." Each pair(or small group) of students works as an "ambassador" and finally they have a big meeting. All of MUN is Group Work. Second, MUN needs many people, takes long days, and the final big meeting also needs a long time. The feature can fulfill "Universal Experience." Third, "Multicultural Transaction" could be fulfilled by having a MUN that includes foreign people, but fulfilling it is not easy for schools because they have to invite more foreigners. This term is one of unsolved problems.

Next, this study shows some concrete plans to make MUN a success below.

In the first place, there is a remaining term, "Success." To solve this problem, "Humour at the Model United Nations: The Role of Laughter in Constituting Geopolitical Assemblages"(Jason Dittmer,2013) is useful. The study showed that humor and laughter can support MUN. However, In Japan, there might be few people who make actions active due to Japanese cultural background. Hironori NATORI(2007) and

Tadashi SENDA(1997) say that “praise” or “achievement” will increase students’ motivation. Though these educational activities are different from MUN, students will discuss more actively by adopting “prize”into MUN. To create “humor,” I suggest MUN to build “Entertainer-Prize”, which praises a person who moved actively in MUN.

3 Conclusion

The first study about specific activities to improve students’ self-esteem showed that MUN is an appropriate solution to increase students’ self-esteem. Second, to create “Entertainer-Prize” into MUN would make MUN a success. There is an unsolved problem of how schools invite foreign people to MUN.

4 References

[1]Japan Cabinet Office(2019). Japan and Some Countries Young People’s Attitude Survey

[2]Sosuke MIYAMOTO(2012). The relationship between friendship network size and social-esteem - Comparison between Japanese and American university students-

[3]Taku KONDO, Hideo YAMAZAKI, Yuka TANAKA, Minami OTOI(2016).

The change of self-esteem in “A Chorus”

[4]Jason Dittmer(2013). Humour at the Model United Nations: The Role of Laughter in Constituting Geopolitical Assemblages

[5]Yasuko AOTO, Maki MURASE(2012). A Study of Factors Which Raise the Self-affirmation of Part-time high School Students

[6]Hironori NATORI(2007). Coaches’ verbal Feedback and Elementary School Football Players’ Motivation

[7]Tadashi SENDA(1994). A Study of Achievement Motivation in Learning Activity of Physical Education

To Improve Nasal Congestion

~Find The Best Way Without Taking Medicine~

5105 Rikuto Serizawa

Abstract

This study's final destination is to find the best way to improve nasal congestion without taking medicine. I found an article on the Internet. It said that there are about four hundred million people who have hay fever in the world. This number includes me. Of course I always take medicines. Even though I sometimes have nasal congestion suddenly. Therefore I'd like to find the best way. I looked for many ways to improve it, separated them into five systems, and tried them on my body. To understand easily, I studied by stopping taking medicine, which made my allergy worse. On my subjective feeling, the best system is pushing the accupoint Geiko and the place is the side of the nose. This study has a problem that it doesn't have credibility because of the little subject. In the future, I want to gather more subjects and make this study more credible.

1 Introduction

When I was five years old, I got hay fever. The symptoms were really terrible. For example, I injured my eyes because of over scrubbing. However the biggest problem is nasal congestion. When it is terrible, I can't breath with my nose. It is really hard, but the biggest reason is not to sing easily. Nasal congestion makes it hard for me to sing and because of sniffing, the throat would be worse. It has been my stress for 12 years. Of course I always take medicines. Even so, I am attacked by nasal congestion suddenly. In addition, I found an article that said that about four hundred million people in the world have hay fever. Another article said that there are some descriptions of ancient Babylonia's heritage which express hay fever. These days, hay fever is infamous in Japan but actually it is a disease which has become a problem all times and places. So I want to find the best way to improve nasal congestion wherever and

whenever they are.

2 Discussion and implications

First, I researched the ways to improve it. I found a lot of ways. I would try all the way on my body, but I can't choose the best way from them. Therefore I decided to separate these ways by the system to improve it. Now, I will introduce the five systems and ways on each systems. First, "Improve sympathetic nerves". It will contract the nasal mucous membrane, spread the passage of air in the nose, and nasal congestion is improved. I chose the way to pinch a PET bottle with your armpit. If you pinch the bottle on the right armpit, you would improve the left side of the nose. The effect will appear on the opposite side of the nose. Second, "Improve the flow of blood and lymph". Because of accumulating blood on the nose, the nasal mucous membrane expands and feels congestion. I chose the way to scrub your neck from top to bottom. Third, "Pless the acupoint". The name of the acupoint is Geikou. Fourth, "Be in Moisture". I found it on most of western websites. I chose the way to take a shower. Fifth, "Make the situation that you are lacking oxygen". It is really dangerous. Because of the lack of oxygen, our brain wants to take in more oxygen. Therefore the brain made an order to spread the nose's passages of air. As a result, nasal congestion improved. In addition, Because of using it, we may get drug-induced rhinitis, so I did not choose it.

Next, I tried it on my body and made a ranking of these five systems. The judgement was by my subjectivity. The destination is to be easy to sing by the ways, so I judged by how I can sing better because of the ways. To make the conditions equal, I made some standards for this study. To make a good throat, I tried it in the afternoon, and sang the basic song to warm up. Then, I started to study.

3 Conclusion

I made the ranking.

- 1, Plessing the acupoint
- 2, improving sympathetic nerves
- 3, Lack of oxygen

4, Improving the flow of blood and lymph

5, Moisture

In my conclusion, Pressing the acupoint is the best way to improve nasal congestion.

“Moisture” which I found in western website made my symptoms worse. I took a shower in about 10 minutes. I think because of hot water and moisture, the nose’s passages have become narrow and nasal congestion getting worse.

In this study, the biggest problem is not to have enough credibility because this study has only my data.

I am curious whether the way of moisture is really bad or not. I found it on many western websites, so It may be a good way for western people who have nasal congestion.

In the future, I want to get a lot of data on all ages and a lot of people in different countries. Then, I found the best way and spread around the world especially for people who can not receive medical care.

4 References

「鼻づまりを解消する、即効性のある3つの方法」

<https://www.mylohas.net/2018/03/blocked_nose.html> (3月18日)

「たった1分で「鼻づまり」を解消！花粉症の原因はあなたの夜の○○の習慣かも!?花粉症解決にこのエクササイズを」 < <https://ddnavi.com/review/518364/a/> > (3月18日)

「花粉症の鼻づまりは“足首輪ゴム”で解消!? 耳鼻科医が発見した驚きの裏技とは！」

<<https://news.livedoor.com/article/detail/16134562/>> (3月18日)

「花粉症が辛い季節... 1分で鼻づまりが治るヨガが話題」

<<https://www.j-cast.com/trend/2018/03/19324068.html>> (3月18日)

「もう鼻いらない...オフィス内で一瞬にして鼻づまりを治すマッスルな方法」

<https://bita.jp/blog/kahun_muscle> (3月18日)

「呼吸を楽に！指を使うだけで鼻づまりを解消できる裏ワザ」

<<https://www.chietoku.jp/nose-trick/>> (3月18日)

「粘膜下鼻甲介骨切除術」

<<https://www.hiroshiba.com/nose/operation02.html>> (3月18日)

「音痴の原因は鼻づまり！？歌に与える4つの悪影響と改善法を公開！」

<https://music-planet.jp/blog/onchi_hanadumari/> (3月18日)

「止まらない鼻水対策にヨガが有効！？アレルギー性鼻炎・副鼻腔炎の間違ったセルフケアに注意」 <https://tokusengai.com/_ct/17261718> (3月18日)

「鼻づまりの4つの原因と対策とは？」

<<https://www.angfa.jp/karada-aging/practice/stuffy-nose/>> (3月18日)

「日本の子どもたちのアレルギーはどう変わりつつあるのか学校・インターネット調査からみた子どものアレルギーの実態」

<https://allergyportal.jp/wp/wp-content/uploads/2020/04/21074358/epidemiological_investigation_2020.pdf> (3月18日)

「How to Clear a Stuffy Nose」

<https://www.healthline.com/health/stuffy-nose-relief#_noHeaderPrefixedContent> (10月12日)

To Learn “ Living English”

~ Education by “Subscription Type English Cram School” ~

5106 Rei Hayashi

Abstract

Recently, a decline of Japanese’ English language skill has been discussed around Japan. In fact, there is some data indicating that it is surely true. In this study, I focus on the three biggest causes which prevent Japanese from getting high English standard, ①studying only for college entrance exams, ②ALTs who play a role of an audio, and ③the hesitation to pronounce English. And I propose the idea of an institution where Japanese children can interact with native English speakers in order to improve English language skill in Japan.

1 Introduction

In 2020, “EF(Education First)”, one of the biggest language schools around the world, announced “EF EPI” which shows the ranking of English language skill level. According to their announcement, they regard the level of English language skill in Japan as 55th and classify it as “low”. Then, I focus on English education from childhood in Japan and cite three things as the cause of the stagnant English standard in Japan.

First one is to study only for college entrance exams. Some Japanese tend to think that they study English for the purpose of passing the exam rather than using English. And this thought makes learners nervous because they hesitate to make any mistakes in their English. Moreover, they mainly study writing, reading, and listening in their educational curriculum, so they have less chance to study and speak English. That is one of the reasons why Japanese students are sometimes not capable of communicating in practical English.

Second one is ALTs who only play an audio role. There are some ALTs at each

school, but in English class at some elementary schools, they often play an audio role and classroom teachers mainly teach English in Japanese. It is a good opportunity for elementary students to be taught English by ALTs (or native English speakers) and communicate with such people. Therefore, we have to use ALTs more effectively than now.

Third one is the hesitation to speak English. It is a common saying that the older you get, the more you feel embarrassed when you speak English. In particular, the students who have reached puberty are more likely to hesitate to use English because of embarrassment. To solve this problem, I think it is useful for them to start learning English before they feel embarrassed to speak English. In other words, early English education is effective in this respect.

The purpose of this study is to suggest an idea of the institution, which makes up for those three problems.

2 Discussion and implications

A researcher, Narita[2013] suggested that we need to prepare an English cafe where students can have a cultural interaction with native English speakers and can practice English conversation at school (in his research, “school” means university) . I would like to propose an idea based on this opinion, but whereas I recognize the importance of English cafes, it seems to me that English cafes are a little casual and they sometimes provide students with inaccurate English because the people who are in an English cafe are not necessarily native English speakers. Therefore, I would like to propose “Subscription type English cram school” for young people.

The reason why I want to establish this kind of institution is to reduce children’s hesitation to use English by teaching English at an early stage of their growth. The students can use it not so much to study English as to learn English communication, rhythm, pronunciation, and the joy of learning English, so it is cram school, but it is like an English cafe. I would like to divide it into two parts, (1)the learning room and (2)the shared communication room. In (1)the learning room, the main staff are Japanese

who teach English grammar, so students can use this institution like any other cram school. Also in (2) the shared communication room, the main staff are native English speakers and students can use this institution at any time. They learn living English through a conversation with staff there.

3 Conclusion

I suggest “subscription type English cram school” in order to make up for ①studying only for college entrance exam, ②ALTs who play a role of an audio, and ③the hesitation to pronounce English. However, I have not thought about a concrete mechanism and plan, so I need to go over some of the advantages and disadvantages of this proposal more. From now on, I would like to do my research focusing on the contents of “subscription type English cram school.”

4 References

- ・「コンチネンタル国際行政書士事務所ー保育園で外国人の採用は可能かー」
<https://continental-immigration.com/employ/hoikuen/> (R2, 11月22日)
- ・「EF EPI」 <https://www.efjapan.co.jp/epi/about-epi/faq/> (R2, 10月12日)
- ・「0歳からの英語教育「いい？悪い？」論争 最新調査で決着！？」
https://dot.asahi.com/print_image/index.html?photo=2017072800066_1 (R3, 1月25日)
- ・「小学校・中学校・高等学校におけるALTの実態に関する大規模アンケート 最終報告書2017」 https://www.bun-eido.co.jp/aste/alt_final_report.pdf (R3, 1月30日)
- ・「日本人に相応しい英語教育ー外国語習得の仕組みと言語差ー」
https://www.bun-eido.co.jp/aste/alt_final_report.pdf (R3, 10月17日)

The Solution to Bad Report by the Media

~The Improvement Quality of Report with Radio Wave Auction~

5107 Sora Hirakata

Abstract

I suggest the solution of the media's bad reporting is to use the radio wave auction system. The system is famous and popular in many countries except Japan. That is the media which wants to report by buying the right of reporting with an auction. It has many benefits for us and the media. For example, all media have a chance to report, also the company which is newcomer. And if the media reports the truth and gets the trust of customers, the company can get a right again and continue to report. As for the fund to report, I suggest establishing the investment system for newcomers and independent existing companies from their parental companies to get rid of their excessive investors. This allows every medias can do the radio wave auction equally.

1 Introduction

Now in the world, there are many dramatizations, clipping and bias reporting such as governmental censorship by China and North Korea, also recently Myanmar's dictatorial military regime is too. and that problem is not only the country but also many countries around this world. That is because there are many media watch associations in the world such as a ``FAIR`` in the US. So it is a serious problem in the world now. The cause is two points. First, many reporting companies have a lot of money and they can get it from their parent company anytimes. So if a new reporting company joins the media

industry, the company can not fight against the well-established one. Therefore, if this system continues in the future, it will not change forever the quality of the report . The second is people do not have an interest in the media and the truth of information which broadcasted from the media. In Japan, it is a serious problem that young people do not watch the news and do not have interest in the information truth or false. That results in people becoming passive to the media. It means people feed the reporting companies' own sense of false justice that we feed and help many people's lives with our broadcasting. That is a terrible situation for us because there are no people who can limit the media's outrage. So we should establish the radio wave auction and support investment systems for the fresh reporting companies.

2 Discussion and implications

Radio Wave Auction

This research has to take two steps, protect reporting companies independence and set up the system so both fresh media and old media can fight with radio wave auction.

Mr.Yoichi Takahashi, an economist in theJapan evaluated the radio wave auction, said, "If you say crazy things, you will lose popularity, and if you are popular, you will gain viewers and sponsors." The radio wave auction is an auction in which the media do an auction for the rights of the reporting. The merit is equality. Now in this world also in Japan, few media can report. The company which can report is given the right of report from the government. It cost a lot of money to buy the rights. The fresh media can't buy it. So it is difficult to change the quality of the report, because there is no race to improve the quality of it. Therefore I suggest introducing the radio wave auction and evaluate media equality based on whether they are doing the right reporting or not.

Investing System

Second, The investing system for the fresh media. It was established to support the fresh media to do an auction by equality in the terms of funds. It is like a "*Furusato*

Nozei” in Japan. People who want to assist and cheer for the fresh media, people give some money to help the media. And the media which get money to do an auction return the part of the money if the media could get the right of reporting. There is a rule about support for money. Set a limit on the amount of money each person can donate, because if one person donates a large amount, that person may become like the parent company. And its purpose is to support the fresh media to do an auction and to win more easily to get the right of the reporting. Finally, there is the radio auction, which will make it possible to determine the value of a station based solely on the quality of its reporting, regardless of background. Radio auctions will allow new broadcasters to enter the market freely, and competition will result in high quality reporting and programming. If they say crazy things, they will lose popularity, and if they are popular, they will gain viewers and sponsors. That is my research’s ultimate goal.

3 Conclusion

As for the result, I have explored several other ideas, but I think this one is the most realistic. To summarize the three ideas I've mentioned so far, eliminate the strength and harm of the existing press, and create a situation where everyone can receive information equally, and only those news organizations that provide correct and quality information will remain.

This is what I mean. And there is a problem. I do not think that the radio wave auction plan allows the existing reporting companies. So It has to promote and cooperate with many members in the media.

4 References

watched 23 July, 2021

https://www.law.cornell.edu/wex/category/employment_law
Media | Wex | US Law | LII / Legal Information Institute

<https://fair.org/about-fair/> What’s FAIR ?

watched 24 August, 2021

<https://gendai.ismedia.jp/articles/-/49808?page=2>

新聞テレビが絶対に報道しない「自分たちのスーパー既得権」だから日本の報道は「左巻き」になる

(Y. Takahashi.2016)

watched 31 august 2021

<https://www.jnpc.or.jp>

日本記者クラブ JapanNationalPressClub (JNPC)

https://www.ntv.co.jp/ir/holder/stock_info.html

日本テレビ 企業 I R情報

<https://news.yahoo.co.jp/articles/7f8bb85aab73c899bedf2da34f8d5cc2e8aa3bbe>

メディアは「共感」や「同調圧力強化」を求めて動くな 新型コロナワクチンの報道に精神科医が注文

Supporting Developing Countries by Human Resources Development

~Support of Private Company~

5108 Ryota Horiguchi

Abstract

Now, there is enough infrastructure in Japan. Thanks to this, we can use electricity, water, and the internet almost everywhere. In addition, we can use cars, trains, and bicycles because of safety and clean roads. However, in other countries especially Africa do not have enough infrastructure, so they cannot go to school, or hospitals. Because of that, developed countries including Japan, US, and EU have been supporting developing countries by official development assistance (ODA). However, as you know, developing countries did not change by ODA. Besides Action Aid, one of the NGOs, made a report that said about 60% of ODA which is done was wasteful. Thus I suggest that Japanese private company do human resources development in developing countries to support developing countries. To support developing countries is so important because the problems of developing countries may have influence on people's lives who live in developing countries. Thanks to support by private company, of course developing countries can maintain infrastructure and private companies can get profits when economies in developing countries become big.

1 Introduction

The purpose of this study is how to support developing countries and maintain infrastructure there. For example, COVID-19 pandemic started and it is continuing still. It is said that COVID-19 viruses were born in a market in Wuhan in China. Raw meat was sold in the market, and the market was not clean enough to keep hygiene conditions. However if Japan or other countries support China and give technologies that keep the market clean. Thanks to this support, developed countries may not need to take measures of COVID-19.

Like this, the problems of developing countries will affect developed countries. Supporting developing countries is important for not only developing countries but also developed countries.

However recently, many developed countries may not understand the real reason why they should support developing countries. Japan, the US, and other developed countries have been supporting developing countries by ODA. In spite of these, these ODA did not work

well because developed countries did not know the state of developing countries, so they think that the fact of supporting is important, but the most important thing is to support effectively.

We need to change how to support developing countries and support them strongly.

2 Discussion and implications

《The now state of Japan ODA》

The Japanese government decided to use about 560 billion yen for ODA in 2020. This amount of money looks very big, actually, Japanese government used ten thousand billion yen for ODA in 1997. Although the government needs to use the budget for social security or education, the decrease of supporting money means a delay of development.

Seemingly, developed countries need to add to the budget of ODA. However, according to Action Aid, a international NGO, concluded that about 47% of Japanese ODA was “Ghost support”. It means that Japanese ODA was not useful for developing countries. I think this problem comes from how to decide to support developing countries. In Japan, how to support, which county to support, or other things are decided at the Infrastructure Strategy Conference in the cabinet secretariat. They need to consider these things so seriously. Because of this, it takes long time to start to support and when Japan supports, the state of developing countries is changed. Japanese ODA is said that it is not effective and speedy.

《Support by Japanese private company》

From the current state of Japanese ODA, I propose that Japanese private companies do human resources development in developing countries. First, I thought that Japan should add to the budget of ODA, however as you know, ODA did not work well. Thus a new system of support is needed. Private companies build foreign branches in developing countries, and maintain infrastructure and at once develop human resources.

The merits of this support are two. First, it is easy to support developing countries. They can reduce the time to decide how to support. Private companies need not consider seriously like the government. Thanks to this, we can solve the problems of Japanese ODA. We can support developing countries quickly. Second, people who live in developing countries will be able to maintain infrastructure by themselves. Private companies develop human resources there, so inhabitants can get the ability to maintain. Private companies need support only materials and equipment. And until now, sometimes infrastructure made by ODA was destroyed by conflict, so the government needed to support them again. It is a waste of

money and time. The government needs to consider how much money to support or how to support again. However, because residents have the ability to maintain, they can maintain again immediately.

《Merit for Japanese private company》

However the question is always whether there are benefits to developing countries and companies. They cannot forecast the benefits to them. Even so the problems of developing countries will affect developed countries and supporting developing countries is essential not only for developing countries but also developed countries as I mentioned before. However, although supporting developing countries is important, I understand that private companies do not support because private companies have to make a profit and pay salaries to employees.

Even though private companies do not want to support developing countries, I think this system of supporting developing countries that I propose will bring benefits to private companies.

It is good for private companies to be able to get profits when developing countries which they support grow their economies. One of the reasons why developing countries did not grow their economies is not to have a distribution system because of lack of roads, railroads, and airlines. Even if developing countries people make products, they cannot carry products faraway place, so they can get only a little proceeds. However, if they get enough infrastructure supported by private companies, the distribution system will be ready. Thanks to this, the economy will be revitalized and the nations become richer. By doing so, people will use money to buy something and Japanese private companies can sell their products. I think Japanese private companies will get more benefits than other countries' companies because they have been supporting and have branch offices there, so they will be trusted by residents. Japanese private companies will expand their market share.

Like this, there are many merits for developing countries and also for private companies, so private companies should start to support developing countries by using this system.

3 Conclusion

In conclusion, I suggest a new supporting system for developing countries. Japanese private companies develop human resources in developing countries and when the developing countries become richer, they can get benefits. Also of course there is a merit for developing countries that they can maintain infrastructure. However, I need to solve the

problem that private companies did not support before because they do not want to do things that they cannot predict the future benefits for them.

4 References

- Action Aid [2005] Real Aid. Retrieved on <https://actionaid.org/publications/2005/real-aid-agenda-making-aid-work> (Viewed on July 20, 2021)
- Ministry of Foreign Affairs of Japan [2019] Japan's ODA budget. Retrieved from <https://www.mofa.go.jp/policy/oda/budget/index.html> (Viewed on July 20, 2021)
- UNDP representation office at Washington [2017] Goal 9: Industrial Innovation and Infrastructure. Retrieved from <https://www.us.undp.org/content/washington/en/home/sustainable-development-goals/goal-9-industry-innovation-and-infrastructure.html> (Viewed on October 16, 2020)
- 大林稔 [2011] 貧困者に届く支援を-日本のアフリカ向けODAの課題 <https://www.hurights.or.jp/archives/newsletter/section3/2011/01/---oda.html> (閲覧日 2021年1月19日)
- 財務省[2020] 2018年における日本の開発途上国に対する資金の流れ https://www.mof.go.jp/policy/international_policy/reference/financial_flows_to_developing_countries/data/gaiyou2018.pdf (閲覧日 2020年12月4日)

Making Wine in Gunma

～Is the Terroir of Gunma Suitable for Wine Production～

5109 Izumi Maeda

Abstract

In recent years, the amount of wine consumed in Japan has been increasing every year. Therefore, I would like to make wine in Gunma Prefecture and boost the prefecture as a new industry. In this study, I explain whether it is possible to produce wine in Gunma in terms of terroir suitable for wine.

1 Introduction

There are two things I would like to clarify in this research. The first is whether it is possible to produce wine in Gunma, and the second is what can be done to promote Gunma wine. These are the two questions I would like to research.

Currently, the amount of wine produced in Japan is increasing year by year. However, when looking at the number of wineries by region, the five regions of Yamanashi, Hokkaido, Nagano, Yamagata, and Niigata account for 60% of Japan's wine production. As the demand for wine is increasing, we believe that we can prove that we can make wine in Gunma Prefecture, and furthermore, that this will lead to the development of the region as a new industry in Gunma Prefecture.

The first step in the research process was to determine what kinds of places are suitable for winemaking, and to consider whether there are actually such places in Gunma Prefecture from a geographical perspective. Then, I will consider how to make wine in Gunma and how to promote it. Therefore, this research will be mainly a literature review.

Since I will be using the term "terroir" frequently in this paper, I would like to define it beforehand. Terroir refers to the geographic, topographical, and climatic characteristics of a growing region as it relates to winemaking.

There are also two types of wine countries: Old World and New World. Old World is simply defined as the regions that have been producing wine for a long time, mainly in Europe. New World, on the other hand, is the countries that started producing wine after World War II, including Chile, the United States, and Australia. Japan is of course one of the New World countries. One of the characteristics of New World wine is that it is inexpensive and has a high alcohol content.

2 Discussion and implications

First of all, what is a good terroir for wine? Basically, land with good drainage is chosen to produce wine grapes. The more sunshine hours, the better it is for wine production. Generally speaking, the harsher the environment, the better the grapes. This

is because the vine does not actively use the energy it takes in to prepare the seeds for storage. This allows the energy to be channeled into the fruit, which in turn produces good grapes. This is the basis of a good terroir.

Next, we turn our attention to terroir, especially soil. Within the Old World, there are many regions with different characteristics. I will focus on a few of them.

- 1) Clayiness: Excellent water retention. The soil does not retain too much water and does not dry out. It is also resistant to sunshine.
 - 2) Volcanic ash: Soil that has accumulated volcanic ash from volcanic eruptions, and is rich in nutrients and well-drained. Acidic soils are basically unsuitable for grape production, with the exception of volcanic ash.
 - 3) Calcareous: Contains a lot of calcium carbonate. It is rich in minerals and has good drainage.
 - 4) Sandy: Fine sand that drains well but does not retain water well. It dries out easily.
 - 5) Gravelly: Very well drained and reflects sunlight well, so grapes grow easily.
- These are just a few of the many characteristics of the soils we have chosen. There are also Wine grape varieties that are suited to each soil type, but these are beyond the scope of this paper.

With these facts in mind, I would like to look at the terroir of Gunma. First of all, according to the data from the Japan Meteorological Agency, Gunma Prefecture ranks 45th in precipitation and 2nd in sunshine hours among the prefectures. In other words, it doesn't rain much in Gunma and the sunshine hours are long. This makes it a very suitable terroir for wine grapes, as you can see from the description of suitable terroir above. As for the soil, we found out from the soil map of the Gunma Agricultural Administration Department that there is a lot of soil called "black box soil". Black Box Soil is highly hydrophilic and also has good drainage. In this respect, too, the terroir of Gunma Prefecture may be suitable for wine production.

Finally, I would like to discuss the main varieties of wine grapes used in Japan. In Japan, there are many varieties of wine grapes such as "Koshu" for white wine and "Muscat Bailey Alpha" and "Black Queen" for red wine. These varieties were created by Zenbe Kawakami, who improved them to make wine in Japan. Since these varieties are grown in many places in Japan, we believe that they can be grown in Gunma without any problem. It is also possible to grow international varieties such as Chardonnay, Sauvignon Blanc, and Riesling, which are grown regardless of the region.

3 Conclusion

As I mentioned earlier, the purpose of this study was twofold: to find out if it is possible to make wine in Gunma, and to find out what can be done to promote the wine of Gunma. However, this study was not able to address the question of how to promote the wine of Gunma in detail. Therefore, a brief summary of the findings of this study is that it is possible to make wine in Gunma. In addition, there is a good chance that we can produce higher quality wine than in regions such as Yamanashi and Hokkaido, which are currently the largest producers.

I would like to summarize the future prospects and challenges of this research. First of all, there are many things that will not be known until the actual production of wine grapes in Gunma Prefecture is considered. Therefore, I would like to focus on a specific region and collect data for further research. In terms of promoting wine, I believe that we can solve this problem by creating wines that have unique characteristics of Gunma. I would also like to think about the sustainability of wine production in the future.

4 References

若生ゆき絵 (n.d.) ワインの基礎知識. 新星出版社

群馬県農政部技術支援課 (2021) 群馬県耕地土壌図 Retrieved from
<http://www.aic.pref.gunma.jp/agricultural/management/technology/soil/03/03040000.html>

総務省統計局 (2016) 国土・気象 Retrieved from
<https://www.stat.go.jp/data/nenkan/back64/01.html>

suntory ブドウ品種で見る日本ワイン Retrieved from
<https://www.suntory.co.jp/wine/nihon/column/hinshu01.html>

日本醸造協会誌 岩の原葡萄園 Retrieved from
https://www.jstage.jst.go.jp/article/jbrewsocjapan1988/86/3/86_3_210/_article/-char/ja/

国税庁課税部酒税課 国内製造ワインの概況 Retrieved from
<https://www.nta.go.jp/taxes/sake/shiori-gaikyo/seizogaikyo/kajitsu/pdf/28wine.pdf>

Shinkansen runs all over the world

~Promoting the export of Japan's high-speed rail technology~

5110 Yamashita Daichi

Abstract

These days, the demands for high speed railways are increasing in South-East Asia and America. Japan has high-speed rail technology(Shinkansen), and tried to sell it, but they couldn't get a contract. This study investigates the reason why Japan undertook the construction of a high speed railway project overseas, and what we should do at order competition in other countries. Now, many high-speed railway plans have been announced. Europe, Japan, and China, which already own railways, are competing for orders. On the other hand, there are only a few export examples of Japanese technology. The Shinkansen is characterized by high safety and punctuality, but it has the problem of high construction costs. One of the causes is that manufacturers of vehicles and electricity are crowded. Therefore, I propose to establish a new railway consulting company that will oversee the overseas export business. In Europe, such a method has already been adopted, and the cost can be reduced by having one company take charge of everything from business verification to construction start, opening of business, and sales. In addition, since demand is increasing in emerging countries, there are few countries that have enough funds, even though they are major national projects. Like India's high-speed rail business, which Japan has successfully received orders for, financial support will also be aggressive by ODA .

1 Introduction

As a result of the new coronavirus epidemic, the profits of railroad companies have been declining due to a decrease in demand for commuting and travel. With the recent development of heavy industries in China and Korea, Japanese companies are losing ground in the fields of rolling stock and shipbuilding. However, the Shinkansen, which boasts of high technology and experience in safety and punctuality with no fatalities or injuries in the 50 years since its inauguration in 1964, is highly regarded overseas, and the government is promoting plans to export the Shinkansen overseas. In recent years, railroads, which were once considered a shady industry, have been attracting attention worldwide. The demand for high-speed rail is increasing dramatically, and countries are paying close attention to it. High-speed rail projects require the construction of not only tracks and rolling stock, but also large-scale infrastructure such as bridges and elevated tracks, and require appropriate technology and funds. For this reason, it is a project that can be of great benefit to industrially advanced countries, and France and Germany have a track record of construction and technology licensing in various parts of Europe, the United States, and Asia. On the other hand, Japan's Shinkansen technology has only been exported to a few countries, such as Taiwan High Speed Rail, the British Express, and a high-speed rail project in India. Although the Shinkansen boasts of safety and punctuality, there are few examples of orders received. The goal of the project is to contribute to the countries that receive orders, earn profits, and disseminate the technology in order to win more orders.

2 Discussion and implications

In recent years, there have been proposals to build high-speed railroads in many countries around the world, which are expected to facilitate transportation and have a number of economic benefits. Europe, Japan, and

China are currently competing to win orders for their own high-speed rail systems, with emerging countries and the U.S., which has not placed much emphasis on railroads, being the most important players. France's TGV high-speed train has the largest track record, and exports to a wide range of countries, including South Korea, the United States, and Morocco. In recent years, China has been rapidly improving its technology and making its presence felt, participating in many competitions for orders and successfully winning them with its unbeatable prices. The demand for high-speed rail is increasing dramatically, and other countries are keeping a close eye on it.

I propose the establishment of a new railroad consultancy company to oversee overseas export business. In Europe, such an approach has already been taken, with investments from national railways (private companies), banks, governments, rolling stock companies, electric companies, civil engineering companies, and others. There, a single company is responsible for everything from project verification to construction, opening, sales, and support, thereby reducing costs.

Shinkansen trains are characterized by their high safety and punctuality, but they are expensive to build. However, it is inevitable that costs will rise as safety is pursued, rolling stock is made faster, and comfort is improved, and suppressing these costs may lead to a loss of trust. Therefore, we looked for other ways to reduce costs, and found that the problem was that the manufacturers of rolling stock, electricity, etc. were all over the place. Japan's bullet train system has a division of labor among many companies in various fields such as bridges, tracks, and rolling stock. For example, Kawasaki Heavy Industries, Hitachi, Ltd. and Nippon Sharyo are all involved in the manufacture of rolling stock. As a result, the interests of these companies, which normally need to collaborate and cooperate in overseas business, do not coincide, resulting in increased costs.

In addition, since demand is increasing in emerging countries, there are

few countries that have sufficient funds for such projects, even though they are major national projects. In India's high-speed railroad project, for which Japan was successful in winning the order, it provided an extremely generous loan of 1.8 trillion yen, or about 80% of the total project cost, with an interest rate of 0.1% and a payback period of 50 years. As China has succeeded in winning orders with its overwhelming financial strength, Japan will also need to aggressively provide yen loans through ODA.

However, for the U.S., it is important not only to have financial strength, but also to have the attitude to win orders. In the past, when Japan and Europe competed against each other in the race to win orders for high-speed rail in South Korea, Europe launched an unfounded negative campaign against Japan, saying that its technology was low and that it had many failures. As a result, Europe was awarded the contract, partly due to political issues between Japan and South Korea, but Japan's overly humble attitude is also a problem. Although Japan should not develop unfounded criticism, an overly humble stance of not criticizing the other side at all will be a disadvantage in bidding. It will be necessary for Japan to develop some degree of negative campaigning. In the U.S., a high-speed rail system is already in operation on the West Coast, with technology provided by France, and it has been a success. On the East Coast, there is also a line under construction, and JR Tokai is planning to build a high-speed rail line between Houston and Dallas. President Biden has pledged to increase the speed of rail lines in the U.S., and Japanese companies are expected to have more opportunities to participate in rail projects in the U.S., and are required to be proactive in planning and bidding. The current railroad company in the U.S., like JR in Japan, is the Association of American Railroad Passengers (Amtrak), but it is also notorious for accidents. Therefore, if the safety and punctuality of Japanese railroads can be utilized, and if American financial resources are also available, there is a high possibility of participating in the project.

3 Conclusion

I propose the establishment of a new railroad consultancy company to oversee overseas export projects. Such an approach is already being used in Europe. A single company would be responsible for all aspects of the project, from verification to construction, opening, sales, and support, thereby reducing costs.

Shinkansen trains are safe and punctual, but their construction costs are high. However, it is inevitable that costs will rise as safety is pursued, rolling stock is made faster, and comfort is improved. However, there is a problem that manufacturers of rolling stock and electricity are in disarray. In Japan's Shinkansen, there is a division of labor among many companies in various fields such as bridges, tracks, and rolling stock. Normally, the interests of these companies, which need to cooperate and collaborate in overseas projects, do not coincide, resulting in increased costs.

In addition, since demand is increasing in emerging countries, there are few countries that have sufficient funds for such projects, even though they are major national projects, and active yen loans (ODA) will be necessary.

However, in addition to financial strength, it is also important to have the right attitude to win orders. With U.S. President Biden's pledge to increase the speed of rail lines, Japanese companies are expected to have more opportunities to participate in rail projects in the United States. The largest railroad company in the U.S. is the Association of American Railroad Passengers (Amtrak), but it is also notorious for accidents. Therefore, there is a high possibility that Japanese companies will be able to participate in the business if they can take advantage of the safety and punctuality of Japanese railroads and also have the financial strength of the US.

As Japan's population declines, it is no longer possible to maintain

regional lines with the Shinkansen and city profits due to Corona; JR West is considering discontinuing lines with low passenger numbers. The transportation capacity provided by Japan's railroads is great, but the demand for it domestically will decline. However, we can maintain our profits and contribute to the international community by sharing and utilizing our technology and know-how overseas.

4 References

「Overseas Development Strategy October 2017 (International Affairs Division, Railway Bureau, Ministry of Land, Infrastructure, Transport and Tourism)」

<<https://www.mlit.go.jp/common/001210028.pdf>>(2020/07/15)

「Shinkansen Railway Development (Ministry of Land, Infrastructure, Transport and Tourism)」

<https://www.mlit.go.jp/tetudo/shinkansen/shinkansen6_QandA.html>(2020/07/27)

「A New Stage in the Development of China's High-Speed Railways: From Technology Introduction to Overseas Development through Original R&D

(Research Institute of Economy, Trade and Industry) 」

<<https://www.rieti.go.jp/users/china-tr/jp/161019sangyokigyo.html>>(2020/07/27)

「Global Demand for High-Speed Rail and Japan's Export Strategy 」

<<https://core.ac.uk/download/pdf/268144627.pdf>>(2020/07/27)

「Global Demand for High-Speed Rail and Japan's Export Business (2)」

<https://aichiu.repo.nii.ac.jp/?action=repository_action_common_download&item_id=2821&item_no=1&attribute_id=22&file_no=1> (2020/07/29)

「Global High-Speed Rail Strategy: A Case Study of Hitachi, Ltd.」

<http://reposit.sun.ac.jp/dspace/bitstream/10561/1451/1/v52n2p1_ezaki.pdf>(2020/09/

04)

「Current Status and Issues of Shipbuilding Industry" (Ministry of Land, Infrastructure, Transport and Tourism)」

<<https://www.mlit.go.jp/policy/shingikai/content/001348308.pdf>>(2021/07/15)

「American intercity passenger rail must be truly high-speed and transit-oriented」

<<https://www.sciencedirect.com/science/article/abs/pii/S0966692312000233>>

(2021/05/22)

「Overseas Development Strategy October 2017 (International Affairs Division, Railway Bureau, Ministry of Land, Infrastructure, Transport and Tourism)」

<<https://www.mlit.go.jp/common/001210028.pdf>> (2020/07/15)

「Development of Shinkansen Railways (Ministry of Land, Infrastructure, Transport and Tourism) 」

<https://www.mlit.go.jp/tetudo/shinkansen/shinkansen6_QandA.html>(2020/07/27)

「Global demand for high-speed rail and Japan's export business (1)」

<<https://core.ac.uk/download/pdf/268144627.pdf>>(2020/07/27)

「Global demand for high-speed rail and Japan's export business (2)」

<https://aichiu.repo.nii.ac.jp/?action=repository_action_common_download&item_id=2821&item_no=1&attribute_id=22&file_no=1>(2021/07/27)

「Global High-Speed Rail Strategy - A Case Study of Hitachi, Ltd.」

<http://reposit.sun.ac.jp/dspace/bitstream/10561/1451/1/v52n2p1_ezaki.pdf>(2021/07/27)

Using Traceability Systems to Stop Water Shortages

~Thinking about the World's Water Problems through Avocados~

5111 Aoi Iwasaki

Abstract

Water shortage is one of the biggest problems of the world, and it is considered to be that water shortage is speeding up as population explosion goes more. The purpose of this study is to think about what we can do in this situation. In this study, I thought about water, focusing on avocados, which are currently in fashion. Huge amounts of water are needed to grow avocados, so water stress in the production area is very high. Japan covers its internal water needs by importing virtual water. In other words, Japan is a country that saves a great deal of water. Therefore, water shortages, water pollution, and other water problems overseas are not unrelated to Japan. My suggestion to solve this problem is to disclose the growing environment of food to consumers through traceability systems.

1 Introduction

Last year, I conducted a study on why we need to save water. As a result, I found out that Japan imports virtual water, so if we who live in Japan save water, we can help solve the water problem in some faraway country in the world. The study also made me realize the importance of water conservation, so I decided to do another study on water this year. We focused on avocados because they require far more water than other popular vegetables and fruits. Through this research, I hope to improve the water shortage in the world.

2 Discussion and implications

Due to the growing demand and rising prices, avocados are also called "green gold" in the producing countries. However, it takes 2,000 liters of water to produce 1 kg of avocado, causing a serious water shortage in the production areas. The United Nations has set the daily water consumption for basic human rights at 50 liters, which means that one avocado can provide enough water for eight people for one day. However, the average monthly rainfall in Michoacan, the largest avocado-producing state in Mexico, is 150mm in the wet season and 15mm in the dry season, which is very low compared to the world average monthly rainfall of 800mm. In spite of the low precipitation to begin with, avocado cultivation uses a large amount of water, which leads to water depletion. Knowing all this makes me think that we should stop eating avocados.

Therefore what about other foods? Does not the production of other foods require a significant amount of water? This is where I learned about something called virtual water. Virtual water is "an estimate of how much water a country that imports food would need if it were to produce that imported food" (By Ministry of the Environment website, "What is Virtual Water?"). In other words, how much water is being imported indirectly? By using the Ministry of the Environment's virtual water calculator to calculate the amount of food we eat, I was able to realize that Japan is actually closely involved in water issues overseas, even though they may not seem to be. However, even though we import a lot of water, if the water resources in the production area are abundant and the water is used in a sustainable manner, the impact on the environment is minimal even if water is used for production. On the other hand, if water resources are low and used in a rough manner, the impact on the environment will be large. The term "water stress" is used to describe a situation where the amount of water available per person per year is less than 1,700 tons, making daily life inconvenient. Returning to the topic of avocados, I read that Mexico, Chile, and Peru, which are the main production areas of avocados, all have high stress levels of 40-80%. Latin America has been experiencing a severe drought since 2010, which has devastated agriculture and cattle breeding, and has led to a war for water. In such a situation, large-scale capital is

producing avocados to meet the demand, using large amounts of groundwater and storing water in reservoirs. This has led to water conflicts between the companies and the water supply, such as the loss of water for the local water supply. In addition, as more money flows into the production areas due to the boom, gangs and mafias become involved, threatening the lives of the growers. It's not that eating avocados is bad, it's that in areas where there is a shortage of water, the water is used in an abusive manner to produce avocados, causing problems for the local people and harming the ecosystem. By buying such avocados, consumers are also involved in environmental destruction and crime. In order to prevent consumers from being involved in environmental destruction and crime, importers and sellers should actively disclose information about the production areas.

My proposal is to use traceability systems to disclose the growing environment of food from overseas. Traceability means to make it possible to trace a product from procurement of raw materials to production, consumption, or disposal in order to clarify "when, where, and by whom the product was made. Some of the products sold in supermarkets have QR codes attached to them, which provide traceability information when read. Currently, QR codes for traceability include information such as ingredients, content, best-before date, country of origin, storage method, and manufacturer. We thought that adding data on the production environment of food to this information would expand the shopping options for consumers. If more importers and sellers would disclose this information, more consumers would see the information, more farmers would import from farmers who use water more carefully, and farmers would improve their environment so that more farmers would buy their products.

3 Conclusion

Through avocados, I was able to learn about virtual water and realize the enormous negative impact that humanity is having on the planet behind the huge popularity of avocados as more and more people become health conscious. When production has a negative impact on the ecosystem or harms the local population, as in the case of avocados, I think it is necessary to let the consumer choose what to buy in order to

avoid criminalizing them. My suggestion is to use the traceability system that already exists today to disclose the production environment and other conditions of the products to the public.

4 References

ScienceDirect DarioCaro "Global virtual water trade of avocado"

〈<https://www.sciencedirect.com/science/article>〉 (9.14.2021)

WRI Paul Reig "World's 36 Most Water-Stressed Countries"

〈<https://www.wri.org/insights/worlds-36-most-water-stressed-countries>〉 (9.21.2021)

Weather Spark "Climate and Average Weather Year Round in Morelia"

〈<https://weatherspark.com/y/4452/Average-Weather-in-Morelia-Mexico-Year-Round>〉 (9.5.2021)

ウォーターエイド「隠れた水-世界水の日報告書2019」

〈<https://www.wateraid.org/jp/sites/g/files/jkxoof266/files/2019beneath-the-surface.pdf>〉 (8.18.2021)

環境省 「バーチャルウォーターとは」

〈https://www.env.go.jp/water/virtual_water/〉 (9.7.2021)

環境省 「仮想水計算機」

〈https://www.env.go.jp/water/virtual_water/kyouzai.html〉 (9.7.2021)

国連「WWDR-世界水発展報告書」

〈https://www.un.org/esa/sustdev/sdissues/water/World_Water_Report_exsum_jpn.pdf〉 (9.5.2021)

トレーサビリティ大学 「トレーサビリティとは」

〈https://www.keyence.co.jp/ss/products/marker/traceability/basic_about.jsp〉 (9.17.2021)

ニュースウィーク日本版 六辻彰二

「アボカドは「悪魔の果実」か？-ブームがもたらす環境破壊と難民危機」

〈<https://www.newsweekjapan.jp/mutsuji/2021/06/post-117.php>〉 (8.21.2021)

Garden Story HP

「捨てないで！ おいしく食べたアボカドのタネから、アボカドを育ててみよう」

〈<https://gardenstory.jp/plants/18865>〉 (8.18.2021)

HUFFPOST

「気候変動による「水ストレス」が世界を脅かす 世界有数の水輸入大国・日本も高リスク」

〈https://www.huffingtonpost.jp/2013/12/14/water-stress_n_4446648.html〉

(9.17.2021)

VICE WORLD NEWS Lauren Rothman 「アボカドブームがもたらすチリの干ばつ」

<https://www.vice.com/ja/article/435w9b/your-bottomless-hunger-for-avocados-is-causing-droughts-in-chile>〉 (8.21.2021)

For Promotion of Mental Health

~The Role of Counseling Suitable for Modern Society~

5112 Mimi Otsuka

Abstract

The purpose of this research is to find a solution to the problem that the number of mental patients is increasing. Psychiatric treatment and counseling are both methods to attract mental problems. Also I thought mental patients should rely on counseling first considering the two methods' characteristics. Then I think we should use online counseling more and propose two means to refine it. They are a way of publishing advertisements and using video calling applications. They will help online counseling to be easier for people to use.

1 Introduction

I was originally interested in psychology so I was gathering information about it. One day I found data from the Ministry of Health, Labor and Welfare that the number of mental patients is increasing among a wide range of ages. (2017) Since I found this data, I decided to seek a solution to solve the problem.

2 Discussion and implications

Psychiatric treatment and counseling

First, I would like to explain details of psychiatric treatment and counseling, which

have something in common. According to the Chiba prefectural government, psychiatric treatment is categorized literally in the medical field. Healing patients' diseases and reducing the symptoms are the main steps of psychiatry. Thus doctors tend not to lend an ear to their patients' talking unless it's necessary for medical care. Some people who see a psychiatric doctor complain about doctors' behavior.

On the other hand, counseling is categorized in the field of psychology. In counseling, listening to patients' talking is regarded as the most important thing. Although counselors cannot take medical care of their patients as doctors, it may be better for mental patients.

Counseling on SNS

Based on the differences between psychiatric treatment and counseling, it can be said that mental patients should rely on counseling services first because counselors listen to clients' talking well. However, according to Kei Kudo, the chief director of Certified Specified Nonprofit Corporation Raising Net (2019), people cannot tell their worries to others easily. There are some reasons for this, such as not knowing what to say, fears of being regarded as weak when talking with other people, worrying about whether we are out of place, or the opinion that being supported is embarrassing. Then I thought chatting on SNS can make counseling easier. This is a way of talking to somebody using official accounts of NPO corporations on SNS applications such as LINE or Twitter. People chat with the official accounts to talk about their mental problems. This way may prevent mental patients from getting worse because patients can use it easier and earlier. I found some official accounts which have already started such online counseling so I gathered information about them.

First, there are some merits of online counseling. For example, we are able to use SNS anytime, without disclosing our names and other personal information. Thanks to this, people will feel less of a sense of resistance than before. In addition, online services can be used whenever we like. When we go to a face-to-face counseling, we

need to make an appointment and go to see the counselor's place by ourselves. That may make it difficult for people to go to counseling. Thus online counseling is suitable for people.

However, there are also some demerits in using online counseling; cost, securing sufficient personnel, credibility, and publicity. Besides, not looking at each other's faces disturbs comfortable counseling for some people. If we use it, patients may not be relaxed and counselors are not able to read patients' feelings by looking at their faces.

Solution of the problem

Based on my research, I thought of two solutions, how to use advertisements and introducing video calling services.

First, I will describe how to use advertisements. To let something know, advertisement can be necessary. Thus I thought advertisements of online counseling should be published on SNS because the system itself uses SNS. Then I suggest using LINE because many people use it. According to LINE FOR BUSINESS (2019), more than 80% of SNS users use LINE. In addition, we can narrow target users by using demographic data distribution function. Thanks to this, we can carry advertisements efficiently.

Second, I think we should introduce video calling services. Online counseling services are known as online chatting services for now. But if we can use video calling, we will be able to look at the counselor's face while talking to each other. Also in case either patient or counselor doesn't want to disclose their face, then they can turn off their camera. So video calling is flexible and suitable for talking online.

3 Conclusion

In conclusion, I propose using online counseling with advertisements on LINE and using video calling at the same time. That will make talking about problems easier for

mental patients and it will be a part of the solution of problems about mental patients.

4 References

LINE FOR BUSINESS 「LINE広告とは サービス概要・特徴」 (2019)

<https://www.linebiz.com/jp/column/technique/20191024/>

厚生労働省障害保健福祉部「精神疾患に関する参考資料」 (2017)

https://www.mhlw.go.jp/file/05-Shingikai-12201000-Shakaiengokyokushougaihokenfukushibu-Kikakuka/0000108755_12.pdf

厚生労働省SNS相談窓口「SNSやチャットでの相談を行う団体の紹介」 (発行年不明)

<https://www.mhlw.go.jp/mamorouyokokoro/soudan/sns/#yorisoi>

千葉県庁健康福祉部障害者福祉推進課精神保健福祉推進班

「精神科とカウンセリングの違いについて」 (発行年不明)

<https://www.pref.chiba.lg.jp/kenshidou/faq/363.html>

認定特定非営利活動法人育て上げネット理事長 工藤啓

「戸惑うひとこそ『まずは相談』が難しい」 (2019)

<https://news.yahoo.co.jp/byline/kudokei/20190614-00130168/>

翠会ヘルスケアグループ 医療社団法人翠会 慈友クリニック

精神科・心療内科について (発行年不明)

<https://www.jiyu.or.jp/>

Reform of Dance Classes in Japan

~Teaching Method to Learn From Overseas~

5113 Kaneko Yui

Abstract

This research is focusing on establishing teaching methods in dance classes in Japan. We experienced dance classes when we were junior high school students. I like to dance, so I was very happy to participate in dance classes. Then I had a question about why only teachers coaching is about dance for students. I was very bored when I participated in dance classes. I thought that I wanted to suggest better ideas. So I researched this topic. My research question is “How to make dance classes better.” My final goal is to innovate use tablets often used in Japanese classes and to invite dancers to direct coaching. Now, Teachers and students are worried about dance classes in Japan. If I suggest a good dance education method, I think Japanese dance classes will be even better.

1 Discussion and implementations

First of all, we will investigate what is actually done in Japanese dance classes and the system. Next, I would like to investigate dance classes in overseas, compare them with Japanese dance classes, and proceed with research by incorporating things. I found that can be used in Japanese dance classes overseas. I made three suggestions last year. The first is to hold an ICT dance class using an app called "Smart Coach," which SoftBank has been conducting since 2017. In the Smart Coach, a teacher shoots a dance video of the student, sends it to a professional coach, and then the coach corrects student's movements using the

character and voice function. The coach then sends it back and the teacher teaches the student while watching it. By using this Smart Coach, we can know more clearly what part of our dance is not correct, and since we are using a tablet, there is an advantage that teachers and students can actively communicate with each other. In fact, Gifu prefectural Aoyama junior high school used this system.

The second is to encourage teachers to actively participate in JDAC and NSSA, which are held classes for teachers. It is an institution that provides practical guidance such as how to proceed with dance classes and concrete examples. I think it would be good for teachers to enthusiastically participate in such a studio.

Finally it conducts classes for teachers. It is guidance using a free app (Ugotoru) that does not cost money. This app can flip video, which is useful when reviewing videos you have taken. There are many situations where you can make use of even with a free app, so it might be a good idea to actively use it. On the other hand, dance classes in overseas are conducted for the purpose of student's creatively, self-assertion, As you can see, there are difference in dance classes between Japan and overseas. However, I felt that some guidance should be given as a major premise for Japan's goal of "improving communication skills with peers." So what kind of teaching methods are they actually doing overseas? In Australia, regular physical education classes are conducted by school teachers, and dance classes are taught by calling professional dancers.

2 Conclusion

As a suggestion from here, a school will invite dancers for a period of time. For example, like once a week at an Australian school. Also, actively use tablets. I thought that by doing

this kind of thing, I could have an efficient dance class. However, it costs money to call a dancer. I referred to Gifu City Aoyama Junior High School. At Aoyama Junior High School, they ask local dance circles at Gifu University to teach dance and student's movement video, not professional dancers. So if yours a professional dancer and it costs money, it might be a good idea to get the help of a dance circle from a local university. In the future, it will be necessary to consider the cost aspect and what kind of dance lessons should actually be given to students to receive equal education, so I would like to focus on that.

3 References

{1}Htf Dance Academy (2021.3.20) <https://kidsdance.jp/column/484/>

{2}The difference between Japanese dance education and American dance education!-What is the current status, effect, purpose, and significance of dance education? "

(2021.4.6) <http://siri-tai.com/usdanceeducation/>

{3}SKY SOART & WINGS STONE & WINGS (2021.4.6)

<http://www.stone-wings.com/sw/blog/blog/156->

{4}British Digital Theater Plus has great drama education E-learning (2021.5.6)

<http://www.stone-wings.com/sw/blog/blog/>

{5}Theater education that enhances communication, expressiveness, concentration, and imagination which are common overseas (2021.6.6)

[https://kodomo-manabi-labo.net/dramaeducation-kaigai\]](https://kodomo-manabi-labo.net/dramaeducation-kaigai)

{6}Remote sports instruction using ICT (2021.8.6)

<https://www.softbank.jp/corp/csr/next-generation/education/bukatsu/>

{7}JDAC(2021.9.6)

<https://www.jdac.jp/>

Improving English Abilities by Watching Foreign Movies

~how can we talk smoothly with foreign people ~

5114 Reona Kiuchi

Abstract

I want to live in a foreign country in the future. However, my English ability is not high, so I have to study more. However, I do not want to study because I hate it. Also, there are more and more chances to speak to foreigners these days because of the global society. So we need high English skills, but I think there are many people who do not want to study English like me. Actually, there are data of questionnaires, though many people want to study English, but they cannot. Then, I suggest the way to study English by using foreign movies with fun. My research question is “What kind of effect does foreign movies have on your English ability?” We can improve our own listening skill, vocabulary and sentence conceptions. Then, I started searching for myself. After watching movies, I took notes about my thoughts on my abilities. Compared with myself before watching, I can catch more words and sentences. Also, I could learn more words and conversations. My future tasks are recognizing this study method with SNS and developing the way to improve listening and writing abilities.

1 Introduction

I want to live in a foreign country in the future, but my English ability is bad. Even though I have to study harder, I hate studying English. I think it applies to a lot of people. According to The Institute for International Business Communication, 70 percent of people study less than three hours in a week from a questionnaire. Which is ‘How many hours do you study in a week now?’ However, according to a survey, 60 percent of people actually wanted to study more than three hours from the questionnaire ‘Actually, how many hours do you want to study in a week? What is your ideal study time?’ Therefore, a lot of people wanted to study more but they did not. I think the reason why they didn’t study is because studying is boring.

So I thought if I would suggest the method of studying with fun, more people would study more time, then, I thought watching movies is the best way to study with fun. To improve my English abilities with movies will contribute to my future and I can suggest how to study English to people like me. These days, globalization is progressing, so we will have more chances to speak to foreigners. If our English abilities improve, our width of communication will spread and we will be able to contribute to the globalizing world.

My method of this study is mainly searching the internet for previous research, and watching movies with subtitles with myself. The second method, I watched more than two movies in a week. After that, I wrote a memo about my thoughts on English abilities. I classified it into four skills. They are Listening ability, writing ability, reading ability and vocabulary. Vocabulary includes daily conversation and slang expressions.

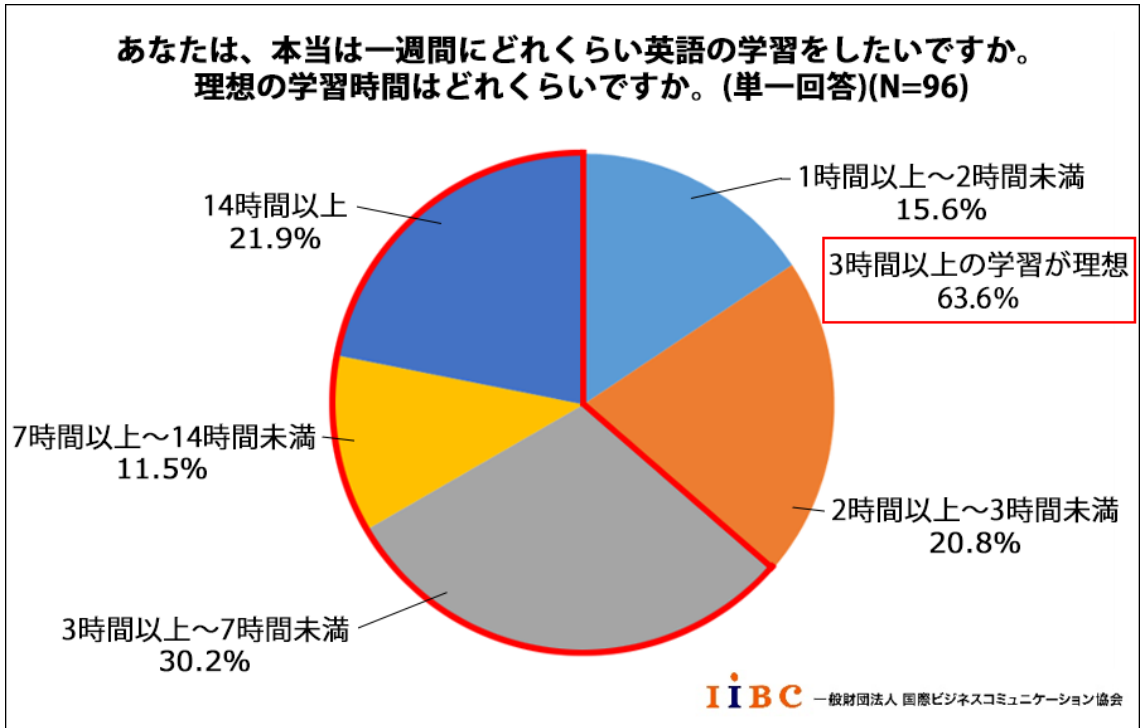
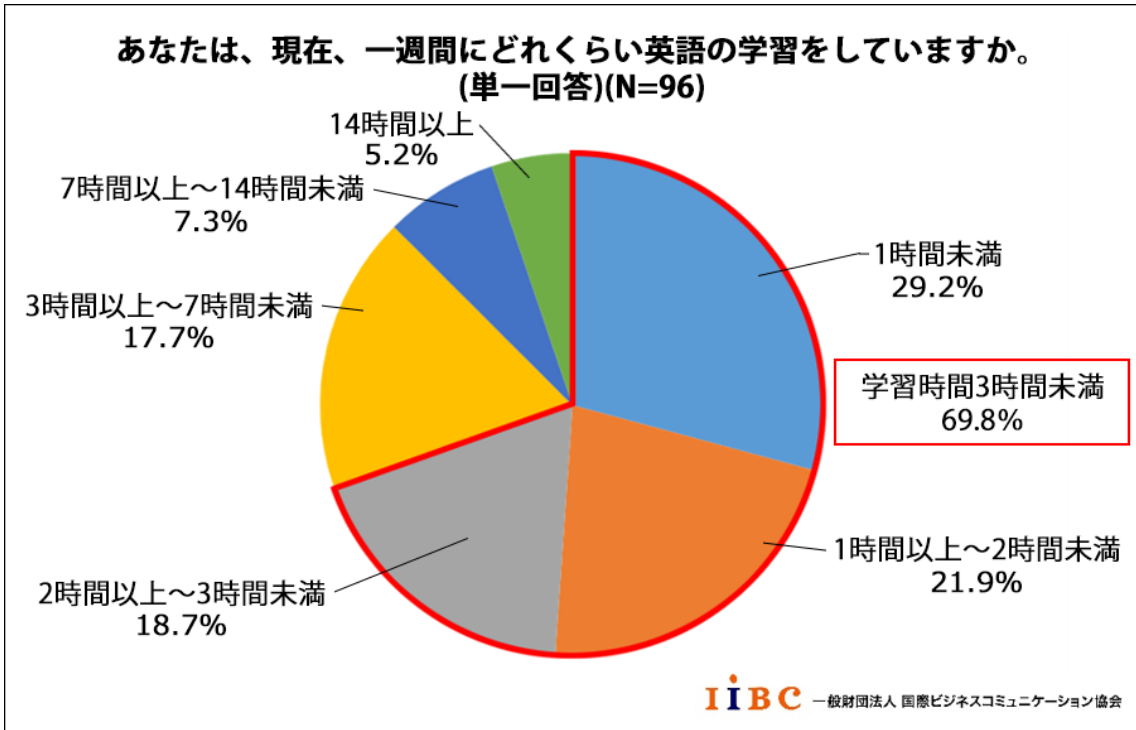
2 Discussion and implications

I considered four abilities. First, about my listening ability, I feel it has improved so much. I could catch more words and more sentences in the English classes of school and foreign movies. Also, it contributed to my studying that I can listen to real native English and accents.

Second, about writing and reading ability, I cannot feel that I am improving. Finally, about vocabulary, I could get a ton of them. I could review the words or expressions also, and I learned more. Particularly, I understand slang, daily conversations, or abbreviations which we are not taught in the school. These are the essential skills when living foreign country.

Therefore, you will be able to improve your listening skill and increase the amount of vocabulary by watching movies with subtitles.

There are two tasks for my future assignment. First, I should suggest ways of studying English by using foreign movies for many people who want to study but do not like to study English like me by using SNS. Second, I have to consider the method of improving writing and reading abilities by watching movies.



3 Conclusion

I searched “What kind of effect do foreign movies have on your English ability?” Then, I could find that listening ability, vocabulary and sentence conceptions improve by watching foreign movies with subtitles.

4 References

「映画を観るだけで英語の勉強に?!映画好きさん必見!《洋画でカンタン英語学習》」
<<https://kinarino.jp/cat6/24251>> (5.15)

「映画で英語を学ぶには?洋画を使ったおすすめ英語学習法を徹底紹介!」
<<https://progrit-media.jp/546>> (2021.5.18)

「映画で英語を学ぶ!超シンプルな勉強法【洋画歴6年のぼくが解説】」
<<https://ingle729.com/2019/09/03/study-with-movie/>> (2021.5.18)

「映画で英語学習!3カ月でリスニングや会話力を驚くほど伸ばす方法」
<<https://www.berlitz-blog.com/movie-english>> (2021.5.18)

「映画で英語を学ぶための完全ガイド」

<<https://www.fluentu.com/blog/english-jpn/映画で英語を学ぶ/>> (2021.5.20)

「英語を勉強するうえで映画は最高の教材!おすすめの勉強法と映画を紹介」
<<https://eigomonogatari.com/how-to-study-english-in-movies/>> (2021.5.20)

「海外ドラマ見るだけで「TOEIC955点」という驚愕の英語学習法」
<<https://www.google.co.jp/amp/s/gendai.ismedia.jp/articles/amp/65436>> (2021.5.20.)

「僕にもできた!映画で英会話をマスターする、おすすめ英語勉強法」
<<https://eikaiwa-highway.com/movie/>> (2021.5.20)

「『英語学習の実態と意欲』に関する調査結果
ビジネスパーソンの約7割が英語に対して苦手意識あり」

<<https://www.iibc-global.org/iibc/press/2019/p123.html?media=pc>> (2021.7.14)

New Initiatives to Increase Voting Rate

~Internet Voting and Senkyo-wari~

5115 Midori Koyama

Abstract

I often hear that Japan's voting rate is low. Then, How do we increase the voting rate? In Japan, the House of Representatives' voting rate and the House of Councilors' voting rate were held in 2016 and 2017. At that time, half of voters participated in those elections. At first, I was interested in how there are voting systems in Japan. I learned about three ways of voting. The names are "Pre-election-day voting", "Absentee voting", and "Overseas voting". After that, I found "Online voting" in the Republic of Estonia. I want to introduce the way of voting. However, actually, "Online voting" has already started to be studied, and it tries to solve some problems. Also, I searched for another way which could increase the voting rate, and "Senkyo-wari" is the next target. "Senkyo-wari" is a convenient event. We can get discounts for the prices after we go to vote. Because this project has some problems, I suggest solutions.

1 Introduction

Voting is a right for us. Recently, the age of participation voting was reduced. By the way, Japanese people often say that "The voting rate is low." and "Young people do not go to vote." The voting rates in advanced countries tend to be low, and in developing countries tend to be high. We sometimes watch TV programs which talk about the voting rate because they want young people to be interested in voting. If I were in their position, I could understand their opinion. For example, it is troublesome to go to the hall of voting. Before talking about this, politicians have no pledges which young people want to do. However, I thought that Japan's voting rates have to be higher than now. Then, how can we increase the voting rate? This is my research question.

When I did research, I used papers on the Internet, and the data from various ministries and agencies. Also, I used the ministry website and local ones.

2 Discussion and implications

The systems of voting

As basic information, I would like to tell you about the situation in Japan now. According to the website of the Ministry of Internal Affairs and communications, the voter of 53.68% participated in the general election for the House of Representatives in 2017. And the voter of 54.70% participated in the general election for the House of Councillors in 2016. This means that about half of all the voters voted.

There are three voting systems in Japan. The names are “Pre-election-day voting”, “Absentee voting”, and “Overseas voting”. “Pre-election-day voting” system allows people to vote before the election date in the same way as on the date of the election. They can use this system when they have something to do on the election date. Such as work, travel, leisure, wedding, funeral, etc. “Absentee voting” system is available to those who are staying in other places during the day of election. For instance, they are registered for work or travel, or those who are in hospital, etc. There are detailed types of this system. Please see the following examples. (1) absentee voting at the election commission, (2) absentee voting at designated hospitals, (3) absentee voting by mail, (4) absentee voting outside Japan, (5) offshore voting, and (6) voting in Antarctica. “Overseas voting” system is available to those who live abroad for work or study, etc., to vote in elections while abroad. Also, at least 18-year-old Japanese can participate in elections. However, they have to have registered in the overseas voter registration and have an overseas voter ID card. There are detailed types of this system, too. (1) voting at diplomatic missions abroad, (2) voting by email, and (3) voting in Japan for those who are not yet registered in the domestic electoral register.

Estonia

According to the “Internet Voting in Estonia (JEEADIS, 2019)”, Estonia has an unicameral system. The number of voters going to the hall of voting is higher than in Japan. In the March 2019 national election, 43.8% of voters chose to vote online. 71.4% of those who voted before the deadline voted online. Furthermore, it seems that Internet voting has become an essential way for the people.

Online voting

“Online voting” has some merits. According to NEC homepage (2019), such as increasing voter turnout among young people, reducing the risk of weather and disasters related to voting, consideration for the elderly and people with disabilities, and speeding up the vote counting process. If this system is introduced in Japan, the way of voting will be convenient for us. In fact, Internet voting is now being considered in Japan as well. However, this system has problems. For example, how we prevent illegal voting and protect the secret of voting contents. Recently, however, something called the “double envelope system” is said to be able to solve these disadvantages. I will explain what it is.

According to the KSC Official Blog (2019). First, voting data is “encrypted” with the “public key” of the “digital certificate” issued by the election management organization. Second, (In the case of Estonia) “Digitally sign” the data with the “digital certificate” contained in the e-Residency “eID card”. Third, if so, take only the information that can identify the individual. Finally, decode the encrypted voting data. This method has become an important element of online voting because it guarantees anonymity with ensuring security.

Senkyo-wari

“Senkyo-wari” is a service which you can get after you vote. Such as discounts at restaurants, tires discounts, etc. It is managed by the Senkyo-Wari Student Implementation Committee. According to the Senkyo-wari website (2019), there are over 900 participating stores and participating stores in more than 40 prefectures. One of the points is raised in the FEWC paper check. It was that if the number of people who only want to use Senkyo-wari, would they seriously choose politicians? However, it is up to the voter to decide which party to vote for, and for what reason. When I saw the “Senkyo-wari” home page, I noticed that there is no useful map that clearly shows the participating stores. In 2017, they made a map which shows the participating stores, but it is not convenient.

3 Conclusion

In order to make the most of the benefits of Senkyo-wari, I think we need to think about creating new maps and increasing the number of participating stores. For example, if we

created a new map, we could know such stores near the voting place. Also, the map makes it easier for people to stop by there after they finish voting. Another effective way is to increase the number of participating stores and it would be to gather people who are interested in the project. These ways give people an opportunity to explain the benefits of participating in Senkyo-wari. If you participate in the project, you will be able to advertise your store. It is because the people who finished voting might be interested in your store and will actually visit your store. If they show their benefits, the Senkyo-wari may be able to increase the number of stores that participate. In order to increase the voting rate, it may be necessary to take measures that consider the age group, such as actively approaching stores that may be of interest to young people.

My future task is to think about what kind of map of participating stores should be made easier for users to use and how to increase the number of users. I think it is also necessary to consider what would be effective in increasing the number of participating stores.

4 References

- ・総務省HP 「総務省 投票制度」 (March 21,2021)
[〈https://www.soumu.go.jp/senkyo/senkyo_s/naruhodo/naruhodo05.html〉](https://www.soumu.go.jp/senkyo/senkyo_s/naruhodo/naruhodo05.html)
- ・JEEADIS (2019) 「エストニアのインターネット投票について」 (August 25, 2021)
[〈http://www.jeeadis.jp/jeeadis-blog/6345028〉](http://www.jeeadis.jp/jeeadis-blog/6345028)
- ・国立国会図書館 (2019) 「主要国における投票率」 (August 25, 2021)
[〈https://dl.ndl.go.jp/view/download/digidepo_11335495_po_082205.pdf?contentNo=1〉](https://dl.ndl.go.jp/view/download/digidepo_11335495_po_082205.pdf?contentNo=1)
- ・NEC HP (2019) 「ネット投票は実現するのか！？従来の選挙を一変するオンライン選挙の可能性」 (August 25 , 2021)
[〈https://wisdom.nec.com/ja/technology/2019032701/index.html〉](https://wisdom.nec.com/ja/technology/2019032701/index.html)
- ・KSC Official Blog (2019) 「ネット投票っていつ出来るようになるの？」 (October 12, 2021)
[〈https://www.ksc.co.jp/blog/internet-vote-by-mynumbercard/〉](https://www.ksc.co.jp/blog/internet-vote-by-mynumbercard/)
- ・センキョ割 (October 12, 2021)
[〈https://senkyowari.com/〉](https://senkyowari.com/)

• Filip Kostelka & Andre Blais (2020) The Generational and Institutional Sources of the Global Decline in Voter Turnout (November 16, 2021)

⟨http://repository.essex.ac.uk/30555/9/Kostelka_Blais_Manuscript.pdf⟩

• Izabela Kapsa (2020) Political Trust vs. Turnout in Modern Democracies (November 16, 2021)

⟨<http://czasopisma.marszalek.com.pl/images/pliki/psy/49-3/psy2020309.pdf>⟩

Eliminate Mass Disposal of Clothes

~Make Fashion Industry More Sustainable~

5116 Ai Sakamoto

Abstract

This study investigated a problem of the fashion industry- mass disposal of clothes. In order to solve the problem, this study focused on “Fast fashion”. It makes a lot of unsold clothes because mass production is a prerequisite for it. I was thinking of ways to utilize the surplus from mass production instead of disposing of it, and I found out about a business called Rename. This business buys surplus clothes from other companies, removes the tags, and sells them again. It can protect the brand image and prevent the waste of clothes. However, if consumers do not pay attention to the various problems caused by fashion, they are unlikely to buy clothes from these brands. Therefore, I propose to organize an integrated event that combines four parts - Fashion Show, Clothing sale, Clothing Remake Workshop, and Exhibition. This event can make use of unsold clothes and increase consumer awareness of the issue.

1 Introduction

One day I heard that a large number of clothes are discarded every year. I thought the problem should be solved, so I started this study. This study’s purpose is to make solutions in order to eliminate mass disposal of clothes.

There are some other studies about fast fashion. My research is to come up with a concrete solution to the current situation and issues revealed by the studies and surveys.

I carried on this study by searching on the Internet, sending out questionnaires to consumers, and being advised by a consultant.

2 Discussion and implications

According to the Pulse of the Fashion Industry Report 2017, 92 million tons of clothes, or about 60 percent of all clothes produced globally, were discarded in 2015. Furthermore, only 18% of the discarded clothes were recycled. Even though the production process of clothes uses a lot of resources, the disposal process also has a negative impact on the environment. This leads to depletion of resources and deterioration of the global environment.

There are many reasons for the large amount of clothes being discarded, but one of the biggest reasons is the "fast fashion" trend. According to the READY TO FASHION MAG editorial team (2020), many fast fashion brands, such as Inditex and H&M Hennes & Mauritz, are SPA (Speciality Store Retailer of Private Label Apparel). Since the appearance of fast fashion brands in the 1990s, consumers have been able to purchase trendy clothes at low prices, and it has become an indispensable part of our lives. However, since price and affordability are the main points of appeal to consumers, mass sales have become a prerequisite, resulting in a large amount of unsold items. Furthermore, according to Madeleine Cobbing and Yannick Vicaire (2016), while fast fashion is a large-scale, cutting-edge business, its underlying production system is disjointed and generally relies on manual labor. This system also has a huge impact on the environment.

Due in part to the SDGs adopted at the UN summit in 2015, various efforts are being made to eliminate mass disposal. However, the effectiveness of these efforts remains unclear because there is no up-to-date and comprehensive data on how much clothing and used clothing is being disposed of worldwide.

So I thought of a way to make use of unsold clothes instead of discarding them. First, I hypothesized that we could sell off the surplus clothes at a reduced price. However, a large price cut would lead to a decline in brand image. Then, I researched examples of making use of unsold items without losing the brand image, and found out about a business called "Rename". According to the official Rename online store, the business buys unsold clothes from different brands, removes the tags, and sells them again without identifying the original brand. The business started in 2016 and has saved more than about 400,000 pieces of clothes from disposal. Since the company buys up unsold clothes, it can sell them at a lower price than the original. In addition, by not revealing the brand, consumers can have a new

purchasing experience of choosing by the clothes themselves, not the brand. This method can prevent the disposal of clothes while protecting the brand image.

However, if consumers are not concerned about the various issues caused by fashion, they are unlikely to buy clothes from these brands. Last year, I conducted a survey of 465 people using GoogleForm.(See [Questionnaire survey results] on page 4.) The survey showed that 95% of the respondents had used fast fashion, but only 33% of them knew that fast fashion was causing environmental problems. From these facts, I thought that in order to make effective use of unsold clothes, I would also need to raise consumer awareness.

3 Conclusion

Therefore, I suggest an event that makes use of unsold clothes and increases consumer awareness of the issue. It is an integrated event that includes Fashion Show, Clothing sale, Clothing Remake Workshop, and Exhibition.

First part is the Fashion Show. Before holding this event, we ask people to coordinate with unsold clothes. We call for coordinated outfits in the form of a contest not only from stylists but also from the general public. The coordinated outfits will be shown on stage. This show can get rid of the negative image of unsold clothes.

Second part is the Clothing Sales. Participants can buy clothes from the fashion show directly on the spot. And a part of the profits will be donated to charity because the purchase price is low.

Third part is the Clothing Remake Workshop. In this Workshop, participants can use unsold clothes to make their own clothes or bags or etc. For advanced participants, they start from the stage of cutting clothes into cloth. They can make items with a high degree of originality. For beginners, they just arrange clothes a little. Practical experience will help raise consumers' awareness. Learning how hard it is to make clothes leads them to think about taking good care of the clothes instead of throwing them away immediately.

Fourth part is the Exhibition. In this part, we introduce a lot of information about the environmental problems of the fashion industry. This will help raise awareness of the issues

and encourage people to buy clothes from the brands that create eco-friendly products.

For these parts, I think this event can make use of unsold clothes and increase consumer awareness of the issue.

The problem with this research is that this event is still in the planning phase. If this event is to be actually carried out, it is expected that various problems will arise in terms of cost and technology. I would like to think about them from now on.

[Questionnaire survey results]

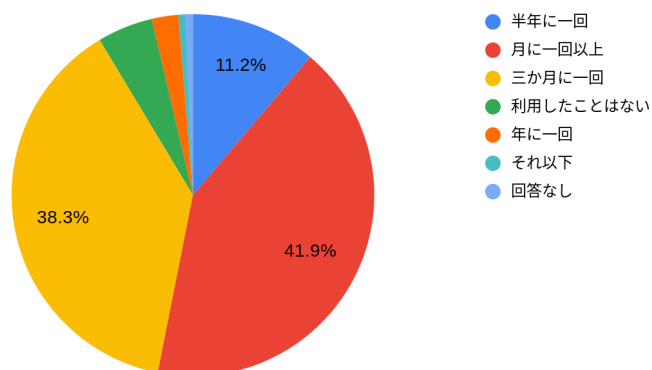
Subjects: 465 people (121 junior high school students, 315 high school students, 26 university or vocational school students, and 3 working adults)

Method of implementation: GoogleForm

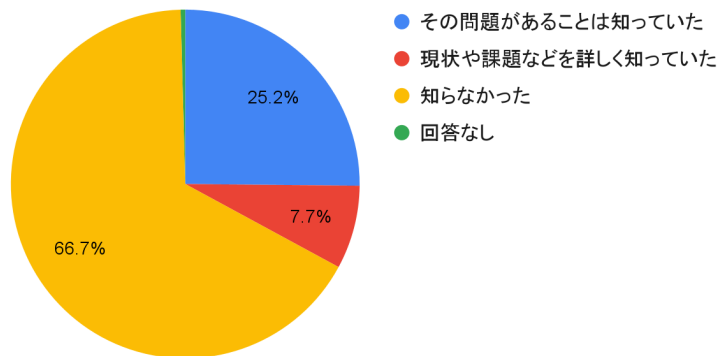
Implementation period: October 30, 2020 - November 4, 2020

Text of questions, list of options, results:

ファストファッションブランドをどのくらいの頻度で利用しますか？（一番近いものを選んでください）



ファストファッションによって環境問題や労働問題が起こっていることを知っていましたか？



4 References

[1] Global Fashion Agenda & The Boston Consulting Group(2017) / 「Pulse of the Fashion Industry 2017」

<<https://www.globalfashionagenda.com/publications-and-policy/pulse-of-the-industry/>>

(2021/8/31)

[2] Madeleine Cobbing、Yannick Vicaire(2016) / 「ファストファッションをもっとスローに」

<https://www.greenpeace.org/static/planet4-japan-stateless/2020/10/f3bca316-20201028_tff.jp.pdf> (2021/8/31)

[3] Rename official online store / 「リネームとは」

<<https://www.rename.jp/shop/contents/brand/>> (2021/8/31)

[4] READY TO FASHION MAG editorial team (2020) / 「SPAとは」

<<https://www.readytofashion.jp/mag/column/apparel-industry-spa/>> (2021/8/31)

5 Bibliography

[1] Morgan McFall-Johnsen(2019) / 「大量の水の使用、そして85%はゴミに...ファッション業界は環境へ大きな影響を与えている」

<<https://www.businessinsider.jp/post-200862>> (2021/8/31)

[2] Sayaka Ninomiya(2017) / 「ファッション業界の『裏側』」

<<http://globalnewsview.org/archives/5622>> (2021/8/31)

[3] Irena Zubcevic, Simone Cipriani, Michael Stanley-Jones, Karen Newman, Lilian Liu, Niclas Svenningsen (2018) / 「Fashion and the SDGs: what role for the UN?」
<https://unece.org/fileadmin/DAM/RCM_Website/RFSD_2018_Side_event_sustainable_fashion.pdf> (2021/8/31)

[4] Chikako Oheda, Etsuko Sato, Tomoko Takaoka (2013) / 「若者のファストファッション意識に関する調査」 <https://www.jstage.jst.go.jp/article/jhej/64/10/64_645/_pdf>
(2021/8/31)

Food Tech Revolution For the Elderly

~Helping Dysphagia Patients By New Technology~

5117 Haru Sakurazawa

Abstract

The purpose of this study is to solve the problem that the elderly people are facing now. Now, the size of the problem that suffers the elderly people is much bigger than we think. A lot of people are dying from the disease caused by dysphagia. But the fundamental solution is not found. Then, a lot of researchers focus on “food tech” to solve this problem. I read a book about food technology, and I learned about “food tech” and the current status of the elderly people’s dysphagia. And I found that “food tech” has a lot of ways to save the elderly people. Then I noted to use one of the machines that enable the elderly people to eat easily by processing food, and collect the money to put the machines to nursing homes or hospitals or etc. by implementing “crowd funding”.

1 Introduction

In Japan, the birthrate is declining and the population striking is aging. When we look at picture 1, we will understand the fact. Furthermore, according to picture 2 in 2016, the rate of elderly people needing help for the number of elderly people is about 20%. So about 1 in 5 of elderly people is needing helps. But there are a lot of people who find it hard to be compatible between work and nursing. So the number of elderly people suffering from dysphagia is increasing year by year. Dysphagia is the condition in which swallowing is difficult or painful. Meanwhile, the solution by using “food tech” is spreading to help such elderly people. “Food tech” is an abbreviation of the word “food technology”, and it is created by food and IT. Elderly people who have dysphagia gave up having satisfying meals, and they think that eating food is merely an action for health.

So we should stop increasing elderly people who has a dysphagia.

2 Discussion and implications

Under such a circumstance, we focus on the project, “12 Future Food vision”.

When you glance at picture 3, you can understand what it is. They are twelve items that express the state of society and individuals that we want to be like this in the future, which was represented in Smart Kitchen Summit Japan.

Among them, I focus on the no.6, “A society that responds to niche food needs”.

The number of elderly people who have dysphagia is so many, but the number of people who claim that it is necessary is few. In other words, I think this circumstance is to which no one pays attention, and the number of people who need to be helped by people will increase more and more in the future.

It is exactly “A society that responds to niche food needs”. So I will talk about this problem along with the no.6.

3 Conclusion

So I propose the use of "DeliSofter" from "GIFMO Co., Ltd." as a medium to deal with dysphagia, which is such a niche food need. But there are few people who know what “Delisofter” is. Delisofter is a product that can be processed food so soft that you can eat it without chewing it while keeping its looks. The picture 4 is representing the comparison of the softness between before using Delisofter and after. Before using it, it was too hard for elderly people without teeth to bite, but after using it, it was hard enough for them to bite.

So using a delisofter, elderly people without teeth can eat a meal with satisfaction and keep the dish's appearance.

Then I think that it is effective to put the product in the nursing homes or hospitals or etc. But putting one product costs ¥47,300.

So I suggest doing crowdfunding. As you know, it is a project that we can collect money from supporters for our own purposes. By doing it, not only being able to put the products in, but we can spread understanding of the problem to many people. So we can increase the number of supporters.

Now, I have several tasks to do.

First, I should consider women who nurse elderly people. There are many women who balance work and nursing care. They may be exhausted to do. So it is necessary for us to think of a solution that they can live more comfortably with their work and nursing care.

Second, I should search for the newest information of Food Tech, and find better ways to save elderly people and helpers. The information of Food Tech is always increasing, so we should pursue it and think of the best solution.

Third, I should explain how to use them. Most elderly people cannot operate computers properly, so we should explain how to use them easily.

Now, a lot of elderly people have worries.

So each person considers it like our own problems.

4 References

*書籍

田中・岡田・瀬川・外村（2020）「フードテック革命」日経BP

*Web

老年医学会（2010）J-stage 老年医学会雑誌第47巻5号

<https://www.jstage.jst.go.jp/article/geriatrics/47/5/47_5_390/_pdf/-char/ja#:~:text=%E3%80%8C%E5%9A%A5%E4%B8%8B%E5%9B%B0%E9%9B%A3%E3%80%8D%E9%AB%98%E9%BD%A2%E8%80%85%E3%81%AE,%E6%9C%9F%E3%83%AA%E3%83%8F%E3%83%93%E3%83%AA%E3%83%86%E3%83%BC%E3%82%B7%E3%83%A7%20%E3%83%B3%E7%97%85%E5%BA%8A%E3%81%A7%E3%81%AF>(2020.11.17)

（株）LIFULL介護（2021）LIFULL

<https://kaigo.homes.co.jp/manual/meal/senior_nursing_food/swallowing/>(2020.12.03)

（株）シグマクシス（2020）PR times <<https://www.food-innovation.co/sksj2020/>>(2020.11.17)

（株）シグマクシス（2008）株式会社シグマクシス

<<https://www.sigmaxyz.com/>>(2020.12.03)

GIFMO（2019）GIFMO DeliSofter <<https://gifmo.co.jp/delisofter/>>(2020.12.03)

（株）CAMPFIRE（2011）Campfire <<https://camp-fire.jp/crowdfunding>>(2021.03.04)

（株）生活デザイン研究所（1992）嚥下食ドットコム

<<https://www.engesyoku.com/kiso/kiso02.html>>(2021.03.04)

図表

picture 1 『嚥下障害の基礎知識』

(株) 生活デザイン研究所 (1992) 嚥下食ドットコム

<<https://www.engesyoku.com/kiso/kiso02.html>>(2021.03.04)

picture 2 『要介護度別認定者の推移』

内閣府 (2017) 要介護度別認定者の推移

<<https://www5.cao.go.jp/keizai-shimon/kaigi/special/reform/wg1/301030/shiryous3-2-2.pdf>>(2022.01.05)

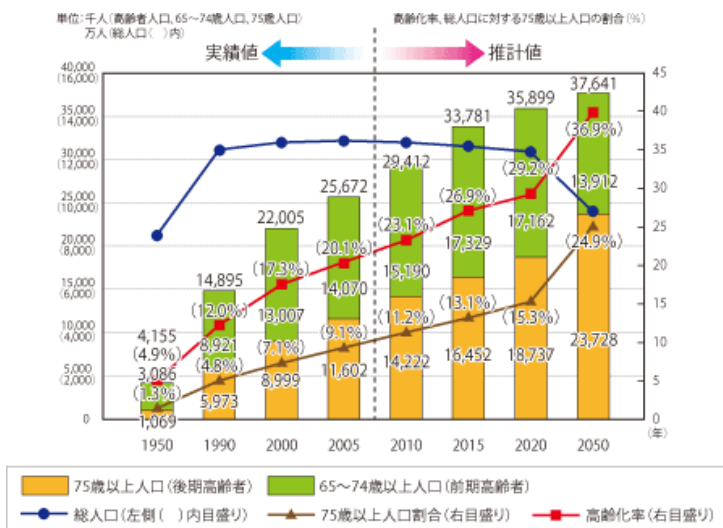
picture 3 『Future Food Vision 1.0』

(株) シグマクシス (2020) PR times <<https://www.food-innovation.co/sksj2020/>>

>(2020.11.17)

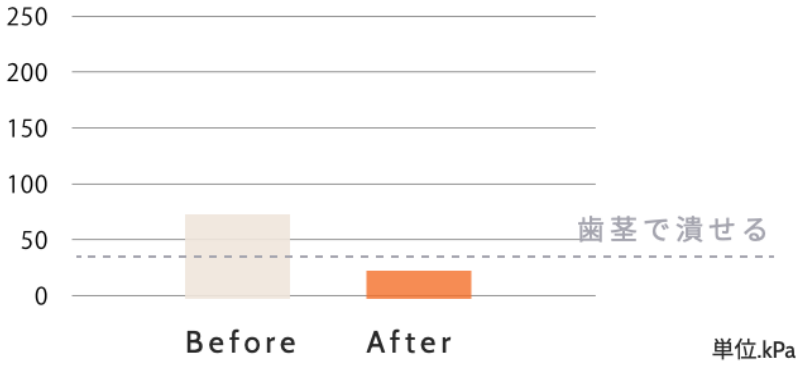
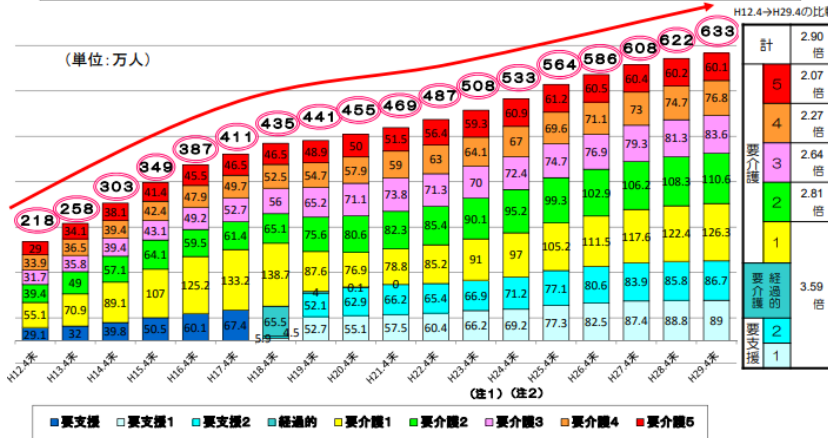
picture 4 『鶏のから揚げのDelisofter使用前後の柔らかさ比較』

GIFMO (2019) GIFMO DeliSofter <<https://gifmo.co.jp/delisofter/>>(2020.12.03)



要介護度別認定者数の推移

要介護（要支援）の認定者数は、平成28年4月現在633万人で、この17年間で約2.90倍に。このうち軽度の認定者数の増が大きい。また、近年、増加のペースが再び拡大。



Let's be Semi Vegetarian

~For Reducing Food Loss in Japan~

5118 Ito Sano

Abstract

Food loss is a one of the serious problems in Japan. According to the data from the Center for Environmental Science in Saitama, big causes of food loss are vegetables scraps and fruit peels. I think the reason for this is that it is difficult to use them in our usual cooking. So my research question is how can we reduce the food loss which is made from vegetables and fruit? My suggestion is to be semi vegetarian. Semi vegetarianism is people who sometimes eat vegan food. Vegans are people who eat only botanical food. Vegan is not familiar in Japan because the number of vegans in Japan is less than other countries. However, I think more people in Japan should know about vegan and semi vegetarian. If more people in Japan are semi vegetarian and eat more vegan food, the food loss in Japan will be reduced. Vegans eat only botanical food. So, I suggest the recipe which uses a lot of vegetables and fruit. There are many recipes of food loss, and many of them are suggesting that we use whole vegetables and fruit. So to try to use them in our usual cooking sometimes red to reduce the food loss.

1 Introduction

Food loss is a one of the serious problems in Japan. According to MAFF, Ministry of Agriculture, Forestry and Fisheries, the amount of food loss in the world is 13 billion a year, and the amount of food loss in Japan is about 6000000 ton a year. The amount of food loss from household rubbish is 2760000 ton a year. In other words, a person in Japan throws 133.6 kilos of grama away in a year. In the article of hagukumu, shogakukan, it is the bottom in the Asian ranking of food loss per person. I wonder how we can reduce such food loss, and I will research about them. According to website vegewell [2019], 5.7% of people in Japan are vegan. On the other hand, according to website Frembassy[2019], 29.0% of people in India are vegan, and 6.0 %of Americans are vegan .

2 Discussion and implications

Food loss is one of the serious problems in Japan. There are some causes of food loss, such as the food which people can't eat in the expiry date, the dish they can't eat because they are full, and the food they forget. These causes make such a ton of food loss in Japan.

According to the data from the Center for Environmental Science in Saitama, big causes of food loss are vegetable scraps and fruit peels. The other cause of them is vegetables. When I am cooking dinner, I strip the skin of vegetables and fruits, and always throw them away, because I can't use them in my dish. I think the reason for this is that it is difficult to use them in our usual cooking. So my research question is how can we reduce the food loss which is made from vegetables and fruit? According to the data from the center for environmental science in Saitama, the cause of vegetable scraps accounts for 14.4%, and the cause of fruit peels accounts for 14% of food loss in Japan. In addition, not only that of peels and scraps but also that of whole vegetables accounts for 8.3% of food loss in Japan. Other causes are fruit peels which is 14%, fruit scraps which is 2.7%, and whole fruits are 0.6%. So total of causes of vegetables and fruits become 46.3%.

3 Conclusion

My suggestion is to be semi vegetarian. Semi vegetarianism is people who sometimes eat vegan food. First, I will introduce Vegans. Vegans are people who eat only botanical food, such as fruits, vegetables, and beans. They don't eat animal food, such as meat, fish and dairy products. It may be very hard to have meals, but these days there are some vegan food which vegans can eat by being cheat, such as fake meat, which are not made from meat. They are made from beans. They have some reason to become vegan. One of the reasons for becoming vegan is for animal. They cherish the living things. Vegan food is not made from animals. So it led to Animal welfare. Second, they become for the environment. According to the article of The Guardian[2019], among the measures put forward by the report is the proposal of a major shift towards vegetarian and vegan diets. Vegan is good for environment because don't eat meat and fish. "The consumption of healthy and sustainable diets, such as those based on coarse grains, pulses and vegetables, and nuts and seeds ... presents major opportunities for reducing greenhouse gas emissions," the article said. From these data Vegan led to protect

the environment. One more reason is for health. According to NIH research matter[2019], High saturated fat levels in red meat have long been known to contribute to heart disease, the leading cause of death in the United States. And, The article of physician committee said, A 2017 study funded by the National Cancer Institute that compared the diets of women diagnosed with breast cancer to those without breast cancer found that those who consumed the most American, cheddar, and cream cheeses had a 53% higher risk for breast cancer. As you can know from these informations, becoming vegan is good for our health. There are main three reasons for becoming vegan. However, vegan is not familiar in Japan because the number of vegan in Japan is less than other countries. According to website vegewell [2018], 5.7% of people in Japan are vegan. On the other hand, according to the website Frembassy[2019], 29.0% of people in India are vegan, and 6.0 %of Americans are vegan . I think more people in Japan should know about vegan and semi vegetarian. If more people in Japan are semi vegetarian and eat more vegan food, the food loss in japan will be reduced. Vegan eat only botanical food .So I suggest the recipe which uses a lot of vegetables and fruit. There are many recipes of food loss, such as the recipe in the cookpad which Consumer Affairs Agency shows .Many of them are suggesting that we use whole vegetables and fruit. So referencing it, I think it is easy for Japanese that we sometimes use the recipe for food loss in our usual cook to be semi vegetarianisms. So to try to use them in our usual cooking sometimes red to reduce the food loss.

4 References

「食品ロスの現状を知る」 <https://www.maff.go.jp/j/pr/aff/2010/spe1_01.html> (2021.10.23)

「食品ロスの世界ランキング」 <<https://hugkum.sho.jp/252071>> (2021.7.6.)

「We must change food production to save the world, says leaked report」

<<https://www.theguardian.com/environment/2019/aug/03/ipcc-land-use-food-production-key-to-climate-crisis-leaked-report>>(2021.10.28)

「Health Concerns About Dairy」

<<https://www.pcrm.org/good-nutrition/nutrition-information/health-concerns-about-dairy>>(2021.11.7)

「Eating red meat daily triples heart disease-related chemical」

<<https://www.nih.gov/news-events/nih-research-matters/eating-red-meat-daily-triples-heart-d>

[isease-related-chemical](#)>(2021.11.7) 「2019年の訪日外国人ベジタリアン～人数と市場規模～」 <<https://frembassy.jp/news-post/vegetarianmarket/>>(2021.7.8) 「日本のベジタリアン・ビーガン・フレキシタリアン人口調査 by Vegewel」
<<https://frembassy.jp/news-posrg/vegetarian-ranking/t/vegetarainstatistics/>> (2021.7.8)
「消費者庁のキッチン cookpad」 <<https://cookpad.com/kitchen/10421939>>(2021.7.8)

Dementia Prevention with Rescued Cat

~Protected cats and the reduction of pre-dementia patients~

5119 Rio Jinbo

Abstract

In recent years, the number of cats killed has increased, which is caused because of the rising popularity of cats and increase in the number of stray cats. Stray dogs have fields of activity, for example police dogs, guide dogs for the blind, and rescue dogs. But how about stray cats? Have you ever watched on TV police cats or guide cats or rescue cats before now? I never watched. Therefore, I want to make opportunities to be an active place for cats. Specifically, I found a cat's special characteristics and leveraged it. As a result, the sound of a cat's throat singing is calming the people. I used it for elderly people and their families. That is animal therapy. Now, there are fewer children and more elderly in Japan. In particular, with the increase in the number of elderly people, the number of dementia patients will also increase. Therefore I want this problem to be solved with stray cats.

1 Introduction

These days, cats are very popular. Cats are cute and easier to keep than a dog. Now, while the number of pet cats is increasing, so is the number of stray cats too. According to the Ministry of the Environment, it surpassed the dog. But I don't know of any other case of a cat being sheltered at a public health center and then kept as a pet. So I thought about the possibility of being active in other scenes, and suddenly remembered that my grandmother with dementia was a cat lover. In Japan, as the number of elderly people increases, the number of dementia patients is also increasing. As the number of dementia patients increases, the burden on caregivers will also increase. I wondered if it would be possible to solve this problem with shelter cats. Then, It was proven that the sound of a cat's throat was good for

reducing stress and interacting with cats can help prevent dementia. The rumbling sound of cats has the effect of regulating the autonomic nerves system and hormone balance, and interacting with cats increases conversation and exercise, leading to the prevention of dementia.

Currently, therapy cats are beginning to play an active role in the animal therapy at hospitals. I think elderly people have a hard time going to the hospital, and animal therapy is not a one-time thing. So I want to propose animal therapy at our home.

The method I came up with was a dispatch-type animal therapy like guide dogs, because transferring the cats directly to the elderly would increase the burden on the family, or if the owner died first, the cats might revert back to being shelter cats .In addition, funding will be raised through crowdfunding.

2 Discussion and implications

The rumbling sound of cats has the effect of regulating the autonomic nervous system and hormone balance, and interacting with cats increases conversation and exercise, leading to the prevention of dementia. In other words, it is possible to prevent dementia in cats. However, the elderly are less likely to keep pets due to physical problems and public opinion. Therefore, I would like to propose a cat-only animal therapy service that can be dispatched to your home. An example of this is how guide dogs work. They are trained at the facility and sent to those in need to work for them. I thought that this system would make it easier for the elderly to receive animal therapy.

3 Conclusion

The purpose of the study was to reduce the burden on society caused by the increasing number of elderly people as a way for shelter cats to play an active role in society. As a result, we found out that the rumbling sound of cats can help prevent dementia and stress. In addition, since having cats directly in the homes of the elderly poses many problems, such as the sudden death of an elderly person and the health care of the cat, we propose a dispatch-type system like guide dogs for the blind.

4 References

「犬・猫の引取及び負傷動物の収容並びに処分の状況」

〈https://www.env.go.jp/nature/dobutsu/aigo/2_data/statistics/dog-cat.html〉 (10月31日)

「認知症の現状と将来推計」

〈

<https://www.tr.mufg.jp/shisan/mamori/dementia/02.html#:~:text=65%E6%AD%B3%E4%BB%A5%E4%B8%8A%E3%81%AE%E9%AB%98%E9%BD%A2,%E3%81%99%E3%82%8B%E3%81%A8%E6%8E%A8%E8%A8%88%E3%81%95%E3%82%8C%E3%81%A6%E3%81%84%E3%81%BE%E3%81%99%E3%80%82>〉 (10月31日)

「Comparison of stress exhibited by cats examined in a clinic versus a home setting」 〈<https://www.sciencedirect.com/science/article/pii/S0168159114002755>〉 (11月18日)

How To Study Useful English

~To Improve English Skills for Japanese People~

5120 Tomoka Takahashi

Abstract

My research is aimed at finding effective ways for Japanese people to learn English that they can actually use in our daily lives. The level of English proficiency among Japanese people remain low and lags far behind that of other developed countries. There are three possible reasons for this: 1) the distance between languages, 2) Japanese educational policies, and 3) the environment. I believe that there are three possible reasons for this: (1) changing the curriculum to one that focuses on output rather than input, so that public schools can provide the same or better level of English education as private schools, and at the same time, changing to an essay exam. (2) Increase the number of ALTs, and at the same time, improve the skills of Japanese teachers (3) Eliminate as many barriers to English as possible, and do not demand too much perfection.

1 Introduction

There are some comments that say “Japanese are not good at using English.” We, Japanese people, were supposed to study English in junior high school, high school, and college. We have equal chances to study English, but most people have the sense that “I am not good at English.” Why are Japanese people not good at English? These days, more people have been coming to Japan and going to foreign countries. Also, there are many companies that work with foreign people. Thus, English skills are essential for our lives. In particular, I think it is important to acquire listening and speaking skills, so I focus on the aspects of listening

and speaking. This is my research about how to enhance listening and speaking skills of English for Japanese people.

I pay attention to language education around the world. Then I chose three countries with different perspectives. I also searched about blogs written by people who live in another country. Besides, I want to reveal the English level of Japanese and both good and bad points of Japanese English education, so I researched it, too.

2 Discussion and implications

① Current Situation

First, I will introduce the English level of Japanese people. According to EF English Proficiency Index 2021 examination, the Japanese English level is regarded as “Low”. To make matters worse, the rank is becoming lower and lower. This year’s rank is 77th, which is the lowest that Japan ever got. This survey is taken not by all the people in the country, but by those who wish to take the test, so it is not possible for each country to get accurate data, but you may find the level of Japanese is low.

The government, seeing this as a problem, has changed the curriculum for English education in elementary schools in the 2020 school year. From the upper grades of elementary school, English was treated as an official subject and grades were given. It is believed that this has eliminated the problem of students entering junior high school and suddenly being required to read and write in English, which has been a problem up until now, and has allowed for a smooth transition to English study in junior high school. Since the program started last year, there is not a lot of concrete data available, so I am still investigating how much the foreign language activities in elementary school helped to improve English skills.

② Factors

I wondered why the Japanese English skills don't improve, so I tried to find factors that prevent development. Then I found three factors.

The first is the issue of interlanguage distance. Interlanguage distance is a diagram that shows how much a language differs in grammar and pronunciation based on a certain language. It turns out that English and Japanese are at opposite ends of the spectrum in terms of both grammar and pronunciation.(Fig.1)

There is also the amount of time it takes an English speaker to learn a particular language. "Easy" languages include Spanish, Portuguese, French, and Dutch, which can be learned in about 600 hours. In contrast, Japanese, along with Chinese, Korean, and Arabic, are considered "hard" languages, and it is said to take 2,200 hours to master them. This shows that it is very difficult and challenging for Japanese people to learn English.

Secondly, there is the issue of Japan's educational policy. There are good points, of course, but there are also bad points when I focus on listening and speaking. The good points are that classes are conducted in Japanese, which makes it easier to understand grammar, spelling, and vocabulary. However, the bad points are that because the classes are focused on English for exams, there are few situations where students actually speak English, and because there are few opportunities for output, many students find themselves unable to speak when the time comes to speak.

Third, there is the issue of the environment. Overseas, since many countries are connected by land, it is easy for people who speak various languages to come in and to have many opportunities to come in contact with them. In contrast, Japan is an island nation, and there are few people in Japan who speak languages other than Japanese. This is thought to be a contributing factor to the environment in which people can live in Japan if they speak Japanese.

③Language Education in Foreign Countries

I extracted countries from three perspectives, researched English education, and looked for things that could be applied to Japan.

1 Switzerland

Switzerland is a multilingual country, with four official languages: French, German, Italian and Romansh. The languages spoken in the north, south, east, and west of the country differ. In Switzerland, people from different parts of the country often marry, which inevitably means that they are exposed to two different languages. In addition, Switzerland has a national policy that people should be able to use at least two of the four official languages, and English education starts early, so many people in Switzerland are trilingual.

2 The Netherlands

The official language of the Netherlands is Dutch, and in the EF rankings mentioned earlier, the country ranked first in the 2004, 2005, 2007, and 2008 surveys. The level of English that the Dutch government expects its citizens to achieve is that for them to be able to: i) obtain and read necessary information, ii) ask questions about things they do not understand, iii) express themselves, and iv) look up unfamiliar words. The textbook uses pictures of famous artists to make learning English fun.

3 Korea

The official language of Korea is Korean, and the distance between languages is about the same as Japan. However, when comparing the average scores of TOEIC and TOEFL, the average score of TOEIC is 520 in Japan and 673 in Korea, which is a big difference, and the ranking of TOEFL is 27th in Asia in Japan and 11th in Asia in Korea, which is also a big difference. Although there is a large difference in the number of test takers, the reasons for this difference may be that English proficiency is mandatory for employment in Korea,

education emphasizes output through presentations and debates, and entrance examinations are conducted in writing format.

3 Conclusion

After researching the relationship between English and Japanese from various directions, I have come up with three suggestions.

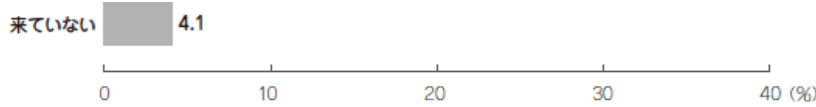
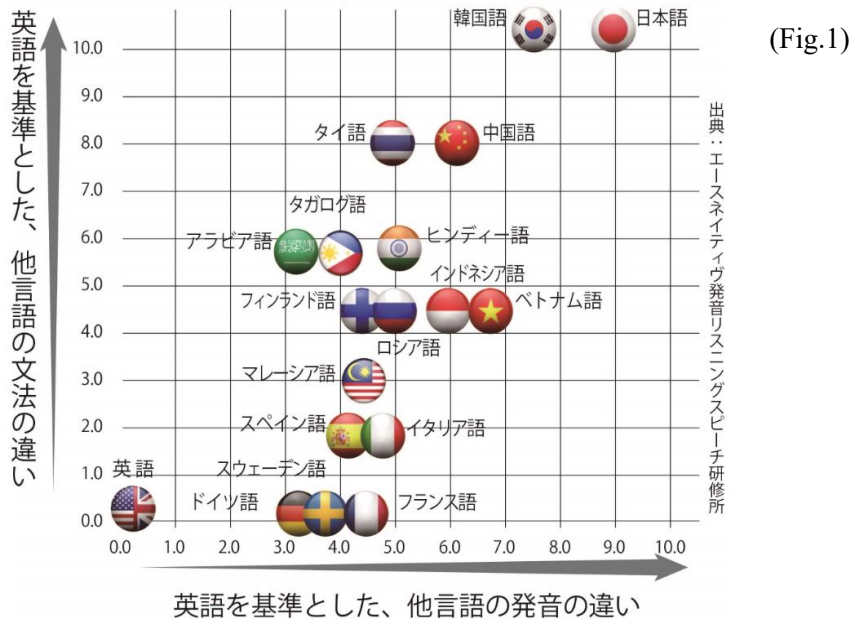
The first is to change to an education focused on output and emphasize speaking. Since there are fundamental differences in grammar and pronunciation between English and Japanese, so it is essential to learn them. Then after learning these things, watching movies or dramas in English, making speeches, doing presentation or debate and so on will make people progress in listening or speaking English. Moreover, changing the way of entrance exams as essay exams are also effective to improve English skills.

The second is to promote the improvement of the skills of Japanese teachers, at the same time, teaching by native English speakers and those who have studied abroad. In elementary schools, where English education has just started, there have been cases of inexperienced teachers teaching the wrong kind of English, which has become a problem. Therefore, I thought it was important to hold training and seminars so that even Japanese teachers can teach English correctly. I also thought that getting native English speakers or people who have studied abroad to come to school would increase the number of situations where we can use English by experiencing authentic pronunciation and intonation. Currently, the most common answer for elementary schools is that ALTs visit the school at least once a month, followed by a few times a month (Fig. 2). Considering the fact that the level of Japanese teachers are still not up to par, I thought that visiting the school at least once a week would be ideal.

Third, we should not expect too much perfection in speaking English. I think there is a

tendency for Japanese people to demand too much perfection. It is certainly important to have correct grammar, but I think it is necessary for Japanese people to face English frankly.

4 References



*英語教育を「行っている」学校 (3,292人) のみ対象。
*「無答不明」は図から省略した。

(Fig.2)

「世界最大の英語能力指数ランキング」 <https://www.efjapan.co.jp/epi/>

「英語 発音」 http://www.ace-schools.co.jp/about_ace.html

「【言語間距離という概念】英語が日本人にとって特別難しい言語である理由」
<https://cebu.ec.com/linguistis-distance/>

「小学校の外国語教育はどう変わる？2020年から小学生が学ぶ「英語」」
<https://teachforjapan.org/entry/column/2019/11/04/syougakko-gaikokugokyoiku2020/>

「中学校・高等学校における英語教育の在り方に関する論点」
https://www.mext.go.jp/b_menu/shingi/chousa/shotou/102/shiryo/attach/1349083.htm

「日本人の英語力 | アジア最低の理由と根本的な5つの対策はこれだ！」
<https://english-club.jp/blog/japanese-english-ability/>

「4つの公用語を持つスイス、不便じゃないの？」

https://www.swissinfo.ch/jpn/society/%E8%AA%AD%E8%80%85%E3%81%8B%E3%82%89%E3%81%AE%E8%B3%AA%E5%95%8F%E3%81%AB%E7%AD%94%E3%81%88%E3%81%BE%E3%81%99_%EF%BC%94%E3%81%A4%E3%81%AE%E5%85%AC%E7%94%A8%E8%AA%9E%E3%82%92%E6%8C%81%E3%81%A4%E3%82%B9%E3%82%A4%E3%82%B9-%E4%B8%8D%E4%BE%BF%E3%81%98%E3%82%83%E3%81%AA%E3%81%84%E3%81%AE-/45192774

「スイス人が複数言語を早期に習得できる理由」

<https://toyokeizai.net/articles/-/256254?page=2>

「94%がバイリンガルに！オランダ小学校の英語教育はここがスゴイ」

<https://gendai.ismedia.jp/articles/-/54564>

「非英語圏でNo.1！高い英語力を誇るオランダの「小学校英語教育」事情」

<https://azby.fmworld.net/kids/parents/040a/?supfrom=backnumber>

「英語先進国「韓国」と英語後進国「日本」という結果を招いた3つの違い」

<https://www.rarejob.com/englishlab/column/20151104/>

「韓国とは大違い...日本は「世界最低レベル」、英語教育がマズい」

<https://gentosha-go.com/articles/-/24251>

「ALTの来校頻度」

https://berd.benesse.jp/berd/center/open/report/syo_eigo/2006/kyouin2_1_2_4.html#:~:text=ALT%E3%81%AE%E6%9D%A5%E6%A0%A1%E9%A0%BB%E5%BA%A6%E3%82%92%E3%80%81%E9%AB%98%E5%AD%A6%E5%B9%B4%E3%81%AB%E3%81%8A%E3%81%91%E3%82%8B%E8%8B%B1%E8%AA%9E%E6%95%99%E8%82%B2,%EF%BC%85%E3%81%A8%E3%81%AA%E3%81%A3%E3%81%A6%E3%81%84%E3%82%8B%E3%80%82

「What's the hardest language to learn?」

<http://paassc.com/whats-the-hardest-language-to-learn/>

「マイクラを小学校に導入した英語教諭が語る、『教えない教育』が育むもの」

<https://www.businessinsider.jp/post-192653>

「小学校の英語必修化でどう変わった？親が知っておきたい小学生の英語学習」

<https://www.daiwa.jp/sodate/child/s0293/>

Reduction of Disaster Related Death

~To Get Securer Safety~

5121 Hiyori Takii

Abstract

A lot of natural disasters happen in Japan. However Japanese evacuation shelters are worse than any other country which has many disasters. In addition, because of Japanese shelters, There are many people who died from disaster- related to deaths. Disaster related to deaths means that people who feel anxiety or stress in evacuation shelters died. This disease is not directly caused by natural disasters. I suggested that evacuation drills in communities and schools be reviewed, and that new drills to experience a life in evacuation shelters be introduced. Actually many people died from disaster related deaths in the Kumamoto Earthquake and the Great East Japan Earthquake. The main causes of disaster related to death is fatigue in evacuation shelters. If we can experience evacuation shelter life before a natural disaster happens, we can evacuate smoothly and reduce anxiety. That is why I made an evacuation shelter life experience program. I want to spread this program and many people experience evacuation shelters in communities and schools evacuation drills.

1 Introduction

I have been researching disaster-related deaths since last year and have been thinking about ways to improve evacuation shelter facilities. Last year, I compared evacuation shelters in Italy, one of the largest disaster countries. I tried to improve evacuation shelters, but it was difficult for me. Therefore, this year I decided to do this research in order to improve evacuation drills instead of improving evacuation shelter facilities. In Japan, where there have been many natural disasters in recent years, I believe that a smoother evacuation will be more important in the future. For this reason, I think this research is very meaningful. As for the method of my research, I basically search on the Internet and develop my own research since last year.

2 Discussion and implications

As a result of thinking about what I could do other than improving evacuation shelter facilities, I decided to experience living in an evacuation shelter at school or in the community, so I looked up communities and schools that were actually offering shelter life experiences, and found that only a few communities and schools were doing so. We looked at the websites of the communities and schools that were actually offering such programs to find out what they were doing. Most of the communities and schools were doing things such as cooking out food and how to open evacuation centers. As for evacuation drills, More and more schools and communities are conducting them every year. However, these evacuation drills only cover the process of evacuating to a safe place in the disaster. I thought it would be effective to review the evacuation drills conducted by many schools and local governments and to promote the experience of living in an evacuation shelter, because it would increase the number of places where people can experience life in an evacuation shelter. For this reason, I decided to come up with a program that would make it easier for more communities and schools to experience life in an evacuation shelter.

3 Conclusion

As a result of our research, I found that many people died from disaster-related deaths in both the Great East Japan Earthquake and the Kumamoto Earthquake. The main cause of disaster-related deaths is fatigue during evacuation, followed by fatigue which is caused by people who have to evacuate getting to shelters on foot. From these results, I thought that I could reduce the number of disaster-related deaths by eliminating fatigue during evacuation.

As a suggestion, I would like to establish a program to experience life in an evacuation shelter and have schools and local governments provide experiences of life in an evacuation shelter. I believe that there are manuals for evacuation drills in local governments and schools, but that there are no manuals for experiencing life in an evacuation shelter, so there are very few opportunities to experience life in an evacuation shelter. However, if there is an evacuation shelter experience program, anyone can easily experience life in an evacuation shelter, and it is easy for schools and local governments to do so. I also thought that understanding the structure of evacuation centers in advance would help people evacuate

smoothly, reduce anxiety during the actual evacuation, and eliminate fatigue. The specific contents of the evacuation center experience program were as follows

(1) Check the hazard map to see if the route to the evacuation center is safe.

(2) If it is safe, take the minimum amount of belongings and move to the evacuation shelters (it is appropriate to go on foot because there is limited space to park a car).

If it is not safe, call for help (119).

(3) When you arrive at an evacuation center, write down your name, address, and contact information. If you are unable to contact your family, leave a note on the bulletin board at the evacuation center to confirm your safety.

(4) Secure your own space, and if you have cardboard, use it to make a simple bed or partition.

(5) Check the toilets in the shelter (whether there are enough and whether they are sanitary).

If toilet facilities are inadequate, build a simple toilet.

(6) Have a cookout (although it has been several weeks since the disaster, there are still many victims who are forced to live in evacuation centers, and electricity, water, and gas are still available).

(7) Practice exercises to prevent economy class syndrome.

Economy class syndrome is a condition that occurs when a person remains in the same posture for a long time in a cramped seat, causing blood flow to slow down and blood clots to form in the blood vessels, resulting in pain and swelling. When the blood clot peels off and gets stuck in the blood vessels of the lungs, it causes symptoms such as chest pain and difficulty in breathing.

○ How to make a cardboard bed (for one person Materials: cardboard boxes, cardboard board, duct tape)

1. Cut a cardboard box and fold it into a mountain shape to make a base.

2. Insert the cardboard into the base.

○How to make a simple toilet

Materials: 1 cardboard box, 2 large plastic bags, newspaper, cutter

1. Cut a hole in the cardboard box to make it look like a toilet seat.
2. Set the bags in place and fill with newspaper.

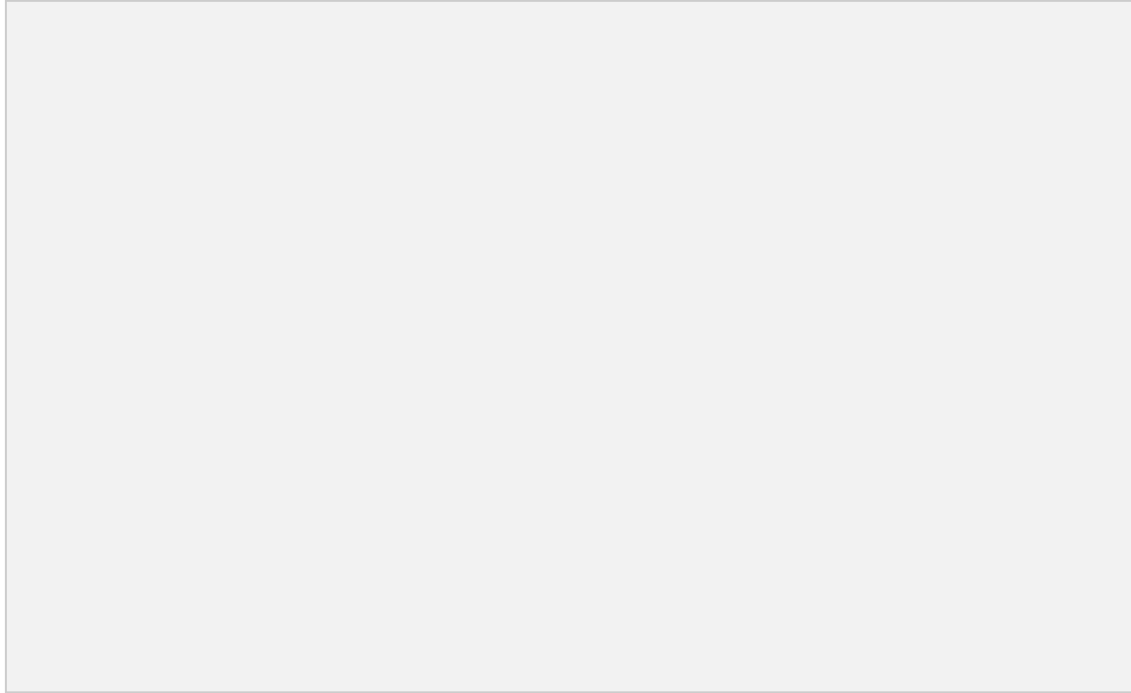
Attention: After using it, remove the air from the bags and tie them up before throwing them away.

○Exercise to prevent economy class syndrome

1. Make a "goo" with your toes.
2. Open your toes.
3. Move your feet up and down on your toes.
4. Pull your toes up.
5. Hold your knees with both hands, relax your legs and turn your ankles.

Lightly rub your calves.

I would like to create such a program and expand it to schools and local governments. Japan is prone to natural disasters and there are concerns about natural disasters in the future. I thought it was important to know about evacuation centers in order to safely evacuate and live in a safe shelter in the event of such a natural disaster, which could happen at any time. However, when a natural disaster actually occurs, it is difficult to make a calm decision due to panic. Most evacuation drills only cover the evacuation process, and there are few opportunities to experience life in a shelter afterwards. Japan's evacuation shelter facilities are not enough shelters. In Italy TKB for toilets, kitchens (for meals), and beds is focused on. Japan needs the same kind of evacuation shelters as Italy, but it is difficult to achieve. However, I believe that it is possible to experience living in an evacuation shelter as a part of evacuation training. There are many disasters in Japan every year, and I hope that the number of disaster-related deaths will decrease as much as possible.



4 References

Cabinet Office, Government of Japan Disaster-Related Deaths (March 13, 2019)

<http://www.bousai.go.jp/taisaku/kyuujo/pdf/r01kaigi/siryo8.pdf>

Cabinet Office, Government of Japan, White Paper on Disaster Prevention, Fiscal Year 2009, Appendix 56: Status of Disaster Prevention Drills (May 24, 2017)

http://www.bousai.go.jp/kaigirep/hakusho/h29/honbun/3b_6s_56_00.html

Nagano Gender Equality Center: FY 2014 Cabinet Office Commissioned Project for the Promotion of Gender Equality in Community Disaster Management (July 15, 2014)

<https://www.pref.nagano.lg.jp/aitopia/tosho/documents/2611hinanjopanf.pdf>

The newspaper of Kumamoto

<https://kumanichi.com/articles/188890>

Ministry of Health, Labour and Welfare, To Prevent Economy Class Syndrome (April 19, 2016)

https://www.mhlw.go.jp/stf/newpage_07384.html

Red Cross Service Disaster Cookout Recipe Collection (February 26, 2016)

https://www.jrc.or.jp/volunteer-and-youth/volunteer/chiiki/pdf/200303_006102.pdf

NHK NEWS WEB (April 3, 2012)

https://www3.nhk.or.jp/news/contents/bousai_tips/cont16.html

Kasuya-gun Tips for Living in Evacuation (June 28, 2020)

<https://www.town.umi.lg.jp/uploaded/attachment/6926.pdf>

The newspaper of Mainichi(March 10, 2020)

<https://mainichi.jp/articles/20200310/k00/00m/040/197000c.amp>

The news of Nisinhon (April 23, 2016)

<https://www.nishinippon.co.jp/item/n/240685.amp>

Reconstruction Agency: Number of deaths from disaster-related causes (June 30, 2021)

<https://www.reconstruction.go.jp/topics/main-cat2/sub-cat2-6/20140526131634.html>

Support for Children with Developmental Disability

~Cooperation by the National Association of Child Care Workers~

5122 Shogyo Cho

Abstract

The kanji for "developmental disability" had changed. This shows that many people are interested in disabilities. Therefore, my research's goal is to deepen the understanding of developmentally disabled children. According to the Ministry of Health, Labor and Welfare's website, a developmental disability is a characteristic of a child who is born with a brain that develops differently from normal. The three major categories are "autism spectrum disorder", "learning disabilities", and "attention deficit/hyperactivity disorder". Autism spectrum disorders, which include autism, Asperger's syndrome, and pervasive developmental disorder, are major developmental disabilities that include disorders in interpersonal relationships and communication, and biases in interests and behavior. Learning disabilities are only certain things that are difficult for children, such as reading and writing. Attention deficit/hyperactivity disorder (ADHD) includes symptoms such as behavior and attention deficits that are not appropriate to their age.

Developmental disabilities cause a lot of troubles. In this study, I tried to find what kinds of troubles they might cause and what is necessary to avoid or solve them. In conclusion, I found that it is necessary to deepen the understanding of developmentally disabled children themselves and those around them. For this purpose, I suggest that national nursery schools support developmentally disabled children.

1 Introduction

The purpose of this study is to deepen the understanding of children with developmental

disabilities. I proposed this study for children with developmental disabilities and those who are deeply related with them, such as their parents and nursery school teachers. In order to prevent misunderstandings and interpersonal problems caused by a lack of knowledge about developmental disabilities.

I did my research in two main ways.

1) I used books and the Internet to deepen my knowledge of developmental disabilities.

2) To learn about public opinion on developmental disabilities, and to think about what I can do based on the data and make suggestions.

2 Discussion and implications

Developmental disabilities can be classed into three categories, autism spectrum disorder, learning disabilities, and attention deficit hyperactivity disorder. In addition, it is not uncommon for people with the same disability to have more than one type of developmental disability at a time. (Ministry of Health, Labour and Welfare)

According to the understanding of the developmental disabilities section of the public opinion on the physically challenged from Cabinet Office's research , 33.6% of the 1,913 respondents answered that they understand the issue. 59.9% answered that they did not understand the issue. This research shows that there are more people who do not have an understanding of developmental disabilities. Think about what can happen when there is a lack of understanding, that can see interpersonal problems can happen. One of the symptoms of developmental disabilities is language delay. People who have developmental disabilities do not have language development within their age. This will lead to a lack of communication, children and people around them did not deeply understand this. Others are not good at acting in groups or are very particular. In such cases, they may cause misunderstandings.

In recent years, the number of children with developmental disabilities has been increasing. According to a graph titled "Changes in the Number of Children Receiving Guidance through Advancement" in a document compiled by the Ministry of Education,

Culture, Sports, Science and Technology called Gentosha, which I viewed on March 22, 2021, the percentage of children with autism spectrum disorder had increased by about 3.1 times, the percentage of children with attention deficit hyperactivity disorder had increased by about 6.3 times, and the percentage of children with learning disabilities had increased by about 8.0 times over the past 20 years. The number of children with developmental disabilities is also increasing not only in Japan but also in other countries. For example, according to the U.S. Centers for Disease Control and Prevention, the rate of change of the number of developmentally disabled children in the U.S. is 1.5 times higher for attention deficit hyperactivity disorder and 1.5 times higher for hyperactivity disorder. This could be due to the fact that the number of people who know about developmental disabilities has increased in recent years, and the number of people who have been diagnosed with developmental disabilities has also increased, but there is a lack of understanding of developmental disabilities, so I find that we first need to deepen our understanding of children with developmental disabilities.

3 Conclusion

I suggest that the National Association of Child Care Workers get involved with developmental support centers and medical institutions. The goal is to deepen the understanding of developmentally challenged children among childcare workers. The reason for focusing on nursery school teachers is that there are many parents who do not want to recognize their children as developmentally challenged or who want their children to grow up naturally (according to the website of parents of developmentally challenged children), so I think nursery school teachers are one of the person who is most deeply involved with developmentally challenged children. Childcare workers may have a good understanding of children , but may not have detailed information about children with developmental disabilities. One of the solutions to this lack of knowledge is for nursery schools to get in contact with specialists in developmental disabilities. It is difficult to collaborate with specialists every time because it is difficult to contact them. I propose that the experts get involved with the National Association of Nursery Teachers. The National Association of Nursery Teachers is a group of nursery teachers and nursery instructors from all over Japan.

The motto is "supporting children's growth, supporting parents' child-rearing, and creating a child and child-rearing friendly society. (Official website of the National Association of Child Care Workers)

The ideas for getting involved are to hold workshops at developmental support centers and medical institutions, and to create and distribute materials about developmental disabilities.

This suggestion has many issues. One of the issues is that I have not considered the cost of creating the materials or the time spent on the workshops. As for time, I think that sharing information on the official website of the National Association of Child Care Workers will solve this problem.

4 Referenses

LITALICO Junior (March 22, 2021)

[://junior.litalico.jp/about/hattatsu/](http://junior.litalico.jp/about/hattatsu/)

Cabinet Office (March 22, 2021)

<https://survey.gov-online.go.jp/h24/h24-shougai/index.html>

Gentosha (March 22, 2021)

<https://gentosha-go.com/articles/-/19749>

National Association of Childcare Workers (March 22, 2021)

[tps://www.z-hoikushikai.com/about/donnna/index.html](https://www.z-hoikushikai.com/about/donnna/index.html)

Ministry of Health, Labour and Welfare (March 22, 2021)

https://www.mhlw.go.jp/kokoro/known/disease_develop.html

Parental Leave System to Balance Childcare and Work

~The New Option of the System to Do Both Work and Childcare~

5123 Fumika Naganuma

Abstract

I searched for a way to create a society where every parent can balance childcare and work. I want to suggest a system, "Telework × Parental Leave". Unlike conventional systems, this system lets workers get both a subsidy and a salary. Under this system, you decide your working time with your boss. And you get a salary and a subsidy based on your working time. In Japan, there are two big problems concerning parental leave. First one is the low rate of mail's acquisition of parental leave. The biggest reason for this is human lack. The second one is that women feel great anxiety about returning to work after maternity leave. By using this system, women feel less anxious. Furthermore, workers can work during the leave, so it will be a solution for human lack.

1. Introduction

In recent years, "gender gap" has been gaining attention. The government and many companies are making efforts to create workplaces where women can work comfortably. Many women consider marriage, childbirth, and childcare when they start working. However, in order to create an environment where women can work comfortably, it is necessary to make parental leave convenient not only for women, but also for men. This is because in many cases in Japan today, only mothers take parental leave and fathers do not. So the burden of childcare tends to fall on the mothers. We also need to make it comfortable for single mothers and single fathers to use parental leave. Therefore, I decided to consider and propose a parental leave system which would allow all parents to balance childcare and work.

In order to create a parental leave system that is convenient for all parents, I considered what contents of the system are needed for male and females. First, I researched the problems happening to the father's side and the mother's side. Second, I researched what kind of systems that help people to balance work and childcare have already existed and considered whether there is a problem with them. After researching, I considered what kind of system is the best to solve those problems.

2. Discussion and implications

(1) Current Issues

First, I considered what kind of maternity leave is convenient for men . According to UNICEF's "Are the world's richest countries family friendly?" (2019), Japan was ranked first among OECD countries in the area of "length of maternity leave male can use with benefits". However, according to the Ministry of Health, Labor and Welfare's "Basic Employment Survey"(2020), 82.2% of women take parental leave, but only 6.2% of men do. This figure is very low among developed countries. There is a huge gap between 89% in Norway or 90% in Sweden and Japan, even though they were ranked as high as Japan in "length of maternity leave with benefits for men". The government set a goal to increase the rate of men taking maternity leave from 2,4% at the time to 13% by 2020 in "numerical targets" (2014). But the actual rate was only 6.2%. According to the Japan Productivity Center's "New Employee Fall Attitude Survey" (2018), 79.5% of newly hired male answered "yes" to the question "Would you like to take parental leave when your child is born?". This means that even though 80% of males in Japan want to take parental leave, only about 5% actually do. From this, I knew that many men do not take parental leave not because they do not want to take it. Therefore, I looked at what concerns about parental leaves employees and their bosses who allow them to take it. According to the Ministry of Health, Labor and Welfare's "Status of Male Employees Taking Childcare Leave and Initiatives to Promote Taking Childcare Leave" (2019), the most common reason why the men who were originally possible to take childcare leave did not take it was concern about a lack of human resources in the workplace at 27.8%. And according to the En Group's "Questionnaire Results Report: About Childcare Leave ", the

most common concern that companies have is securing human resources instead of employees who take leave and costs, at 67%. In addition, dispatched workers to replace employees taking parental leave have become an unpopular occupation because of the uncertain duration of the dispatch and the mental burden of the position as a "replacement for an employee taking parental leave". Therefore, it is essential to solve the human resource shortage in order to increase the rate of men taking parental leave.

Next, I considered what kind of maternity leave is convenient for women. According to KIDSLINE's "Housewives' Work Choices and Work Styles", 96% of women who have taken parental leave are anxious about returning to work. The main reasons are that they would make their children feel lonely, the burden of transporting their children and dealing with their sickness, and the worry that they would not have enough energy to do both childcare and work. Therefore, in order to make it convenient for women, I thought it was necessary to remove these concerns and allow them to return to work comfortably.

(2) Currently available systems

Next, I searched for the existing systems that allow employees to balance work and childcare. The two systems that I thought could be useful were telework and half-paid parental leave. Telework is a way of working that some people are currently using in place of parental leave. Working from home has the advantage that they are able to respond to their children's emergencies. But it is treated as a job, so you only get a salary for the work you do and no benefits for parental leave is given. Semi-parental leave is a system that allows employees to work up to 80 hours per month while taking parental leave. Under this system, employees can receive benefits, and salary for those working hours. There are some people who telework as part of their semi-paid leave, but it is only "unavoidably permitted when absolutely necessary". And because their working hours and salary are limited, it is not possible to balance work and childcare. In other words, in today's Japan, there are only two choices: "work" or "take a leave", and there is no system that offers the option of balancing both.

3. Conclusion

Through these considerations, I propose that a system named "Telework×Parental Leave" be introduced in Japanese society. While semi-paid maternity leave is a supplementary system that can be used only when absolutely necessary and is not a formal system, I propose that "Telework×Parental Leave" be a formal system. This system is a new option to "continue working while taking a break". The main difference between this system and the conventional telework and semi-parental leave is that it allows people to continue to work while taking time off as a formal system, with no limit on salary or working hours. Under this system, the users decide the working hours and work contents in consultation with the company, based on the premise of balancing telework and childcare. Then, they will receive both a discounted salary and benefits according to their working hours and work contents. This is expected to reduce the financial burden of balancing work and childcare. If men use this system, it is expected to improve the shortage of human resources caused by complete leave for childcare. Furthermore, by adding not only men but also women who have completed the maternity leave to the target of this system, it can be a step before returning to work completely from leave, and reduce their anxiety about returning to work. Since telework is not available in all industries, this system will not be mandatory for all companies, but will be only introduced in companies that wish to do so. Companies that have introduced this system will be able to appeal that employees in their companies can use "Telework×Parental Leave" to job seekers. By this appearance, not only the companies will be able to improve their image and get more job applicants, but also job seekers can find the company where they are able to work as they want. So this system will benefit both workers and employers.

Although this system is limited to industries where telework is possible, I hope that it would be a start to make it a norm for both men and women to participate in childcare and balance work and childcare. In this age of diversified work styles, I would like to make the most of the style to realize a society where all parents can balance work and childcare.

4. References

- 「UNICEF: Are the world's richest countries family friendly?」
https://www.unicef-irc.org/publications/pdf/Family-Friendly-Policies-Research_UNICEF_%202019.pdf. (2021.06.21)
- 「The Ministry of Health, Labor and Welfare: Basic Employment Survey (2020)」
<https://www.mhlw.go.jp/toukei/list/dl/71-r01/06.pdf>. (2020.07.20)
- 「Cabinet Office: Numerical Targets (2014)」
http://www.cao.go.jp/wlb/government/20barrier_html/20html/pdf/besshi01.pdf.
(2020.07.20)
- 「The Japan Productivity Center: New Employee Fall Attitude Survey (2018)」
<https://www.jpc-net.jp/research/assets/pdf/R41attached.pdf>. (2020.08.08)
- 「The Ministry of Health, Labor and Welfare: Status of Male Employees Taking Childcare Leave and Initiatives to Promote Taking Childcare Leave(2019)」
<https://www8.cao.go.jp/shoushi/shoushika/meeting/consortium/04/pdf/houkoku-2.pdf>.
(2020.08.08)
- 「En Group: Questionnaire Results Report: About Childcare Leave 」
<https://partners.en-japan.com/enqueterereport/old/131/>. (2020.08.08)
- 「KIDSLINE: Housewives' Work Choices and Work Styles」
<https://kidsline.me/shufu/contents/382>. (2020.08.08)

To Realize a Gender-Equal Society

~Reform of the Maternity Leave System~

5124 Fukazawa Haruno

Abstract

Gender equality is an important issue that is being promoted by the entire international community, including SDGs. However, as the Gender Gap Index shows, gender equality in Japan is far from being advanced. For this reason, I thought that one way to realize gender equality would be to improve the figures in the economic field, where the gender gap index is low in Japan. Specifically, the causes of the low gender gap index are income disparity and low labor force participation rate. Moreover, the root of this problem is thought to be "career resetting due to pregnancy and childbirth. For this reason, I decided to improve the parental leave system as my research theme. I compared the duration of parental leave and the ratio of childcare benefits in Iceland, Norway, and Sweden, which have low gender gap indexes and are considered to have already achieved gender equality.

1 Introduction

In the future, I would like to work as a "career woman", and be as good as male counterparts. On the other hand, I would like to have a family through childbirth and childcare. Is this a reckless wish? Perhaps in Scandinavian countries, it would be achievable, but in Japan, unfortunately, it would be reckless. This is because there is a strong belief that women should stay at home and that housework and childcare are women's work. Thus the number of men who cooperate with women in the field of childcare is low.

There is a gender gap index in the world, which is based on four areas: economics, politics, education, and health, with 1 representing complete equality and 0 representing complete inequality. Japan's score is 0.652, which means that it cannot think of a gender-equal country. In contrast, Iceland, which has the highest score, has a score of 0.877.

It is very high compared to Japan. These figures are based on four areas. Moreover the four areas are divided into a number of criteria. I used the figures for each criterion, and I found out that the reasons are "wage disparity," "labor force participation," and "income". Therefore, I thought that if I could discover the causes of these problems and solve them, we could get a little closer to gender equality.

I hypothesize that the cause of these problems are in the field of "childbirth" and "childcare". The reason for the decline in the women labor force participation rate in the 30s is the difficulty in balancing work with marriage and child rearing(Figure1). According to a survey conducted by the Ministry of Health, Labor and Welfare (MHLW) on women with preschool children in 2008, about 30% of them left their jobs because of "marriage" and "pregnancy of the first child" respectively. And the reason 26.1% said that they "wanted to continue working, but quit due to the difficulty of balancing work and childcare". The same survey shows that about 40% of women were forced to leave their jobs involuntarily before or after pregnancy or childbirth. Hence I thought that the large inequality in childcare between men and women may be the cause of decline in the labor force participation rate of women in their 30s.

In order to find issues, I compared the duration of childcare leave and the ratio of childcare benefits in Iceland, Norway, and Sweden. I found the shortcomings of Japan's childcare leave system.

2 Discussion and implications

(i) Rate and causes of men taking parental leave

It clearly shows that the percentage of men who take parental leave is low compared to the three countries(Figure2). However, according to a survey conducted by the Cabinet Office in 2021, 39.4% of 640 married men in their 20s and 30s intended to take parental leave.

Furthermore, according to the survey, "'Don't want to bother the workplace' was the most common answer at 37.2%. This was followed by "The workplace does not approve of men taking maternity leave" (32.9%), indicating that workplace understanding of men's maternity leave continues to be a barrier. A large number of respondents (29.2%) also said that their

income would decrease. This suggests that the problem is not only with the parental leave system itself, but also with the lack of understanding and stereotypes.

(ii) Available leave period

Figure 3 is a ranking which shows the quality of paternal leave by judging from maternity/childcare leave and the ratio of the benefit amount compared to their wage. Looking at this ranking, it appears that the paid parental leave period for women is inferior to that of other countries. However, it is not outstandingly low; in fact, it is longer than in Sweden and Iceland. Additionally, the period of paid parental leave available to men is the longest in the world.

(iii) Parental leave benefits

Japan: 67% of salary (first 6 months for each individual)

50% (portion beyond 6 months) Both exclude bonuses

Norway: 80% of pre-birth salary for up to 54 weeks, 100% for up to 44 weeks

Sweden: About 80% of income is paid as parents' benefits. However, the maximum amount per day is 967 SEK (about 12,000 yen).

If the duration of employment (consecutive) prior to the birth is less than 240 days, or if the annual income prior to the birth is less than 117590 SEK (approx. 1.5 million yen), a flat daily amount of 250 SEK (approx. 3,000 yen) will be paid. Note

1

Iceland: 80% of the salary before the leave (6 months for both men and women)

Looking at it this way, it seems that the ratio of childcare leave benefits to salary in Japan is low. Also, the fact that the percentage drops depending on the period of time seems to be a bit of a problem.

From (i) to (iii), the following issues come to mind.

(1) The rate of men taking parental leave is low.

(2) Low childcare benefits.

Proposals for solving these problems are as follows.

3 Conclusion

To eliminate the disparities in the field of working and career building career, I suggest the introduction of the Papa Quota System.

According to the Japan Women's Learning Foundation, the Papa Quota System is "a system that assigns fathers to take a certain amount of parental leave" and "guarantees 42 weeks of parental leave with 100% income compensation. In Norway, where this system has been introduced, the percentage of men taking parental leave has increased from 5% to about 80%. If this system is introduced, high wage guarantees can be expected. Another feature of this system is that "men are required to take a minimum of four weeks of vacation. If a man does not take a leave, the leave will be deducted. It is also possible for men to take more vacation than women. The system does not allow women to take all 42 weeks off, so if men do not take leave, their parental leave period will be reduced. This would increase the benefits of men taking parental leave, and improve the rate of men taking parental leave.

Figures

Figure1 The rate of women labor force participation

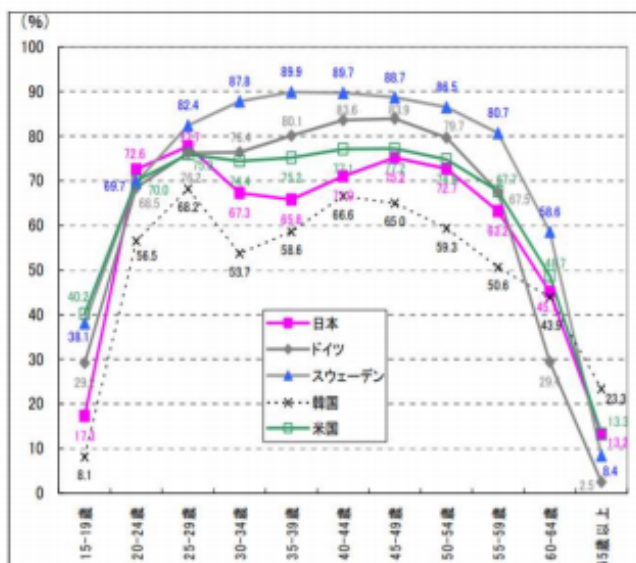


Figure 2 Percentage of male employees who take parental leave

Created based upon date from <https://akeruto.com/feature/ways-of-working-in-the-world8/>

男性の育児休暇取得率(%)

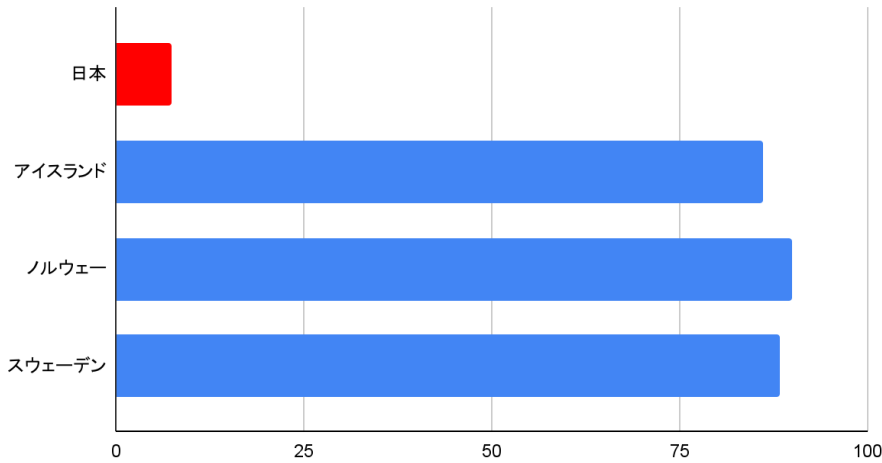
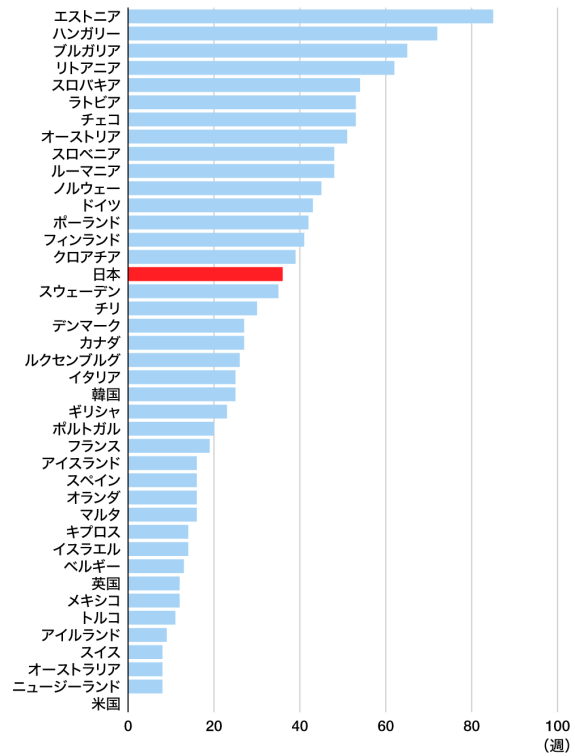
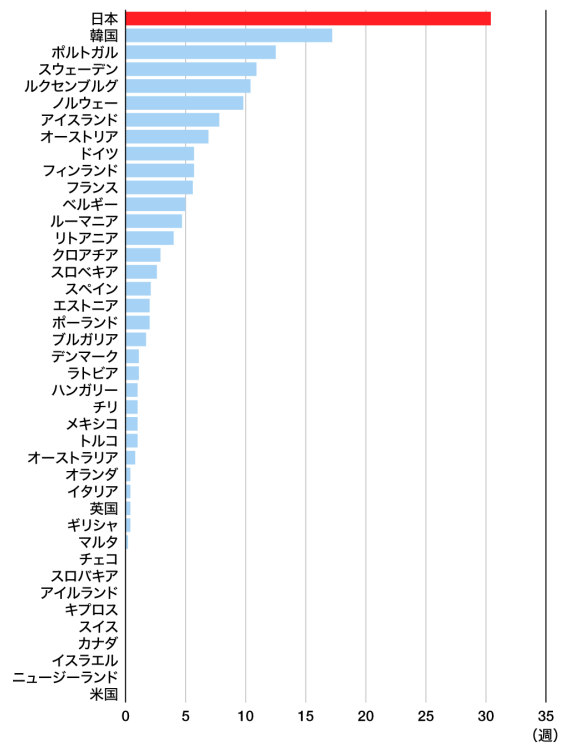


Figure3 The duration of maternity and paternity leave

母親が取得可能な有休育児休暇期間



父親が取得可能な有休育児休暇期間



4 Reference

「情報物知り帖」 〈<https://www.kyoeikasai.co.jp/kpa/agent/monosiri2008-21.htm>〉 (2021年8月5日)

「資料シリーズNo.186『ヨーロッパの育児・介護休業制度』」

〈https://www.jil.go.jp/institute/siryo/2017/documents/186_01.pdf〉 (2021年8月21日)

「nipon.com」 〈<https://www.nippon.com/ja/japan-data/h00500/>〉 (2021年8月26日)

「男女共同参画局」

〈

https://www.gender.go.jp/about_danjo/whitepaper/h25/zentai/html/honpen/b1_s00_02.html〉 (2021年8月14日)

「aketuto北欧とフランスの「女性活躍」事情—欧州に学ぶ、子育てとキャリア」

〈<https://akeruto.com/feature/ways-of-working-in-the-world8/>〉 (2021年8月21日)

「JIJI.COM 男女平等「世界一」の秘訣は 両親育休やクオータ制—アイスランド大使に聞く」

〈<https://www.jiji.com/jc/article?k=2021030800150&g=int>〉 (2021年8月23日)

「日本経済新聞 男性育休「取得せず」4割、職場理解が壁に 内閣府調査」

〈<https://www.nikkei.com/article/DGXZQOUA0439I0U1A600C2000000/>〉 (2021年8月23日)

Hand Sign Language as a Language

~Sign Language by way of optional subject~

5125 Kano Honda

Abstract

I thought that the reason why there is a shortage of social service is because there is little awareness that sign language is a language. So, in order to raise the degree of recognition of hand sign language as a language and improve social services, I came up with an idea of including it as an elective subject in high school. In addition, since the conclusion of last year's research theme, "To increase awareness of sign language," was to include it in elective courses, I researched this usefulness in my research this year. The research was divided into two main points: 1) whether it can be treated as an optional subject in and 2) whether social services can be improved by increasing its recognition as a language. Regarding point 1, according to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), I have come to the conclusion that it may be difficult to train sensitivity, which is one of the purposes of the current elective courses. As for point 2, I concluded that it may be possible to look at the current situation in other countries. So, the research was conducted to see if it would be possible to improve social services by incorporating sign language into school education in order to increase its recognition as a language.

1 Introduction

The reason for setting the theme was I learned that people with disabilities feel inconvenienced in places where we normal people do not feel inconvenienced in our daily lives. I thought that we should respond to this. Also, last year I did research on "To have sign

language recognized as a language", and at that time I learned that sign language is already recognized as a language, and I thought that even though it is recognized, social services may not be fulfilling. As the cause of this, I thought that the problem might be the fact that in Japan sign language has a strong impression of welfare rather than language, as written in "Culture as Minority" by Musashi University. In fact, English, Korean, Chinese, and other foreign languages are written on menus, people try to speak the language of the country, and so on. However, for the deaf, I thought that there are still some things that need to be taken into consideration, such as the introduction of a charge for plastic bags and emergency bells on elevators, which went into effect on July 7.

The purpose of this research is to determine the effectiveness of increasing the awareness of sign language as a language by improving social services.

In addition, we will conduct a detailed study on how the class can be taken and how it will be taken when it is realized.

2 Discussion and implications

As for the method of the research, a proposal was set at the first. This time, I thought about the conclusion of last year's research, "To raise awareness of sign language," which was "to include it in elective courses in higher education," and what it would take to make it a reality.

This year, I researched from two perspectives: 1) whether it can be treated as an optional subject and 2) whether social services can be improved by increasing its recognition as a language. For the first, I researched the current purpose of elective courses from the MEXT, and cited the similarities in all of them.

As for point 2, since it was difficult to estimation in only Japan, I thought that since people of various nationalities, races, and religions coexist in the U.S., which is described in Mr. XX's research paper as "a country whose national identity is to accept various cultures," the social services for minorities are relatively better than in Japan. In the United States, people from different countries, races, and religions coexist, so I thought that social services are relatively better for minorities than in Japan.

Also, according to a study by Tsukuba University of Technology titled "The Significance of Japanese Sign Language Education in the U.S. Universities," the number of students in 2009 was 1602, but due to the sign language movement, the number became 91763 in 2010, an average of 11-18 students per semester.

This led me to believe that in the U.S., there is a strong recognition of the language because they learned in school as a language, such as the increasing number of students taking it in school education. So I decided to look into social services for the deaf in the U.S. and find something and it could be used in Japan.

3 Conclusion

As a result of my research, I have come to the conclusion that the first point may be difficult. The reason for this is that it may not be applicable to the clause of training sensitivity. One of the common objectives of arts, calligraphy, crafts, and fine arts, which are currently included as elective subjects in higher education schools, is to train sensitivity and to experience culture. In terms of culture, there are many things that can be learned, such as the campaign to spread sign language in Japan and the path to recognition as an official language overseas.

However, when it comes to the sensibility aspect, since sign language is a language that has already been created, it does not require individual originality, and it may be difficult to incorporate it.

However, it can dispel the awareness and stereotypes of we normal people, who take it for granted that we can hear sounds, listen to music, hear the sounds of daily life, and talk with our friends in our voices. This is a new perspective in education, and I think it is appropriate to include it as an elective course. In addition, learning about other languages such as English allows us to learn about other cultures, but since education is based on the assumption that these people can speak, I thought that there would be something else to be gained from learning other languages.

As for point 2, I came to the conclusion that it is possible. As a result, the U.S. Sign language is recognized because they learn as a language, has well-developed social services,

such as subtitle rate, relay operation service, and social security. In particular, Japan is the only country in the G7 that has not adopted the relay operation service. The reason for this is the lack of maintenance and the need to verify the identity of the user when stopping a credit card. Therefore, I thought that if the degree of recognition of sign language as a language is spread, the maintenance would be promoted.

I didn't show it above, but New Zealand is also famous as a country where sign language is an official language. In New Zealand, as it became an official language, there was an increase in interest and educational guidelines were created and promulgated. There is also a case where the use of sign language in court was considered rude and did not allow for a fair trial, but this has been improved.

And specific suggestions for incorporation include I;Teaching according to English guidelines II.;Teach it according to English guidelines. I propose the two points. MEXT clearly written that the first significance of current English education is to "deepen understanding of language and culture" From this, I thought that if I took the methods that are currently being used in accordance with this significance, I would be able to achieve the "understanding of language," which is the purpose of my research.

Another thing about setting up a subject is "sign language". After all, even if it is something that is studied at school, I think that many of them are strongly welfare oriented such as general studies, and this makes it difficult for other students who did not choose it to get the impression that sign language is a language. Therefore, to make it easier for everyone to recognize it in school and understand that it is a language, it can be emphasized as a sign language "language" . I thought it would be a good idea to make the topic known to people of different ages.

In the future, I would like to ask students in the U.S. about the number of students who take the elective courses, and consider the needs of Japanese students.

4 References

"The Significance of Japanese Sign Language Education in U.S. Universities."

Tukuba Thechnology University Kobayashi Youko Yutaka Osugi

California State University, Northridge

"Culture as Minority"

Musashi University

"Report on Future Measures to Improve and Enhance English Education: Five Proposals for English Education Reform in Response to Globalization"

"Curriculum Subcommittee Special Committee for Educational Planning"

Ministry of Education, Culture, Sports, Science and Technology

Safe and Delicious Foods for Allergic Patients

~Develop and Provide Allergen-Free Foods for Food-Allergy Patients ~

5127 Mana Matsumoto

Abstract

This research investigates how food allergic patients are able to eat meals with a smile . My research's final purpose is that I want to provide safe and delicious foods for people with food allergies. The reason why I decided to research this theme is that I have many kinds of allergies, so I was not able to eat something with satisfaction. Then I thought surely there are some people who have the same feeling as me. As a part of the study, I made some cakes like chocolate, but they have some problems. One of the problems is that the cakes are not able to be eaten by people with allergies other than dairy allergies , including my cake. Also the second problem is I have no place to serve them. Therefore, now I need to think about the future direction of my research and find a place to devise new foods and actively provide them.

1 Introduction

My research question is “ How to provide safe and delicious food for food allergies patients”. I am also one of the patients who has some kinds of allergies, so I want to make someone smile while they are eating.

First, about the current situation, According to FARE, the population of food allergies, “85 Million Americans are impacted by food allergies and intolerances, including 32 million who have a potentially life-threatening condition.” [Food Allergy Research & Education 2021] Also according to U.S. FOOD & DRUG ADMINISTRATION, symptoms of food allergies typically appear from within a few minutes to a few hours after a person has eaten the food to which he or she is allergic. A severe, life-threatening allergic reaction is called anaphylaxis. Symptoms of allergic reactions can include: Hives, Flushed skin or rash,

Tingling or itchy sensation in the mouth, Face, tongue, or lip swelling, Difficulty breathing, Loss of consciousness and so on. People with a known food allergy who begin experiencing any of these symptoms should stop eating the food immediately, and evaluate the need to use emergency medication (such as epinephrine) and seek medical attention. Some of these symptoms are not always due to a food allergen. In short, if the symptoms or reaction experienced was due to a food allergen, it is important to take proper care and diagnosis from a healthcare provider to determine.

As you can see from this, there are lots of people who are in agony because they cannot eat enough food all over the world. Thereby I started this research. I came up with the idea of making some allergen-free foods. Now, however, there are many allergen-free foods in the world. So if I make some allergen-free foods, there is no need and I have to make new thinking.

2 Discussion and Implications

Nipponham Foundation proposed that Eggs, milk and wheat account for a large percentage of allergenic foods. Other allergenic foods include seafood and fruits, such as mackerel or bananas and kiwifruit, soybeans, peanuts, and buckwheat. These allergenic foods vary with age. [Nipponham Foundation]

新規発症の原因食品

n=1,706

	0歳 (884)	1歳 (317)	2、3歳 (173)	4～6歳 (109)	7～19歳 (123)	≥20歳 (100)
1	鶏卵 57.6%	鶏卵 39.1%	魚卵 20.2%	果物 16.5%	甲殻類 17.1%	小麦 38.0%
2	牛乳 24.3%	魚卵 12.9%	鶏卵 13.9%	鶏卵 15.6%	果物 13.0%	魚類 13.0%
3	小麦 12.7%	牛乳 10.1%	ピーナッツ 11.6%	ピーナッツ 11.0%	鶏卵 小麦 9.8%	甲殻類 10.0%
4		ピーナッツ 7.9%	ナッツ類 11.0%	ソバ 魚卵 9.2%		果物 7.0%
5		果物 6.0%	果物 8.7%		ソバ 8.9%	

[https://www.miraizaidan.or.jp/allergy/images/img_07_v01.gif] [Food Allergy Treatment Guidelines 2016 (revised 2018)]

I think it is necessary for people with food allergies to provide safe food like allergen-free food. By the way, there are many kinds of allergen-free foods in the world, so there is no demand to provide only normally allergen-free foods. Then I have to create new creative allergen-free foods. Unfortunately, I still haven't come up with a breakthrough idea. I hope that it will become a better world for someone having allergies. For this reason, I want everyone to know about allergic patients and help them. Also I hope that some food companies will make a lot of kinds of food that all allergic patients could eat.

3 Conclusion

As a result of my research, I was able to devise an allergen-free food product. It is a dairy-free chocolate cake. The cream and milk in the chocolate mousse and sponge were substituted with cream and milk made from dairy-free soy milk, respectively. Since I did not experience any discomfort in the taste, I believe that there is no problem regarding the quality of the taste if it is commercialized. However, there is an issue that this cake that I invented is only suitable for patients who are allergic to dairy products. Solving this problem at once would be difficult for me now. Therefore, I would like to create foods that are compatible with the major items of allergy, and eventually combine all of them to devise allergen-free foods that are compatible with the most common ingredients of allergy patients.

In addition, since there are certain foods that tend to cause allergies in all age groups, we would like to think of those foods as the main ingredients. And consider whether we can substitute them in dishes that require those ingredients without using them, and actually make prototypes. Once I can make a dish without using one food, I would like to gradually increase the number of allergy-free dishes to two, three, and four. In addition to this, we would like to develop allergen-free foods that use vegetables instead of fruits. We would like to propose these products so that people with food allergies can eat them with peace of mind. At the same time, we would like to achieve a quality that people without food allergies can enjoy. To the end, I keep researching until a satisfactory conclusion is reached.

4 References

[1] Allergy Facts AAFA.org

<https://www.aafa.org/allergy-facts/>

[2] Nipponham Foundation

<https://www.miraizaidan.or.jp/allergy/cause.html>

[3] U.S. FOOD & DRUG ADMINISTRATION

<https://www.fda.gov/food/food-labeling-nutrition/food-allergies>

5 Bibliography

[1] AJINOMOTO

https://www.ajinomoto.co.jp/products/anzen/know/f_allergy_01.html

[2] Nipponham

https://www.food-allergy.jp/info/label_1/

Spread Japanese Rice Disinfectant to the World

~Proposal of Processed Products in COVID-19 Pandemic~

5128 Asumi Yanagisawa

Abstract

The consumption of Japanese rice is decreasing every year in Japan. Due to this, rice farmers' problems are occurring in Japan. To solve this problem, I thought it would be effective to export Japanese rice to the world, but I knew that the Ministry of Agriculture, Forestry and Fisheries had already started a project whose contents were the same as my proposal. Also, I knew that the number of farmers who are switching from edible rice to feed rice is increasing. For these reasons, I thought it is not effective if I propose the extension of Japanese rice to the world. So this time, I turned my eyes to rice disinfectants. This is made from sake lees, so our skin will be moisturized. Also, some of them can drink, so we can use them safely. I hope exporting this disinfectant will increase the number of rice consumption.

1 Introduction

The consumption of rice in Japan has been decreasing year by year. In fact, according to the Ministry of Agriculture, Forestry and Fisheries' Food Supply and Demand Table (2020) and Related Data on Rice (2017), rice consumption in Japan per capita was 118 kg in 1962. However, it was 56 kg in 2020, a decrease of about 62 kg in 58 year.

The reasons for this are the westernization of food, diversification of products, and changes in consumer preferences. According to NTT com Research, this decrease in rice consumption has led to a decline in rice prices, which in turn has led to a decrease in income and losses for rice farmers. On the other hand, since Japanese food was registered as a UNESCO Intangible Cultural Heritage in 2013, there has been a Japanese food boom around the world. Therefore, the popularity of Japanese food is increasing. In fact, according to the Ministry of Agriculture, Forestry and Fisheries' "Number of Japanese Restaurants Overseas (2019)," the number of Japanese restaurants overseas tripled in the six years between 2013 and 2019.

Based on these facts, I thought that increasing the awareness of rice products, and expanding its consumption both in Japan and abroad would be an effective way to solve the problems faced by Japanese rice farmers. Also, Japanese food is booming all over the world, so I think exporting Japanese rice to foreign countries will help increase consumption and solve the problems which rice farmers are facing.

Therefore, I decided to set the theme as "Spread Japanese Rice Disinfectant to the World" and think about what concrete measures I can take to solve the problems rice farmers are facing.

As a method, I mainly used the internet. The Ministry of Agriculture, Forestry and Fisheries had some data on rice in Japan on their website, so I focused on those for my research.

2 Discussion and implications

As I mentioned in my objective, I thought that exporting more Japanese rice processed products to foreign countries is an effective way to solve the problem of rice farmers in Japan. I would like to explain why I decided to export processed rice products instead of rice.

First, according to Nippon.com, Japanese rice varieties such as Akitakomachi are now being grown in the U.S. and China, and they are much cheaper, at one-fifth to one-tenth the

price of those grown in Japan. For this reason, many Japanese restaurants overseas use Japanese rice that was made in America or China instead of Japanese ones. People who can afford to buy Japanese rice are only those with high income.

Second, according to Nippon.com, more and more farmers in Japan are shifting from edible rice to feed rice. Many farmers are actively growing feed rice because they can get stable subsidies from the government. In addition, it does not require aesthetics like edible rice.

Third, the Ministry of Agriculture, Forestry and Fisheries had already been working on a project called the "Rice Overseas Market Expansion Strategy Project." (Syngenta Japan, 2018). Also, According to the Ministry of Agriculture, Forestry and Fisheries "New Policies for the 'Strategic Project for Expanding Rice Overseas Markets'" (2021), since the launch of the Strategic Project for Expanding Rice Overseas Markets in 2017, the volume of rice exports has increased significantly. In fact, the volume and value of rice exports doubled in the four years from 2016 to 2020.

For these reasons, I turned my attention not to rice, but to processed rice products. Processed products are not rice crackers, arare, or other sweets, but rather alcohol disinfectant made from Japanese rice.

According to the Asahi Shimbun (2020), Kamikame Brewery in Saitama prefecture had made alcohol disinfectants from sake lees and donated them to the local Hasuda city to help prevent corona infection. It would be good if this disinfectant spread not only in Japan but also throughout the world, ultimately leading to increased consumption of rice in Japan.

The challenge was that I did not know how effective the rice disinfectant was. Therefore, I experimented with bread to see if there is any difference in the effectiveness of the disinfectant we usually use and the rice. The results showed that the alcohol disinfectants made from rice were just as effective as the disinfectant we usually use. The data shows details. Please see it.

Data

Experimental period: February 27th to March 13th, 2021

Materials:

- Alcohol disinfectant (75% alcohol by volume) that I usually use. (hereinafter referred to as "A")
- Alcohol disinfectant made from rice (Asahi Shuzo "Dassai") (72% alcohol by volume). (hereinafter referred to as "B")

Alcohol disinfectant that I normally use...A



Alcohol disinfectant made from rice...B



- 3 slices of bread for sandwiches
- 3 plastic bags with zippers
- Thermometer
- Hygrometer

I wanted to keep the alcohol content the same, but I couldn't find a commercial disinfectant with 72% alcohol content, so I compared it to COSIMON (75%), which has the closest alcohol content to 72%.

Procedure:

1. Three slices of bread were prepared, one soaked in A (15 ml), one soaked in B (15 ml), and

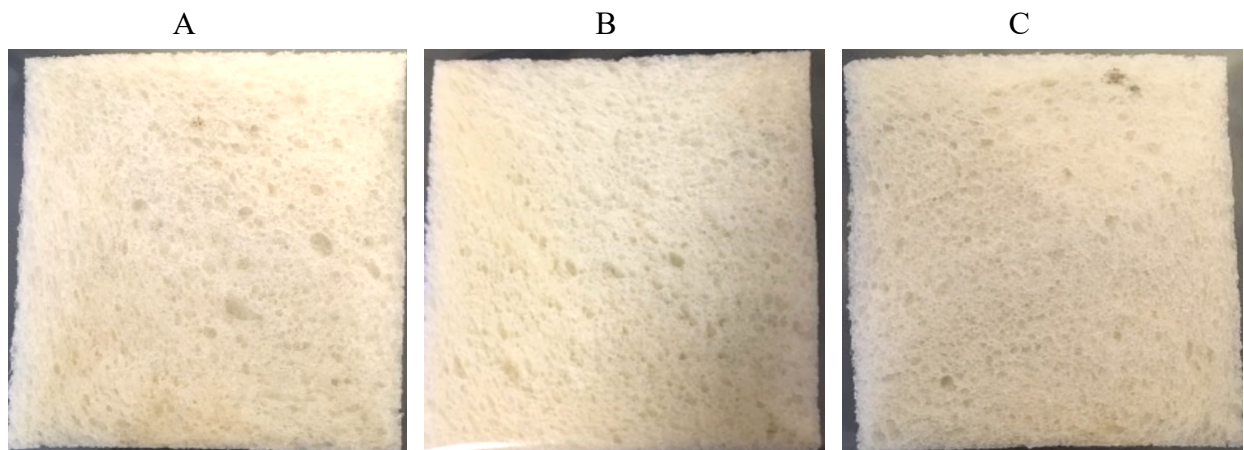
one left unsoaked (this is called as C), and each was placed in a zippered plastic bag.

In order to prevent hand bacteria from getting into the bread, I wore rubber gloves.

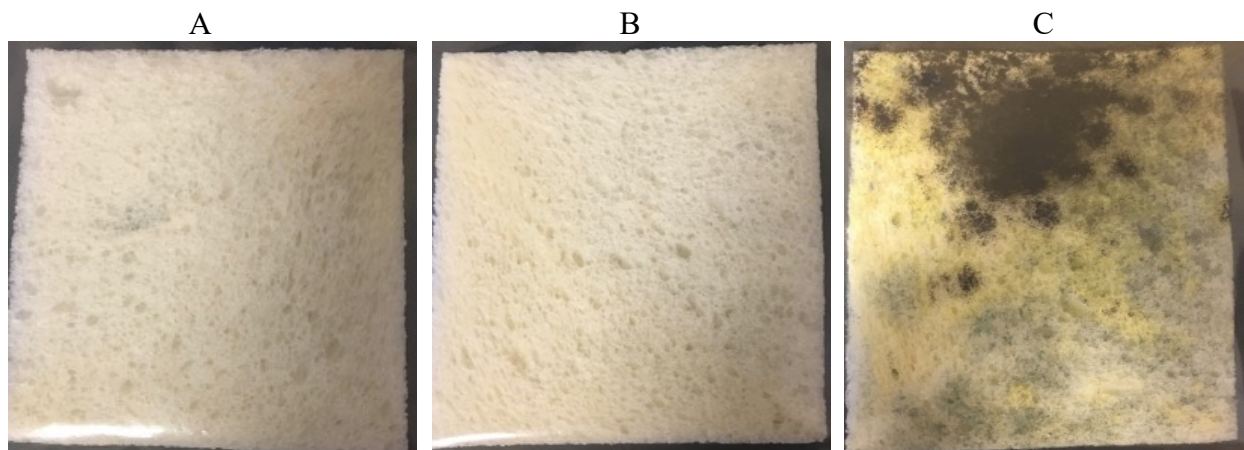
2. These were placed in a room with a temperature of 26 degrees Celsius and humidity of about 40%, and the growth of mold was observed and recorded once a day at the same time.

Results:

March 6th



March 13th



A, B, and C were all unchanged until March 5.

On March 6, A and B were unchanged, but C had a little mold on the upper right side.

On March 13, A and B were also unchanged, but C had mold growth.

	~3/5 (Day7)	3/6 (Day8)	3/13 (Day15)
--	-------------	------------	--------------

A	○	○	○
B	○	○	○
C	○	△	×

○No change

△A little mold has grown

×A lot of mold has grown

On the other hand, rice disinfectants are more expensive than regular disinfectants. The rice disinfectant I used in the experiment, Dassai, costs 2.2 yen per ml, while the regular disinfectant I used in the experiment, COSHIMON, costs about 1.5 yen per ml. If the effects were the same, everyone would buy the regular disinfectant. Therefore, it is necessary to convey the unique appeal of rice disinfectants.

In fact, when I used the rice disinfectant, my skin was more moisturized than usual. According to the website of Bishonen, a sake brewery in Kikuchi City, Kumamoto prefecture, sake lees have not only moisturizing effects, but also various cosmetic effects such as whitening, improving dullness, and inhibiting skin aging. Also, the rice disinfectant I used in this experiment was not drinkable, but some other rice disinfectants can drink, so even if a small child accidentally swallows it, it is unlikely to be harmful to their body

3 Conclusion

As you can see, rice disinfectant has many attractions. However, one issue is that it is a bit expensive. If this point can be solved, it will be used by more people, not only in Japan but also all over the world. In the future, I would like to focus my research on how to solve this problem.

I hope that alcohol disinfectants made from rice can be spread around the world to help rice farmers in Japan.

4 References

[1]Ministry of Agriculture, Forestry and Fisheries (2020). Food Supply and Demand Table.

<https://www.maff.go.jp/j/tokei/kouhyou/zyukyu/>

[2]Ministry of Agriculture, Forestry and Fisheries (2017). Related documents on rice.

<https://www.maff.go.jp/j/council/seisaku/syokuryo/171130/attach/pdf/index-6.pdf>

[3]Ministry of Agriculture, Forestry and Fisheries (2019). Number of Japanese restaurants overseas.

<https://www.maff.go.jp/j/press/shokusan/service/attach/pdf/191213-1.pdf>

[4]NTT Research Com (2009). Rice Crisis.

<https://research.nttcoms.com/database/data/000957/>

[5]nippon.com (2018). Why rice exports are not growing.

<https://www.nippon.com/ja/features/h00262/>

[6]Syngenta Japan (2018). "Join us for the greatest export opportunity!" The Ministry of Agriculture, Forestry and Fisheries (MAFF) speaks passionately about the "Rice Overseas Market Expansion Strategy Project".

https://www.cp.syngenta.co.jp/cp/hot_news/view/?column_id=66

[7]Ministry of Agriculture, Forestry and Fisheries (2021). New Approaches to the "Strategic Project for Expanding Rice Markets Overseas".

https://www.maff.go.jp/hokuriku/seisan/supply/attach/pdf/kome_yusyutu-5.pdf

[8]Asahi Shimbun (2020). Donation of rubbing alcohol made from sake dregs to Kamijou Shuzo in Saitama.

<https://www.asahi.com/articles/ASN5P7GFQN5NUTNB00S.html>

[9]Bishonen, a Sake Brewery in Kikuchi City, Kumamoto Prefecture - Sake Brewing Since the Edo Period - "Full of Flavor and Nutrients! What are the beauty and health benefits of

sake lees?

<https://bishonen.jp/special/column17/>

All references above are viewed on August 31, 2021.

Revitalization of the tourism industry

~Towards the Popularization of Workation~

5201 Sou Awashima

Abstract

In order to revitalize the tourism, aviation, and accommodation industries, which have been hit hard by the spread of the new coronavirus, this study aims to consider ways to promote "work vacations," a method of tourism and work that is beginning to attract attention because it allows people to reduce their contact with other people to the minimum necessary and to balance work and In order to promote this method, we have to think of a way to spread "work vacation".

1 Introduction

Have you ever heard of the term "other prefecture number hunting"? This term is used to describe people who were traveling under the GOTO Travel Campaign, which was officially approved by the government in the summer of 2020 after the new coronavirus had died down and had their cars damaged or their interiors vandalized by the so-called "self-restraint police." This is a problem caused by the idea that tourism causes people to move around a lot, which in turn spreads the new coronavirus. However, the tourism and work method called "work vacation" has the advantage of very little human contact, and if this method is used, countermeasures against infectious diseases and revitalization of the tourism industry can be carried out in parallel. Therefore, we decided to conduct this study.

2 Discussion and implications

First of all, I would like to explain the definition of "work vacation". Workcation is a word coined from "work" meaning work and "vacation" meaning vacation. Next, I would like to explain the target audience for work vacations. The first is businessmen who go alone, and they tend to choose hotels in the city that have internet facilities such as wifi. The second is for families, who tend to look for places to play and someone to look after the kids while the adults are working. Workcations can also help prevent the spread of new coronavirus infections. In contrast to conventional sightseeing and commuting, where people naturally congregate to create what is called a "dense" area, a work vacation allows you to stagger the time and place of your commute and sightseeing to your liking, and since you can spend most

of your time in your own room, such as a hotel, you can reduce your contact with other people. Next, I'd like to explain some examples of workcation. First of all, let's start with the case of Japan. In Japan, Wakayama Prefecture in particular has been actively involved in the workcation program. For example, during the summer vacation of 2020, Wakayama Prefecture and JALPACK, a tour company of Japan Airlines, jointly held a work vacation event. While the adults were working in the office, the children were playing with tour guides at Adventure World. In addition, JAL (Japan Airlines), a famous company, held a work vacation experience for both general employees and executives to deepen their understanding of work vacations. Furthermore, the government is also working to promote the work vacation program. For example, in July 2020, the Ministry of the Environment adopted more than 500 organizations as a project to promote workcations in national parks. The then Chief Cabinet Secretary Yoshihide Suga also said he would work to promote workcations in conjunction with the now-suspended GOTO campaign. Still, the reason why work vacations have not spread in Japan is that work vacations are treated as paid holidays in the first place, there is no work vacation culture, and it is not convenient. Next, I'd like to explain some examples of work vacations around the world. First is the United States. In the U.S., work vacation is not as popular as in Japan. The reason for this is that in the U.S., working is considered a virtue and there are no paid holidays, so there is a tendency to be modest about work and vacation at the same time. In Europe, on the other hand, there is a culture of balancing work and vacation, with many days of paid leave, and work vacations are actively practiced. In Germany, for example, the Federal Leave Act requires employees to take at least 24 days of paid leave per year, and the rate of use of this leave is high, indicating that employees are actively taking work vacations.

3 Conclusion

In order to popularize work vacations in Japan and the U.S., it is necessary to first change the laws and systems so that work vacations are regarded as work, and then to spread the culture of work vacations and improve convenience. As for the improvement of convenience, at present, it is troublesome to make reservations for transportation, hotels, and sightseeing spots, as well as to apply to one's own company, each of which is done separately, and this is thought to be one of the reasons why work vacations do not spread.

4 References

PR TIMES (2020) JAL, Nanki-Shirahama Airport and NearMe to launch shuttle service for seamless travel in Nanki-Shirahama
<https://prtimes.jp/main/html/rd/p/000000037.000031733.html> March 2021 March 22

Japan Airlines (2020) Summer Vacation for Parents and Children by JAL! Let's go to Wakayama

<https://www.jal.co.jp/domtour/jaldp/workation/> January 15, 2021

Nikkei X TREND (2020) JAL also promotes 20% improvement in productivity, will

work-cation become popular?

<https://xtrend.nikkei.com/atcl/contents/18/00351/00008/> March 22, 2021

NHK (2020) Coexistence with Corona: How will it change? The world's airline industry

<https://www3.nhk.or.jp/news/html/20200604/k10012457451000.html> June 22, 2020

maki3 Let's read some English news! (2018) What is a work vacation? Do you work while you're on vacation? Workcation in the USA

<https://maki3english.com/2018/09/23/%E3%83%AF%E3%83%BC%E3%82%B1%E3%83%BC%E3%82%B7%E3%83%A7%E3%83%B3%E3%83%BB%E6%9C%AC%E5%BD%93%E3%81%AB%E3%83%90%E3%82%B1%E3%83%BC%E3%82%B7%E3%83%A7%E3%83%B3%E3%81%A3%E3%81%A6%E8%A8%80> March 22, 2021

<https://www.canadapageants.com/gpolaris1>

Education for mild and moderate Deaf

~Good Education to use digital equipment ~

5202 Name Takuya Imaizumi

Abstract

Recently, the cases in which the mild and moderate deaf child don't graduate from the deaf school, and usually graduates from a normal school, increases. However, the hearing aid is expensive, and there is a difference in the support by the local government. These children cannot receive hearing aids and other support without parental support. We thought that we could use the tablets distributed to schools as an educational aid with less financial burden. Tablets and other ICT devices are also used in schools for the deaf, and we thought that the same kind of assistance would be possible. However, some issues remained. The distribution rate of tablets is not high enough, and while it is possible for high school students, who have a relatively high distribution rate. It is not enough for elementary and junior high school students. In addition, there have been suicides caused by tablets, and we found out that some students misuse tablets.

1 Introduction

For people with mild to moderate hearing loss, Japan has left it up to local governments to provide support, and there are differences among them. This is far behind other countries. Further, the cases in which the mild and moderate deaf child does not graduate from the deaf school, and usually graduates from a normal school is increasing. Children can't receive support from their parents, also they can't cure their own disease. I focused on the problems that happen when a child is not getting enough support from government. And In Japan, the number of children with hearing loss going to schools for the deaf has been decreasing since 2007, and the number of those going to regular schools has been increasing. Therefore, I decided to research the education of children with mild to moderate hearing loss.

2 Discussion and implications

Using Himeji Special Needs School, Kyoto Prefectural School for the Deaf, Hiratsuka School for the Deaf, and Yamagata School for the Deaf as references, we looked for differences and similarities between regular schools and schools for the deaf.

3 Conclusion

I searched for the tablets that were being distributed to schools. When I heard on the news that the latest ICT devices were being used in schools for the deaf, I thought that perhaps ICT devices would be a good match for the education of children with h

In recent years, tablets have begun to be distributed free of charge to elementary, junior high school, and high school students as part of the GIGA School Initiative, and are playing a role as a supplement to classes. Since it would be distributed free of charge, the burden on households would be minimal, and disparities between municipalities would be unlikely to occur. As for the possibility of assisting education, we referred to Himeji Special Needs School, Kyoto Prefectural School for the Deaf, Hiratsuka School for the Deaf, Yamagata School for the Deaf, and other schools to see if education with tablets was possible, and conversely, what was lacking. We found that these schools for the deaf are using tablets, electronic blackboards, and mechanized school broadcasts to visualize and communicate what they perceive with their hearing. In addition to tablets, projectors (electronic blackboards) are also being distributed through the GIGA School Initiative, so students in schools for the deaf are not taught only with special tools that are difficult to introduce in regular schools. This led us to believe that regular schools could adopt a similar classroom format to that of schools for the deaf. Therefore, we investigated in more detail how classes in schools for the deaf use tablets and other digital equipment. According to the Kyoto Prefectural School for the Deaf, the tools used at the school include "IOS8 4 BETA-Live Typing on Talk-to-Text," "Using Google Glass to Caption Conversation," "Google Gesture," "Kinect," "Made for iPhone," "New iPad Air, iPad mini," and "Apple Watch. Made for iPhone", "New iPad Air, iPad mini", and "Apple Watch". In addition to portability, mobility, and operability, the advantages of tablets and iPads were discussed, and it was thought that they would expand the scope of classes because they could do things that PCs equipped in schools could not, such as using AR (augmented reality) and cameras. In addition, "Google Gesture" and "Kinect" are applications for tablets and PCs, and can be installed on distributed tablets as long as permission is granted. Therefore, they could be useful for practicing sign language at home as well as in the classroom. Based on these reasons, I thought that even with just the tablets distributed, if additional applications were used, it would be less likely to interfere with classes even in regular high schools for students with mild to moderate hearing loss. According to Obunsha, 48.0% of tablets would be distributed to students in 2019, and 81.0% of electronic blackboards will be distributed. Tablets are distributed individually, making it easier to distinguish between education for children with hearing loss and children with normal hearing, and with the current increase in the amount of applications, there is a possibility that education can be tailored to each child with hearing loss. Although the popularity of electronic blackboards is higher than that of tablets, it is difficult to adapt them to each individual. He thought that it would be unrealistic to make changes in education with electronic blackboards in regular high schools. Thus, he thought that regular high schools could improve the education of children with hearing loss by using tablets. According to JANET and CEC, as of July 20, 2020, the tablet penetration rate in junior high schools is 3.3%, which means that only about 300 out of 1,000 junior high schools in Japan have distributed tablets. The tablet penetration rate in elementary schools is even lower, at only 1.9%. This means that only about 350 out of 19,000 elementary schools in Japan have

distributed tablets. This means that although tablets can be used in high schools, it is not realistic to use them in elementary and junior high schools. In particular, children with mild to moderate hearing loss would like to start using tablets at an early stage because they need more applications than normal people, but with these numbers, it will be difficult for them to start using tablets in elementary and junior high schools. In a similar survey, the distribution rate of electronic blackboards was found to be 50.4% in elementary schools and 47.5% in junior high schools. This is also a lower percentage than that of high schools, and we thought it would be more difficult to use them for education. We thought that it would be difficult to improve specific educational methods for children with hearing loss attending regular schools in elementary schools, where language education, one of the most important aspects of education for children with hearing loss, takes place, and in junior high schools, where children move from basic to advanced education. I decided to continue my research with an emphasis on elementary and junior high schools. In addition, in November last year, a 6th grade girl at an elementary school in Machida, Tokyo committed suicide because she was bullied on a tablet distributed to her. I also believe that there may be educational methods that do not rely on ICT devices such as tablets and electronic blackboards. However, from this study, I thought that the current situation is that it is possible for students with mild hearing loss to attend special needs schools such as schools for the deaf in elementary and junior high schools, and to go on to regular high schools in high school if educational methods are established.

4 References

[Treating children with mild to moderate hearing loss {Kunihiro Hukushima}]

(https://www.jstage.jst.go.jp/article/jibiinkoka/116/9/116_1056/_pdf)

[Dealing with children with hearing loss in regular schools {Takuji Okitsu}]

(https://www.jstage.jst.go.jp/article/shonijibi/37/3/37_241/_pdf)

[Himeji Hearing Special School]

(<https://www.kobe-np.co.jp/news/kyouiku/201906/0012461623.shtml>)

[Kyoto school for the Deaf]

(<http://www.kyoto-be.ne.jp/rou-s/cms/>)

[Yamagata school for the Deaf]

(<http://www.yamagata-sd.ed.jp/>)

[Hiratsuka school for deaf]

(<https://www.pen-kanagawa.ed.jp/hiratsukarou-sd/>)

[Obunsha]

[\(https://www.obunsha.co.jp/\)](https://www.obunsha.co.jp/)

[Japan Association for Promotion of Information Technology in Education JAPET&CEC]

[\(https://www.japet.or.jp/\)](https://www.japet.or.jp/)

Application of Melted Slag

~In Order to Save Depleted Resources~

5203 Sho Umeyama

Abstract

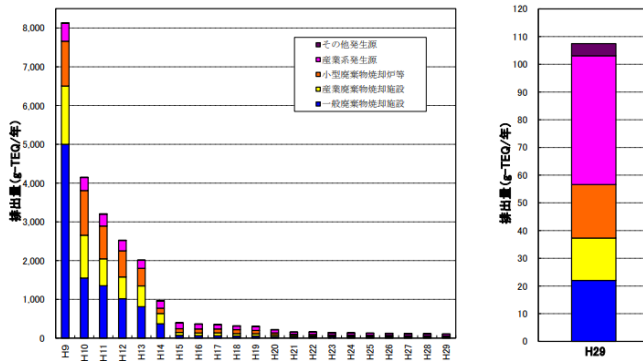
How many people who have accurate information about emission of Dioxin are ? Dioxin is a artificial compound generated when weed-killer is made , especially garbage is burned.To protect human health from harmful substances, the government enforcement ダイオキシン類対策特別措置法 2000 January 15th.Unlike current systems Garbage occurrences in each house or school would be burned there. Daoxin does not occur at ultra high temperature,.Therefore current style of disposal at one time is kind for the earth 's environment,but there is a big problem.we have to use a lot of petroleum in order to make it a high temperature. I think this action contradicts the problem of depleted resources receiving worldwide attention.It is a new environmental issue.It should be discussed.

1 Introduction

Emission of dioxin has a bad effect on the environment and should be improved.There were pollution issues or bad influences on our body in japan.The way of garbage disposal has changed.The garbages were burned individually as houses or school. Now These are burned at the garbage disposal facility.These changes are related with emission of dioxin extreamy. If we burn garbage at low temperatures,dioxin will certainly occur.According to recent studies , The dioxin does not generate at ultra high temperature.Ultra high temperatures are more than 600°C.Therefore people adopt a new way of garbage disposal.You must think that this is a perfect idea,but it is a big mistake.Did you hear another environmental problem such as a problem for resource especially depleted resource?In the current world this issue is taken notice of.UN said that depleted resources will disappear,so we have to save a certain amount of energy.For example using a car driven by electricity.Then I have a question.Is this action good?Because precious resources are used in order to make the disposal machine of disposal high.I think it does not match this world that is aiming for eco-society.

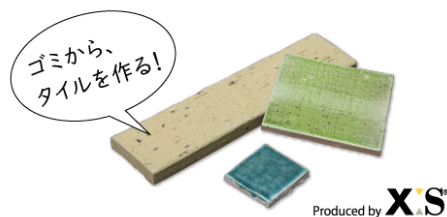
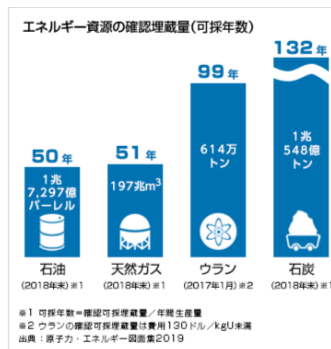
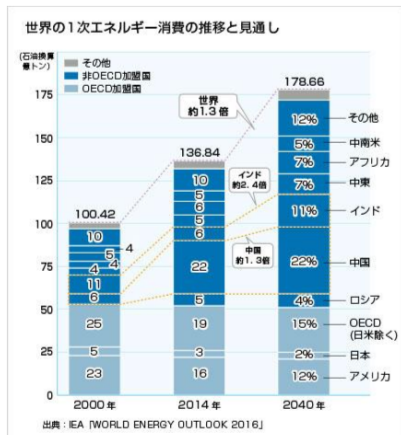


図1 ダイオキシン類の排出総量の推移



2 Discussion and implications

I think that application of melted slag can solve this problem. Melted slag is a glass material made by melting incinerator ash of waste at a high temperature and cooling it. This is a very hard material like artificial igneous. Because of cooling it sharply. Melted slag is a great material made of garbage. The convenience and function of melted slag will solve complex environmental issues. There are two ways of using it. First it is used for fuel. Second it is used for material. The amount of using petroleum for material changes to melted slag. In other words, the amount of using petroleum for making something will be decreased and we will increase the amount of using petroleum as a fuel.



3 Conclusion

You think that all the resources will disappear any time. Some people do not have current information. Of course, global resources reserves are declining, but advances in technology are increasing possible mining. So we do not have to worry about that. Research on the use of renewable energy is underway around the world, and I hope this research will help them.

4 References

- [1] Ministry of the Environment HP <https://www.env.go.jp/doc/>
- [2] Prefecture saitama <https://www.pref.saitama.lg.jp/cess/cess-kokosiri/cess-koko4.html>
- [3] Soution of decreasing dioxin <http://www.env.go.jp/air/dioxin/dioxin.html>

Increase the Number of Repeat Foreign Tourists

~Lending a Mobile WiFi for more Great Sightseeing~

5204 Ryota Kobayashi

Abstract

I would like to increase the number of repeat foreign tourists because it is revealed that they are to pay money depending on how many times they come to Japan. According to the Japan Tourism Agency, JTA, foreign tourists who have visited Japan several times spend more money than those who have not. Also it is proven that they tend to go to Japanese rural areas such as Tohoku district. Then I think that it is important to increase the number of repeat foreign tourists. In order to grow, I have to recognize what makes them frustrated about Japan and solve it. According to the JTA, what they are dissatisfied with is that there are few public WiFi spots and Internet. Therefore I suggest that we should lend them a pocket WiFi so as to resolve these problems and promote more comfortable travel.

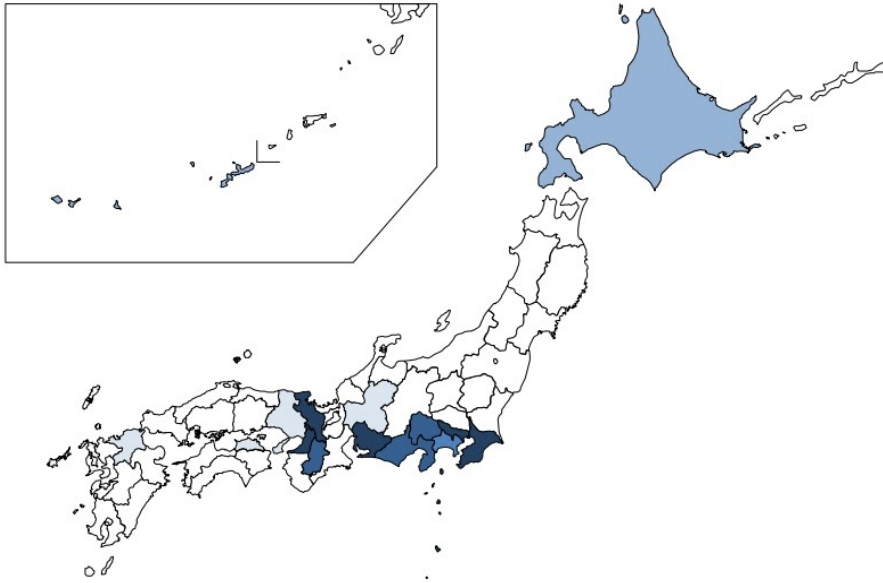
1 Introduction

There were a lot of tourists who live in other countries and various places in Japan were rediscovered before covid-19 epidemic. They are often interested in a different point of view than Japanese tourists and they sometimes find places where Japanese people have not realized. According to the JTA, as the number of times that foreign tourists come to Japan increases, they tend to visit more rural areas. Also, according to the same data, as the number of times which foreign tourists visit Japan increases, they tend to spend more money. In other words, providing more comfortable travel and sightseeing will help local economic prosperity. In addition, this paper is based on data available on the Internet by the government. Since the covid-19 is currently making it difficult for people to travel abroad, you can not go on a trip freely now. However I assume that covid-19 would have gotten lost to some extent and people could travel abroad as they did before because I can take account of it easily.

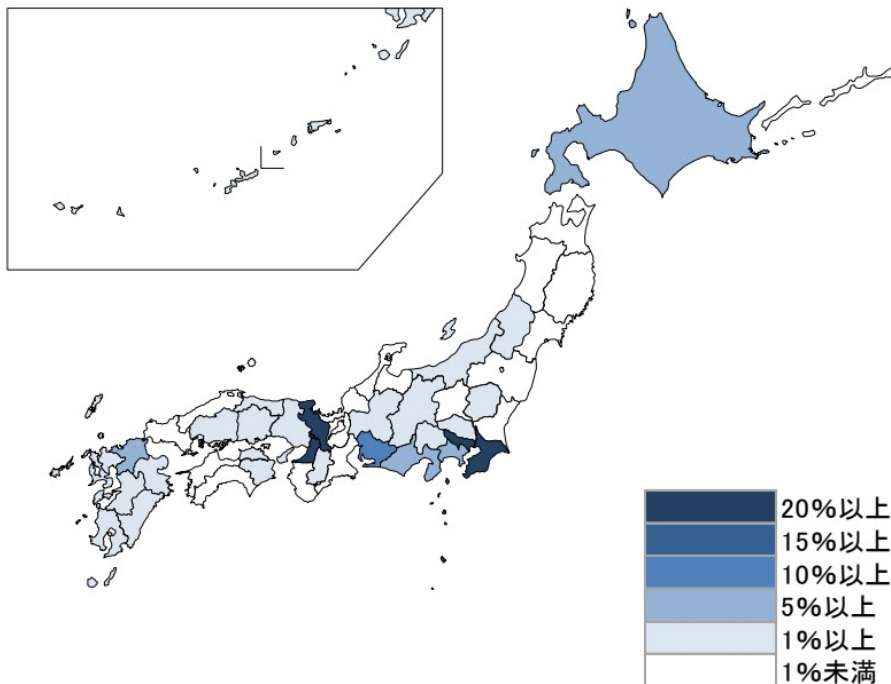
2 Discussion and implications

As I mentioned, it is known that the more often foreign tourists come to Japan, the more opportunities they have to visit local areas and the more money they spend in Japan.

1回目



10回以上



The first research question was "improve the Internet communication environment for foreign tourists" as a guideline for this research. Next, we collected information on the frustration which foreign tourists have about Japan. According to the Japan Tourism Agency in 2017, the number one frustration that foreign tourists have is the lack of free public WiFi and Internet

access. We thought that solving these problems would improve their accessibility. According to the JTA in 2013, about 70 percent of foreign tourists thought that they were going to use free public WiFi before they visit Japan. The reasons for this are that everyone can connect to it for free and use it easily. However there are a lot of problems. For example, it is revealed that it is impossible to connect to limited places. Even if it were possible, the speed of the Internet would be slow due to the largest number of people using it. And there are also privacy issues. Unfortunately, free public WiFi is provided by the local government so it is difficult for us to provide them. What about the sale of SIM cards? I know that it is probably easier to sell than other ways since they only need to sell SIM cards. According to the mentioned data, 28.6% of all foreign tourists had bought a SIM card before they visited Japan and planned to use it during their trip but they only 13.2% used it. In other words, more than half of the people who intended to use the SIM card gave up owing to some trouble which they did not expect. The third option, mobile WiFi rental is the highest percentage of people who actually use it. It indicates that it can be used comfortably and there are almost no problems that may happen when they use SIM cards. However, they have to pay a lot of money to use it, and the price is very high. Then I can assume that the reason why free WiFi is used by many people is because it is free to use. Therefore I propose a free rental mobile WiFi, which is a good combination. The receiving and returning spots will be the airport, which is the gateway of Japan, and unmanned spots will be provided to reduce labor costs. Although how to get together funds is not resolved, I think this problem can be solved by cooperating with private travel agencies and transportation companies. It would enable foreign tourists to travel without the frustration of the Internet. I think it will absolutely have a positive impact on foreign tourists, and surely improve their travel comfort. There would be some more benefits for companies. Also they can expect to take part in the travel agency tours and use the services of transportation companies.

3 Conclusion

For these reasons, I believe that free rental of portable mobile WiFi will have an effect on increasing the number of repeat tourists. I hope that this system will increase the number of people who become aware of the charms of local areas through tourism.

4 References

The Japan Tourism Agency

[訪日外国人旅行者の訪日回数と消費動向の関係について](#) 2021/10/15

The Japan Tourism Agency

[外国人旅行者に対するアンケート調査結果について](#) 2021/10/15

The Japan Tourism Agency

[訪日外国人旅行者が利用する通信環境確保に向けた取組](#) 2021/10/15

NINJA WIFI

[日本国内Wifi短期レンタルのNINJA Wifi](#) 2021/10/15

Progressive Treatment of Gaming Disorders in Minors

~Limiting usage hours and creating a child-friendly environment~

5206 Haruto Sonobe

Abstract

This study was conducted to research ways to improve the lives of children by reducing the gaming disorder, which is a social problem today, so that they can lead healthier lives.(The current study was conducted on minors under the age of 18.)

In this study, I would like to conclude that it is the surrounding environment that causes the development of gaming disorders, and I would like to propose a fundamental remedy and two methods of improvement.

Advanced research said loneliness causes gaming disorders. It said gaming disorder is nasty disease because it's not easy to cure. Children have to stop playing games.

I came up with ways to cure the disorder. There are two ways to cure it. They are limiting usage hours and creating a child-friendly environment. My brother is Gaming disorder. I would like to try the way to my brother. I think these are good ways to cure the disorder.

1 Introduction

To explain in detail, the first is the limitation of the usage time. Specifically, the goal is to reduce the amount of time spent playing games by 10 minutes every two weeks until the WHO's recommended daily gaming time is one hour. We thought that by shortening the duration of the stages, we could reduce the stress caused by the decrease in game time.

Secondly, I would like to suggest that we improve the surrounding environment to reduce the mental stress of the children. Since this needs to be done by their parents, I believe that it is impossible to perform the treatment here, but this is more likely to be a fundamental solution.

2 Discussion and implications

In this study, I researched ways to improve the game disorder. First, game disorder is classified as mental illness, so I choose it as a topic because it does not need any medical

knowledge. At the same time, however, it became apparent in the course of my research that mental illness is a difficult field to treat. However, I saw an interesting paper from a Canadian university that helped me to find a policy to cure the game disorder. The conclusion of the paper was that psychosis is more likely to occur because of poor surroundings. So I thought it would be a good idea to improve the surrounding environment that induces psychosis.

3 Conclusion

I would like to suggest that we improve the surrounding environment to reduce the mental stress of the children. Since this needs to be done by their parents, I believe that it is impossible to perform the treatment here, but this is more likely to be a fundamental solution.

This will be divided into two patterns: Pattern A, which is a method mainly based on limiting the time for using games, and Pattern B, which is mainly based on improving the surrounding environment of the child in the process. (The definition of children here is limited to minors between the ages of 5 and 18.)

① Limitation of usage time

- Example

- 5hours→4hours & 50minutes→4hours & 40minutes

- ✗ 5hours→4hours→3hours

- Limiting the time of use has an effect of reducing children's dependence on games, which leads to the reduction of gaming disorders. This way's goal is 1hour. If we could reduce the time, it's become safer.

② Improve the surrounding environment

- Proposal

- i) Selecting toys to play with outside

- ii) Creating an environment where they will never be alone

- (How to assign a room etc.)

- Improve the surrounding environment to reduce children's exposure to games and increase their opportunities to grow into socially independent adults by reducing the sense of loneliness they feel to the utmost limit through active contact with their families.

4 References

やめられない怖い依存症！脳に異常が起きるゲーム障害の症状、治療法

<https://www.nhk.or.jp/kenko/atc_883.html>(3/22)

「ゲーム依存の実態と課題」（視点・論点）

<<https://www.nhk.or.jp/kaisetsu-blog/400/289702.html>>(3/22)

日本経済新聞

記事名：ゲーム障害、実態把握急ぐ 診断基準確定で厚労省

<<https://www.nikkei.com/article/DGXMZO45283060V20C19A5CZ8000/>>(3/22)

朝日新聞デジタル

記事名：ゲーム障害、眠りに悩む患者多く 病気として治療必要

<<https://www.asahi.com/articles/ASM8X71Z5M8XULBJ01N.html>>(3/22)

MIRA-i

記事名：ネット依存・ゲーム依存度チェック

<<https://mira-i.jp/check/>>(3/22)

vice

記事名：16歳のインド人少年、ゲームのやりすぎで死亡

<<https://www.vice.com/ja/article/d3n4n7/a-16-year-old-in-india-died-after-playing-too-much-pubg>>
(3/22)

IDEAS FOR GOOD

記事名：【2020年最新版】社会問題を解決に導く、ゲーミフィケーション活用事例13選

<<https://ideasforgood.jp/gamification-matome/>>(3/22)

Solving the Food Waste Problem from the View of Washoku Culture

~Establishing “Washoku Thanksgiving Days”~

5207 Yuraki Takayama

Abstract

In 2012, washoku culture was registered as an Intangible Cultural Heritage. Although it is so popular in many countries, not in Japan. Japanese people tend not to eat traditional Japanese cuisine. That will lead to the expansion of the food waste damage. Also, the reason why I treat the less interest in washoku culture as a serious problem is based on the fact: the local cuisine is nutritionally suitable for keeping in good shape for the people who live in that area. If many people in Japan rarely eat washoku, there will be more patients of the lifestyle-related disease in the future. To solve these problems, I suggest that we should establish “Washoku Thanksgiving Days”, a project for giving people opportunities to learn about washoku culture. If more people become interested in this culture thanks to this project, I think I would solve these serious problems.

1 Introduction

In Japan, less interest in washoku is regarded as a serious problem. Although washoku culture was registered as an Intangible Cultural Heritage, a lot of people, especially the younger generation, do not eat traditional dishes in this country. Related to this, decreasing the amount of rice consumption is also a serious problem. Because people tend not to eat washoku, demand for rice is decreasing. This turns out to be an expansion of food waste damage. My goal is to solve these problems by promoting interest in washoku.

To make washoku culture last in the future, MAFF (Ministry of Agriculture, Forestry and Fisheries of Japan) made a pamphlet, “Washoku for the future”. In this pamphlet, they

introduced “The Washoku Association of Japan”, which is an apparatus for preserving the Intangible Cultural Heritage, and implementing the procession of it. They started their project on April 1 in 2015, and have been doing a lot of things, but their works have not become popular yet. So, I would like to suggest the expansion of what they continue doing.

I would pursue my study on some steps. The first step is to learn about what washoku is. The next step is to use the way to preserve gastronomic culture in France as a reference. The final step is to rebuild the way of conservation into Japanese style.

2 Discussion and implications

definition of washoku

According to the MAFF, washoku is defined as “the important culture which shapes the several aspects of Japanese life, and which is built upon the spirit of ‘respect for nature’ that Japanese have been inheriting since ancient time”. It includes the food which is eaten when the observance is held in the local area. This is a really abstract definition, so I define washoku as “the food which has the taste of traditional seasoning, such as soy sauce or miso” in my study.

structure of human body

According to Shintani Enzyme, the human body has been changing its shape depending on where the ancestors used to live and eat. For example, Japanese people have longer bowels than western people, and the shape of the stomach is like a fishhook. The longer bowel and stomach shaped fish hook make it easier to digest food especially grains and absorb more nutrition. On the other hand, it has the drawback that absorbing a lot of nutrients means that we would take in too much. It will lead to exacerbation of lifestyle-related disease. Moreover, if Japanese eat European food which contains a lot of oil, most of them would have stomach ache. Therefore, eating washoku is the best way to keep in good shape for Japanese people.

the amount of rice consumption

In Japan, younger generations tend not to eat washoku in daily life, and less people are interested in it. According to MAFF, the consumption rate of rice has been decreasing

constantly since 1962 when the amount of it is largest. Less interest in washoku should be regarded as a serious problem because it is connected with decreasing the amount of rice consumption and increasing the amount of rice waste. In other words, the less people get curious about traditional Japanese cuisine, the more rice would be thrown.

French Gastronomy Week

In France, the culture of gastronomy was registered to the UNESCO list of Intangible Cultural Heritage in 2010. The government of France established “France Gastronomy Week” in order not to devastate that culture. This project has a lot of campaigns, “lessons of taste”, “chefs in campus”, “tables of taste”, and “atelier of taste”, for giving opportunities to learn about the culture to the children. It is said that this project is known to over 90 percent of the population in France.

3 Conclusion

To increase the people interested in washoku, I suggest that we should establish “Washoku Thanksgiving days”. It is composed of six days, the five seasonal festivals (gosekku), and Washoku Day. The five seasonal festival is “sekku of Jinnjitsu” on January 7, “sekku of Joui” on March 3, “sekku of Tango” on May 5, “sekku of Tanabata” on July 7, and “sekku of Chouyou” on September 9. In addition, Washoku Day on November 24 was established by The Washoku Association of Japan. These are the days which are related to the washoku culture. On these days, each family cooks traditional Japanese food and has opportunities to be exposed to Japanese culture. This is the education for children, who will become a main provider of culture. I think I can promote their interest in washoku. Then, more rice would be consumed, and the number of patients with lifestyle-related disease would decrease.

The agenda for this topic in the future is whether there is enough money to enact “Washoku Thanksgiving Days”. I do not know how much it will cost, so I think I should consider it deeply.

4 References

1. 「Washoku」 (Ministry of Agriculture, Forestry and Fisheries of Japan)
〈<https://www.maff.go.jp/j/keikaku/syokubunka/culture/attach/pdf/index-75.pdf>〉
(access date: November 2, 2020)
2. 「The amount of rice consumption」
(Ministry of Agriculture, Forestry and Fisheries of Japan)
〈<https://www.maff.go.jp/j/seisan/kikaku/pdf/data01.pdf>〉
(access date: January 18, 2021)
3. 「Is it true that Japanese have longer bowels than western people?」
(Shintani Enzyme) 〈<https://www.shinyakoso.com/column/american-iso-choso/>〉
(access date: March 22, 2021)

5 Bibliography

1. 「Washoku day on November 24」 (The Washoku Association of Japan)
〈<https://washokujapan.jp/1124washoku/>〉 (access date: January 18, 2021)
2. 「Five seasonal festivals」 (The Washoku Association of Japan)
〈<https://gosekku-washoku.jp/>〉 (access date: January 18, 2021)
3. 「What is the effect of fermented food?」 (Yomeishu)
〈<https://www.yomeishu.co.jp/health/3892/>〉 (access date: March 22, 2021)

An Innovative Possibility of Water Fluoridation

~Create a New Way of Brushing Teeth in the Hospital~

5208 Tanazawa Shunsuke

Abstract

COVID-19 is one of the most dangerous viruses in human history. Clusters are taking place at every place or family, even hospital. There are a lot of doctors and nurses in the hospital; so, seemingly, the hospital looks like the last place that a cluster would happen. I'm thinking about the reason so far, and I realized one possibility.



I suppose one of the reasons is “brushing teeth”. However, this time, “brushing teeth” does not mean what we do everyday. Actually, what I want to talk about is this picture. You know, there are a lot of people, who can't brush their teeth by themselves because of some injury or disease. This picture shows how helpers brush such people's teeth. By the way, I think this picture shows a serious problem. It is the distance between helpers and patients. Don't you think they are too close? Of course, the helpers wear a mask and rubber gloves; but, the mouth is full of a numerous number of viruses including COVID-19. Considering it, this way of brushing teeth has a lot of risks. Therefore, as a solution, I suggest a new kind of dental care which is not only effective with caries but also keeps a significant distance between them.

Introduction

The pandemic of COVID-19 made helpers in nursing afraid of being infected with

this disease. The reason is, in the conventional ways of dental care such as brushing, the distance between helpers and people who need help is too short. For example, in the case of people who are not able to brush their teeth by themselves, helpers have to wipe the moisture in the mouth directly with a towel after finishing brushing. However, the lack of dental care is critical for elderly people because a lot of serious diseases result from “caries”. In fact, my great-grandmother was also killed by caries. What is worse, according to Japanese National Department of Welfare and Health, the number of elderly people who have caries is increasing. That is no matter how much helpers worry about appearance of infections of COVID-19, they have to help the elderly brush to save their lives from caries.

Discussion and implications

I made my original solution inspired by Water fluoridation, but first let me explain a little about what Water fluoridation is. It’s one of the most admired ways to prevent caries. The high effectiveness of precaution is supported by world health institutions such as “WHO” or the “Japanese National Department of Welfare and Health”. Next is about its mechanism. All we have to do is just adjusting the concentration of fluorine, which is effective with caries, in water service to the most effective level as precaution of caries. By doing so, if we drink the fluoridation water supply, or eat food cooked with it, fluorine will come into our mouths and save our teeth from caries. Conventionally, the system of water fluoridation was attached at water purification plants. On the other hand, my research’s original point is to make mini-fluoridation systems and set them at each nursing home. There, helpers can keep the teeth health of the elderly through non-close work such as drinking or eating. Therefore, the helpers will no longer have to concern about being infected

through dental care.

Problem and how to solve

Though water fluoridation itself has already invented many years ago, the idea of introducing them into each nursing home is completely my original one. It means that I have to predict all problems that can occur in the future. Also one of the problems I have recognized now is cost. To get enough information for solving it, I conducted an interview with Shimonita Town Hall in Gunma. It has already set a mini-water fluoridation system in its building to spread water fluoridation to people. According to it, the first investment costs about 2 million yen. I'm going to make up for a subsidy from the Japanese National Department of Welfare and Health, or crowdfunding.

What to do next

I'm planning to do research on two things to improve my study. The first is to conduct a interview with a nursing home in Gunma, Saisei Kai Azuma So, to check a real concrete situation about what is caused by COVID-19. Also, the second is to ask this school's ALTs of real fluoridation in foreign countries. Since water fluoridation isn't working in Japan officially, I want to know about it not only by the media, but also by people's real impressions.

Conclusion

In conclusion, I'm sure that introducing water fluoridation into each nursing home is necessary for new dental care during COVID-19 pandemic. In fact, my great-grandmother died of caries. I heard that finally I don't want any other people to end like her. However, while this project is completely my original one, there must be some kind of problem that hasn't appeared yet. Therefore, from now on, I will continue to do research no matter what difficult problems may occur.

References

- 平成28年 歯科疾患実態調査結果の概要 10/11
- フッ化物 - 歯とお口のことなら何でもわかる テーマパーク8020 10/11
- 下仁田町ホームページ : フロリデーション 10/17
- 新型コロナウイルスに関連した高齢者施設での「口腔ケア」問題 11/19

How to Solve the Over Tourism

5209 Toyota Naotaka

Abstract

These days, the problems of over tourism are getting harder and harder all over the world. Japan also has this problem, such as in Kyoto and Hokkaido. The examples of the problem are traffic jams, deterioration of public order, environment pollution, and destroying the landscape, etc. Someone may think "Haha, that's so easy! Stop the entry of foreign tourists, the condition will be better!". That's right, but the government's goal of the tourism industry is to increase the number of inbound tourists, so I'm going to think about the way to solve the over tourism problems without restricting the number of people.

As a result, I suggest

- i) compare the tourists by the time.
- ii) hold the capsule toys.

And for the solution of the deterioration of public order,

- i) make strong penalty
- ii) change the clothes of the guards.

1 Introduction

Now, the condition of tourism isn't prospering because of the Covid-19, however, the problems of tourism are getting harder and harder these days. Over tourism is the problem which is caused by too many tourists gathering in one spot. The famous examples of it are traffic jams, deterioration of public order, environment pollution, and destroying the landscape, etc.

Actually, Venice, a city in Italy, has such a serious problem. The residents of Venice are 50,000 people, but the number of tourists is 25,000,000. Because of the great number of

tourists, ocean pollution, destroying the landscape, illegal graffiti, and illegal dumping, and so on, were happening. Therefore, Venice is in danger of cancellation of the world heritage, because the value of history is gone. In the same way, Japan may also lose world heritage. Thus, we have to solve this problem.

The government of Japan has a goal to increase the number of foreign tourists, so it can be thought of as natural that more foreigners will come to Japan. Therefore, for stopping the over tourism, restricting foreigners is not a good way. My study's purpose is to stop the over tourism problem without decreasing the number of tourists.

2 Discussion and implications

The biggest examples of the over tourism in Japan are “jams” and “deterioration of public order”, so I am going to suggest the solution of those two problems.

The first problem is jams.

Especially in Kyoto city, jams often happen there. The historical buildings are very popular not only with foreigners but also Japanese, so a lot of people gather in Kyoto.

The key to a solution is capacity. If the capacity will increase, the jams will no longer be a problem.

Actually, Kyoto city is doing the time separating. Commonly, sightseeings is during the daytime. However Kyoto city created “morning sightseeing” and “night sightseeing”. The capacity was very increased. I have two other proposals. Separating by season and place. If there are some events in several seasons and a lot of places, the capacity will increase more and more. And if these things spread all over Japan, a lot of cities will be able to get a larger number of tourists and decrease the damage caused by over tourism.

And if we can assign the Japanese tourists to several places in Japan, it helps to dissolve the concentration of all aspects of a society in one place. Of course, in Japan, there are a lot of beautiful sightseeing spots.

Peach Aviation, an airline company held “Tabi Kuji”, which is a lot to decide the traveling spots. Unknown stimulates people's curiosity. Thus if the lot spreads, the capacity will

increase.

Second, for the “deterioration of public order”.

Actually, on my school trip, in Kyoto, I saw a lot of foreigners eating on the road, using cameras at the place where they were not allowed to take pictures, and so on.

As one of the reasons for these terrible things, it is said that the Japanese penalty is so soft on foreigners. The foreign tourists do not have a penalty even though they violate regulation and law.

However, in Singapore, the penalties are so strict, so the order in there is better than a lot of countries in the world. Japan should strengthen penalties for illegal actions like Singapore, and notifying of the rules and manners is also an essential measure.

Thus, patrol is very important. However, someone will not feel better surrounded by some guards, and many guards will lead to destroying the landscape.

Because of these bad influences, I propose that the guards change the clothes of the guards to adapt to the place. For example, in Kyoto, if the guards wear Samurai clothes, it will make it possible to protect the town without spoiling the views, And, we can recognize who is guard easily, so someone will be able to call out guards when they are in need.

3 Conclusion

To solve the problem, such as jams and deterioration of public order,

I suggest

- i) Separate the tourists by time, season, and place.
- ii) Hold lots to decide the sightseeing spots randomly.
- iii) Tighten the penalties for illegal act.
- iv) Change the clothes of guards.

I could not think about the cost, and so on, so it may not be useless study, so I want to keep studying and thinking how to fulfill this study.

4 References

World Tourism Organization <<https://unwto-ap.org/about/>> 2021/8/21

The Ministry of Land, Infrastructure, Transport and Tourism

<<https://www.mlit.go.jp/>>2021/8/21

The Cabinet Office <<https://www.cao.go.jp/>>2021/8/21

The Ministry of Foreign Affairs <<https://www.mofa.go.jp/mofaj/>>2021/8/21

The Japan Tourism Agency <<https://www.mlit.go.jp/kankocho/>>2021/8/21

Japan National Tourism Organization <<https://www.jnto.go.jp/jpn/>>2021/8/21

Japan Tourism Association <<https://www.nihon-kankou.or.jp/home/>>2021/8/21

Singapore Tourism Board <<https://www.facebook.com/VisitSingaporeJP/>>2021/8/21

Yamatogokoro.jp <<https://www.yamatogokoro.jp/inboundnews/pickup/31962/>>2021/8/21

Travelvoice.jp <<https://www.travelvoice.jp/20210726-149287>>2021/8/21

Tourism.jp <<https://www.tourism.jp/tourism-database/glossary/over-tourism/>>2021/8/21

myethicalchoice.com

<<https://myethicalchoice.com/journal/sustainable/overtourism/>>2021/8/21

Jiji.com <<https://www.jiji.com/jc/article?k=2021101300805&g=eco>>2021/8/21

Skyticket.jp

<https://skyticket.jp/peach?utm_source=yahoo&utm_medium=cpc&utm_campaign=sponsor>

[edsearch&yclid=YSS.1000090478.EAIaIQobChMI3NOn3srM8wIVBzdgCh0lRASnEAAYA
SAAEgK2ovD_BwE>2021/8/21](#)

The Scientific Way to Relieve Tension

What Is the Real “Shobumeshi”?

5210 Yusei Nakajima

Abstract

The problem of getting nervous is a serious problem around the world.

To begin with, the state of tension is caused due to noradrenaline, a Neurotransmitter in our body. And the secretion of noradrenaline can be suppressed by the intake of tryptophan or vitaminB6. Also, calcium and magnesium can stabilize our nerves, and they enable us to calm down and relax. Then I recommend yogurt with bananas and almonds as a shobumeshi. This includes a lot of nutritions I mentioned that are needed to relieve tension. However, eating this is not enough to relieve tension, so I suggest doing these.

- i** Eating shobumeshi two hours before the performance.
- ii** Walking outside while chewing gum.
- iii** Taking abdominal breathing just before the performance.

By completing this, we can increase the amount of serotonin strongly and suppress the symptoms of getting nervous.

1 Introduction

According to the survey conducted by Asahi Group Holdings, more than 80 percent of the people corporate with this survey answered that they often get nervous. Through this information, I found it valuable to detect the way to solve the problem of getting nervous, and decided to study about it. The reason why I decided to focus on science is that other fields such as psychology are too expert for me to conduct good research. The method to conduct this study is to consider the shobumeshi by going through the food composition database provided by the Ministry of Education, Culture, Sports, Science and Technology.

2 Discussion and implications

According to the association to overcome the human nature of getting nervous, the state of tension is caused due to noradrenaline, a Neurotransmitter in our body. And the secretion of

noradrenaline can be suppressed by the intake of tryptophan or vitaminB6. Also, calcium and magnesium can stabilize our nerves, and they enable us to calm down and relax.

Therefore, I recommend yogurt with bananas and almonds as a shobumeshi.

Yogurt is rich in magnesium(22mg/100g), calcium(120mg/100g), and tryptophan(54mg/100g).

Bananas are rich in vitaminB6(0.38mg/100g), magnesium(32mg/100g), and tryptophan(10mg/100g). Almonds are rich in calcium(240mg/100g), and magnesium(270mg/100g). Like this, yogurt with bananas and almonds is rich in all the nutrients I mentioned.

Moreover, according to My Wellness, a web public relations magazine of starbucks coffee Japan, these behaviors can increase the amount of serotonin.

- Rhythmical exercise and chewing motion
- To soak in the sun
- Abdominal breathing

Also, it was found that serotonin is secreted strongly two hours after the intake of tryptophan

or vitaminB6. Through these information, I came up with an idea to do below.

- ① Eating shobumeshi two hours before the performance
- ② Walking outside while chewing gum
- ③ Taking abdominal breathing just before the performance

Then, to know how effective my suggestion is to relieve tension, I conducted a verification experiment. These are the details and the conclusion of the experiment.

I. The purpose and the method of the experiment

I tried to find out the effectiveness of my suggestion by taking advantage of the English speech

contest held at my school every year. Specifically, I made a speech as usual when I was first-grade student, and when I was second-grade student, I made a speech after I had completed

my suggestion.

II. The conclusion of the experiment

As a result, my suggestion was effective. Especially, I could experience the effectiveness of abdominal breathing and rhythmical exercises gratefully.

III. The problems of the experiment

The most serious problem of the experiment was that it was too difficult to make the same strength of tension. To solve this problem, I decided to conduct the experiment by using the English speech contest whose stage's atmosphere does not change very much every year, however, I can not affirm that I could make the same strength of tension because of the reasons

below.

- I had some opportunities to make a speech during the two speech contests, so I might get accustomed to making a speech a little bit at the latter contest.
- Due to the difference of the quantities of practice, there may have been a difference of how confident I was at the contest.

These factors made it difficult for me to verify the effectiveness of the shobumeshi, but I could

clearly experience the effectiveness of abdominal breathing and rhythmical exercise, so the experiment was worthy.

3 Conclusion

As I wrote in the second paragraph, I suggest doing below.

- ① Eating shobumeshi two hours before the performance
- ② Walking outside while chewing gum
- ③ Taking abdominal breathing just before the performance

By completing this, serotonin will be secreted strongly, and the symptoms of getting nervous will be suppressed.

4 References

「The mechanism of getting nervous, and the effect of serotonin.」
<<https://agarishow.or.jp/blog/mechanism/>> (November 8th, 2021)

「Happiness hormone-serotonin.」
<https://www.starbucks-kenpo.or.jp/my_wellness/mindset/list15.php> (November 8th, 2021)

「Food composition database.」
<<https://fooddb.mext.go.jp/>> (November 8th, 2021)

Is It Better to Have the Death Penalty or Not?

~Thinking about Meaning of Death Penalty in Japan~

5211 Shun Moteki

Abstract

To join The European Union, the country have to ban the death penalty. Like this case, the number of country have already banned the death penalty and also world trends become same. However, in Japan there is a system. I think about the meaning of the existence and policy of the government at this time and I have to consider the public opinion.

Death penalty is written in consitution as a deterrence of crime but these days, some people wonder the effect. The reason is simple: we could not prove the effect. However, they could not probe the invalidity,either. And we do not know the number of the heavy crime if government ban the death penalty. For these reasons, the government said that it is better not to ban the system in japan.

There is so big different point about death penalty between Japan and any other country have already banned. It is public opinion. In Japan, amount of 80% people agree on survival. I think one reason for this is that religious beliefs play a role in the will of the people. However, in the same year that every country moved to abolish the death penalty, public opinion polls showed a close margin between those in favor of the death penalty and those opposed to it.

For these reasons, I am in favor of the continuation of the death penalty.

1 Introduction

The purpose of this research is to find an answer to the question , Japan needs the death

penalty or not, based on examples from around the world. I was interested in this research when I learned in my third year that there are about two-thirds of the world's countries have abolished the death penalty. I was surprised to learn and there is an international tendency to abolish the death penalty. I decided to pursue this research because I was interested in why the death penalty exists in Japan which is an advanced country.

2 Discussion and implications

I researched mainly on the Internet. I also asked my school students about their thoughts on the death penalty. I also thought that more concrete solutions through presentations with senior students.

3 Conclusion

1 The Death Penalty System in Japan

In this section, I would like to write about the current legal status of the death penalty in Japan. The death penalty is stipulated as a punishment in Article 9 of the Penal Code, and the method of execution is specified in Article 11. Article 33 of the Constitution of Japan states, "Torture and cruel punishments by public officials are absolutely prohibited." What is debated in Japan now is whether or not the death penalty constitutes cruel and unusual punishment. The current government has interpreted that this is not in the case. The problem with this argument is that the Constitution is so vague that it depends on the thinking of one's own self. In addition, there is the "general precautionary theory" as a legal approach. However, there is a view that it is not effective as a deterrent in this regard.

2 Global trends

Now two-thirds of the world's countries, 142 countries, have abolished the death penalty.

Due to the fact that abolition of the death penalty is a condition for joining the

European Union. In addition, the United Nations recommends the abolition of the death penalty with international law and international human rights law. Thus, we can see that there is a large movement to abolish the death penalty in the world. The most common reason given for the abolition of the death penalty is that it is inhumane.

3 Changes in the nature of punishment due to modernization

Until the 3rd century, Christians acted by thinking of non-violence and were opposed to the death penalty because of the execution of Jesus Christ on the cross. However, the theory of non-violence was changed and the theory of just war became the main. The theory of just war is the modern term "public welfare," It means that war is acceptable only for justice. Therefore, it accepted that the human rights of some criminals could be violated for the sake of public rights. However, in the 19th century, the death penalty was changed to the objective punishment because it was not appropriate as a retribution. In the 19th century, however, the system of capital punishment was changed to a purposeful system because it was considered inappropriate as a retribution.

4 Geography of the Law

The movement to abolish the death penalty began in Europe, and has since spread to Africa and South America. I focused on the relationship with religion this time. Many of the countries that have abolished the death penalty have a large Christian population. Countries in Europe, where Christianity first emerged, and countries in Africa and South America, where it was colonized and its culture was introduced so it tends to abolish the death penalty there. I believe that this is related to the teachings of Christianity and Judaism. The teachings of these religions have an aspect of "salvation for sinners. Therefore, they often feel disgusted by the death penalty.

Therefore, countries that belong to these religions inevitably have no resistance to the abolition of the death penalty.

In the case of Japan, however, I believe that the Shinto religion, which has been believed in animism, is stronger than the Christian religion. The teachings of Shintoism are called "animism," which is more of a belief in nature than in the salvation of people. This is why the death penalty exists.

5 Japanese Public Opinion on the Death Penalty

According to the results of the Cabinet Office's "Public Opinion on the Death Penalty" survey, about 80% of the Japanese people answered that the death penalty is necessary for this country. The results show me that more than half of the Japanese people are in favor of the death penalty.

“When the culture of the nation is highly developed and a peaceful society based on justice and order is realized, and when the public welfare does not require the prevention of crime by the threat of the death penalty, the death penalty must be rejected by public sentiment as a cruel punishment.” This is why I believe that the death penalty should be abolished.

For these reasons, I think Death Penalty is necessary in Japan.

4 References

死刑制度の存廃に関する議論の状況〔PDF〕

<http://www.moj.go.jp/content/000076135.pdf>

「世界における死刑廃止 - La France au Japon」

<https://jp.ambafrance.org/article13707>

「死刑制度について（肯定派）」

www2.rikkyo.ac.jp/web/taki/contents/2009/20100118.pdf

「日本弁護士連合会」(1月20日)

https://www.nichibenren.or.jp/library/ja/publication/booklet/data/shikeiseido_yesno.pdf

「死刑制度の在廃に関する主な根拠」(1月20日)

<http://www.moj.go.jp/content/000053167.pdf>

「日本における死刑制度 | 執行手続や適用犯罪、廃止論などについて」

< <https://izumi-keiji.jp/column/houritsu-gimon/death-penalty> >

「死刑制度に関する資料」(1月20日)

[http://www.shugiin.go.jp/internet/itdb_rchome.nsf/html/rchome/Shiryo/houmu_200806_shikeiseido.pdf/\\$File/houmu_200806_shikeiseido.pdf](http://www.shugiin.go.jp/internet/itdb_rchome.nsf/html/rchome/Shiryo/houmu_200806_shikeiseido.pdf/$File/houmu_200806_shikeiseido.pdf)

Is It Better to Have the Death Penalty or Not?

~Thinking about Meaning of Death Penalty in Japan~

5211 Shun Moteki

Abstract

To join The European Union, the country have to ban the death penalty. Like this case, the number of country have already banned the death penalty and also world trends become same. However, in Japan there is a system. I think about the meaning of the existence and policy of the government at this time and I have to consider the public opinion.

Death penalty is written in consitution as a deterrence of crime but these days, some people wonder the effect. The reason is simple: we could not prove the effect. However, they could not probe the invalidity,either. And we do not know the number of the heavy crime if government ban the death penalty. For these reasons, the government said that it is better not to ban the system in japan.

There is so big different point about death penalty between Japan and any other country have already banned. It is public opinion. In Japan, amount of 80% people agree on survival. I think one reason for this is that religious beliefs play a role in the will of the people. However, in the same year that every country moved to abolish the death penalty, public opinion polls showed a close margin between those in favor of the death penalty and those opposed to it.

For these reasons, I am in favor of the continuation of the death penalty.

1 Introduction

The purpose of this research is to find an answer to the question , Japan needs the death

penalty or not, based on examples from around the world. I was interested in this research when I learned in my third year that there are about two-thirds of the world's countries have abolished the death penalty. I was surprised to learn and there is an international tendency to abolish the death penalty. I decided to pursue this research because I was interested in why the death penalty exists in Japan which is an advanced country.

2 Discussion and implications

I researched mainly on the Internet. I also asked my school students about their thoughts on the death penalty. I also thought that more concrete solutions through presentations with senior students.

3 Conclusion

1 The Death Penalty System in Japan

In this section, I would like to write about the current legal status of the death penalty in Japan. The death penalty is stipulated as a punishment in Article 9 of the Penal Code, and the method of execution is specified in Article 11. Article 33 of the Constitution of Japan states, "Torture and cruel punishments by public officials are absolutely prohibited." What is debated in Japan now is whether or not the death penalty constitutes cruel and unusual punishment. The current government has interpreted that this is not in the case. The problem with this argument is that the Constitution is so vague that it depends on the thinking of one's own self. In addition, there is the "general precautionary theory" as a legal approach. However, there is a view that it is not effective as a deterrent in this regard.

2 Global trends

Now two-thirds of the world's countries, 142 countries, have abolished the death penalty.

Due to the fact that abolition of the death penalty is a condition for joining the

European Union. In addition, the United Nations recommends the abolition of the death penalty with international law and international human rights law. Thus, we can see that there is a large movement to abolish the death penalty in the world. The most common reason given for the abolition of the death penalty is that it is inhumane.

3 Changes in the nature of punishment due to modernization

Until the 3rd century, Christians acted by thinking of non-violence and were opposed to the death penalty because of the execution of Jesus Christ on the cross. However, the theory of non-violence was changed and the theory of just war became the main. The theory of just war is the modern term "public welfare," It means that war is acceptable only for justice. Therefore, it accepted that the human rights of some criminals could be violated for the sake of public rights. However, in the 19th century, the death penalty was changed to the objective punishment because it was not appropriate as a retribution. In the 19th century, however, the system of capital punishment was changed to a purposeful system because it was considered inappropriate as a retribution.

4 Geography of the Law

The movement to abolish the death penalty began in Europe, and has since spread to Africa and South America. I focused on the relationship with religion this time. Many of the countries that have abolished the death penalty have a large Christian population. Countries in Europe, where Christianity first emerged, and countries in Africa and South America, where it was colonized and its culture was introduced so it tends to abolish the death penalty there. I believe that this is related to the teachings of Christianity and Judaism. The teachings of these religions have an aspect of "salvation for sinners. Therefore, they often feel disgusted by the death penalty.

Therefore, countries that belong to these religions inevitably have no resistance to the abolition of the death penalty.

In the case of Japan, however, I believe that the Shinto religion, which has been believed in animism, is stronger than the Christian religion. The teachings of Shintoism are called "animism," which is more of a belief in nature than in the salvation of people. This is why the death penalty exists.

5 Japanese Public Opinion on the Death Penalty

According to the results of the Cabinet Office's "Public Opinion on the Death Penalty" survey, about 80% of the Japanese people answered that the death penalty is necessary for this country. The results show me that more than half of the Japanese people are in favor of the death penalty.

“When the culture of the nation is highly developed and a peaceful society based on justice and order is realized, and when the public welfare does not require the prevention of crime by the threat of the death penalty, the death penalty must be rejected by public sentiment as a cruel punishment.” This is why I believe that the death penalty should be abolished.

For these reasons, I think Death Penalty is necessary in Japan.

4 References

死刑制度の存廃に関する議論の状況〔PDF〕

<http://www.moj.go.jp/content/000076135.pdf>

「世界における死刑廃止 - La France au Japon」

<https://jp.ambafrance.org/article13707>

「死刑制度について（肯定派）」

www2.rikkyo.ac.jp/web/taki/contents/2009/20100118.pdf

「日本弁護士連合会」(1月20日)

https://www.nichibenren.or.jp/library/ja/publication/booklet/data/shikeiseido_yesno.pdf

「死刑制度の在廃に関する主な根拠」(1月20日)

<http://www.moj.go.jp/content/000053167.pdf>

「日本における死刑制度 | 執行手続や適用犯罪、廃止論などについて」

< <https://izumi-keiji.jp/column/houritsu-gimon/death-penalty> >

「死刑制度に関する資料」(1月20日)

[http://www.shugiin.go.jp/internet/itdb_rchome.nsf/html/rchome/Shiryo/houmu_200806_shikeiseido.pdf/\\$File/houmu_200806_shikeiseido.pdf](http://www.shugiin.go.jp/internet/itdb_rchome.nsf/html/rchome/Shiryo/houmu_200806_shikeiseido.pdf/$File/houmu_200806_shikeiseido.pdf)

Making the Environment Where We Can Give a Birth to Children Easily

~Young People's Pregnancy and Giving a Birth~

5213 HinakoAsami

Abstract

These days everyone attacks young people who are pregnant and they do not give birth. Finally, they do abortion. I do not know why they do that. I think it is not correct that everyone do abortion. We have to be important in our life. Why do they do abortion? I think of three reasons. First, an environment where young people can grow up their children. Second, everyone looks at them. Most people say that they can not come back to school because of this. Finally, money. Most people under 20years old are students or workers. For these reasons I suggest a school system where parents can go to school with their children.

1 Introduction

I agree that young people give birth but I think that they must have enough money to grow up. As you know, people who have children have responsibility. If people have all things, they can be parents. However, I watched people attack a young entertainer who published that they have a child. I was so sad. These days I hear that news people wait maternity leave or do abortion because of not having money and not having time to grow. However In fact, having children is happiness. It did not celebrate, so I think it is the one way to have a child when you are young.

2 Discussion and implications

I think it is the one way to have a child when you are young. However, it is not easy. I watched people attack a young entertainer who published that they have a child. An idol, Tsuji Nozomi, was attacked by many people. She gave birth when she was 18 and married. Everyone said to her it is play. People have some problems. According to the Japan

Obstetrics and Gynecology Association Medical Measures Committee, young people answer the question why young people do abortion. There are 156,430 people do abortion and 41.6% of people do abortion are from 20 years to 24 years. Also, 60.8% of people do abortion are under 20 years. I was surprised and I think we should not slow the life of a baby and these days, COVID-19 was so influential. So many people can not continue Infertility treatment. It has two reasons. First, everyone does not know what it can allow to go to the hospital. Everyone was scared of COVID-19. In fact 18% of people infertility can not continue. Second, it costs a lot of money. They usually cost more than one million yen. And the number of young people consulted is increasing because of COVID-19. In fact, some people cannot give birth, if they want a baby. So I think they should not do abortion. 67% of respondents answered money. In fact, we have to spend from 400,000 yen to 5,000,000 yen. Most people are students or who have a lot of money. And 38.7% of respondents answered about school studies. They can solve that system which was introduced in Australia. The system allows children to go to school.

I suggest two things. First, I think we should have more places where we can consult. I heard the news that young people were helped by the place. In fact, the number of who do abortion is increasing because COVID-19. Young people have time to spend in the house. According to the Ministry of Health, Labour and Welfare, the number of people who consult institutions is increasing 28 out of 32. Also, the younger people who are pregnant the more do abortion later. Furthermore, giving birth was so tiring because of using both physically and mentally.

Second, we introduce the Australian system into Japan. The system that young people who have children can go to school with their children. The system can be consistent with child raising and school work. It can solve the three problems. First, people are worried about the sight of people. Some people think they might attract people but everyone has a child in this school. And secondly they can consult about the same concern. If people go to school, they can not consult easily. But this school has friends who have the same concern. Finally, people can take care of a baby in your hand. Some people say I want to spend more time with my baby. This school can solve it but I don't have any plan. For example, where it is built and when they come here, what success it can have. So I should think about it more.

3 Conclusion

These days many young people are thinking about their pregnancy because of COVID-19. It has three reasons. First, money. They do not have much money because they are so young. Second, the environment. They do not know how their children grow up and how they give birth. Third, they were so scared of the sight of everyone, so they did not go school again. For these reasons I suggest two things. First, the school system allows children to go school with their child. Second, the system of consultation with people.

4 References

「厚生労働省 不妊治療と仕事のサポートブック」2017年6月9日〈[「one more baby 応援団」〈心配だからこそ知っておくべき 妊娠・出産の正しい知識 ～妊娠適齢期から考えるライフプラン 全4回 ①【男性編】「ワンモア・ベイビー・ラボ」](#)〉(2021年6月20日)

「日本産婦人科医会」〈

<http://www.jaog.or.jp/lecture/1-%E5%A6%8A%E5%A8%A0%E9%81%A9%E9%BD%A2%E5%B9%B4%E4%BB%A4/>(2021年6月20日)〉

「内閣府」〈

https://www8.cao.go.jp/shoushi/shoushika/whitepaper/measures/w-2012/24webhonpen/html/b1_s2_1_4.html〉(2021年6月20日)

「家族と健康」2021年4月1日〈<https://www.jfpa.or.jp/kazokutokenko/topics/001066.html>〉(2021年7月3日)

「不妊治療の実態に関する調査研究」2021年3月

〈<https://www.mhlw.go.jp/content/000766912.pdf>〉(7月11日)

「0テレNews24」2021年7月16日

〈<https://www.news24.jp/sp/articles/2021/07/16/07907058.html>〉(2021年7月17日)

「NHK news web」2021年8月19日

〈

<https://www.google.co.jp/amp/s/www3.nhk.or.jp/news/html/20210819/amp/k10013211551000.html>〉(8月20日)

「東京都福祉保健局」

〈

https://www.fukushihoken.metro.tokyo.lg.jp/kodomo/kosodate/josei/funin/shingata_korona.html〉(8月20日)

「朝日新聞」2020年5月20日

〈

<https://www.google.co.jp/amp/s/www.asahi.com/amp/articles/ASN5G4TGNN5BUBQU001.html>〉(8月20日)

辻希美『大好きな人と結婚した、その後』,講談社,2021年

「普通の高校生だった私が16歳でママになって知ったことは、」

〈

https://abema.tv/channels/abema-special/slots/E511U4hD3mchgK?utm_source=abematime_s&utm_medium=abematv&utm_content=&utm_campaign=abematimes_link_article_8666165_ap_amp_free_slots_E511U4hD3mchgK

〉 (8月20日)

Hatena Blog 2018年8月31日

〈<https://high190.hatenablog.com/entry/2018/08/31/035253>

〉 (8月20日)

unbニュース2021年7月21日 〈

https://www.google.co.jp/amp/s/www.uhb.jp/news/single_amp.html%3fid=21640

〉 (8月20日)

prt看mes2020年8月18日 〈

<https://www.google.co.jp/amp/s/prtimes.jp/main/html/rd/amp/p/000000757.000002943.html>

〉 (7月13日)

木戸久美子, 中村仁志, 林隆, 10 代の人工妊娠中絶および出産と抑うつとの関連, 山口県立大学看護学部紀要, 2004年

〈<https://www.mhlw.go.jp/content/11920000/000779764.pdf>

Use AI For Education

~Providing Learning Suitable For Each Student~

5214 Yuka Omura

Abstract

The purpose of this study is to provide students with more efficient learning and reduce teacher work as much as possible by using AI in the field of education. To that end, I made a plan for learning methods using AI.

I mainly used the Internet to collect information, and I thought about three points. About AI used in the learning field, how to teach using AI, and how to make up for the difference in learning level that becomes larger than the current situation by learning using AI.

Also, investigated AI advanced countries in order to compare the world and Japan. According to CROSS BORDER NEWS, AI advanced countries are countries where AI research and AI education are advanced, and countries such as the United States, China, and the United Kingdom are said to be "AI advanced countries".

1 Introduction

I am not good at studying. For example, in math, you can practice exercising right after taking lessons, but when I study alone at home, I repeat the same problem over and over, or forget the formulas I learned that day, and you may feel that each person has a problem that they are not good at. For example, "Someone else told me about my previous problem, but now I was told this."

In order to solve these problems, I would like to utilize AI in the field of education to optimize individual learning. By achieving this, each student will be able to understand the strengths and weaknesses of his or her learning, which may improve the academic ability of the student as a whole. After understanding the advantages and disadvantages of introducing

AI, I would like to propose a method that is easy to use in a place called a school.

We also believe that if AI creates questions for each proficiency level without a teacher, it can save a lot of time and effort. The ultimate goal of this study is to provide students with efficient learning through AI-based learning and reduce teacher work as much as possible.

2 Discussion and implications

Using AI in the field of education has two major benefits: providing learning tailored to each level and reducing the work of teachers. On the other hand, there are also disadvantages such as widening the difference in learning level and cost when introducing AI. Based on these, I investigated the progress of AI technology in Japan and compared it with the world. In the United States, China, and the United Kingdom, which are called AI advanced countries, efforts were being made to grow the country and utilize AI in various fields. On the other hand, Japan seems to be a little behind the AI advanced countries in terms of developing AI technology and utilizing it. However, I think it became easier to think about what to propose by investigating how AI is used for education in AI advanced countries.

I proposed a learning method using technology and thought about how to solve the problem of introducing AI. This time, I was able to understand the advantages and disadvantages of introducing AI, and felt that I could realize the advantages of it in the field of education.

First of all, as a method of using AI in the field of education, I think that the merits of it can be utilized by dividing the conventional teaching method and how to using AI.

Next, I will tell you about how to solve the problem of introducing technology. Among the problems caused by using AI in the field of education, this study examined "the difference in learning level widens". I believe that this problem can be solved by devising ways to utilize AI.

I think there are various types of learning that utilize AI. I thought that the method of

using AI that makes the best use of the part that the teacher cannot do is to make something that suits the individual level in a short time. I wondered how this method could solve the problems that each person is not good at studying mathematics. By utilizing AI, I think we can create a collection of questions that suits each individual and provide guidance tailored to each student's level.

Proposal of specific AI utilization method①

1. Learning the basics together

→ AI is not used. Traditional lessons.

2. Exercises using textbooks and reference books.

→ Everyone studies the same questions. Measures basic proficiency.

3. From the questions solved in 2. creating a personalized question collection based on the answer time of the wrong question.

→ AI will do it. As much as you can at your own pace.

4. Raise the level of the problem and repeat 2. and 3. steps

→ Ask your teacher about any problems you do not understand.

This method suggests that the entire process be executed in a class. You can work on a number of problems that we can do at your own pace in the class and ask the teacher on the spot to solve the questions that arise in the class. You can understand what you are not good at, and AI will automatically select the problem and overcome your weaknesses. By doing so, you will know which part you should concentrate on when studying for yourself, and you will be able to study efficiently.

Proposal of specific AI utilization method②

1. Learning the basics together

→ AI is not used. Traditional lessons.

2. Exercises using textbooks and reference books.

→ Everyone studies the same questions. Work on what the teacher has specified in advance.

3. From the questions solved in 2. creating a personalized question collection based on the answer time of the wrong question.

→ AI will do it.

4. Work at home on the issue created in 3.

→ You can do it at any time OK.

Another idea is to work only on the issues specified by the teacher at the class. Thus, if you have any questions about a particular question, ask your teacher and answer.

By doing so, you will be able to overcome your weaknesses and learn at your own pace. According to AI Smiley (2021), such learning methods are actually being introduced in educational settings. The system in which AI provides learners with effective learning methods is called adaptive learning.

I do not think it is good to have the AI perform every step of the class. The reason may be that using AI does provide efficient learning. However, I think it is necessary to value the relationship between teachers and students. It is not possible to build a relationship in a short period of time. Classes are the place where we are most closely involved in the school, where they spend more than 7 hours in a day. Therefore, leaving all class time to AI may interfere with school life. Based on this, I thought that this proposal would be able to utilize both the good parts of AI and interpersonal communication.

3 Conclusion

I was able to propose individual optimization of learning, which is my research purpose. I am interested in the field of education, and I am glad that I was able to study in that field. One of the motivations for me to start this research is the "COVID-19" that is prevalent all over the world. This gave me the opportunity to think that it is important not only to do the

job given, but to work in a way that solves the problem ourselves. Looking at the examples of companies that utilize AI, I found that technology is also used in places that are most familiar to students, such as “education sites”.

In this study, it was not possible to come up with a solution to the cost, which is one of the disadvantages of introducing AI into educational settings. I would like to collect information on AI used in education and propose opinions to actively consider the introduction of AI. Also, I would like to increase the ideas for learning using AI.

4 References

[1] CROSS BORDER NEWS (2019-04-09)

「AI先進国はどこ？先進的な取り組みに日本は追いつけるのか」

<https://cross-b.jp/blog/1273> 2021年1月8日

[2] VERTEX INNOVATION TOOL BOX (2018-03-30)

ベルテクスAI/INNOVATIONSOLUTIONチーム「海外の教育現場で活用が広がる「AI教師」による学習サポート」

<https://www.vertex-itb.com/single-post/ai-tutor> 2021年1月8日

[3] 小宮山利恵子 (2018) 「諸外国におけるAIを用いた教育の現在と課題」『コンピュータ&エデュケーション』VOL.45 17-22頁

[4] デジタル・ナレッジ

「AIの進化で教育はどう変わるのか？～『教育×AI』のインパクトとメリット・デメリット～」

<https://www.digital-knowledge.co.jp/product/edu-ai/edu-ai-merit/> 2021年2月12日

[5] AIsmiley (2021-04-29)

AIsmiley編集部 「AIを教育に活用するメリット・デメリットとは？導入事例を紹介」

<https://ai-products.net/11637/what-are-the-advantages-and-disadvantages-of-ai-for-education/>
2021年8月13日

[6] Qure (2019-09-03)

「【アメリカ】AIを活用してITスキルをアダプティブラーニング」

<https://www.quire.jp/2019/09/03/%E3%80%90%E3%82%A2%E3%83%A1%E3%83%AA%E3%82%AB%E3%80%91ai%E3%82%92%E6%B4%BB%E7%94%A8%E3%81%97%E3%81%A6it%E3%82%B9%E3%82%AD%E3%83%AB%E3%82%92%E3%82%A2%E3%83%80%E3%83%97%E3%83%86%E3%82%A3%E3%83%96/> 2021年8月13日

[7] SankeiBiz (2019-05-16)

中国新聞 「中国、A I で学習状況分析「スマート教育」時代へ」

<https://www.sankeibiz.jp/macro/news/190516/mcb1905160500003-n1.htm> 2021年8月13日

[8] 東洋経済 (2018-05-18)

ロイター 「中国の学校が教室に「AIカメラ」を置くワケ」

<https://toyokeizai.net/articles/-/221412> 2021年8月13日

[9] ROBOTTEER (2016-12-28)

河鐘基 「教育界に朗報!? ロンドン小学校に「AI数学教師」が登場...インド企業開発」

<https://robotteer-tokyo.com/archives/7220> 2021年8月13日

[10] TechCrunch Tokyo 2021 (2021-05-24)

testuo kanai 「生徒の習熟度に合わせて難易度を調整するAI学習システム「Monoxer」

を中国語教室「waysChinese」が本格導入」

<https://jp.techcrunch.com/2021/05/24/2021-5-24-monoxer-waychinese-fully-introduce/>

2021年8月13日

How to Stop Birth Rate from Declining

~How to Simplify Child Raising in Society~

5215 Goto Sara

Abstract

Recently, the declining birth rate and aging population has progressed in Japan. The measures of child care support have little effect. The cause of declining birth rates have some reasons. I think the root cause is that society is not enough for working women. Many Japanese have fixed concepts. For example, women should have housework and childcare, men should have to work hard for their families. People who raise children are being mentally pressured. Not only women but also when raising children. All child-raising households should be supported by society, so I suggest that we make a paradigm shift in the nation's fixed concept through the media. Also, I wanted people who are having trouble finding a nursery-weblilo to let their children learn about self help childcare.

1 Introduce

Japan has record lowest record every year, and people afraid of the infection of COVID-19 makes it harder to have a child, so the government is aiming for the realization of the Minister in Charge of Promoting Dynamic Engagement of All Citizens. That helps to maintain the economy. Also they reform the age of retirement, and hire workers from overseas, but I think it is an emergency measure which compensates current workers. If Japan exists in the future, children need to be born and raised.

2 Discussion and implications

We have to work and earn money to live when we grow up, and If we earn money, we should have to payment of taxes, which is used to maintain inflation. It is necessary for

economic activity with raising taxes. Gender equality is needed now when the workstyle and way of life is diversified. Women's advancement in society is progress compared to the past. Society of academic background promotes the women work outside and earn income that increases the degree of freedom women's opinion flict in society. In 1986, The Equal Opportunity Law was made. That objective is to ensure the opportunity and treatment. During a few decades, Japanese society has greatly changed. However there are some working environments which still have old thinking. Ithink people's awareness leaves somewhere in changing their lifestyle everyday. Eventually, our fixed concept is rooted. During the war, men went to the battlefield, momen protected children and homes. When the second baby boom generation, men were working hard, women took care of their children. Their children reached that they become their parents. We can understand that in movies or books at that time. The children believed these thoughts, but right now Japan is very different from before. We can educate everyone, women able to go to college, going to vote and they could work the same as men. In spite of society becoming gender equality, That old thinking is said to be high worldwide. That connected the increase in the unmarried rate and decline in the birth rate. Looking for an overseas example in northern Europe Which is natural to take care of children further and they should take childcare leave. On the other hand in Japan, the word "Ikumen" is used to fathers who take care of children. That is caused by the lack of good environments reising children, it costs more money than expected. People who are working with raising children should have to think about where the place takes care of their children and the company which is able to take childcare leave.but rather than people who leave their children at nursery school are working with raising children.

What should children be like, I believe that children need to be more valued and live in happiness now that the birth rate is declining. The adults who worked in society were children. Even if the period and the environment is different, they would think about what children should be like through their childhood. Right now everyone is the best one can do for their own lives, however, I think in the future, we should take action for childcare support. We have to work to live and leave their children anywhere. There are a lot of other problems that can only be understood by those who raise children. I wonder if women's voices really reflect government policy on childcare support, and in spite of that, they had a lot of trouble

raising their child, their children raised up and became an adult, they did not involve childcare. I think that causes the nuclearization of the family. I think the hardship of childcare is the same in every age. However, in Japan, the thinking is strongly rooted that mothers should struggle. Right now, Japan's child care workers are in shortage. Salaries are low and heavy responsibility. Increasing parents who work with childcare need to leave children somewhere. That means more and more childcare workers are in shortage, and the number of children they should take care of is increasing. If the childcare worker is in shortage, children could not play with full energy. It is needed to prevent their injuries. I think that is a negative impact for children on growing. It is difficult to find to built nursery school, because some people complain about children's voices. Why would they say such a thing? I think they may not have much opportunity to come in contact with children, so I think it needs to interact with nursery schools and around adults, children can be connected to society

3 Conclusion

Modern mothers have physical fatigue and mental fatigue. I think reform of sense is necessary for reising Japan's increased birth rate. That attempt should be done through not only school but also region and society. One of the conclusions is a paradigm shift of national fixed sense through the media to support the whole child care household. The nursery school is called 'Noge Kazenoko' running with the local government. They do not have facilities and childcare workers so their children get together and play in parks, public facilities and river terraces, children taken care of their parents. This advantage is very flexible to make decisions. They have discussed only parents. The second conclusion is widespread self child childcare for the household who have trouble in where the children leave.

Issue

This research issue is not clear to see like an old fixed concept, so I do not know if that conclusion is really effective. This research is a reference example. Actually there are more people who trouble in personal problems than I thought.

4 References

[〈https://mainichi.jp/articles/20210604/k00/00m/040/145000c.amp〉](https://mainichi.jp/articles/20210604/k00/00m/040/145000c.amp)

「2020年の出生率は1.34 5年連続低下 出生数は過去最少」

(2021年6月4日)

[<](#)

https://www8.cao.go.jp/shoushi/shoushika/whitepaper/measures/w-2004/html_h/html/g1210000.html>

「第2章 なぜ少子化が進行しているのか 子育て本部 内閣府」 (2021年6月4日)

「フランスはどう少子化を克服したか」 著者 高橋順子 (2021年7月14日)

<https://thinktank.php.co.jp/voice/6519/> (2021年8月22日)

欧米モデルの少子化対策から脱却せよ

<https://president.jp/articles/-/45525?page=1>

「子どものいる女性のほうが、幸福度が低い」少子化が加速するシンプルな理由

「this is japan」 著者 ブレイディみかこ (2021年8月25日)

To Solve the Traffic Jam by Road Pricing

~Make a Stress Free Sightseeing~

D5216 Name Kobayashi Yuko

Abstract

Traffic jams are a big problem in the world. London and Singapore are traffic jam was improved by road pricing. I guess Cordon pricing, Area pricing and some ways merit and demerit. This time I think I will introduce road pricing for sightseeing spots. Especially “Kansai” was a gathering of many sightseeing spots. The study purpose is to solve the traffic jam and make stress free sightseeing.

1 Introduction

These days traffic jams are a big problem. Many areas in the world have poor traffic condition. In the Tom Tom Traffic index, published every year by Tom Tom, a Dutch map information company. Osaka has been ranked in the top 60 (top 20 in Asia) every year for the in the past three years. Kobe also ranks high, though not as high as Osaka. Traffic congestion also causes major economic losses which are said to amount to about 12 trillion yen in total. Traffic congestion is also a obstacle for tourist spots. Traffic jams by the large number of cars and buses that enter the area. Many people have had the experience of having their sightseeing time reduced due to traffic jams that pushed them back from their scheduled time. The reason why I choose the Kansai region is because there are many traditional tourist spots such as temples and shrines as represented by Kyoto and Nara. So I thought that reducing traffic jams would be increase the number of tourists and increase their

satisfaction.

The purpose of study

To solve the traffic jam by road pricing.

The ways of study

Gather information on the status of road pricing and its consideration in Japan.

HP of Kamakura City and Tokyo Metropolitan Government Bureau of Environment

Cities such as Singapore and London.

2 Discussion and implications

About the implementation of road pricing in Japan. Road pricing was conducted on a trial test on the Metropolitan Expressway for the Tokyo Olympics in 2021. As a result, traffic jams on the Metropolitan Expressway were reduced by up to 90%. This result shows that road pricing can reduce traffic jams in Japan.

As for the status of road pricing in Japan, Kamakura City is considering the introduction of Kamakura Road Pricing (tentative). The purpose of Kamakura Road Pricing (tentative) is to improve traffic jams and recover the living environment of citizens. It will be implemented not throughout the year but on weekends and holidays when congestion is high. In 2020, a request for technical support was sent to the Ministry of Land, Infrastructure, Transport and Tourism, and the project is going smoothly now.

There are three main types of road pricing billing methods: cordon pricing, area pricing,

and mileage billing. In cordon pricing, vehicles entering a certain area are charged. The advantage of this type of pricing is that it only requires a checkpoint such as a gantry on the border of the area which is superior to terms of cost and probability. The disadvantage is that there is no charge for travel from within the area to the within area and no charge for travel from within the area to outside the area. So there is a lack of fairness. Area pricing charges for vehicles that travel within a certain area. The advantage is that all vehicles within the area are charged making it fair. The disadvantage is that it requires a more complicated charging system than cordon pricing. The traveling distance charge is the same as the area pricing of the charging method. The advantage is that it is fair because it charges for the traveling distance. The disadvantage is that a system that can measure the distance must be installed in.

London Case Study

The system was introduced in London in 2003. The U.K. adoption of area pricing. It was introduced to reduce traffic jams and improve bus traffic. All vehicles, except emergency vehicles and motorcycles are capacity to use the system. Hybrid and electric vehicles receive a 100% discount but they must pay a registration fee. The area covered about 2,000 square kilometers. We have to buy a permit to enter the area by Internet or store. Then the camera checks our number plate and compares the car which had bought the permit. The charge is a flat rate of 10 pounds per day for all types of vehicles. The fee is 10 pounds, or about 1,250 Japanese yen. The revenue is used to improve public transportation. Traffic congestion has been improved and buses are now more punctual.

Case Study of Singapore

In order to improve traffic jams in urban areas, cordon pricing was introduced in 1975.

Initially purchased tickets were attached to the windshield but in 1988 ERP (Electronic Road Pricing) was introduced in which a pre-charged IC card is inserted into the on-board machine and the money is withdrawn wirelessly when the driver passes through the gantry. The system covers the city center (7.25km²) and six expressway routes. The rates are generally updated every 30 minutes and fluctuate. The amount is lower than that of area pricing. In addition the system uses ANPR which automatically reads number plates to prevent unauthorized traffic. If a car is not equipped with an in-vehicle machine or if the IC card balance is insufficient the license plate will be read and a fine will be charged at a later date.

Examples of Distance Charging

In Germany a distance charge has been applied to heavy goods vehicles. This was introduced in 2004 to ensure the maintenance and construction costs of the Autobahn and to pay for the infrastructure costs appropriately. There are two charging methods: one is to pay at a terminal or over the Internet. The other is to use GPS to measure the distance traveled.

The EU has issued a directive on the billing of heavy goods vehicles and among the member countries. The disadvantage is that a system that can measure the distance must be installed in.

Failed Cases

In the Netherlands, the introduction of congestion pricing was considered as a way to reduce congestion and increase revenue but it was not realized due to political distrust change of government and lack of public understanding of the scheme.

A Study of Road pricing

As for the disadvantages of cordon pricing. It is not fair because there is no charge for travel within the zone or from within the zone to outside the zone however the example of Singapore shows that the disadvantages are covered by installing many gantries. In Singapore, many gantries are installed. The distance charge system is not good for tourists and populated areas because it requires a device that can measure the distance traveled. Cracking down on wrongdoing is also difficult unless the distance traveled can be measured by GPS. It is necessary to set a slightly higher rate when area pricing is applied. In the example of London, the fee was about 1,250 yen. If you don't set a high price, it will not be very effective because you can drive freely in the area for a day if you charge a price. It is important to set an appropriate price. So that the hurdle for entering the area is neither too high nor too low. In order to apply cordon pricing, it is necessary to install a lot of gantries like ERP or a device that recognizes cars on the border between the outside and inside of the area. Since we are focusing on a tourist area, we cannot install anything that would destroy the view. Therefore it would be desirable to install a camera that automatically reads number plates. Looking at the examples of failures when introducing road pricing shows that is necessary to make sure that citizens understand the details of the scheme. It is important to hold explanatory meetings to avoid leaving citizens in disbelief. It is also important to explain the use of the revenue from road pricing in an easy-to-understand manner but since the purpose is to improve traffic congestion. So not too much emphasis on revenue.

3 Conclusion

It is clear from the examples of other countries and the results of road pricing for the 2021 Tokyo Olympics that road pricing will improve traffic congestion. Even though the purpose is road pricing to reduce traffic jams, it also leads to environmental benefits. The revenue can also be used to pay for infrastructure maintenance and repair. This can be a way to attract more tourists.

I would like to recommend Kansai as a place where road pricing can be doing. The reason for this is that Kansai has many tourist attractions such as temples and shrines in Kyoto and Nara prefectures and Osaka and Hyogo prefectures have thriving commerce and attract many people. If the number of people using public transportation increases through road pricing, sightseeing by large buses will be smoother and the city buses will be more punctual. In addition the revenue from road pricing can be used to reduce fares on city buses, to pay for repairs to temples and shrines, to cleanup the landscape. Therefore the introduction of road pricing is necessary.

4 References

[A survey of road pricing](#) 1986年

2021/04/28

[TomTom Traffic Index – Live congestion statistics and historical data](#) 2021年

2021/06/16

[京都におけるロードプライシングの検証](#)

2021/09/01 The test of road pricing in Kyoto

[鎌倉市交通計画検討委員会・専門部会（仮称）鎌倉ロードプライシングについて](#) 2021年

2021/09/09 About Kamakura road pricing(tentative)

[ロンドンのロードプライシング](#)

2021/09/09 Road pricing in London

[諸外国における高速道路料金の動向](#) 2011年

2021/09/10 Trends in Expressway Tolls in Other Countries

[LTA | Electronic Road Pricing \(ERP\)](#) 2011年

2021/09/10

<https://www.express-highway.or.jp/info/document/rpt2010006.pdf> 2010年

Road pricing in Europe

2021/09/12

[首都高渋滞最大9割減 ロードプライシング影響か](#) 2021年

2021/09/14 News article of road pricing reduces traffic congestion on the Metropolitan Expressway.

Food loss in Japan

~Promote Food Sharing in Japan ~

5218 Arisa Takabayashi

1. Abstract

About 1.3 billion tons of food, equivalent to one-third of food production worldwide, is wasted every year in developed countries. Wasting food costs a lot of money to burn and emits a large amount of carbon dioxide. Thus I think it needs to be solved immediately. Food sharing is a more and more widespread reduction measure, especially in Europe now. In Japan, there is a food-sharing application called TABETE and Cocooking Corporation which runs TABETE, has implemented a practical experiment called Rescue Deli at airports and stations. This is a system that sells surplus food collect and buy more cheaply to employees at airports and stations when stores close. I suggest combining the application and the deli and placing it at stations and airports. I want to compare food sharing between Japan and Denmark.

2. Discussion and Implications

According to data from the Ministry of Agriculture, Forestry and Fisheries (In 2019), the amount of food waste in Japan is 6.12 million tons. Food waste emits large amounts of carbon dioxide during disposal, so food loss not only wastes food but also has a negative effect on the environment. For these reasons, I felt that food loss is a problem that needs to be solved as soon as possible. The causes of food loss in Japan can be divided into two main categories, business-related food loss and home-based food loss. According to the Ministry of Agriculture, Forestry and Fisheries (2019), business-related food loss is 3.28 million tons and home-based food loss is 2.84 million tons, so I have focused my research on business food loss.

When I knew that food-sharing applications were spreading in Europe, I looked into a food-sharing application called TABETE which is popular in Japan. However, according to the reviews of TABETE, it has some problems. There are no stores near the customers that can use the

application and there are no stores in the area where the customers live. (TABETE Application store preview review, as of April 24, 2021) Therefore, I wanted many people to use the application efficiently.

Cocooking company runs a rescue deli at airports and stations. The system is buying surplus food from all stores there when stores close and selling it cheaper for employees. As a result, "In the past three demonstration experiments, we have succeeded in reducing food loss by approximately 4.3 tons over a total of 177 days, mainly at Gransta Tokyo, a commercial facility in the area of JR Tokyo Station. In addition to the reduction of food loss, it has also led to a reduction in disposal time and disposal costs for the stores where the system was introduced, as well as a high level of satisfaction among station employees."(PRTIMES, March 11, 2021) Although it is still in the demonstration stage and only targets employees of the facility. So I thought that if rescue delis would do for everyone, not just workers, the effect of reducing food loss would increase considerably. Thus I thought it would be a good idea to set up a deli corner in a station or a convenience store. This is because stations are used by many people of all ages. Also, convenience stores are open 24 hours a day, 7 days a week, and the amount of food loss is higher than in supermarkets. Moreover if stations and convenience stores could collaborate with TABETE and send out information to consumers through the application, it can collect people's attention for the activity. In addition I suggest making lunch boxes from surplus food at stations and convenience stores and sell them there.

3.Conclusion

As the results of the Rescue Deli demonstration have shown that this system can also reduce the time and cost of disposal at each store in the station. I proposed that the application would provide customers with information on what items Rescue Deli stores are currently selling and how much it is. I think it makes the Rescue Deli activity more accessible to customers. I would like to think of a proposal to spread the concept of "TABETE" and Rescue Deli to both consumers and sellers in various stores in the future. In Denmark, there is also a service called "Magic Bag", which is a fun way to buy some food with the contents to be enjoyed after opening the package. I think it would be even better if we could incorporate this kind of service. However, there are still some issues that need to be addressed, such as

the fact that I haven't had a chance to visit CoCooking directly and ask them questions, and the deli is still in the demonstration phase and I don't know the app and the corporation's plans in the future. There is also the issue of hygiene to arrange and serve surplus food. For these reasons, I would like to do more research by comparing successful examples of food sharing overseas.

Reference

・『PRTIMS ,2021年3月11日 実証実験で東京駅の約4.3トンのフードロス削減に成功したため 史上初 駅において“施設従業員向け”フードシェアリングサービス「TABETEレスキューデリ」本格運用開始!』

<https://prtimes.jp/main/html/rd/p/000000117.000034286.html> (2021年4月6日)

・『TABETE App store プレビュー口コミ,2021年4月24日時点「TABETE」をApp storeで』

<https://apps.apple.com/jp/app/tabete/id1392919676>』 (2021年4月24日)

・『食品ロス削減関係資料 消費者庁消費者教育推進課』 〇ごみ処理事業経費 環境省「一般廃棄物の排出及び処理状況等について」,令和元年7月11日版

https://www.caa.go.jp/policies/policy/consumer_policy/information/food_loss/efforts/pdf/efforts_190711_0001.pdf (2020年9月16日)

図表

『PRTIMS、2021年3月11日.史上初 駅において“施設従業員向け”フードシェアリングサービス「TABETEレスキューデリ」本格運用開始!』 (2020年5月3日)

<https://prtimes.jp/main/html/rd/p/000000117.000034286.html>

①実証結果について

<実績>

	実証実験 第1回	実証実験 第2回	実証実験 第3回
実施期間	2020年 1月14日～2月14日	2020年 4月1日～5日	2020年 8月11日～12月28日
販売食数	約1,800食	約420食	約5,700食
口又削減量	約1,000kg	約270kg	約3,100kg

Learning Music with Game Music

~Innovation in Musical Education~

5219 Yuzuki Tokudome

Abstract

The research until last year showed a problem that high-level musical education institutions are located almost only in Tokyo, but when compared to the abroad ones, the further problems of Japanese musical education were found out. Especially in elementary and secondary schools, the majority of the problems are lack of varieties, unbalanced contents, and disagreement between the purpose and the reality. These indicate that Japanese musical education does not match the levels of each individual and also their standards themselves are not mature enough. Considering this, this research suggests introducing a new material to schools. The product is available on the Internet for free because ICT, or information communication technology, education is attracting more attention in recent Japan. It contains game music, which is used as background material in games, in order to connect itself with real-life music pieces, putting importance on the ease of operation and effective, simple visuals which are found in existing music-learning software.

1 Introduction

While my research last year suggested providing music-learning software for free with those who want to learn music, this research has found through the comparison between Japanese and foreign music education that there is not only a mere economic disparity but problems about elementary and secondary education, which are basic to music-learning. Therefore, this research aims to introduce a new material with game music to schools in order to come closer to a better Japanese education.

2 Discussion and implications

The purpose of Japanese music education is a cultivation of aesthetic sensibility, according to Japanese guiding principle, whereas that of European music education is music itself. Despite this, classes are still a passive learning style where one teacher is in charge of many students, and they put too much emphasis on technique, evaluating their students by figures. Besides, in Europe music is taught from various perspectives, on the other hand in Japan it is divided into only two categories, that is, expressions and appreciation, where teachers are apt to teach in an unbalanced way depending on their field of expertise. In short, it became clear that Japanese music education does not match the individual needs and also its standard itself is immature, causing a disagreement between the purpose and the reality.

Throughout the investigation of existing two music-learning materials, Chrome Music Lab and Musictheory.net, both of them have several kinds of merits and demerits.

First, Chrome music lab is described as

” a website that makes learning music more accessible through fun, hands-on experiments”(「Chrome music lab」 <<https://musiclab.chromeexperiments.com/>> (2021/3/5)
)

and as they say, it consists of some Experiments independent from each other and the feature is its colorful and simple user interface and intuitive operation. However, most of them are difficult to associate with real-life music because of the simplicity, ending up being the extraction of one factor of music. One of the Experiments, Piano Roll, is the only one where some pieces of classical music is taken advantage of, but this is a mere visualization of music by using blocks and it can be used to learn nothing logical but sequences or motives, or understand intervals and harmonies visually. In addition, it is also a problem that few explanations are given in the entire material.

Next, Musictheory.net is a material where music theory and various contents of musical grammar are covered comprehensively. It is composed of a lesson section and a practice section: the former is a mixture of animation of music score and explanation text, the latter enables students to solve questions where music score and musical instruments are used, and even practice solfeggio. Thus, the contents differ from Chrome Music Lab in many ways. It is available online for free and also a paid offline version is provided. However, the contents are so high-level that it is hard to introduce it to elementary and secondary stages even if it can in high schools and universities. In the first place they are all written in English, so it seems to be hard to be used in Japan unless teachers can break them down to their students.

3 Conclusion

Considering these facts, it turns out that our material requires the ability to adjust to phased demands, well-balanced practices and explanations, and fun learning experiences. Thus, game music, which is easy to use as material, has got to be taken advantage of in our material in order to meet the criterias. The term “game music” indicates music used as background music. The merits of game music compared to classical music are roughly the following ones.

First, the simplicity of structures. Game music often repeats the same phrases, or quotes or variates melodies from another piece of music from the same game or the same series of games. This is suitable for learning how to variate melodies and how melodies which indicate specific person or thing, or leitmotifs, exist in music. Plus, game musics, mostly pieces of music in Nintendo Family Computer period, are characterized by their impact on us with a minimum number of sounds, so they are appropriate for learning harmony and getting a good idea of the roles of harmonies in music pieces through comparing different pieces where the same melody is played in common.

Second, the abundance of pieces. More and more music pieces are used in one game these days; for instance, the latest Mario series game "Super Mario Odyssey" has as many as 136 pieces while the Nintendo Fami-com version "Super Mario Bros." has only about 10 pieces. Now this scale of games are created all over the world. When considering the merits aforementioned, the number of choices of which to introduce in music learning material would not be inferior to classical music.

Last, the familiarity. Game music itself can be considered being loved and well-liked widely when we get about 11.2 millions of hits by searching the words "Youtube gameBGM" on Google.

Our material, which was developed based on these facts, is separated into practice and lesson modes, introducing game music. In the lesson mode, illustrations appear as well as Chrome Music Lab in order not to be too complicated and difficult to understand, and phrases of game music are also used. The practice mode has not been completed yet, but it is supposed to use phrases of game music adequately as questions and to be operated easily just as you play a video game. Furthermore, it has both Japanese and English translations in order to be uploaded to the Scratch community that is accessed worldwide.

The further tasks are to discuss the practicality of this product and how to disseminate it to the public, and also to make it clear what matters in standardized education.

In the end, we would like to add that these materials are just a supplement to the classes and not a substitute for teachers, which produce multiple possibilities of its utilization.

4 References

- ・ 「Chrome music lab」 〈<https://musiclab.chromeexperiments.com/>〉 (2021/3/5)

How Ballet Should Be In Japan?

～Better For Ballet Dancers～

5221 Natsuki Hagiwara

Abstract

Although ballet is from Europe, the Japanese ballet population is increasing rapidly. Today, in Japan, about 400000 people are enjoying ballet. There are 10000 ballet schools in Japan, too. Ballet is getting more popular. However, there are three big problems which I have found. It is necessary to find out these problems to make Japanese ballet better.

First of all problems is about the teaching license. Ballet is now popular in Japan, but the learning system is not enough yet. Japanese ballet teachers don't have to get the license to teach ballet although it is needed in almost all other countries which are known to be popular in ballet. Second problem is that Japan has no national ballet school now. In other countries, there are famous national ballet schools and their students can take high level lessons at low cost. In contrast, learning ballet in Japan is very expensive. Therefore, in Japan, there must be many talented children who cannot begin ballet because of its high cost. Third, Japanese ballet dancers' working environment is not so good. Their income is so low that many Japanese dancers are doing part time jobs to live. Also, they do not have good benefits. They cannot concentrate on only dancing.

I suggest three solutions for these problems. First, all Japanese ballet teachers have to get a teaching license. If they have it, all students in Japan will be able to take fair and high level ballet lessons. Second, Japan should build national ballet schools. If that happens, more children can learn ballet at low cost. We will be able to find hidden new talents, too. Finally, I think establishing an entertainment agency for ballet dancers will help them to get a lot of jobs and earn more money.

For future tasks, I should think about how to realize these solutions and find more information about this theme to enrich the basis of this study. However, there is a little

information about the present condition of Japanese ballet now. I think it is also important to enhance the information in order to make it easier to know the problems of it for more people. I want them to be interested in ballet.

1 Introduction

I started dancing classical ballet when I was 4 years old, and I am still enjoying it now. This year, I decided to set the theme about one of my favorite things, ballet, because I was interested in the present situation of Japanese ballet, and I wanted to do something to make it better. Because my ballet career is about 13 years, I have had a lot of chances to hear about the serious problems about today's Japanese ballet. Therefore, through this study, I looked for as many of Japan's problems related to ballet as possible, researched those problems deeply, and found out the solutions using the Internet, books, and previous research. Also we might be able to have the chance to ask people working for ballet companies as our school event. I want to get lively information about my study at that time.

2 Discussion and implications

Present Condition of Japan

Although ballet is from Europe, the Japanese ballet population is increasing rapidly. Today, in Japan, about 400000 people are enjoying ballet. There are 10000 ballet schools in Japan, too. Ballet is getting more popular.

Today's Problems

There are three big problems which I have found. It is necessary to find out these problems to make Japanese ballet better.

First of all problems is about the teaching license. Ballet is now popular in Japan, but the

learning system is not enough yet. Japanese ballet teachers don't have to get the license to teach ballet although it is needed in almost all other countries which are known to be popular in ballet, such as France, Germany, Russia, and the U.K. Because of this situation, in Japan, there are a lot of big and serious differences between one school and others.

Second problem is that Japan has no national ballet school now. In other countries, there are famous national ballet schools and their students can take high level lessons at low cost. In contrast, learning ballet in Japan is very expensive because we have to pay a monthly fee of course, and also we need expensive shoes and clothes though they are usually free in national ballet schools. Additionally, it costs a lot to take part in ballet competitions, especially in foreign countries. Therefore, in Japan, there must be many talented children who cannot begin ballet because of its high cost.

Third, Japanese ballet dancers' working environment is not so good. Their income is so low that many Japanese dancers are doing part time jobs to live. Also, they do not have good benefits like holidays, insurance, and so on. Under these circumstances, they cannot concentrate on only dancing.

3 Conclusion

I suggest three solutions for the three problems. First, all Japanese ballet teachers have to get a teaching license. If they have it, all students in Japan will be able to take fair and high level ballet lessons. Second, Japan should build national ballet schools. If that happens, more children can learn ballet at low cost. We will be able to find hidden new talents, too. Finally, I think establishing an entertainment agency for ballet dancers will help them to get a lot of jobs and earn more money.

For future tasks, I should think about how to realize these solutions and find more information about this theme to enrich the basis of this study. However, there is a little information about the present condition of Japanese ballet now. I think it is also important to enhance the information in order to make it easier to know the problems of it and increase the

number of people who are interested in ballet.

4 References

「日本のバレエ人口は世界一」

<https://ameblo.jp/miraidoor10/entry-12238773470.html>

「日本のバレエ教育環境の実態分析」

<https://www.tosei-showa-music.ac.jp/balletresearch/albums/abm.php?f=abm00004246.pdf&n=%E3%80%8E%E3%83%90%E3%83%AC%E3%82%A8%E6%95%99%E8%82%B2%E3%81%AB%E9%96%A2%E3%81%99%E3%82%8B%E5%85%A8%E5%9B%BD%E8%AA%BF%E6%9F%BB2016%E3%80%8F%E8%AA%BF%E6%9F%BB%E7%B5%90%E6%9E%9C.pdf>

「日本のバレエ教育における現状と課題」

<https://eys-kids.com/art-college/ballet/media/91>

「日本のバレエ界の問題点」

<https://balletnews.info/2016/05/10/%E3%81%AA%E3%81%9C%E6%97%A5%E6%9C%AC%E4%BA%BA%E3%83%90%E3%83%AC%E3%82%A8%E3%83%80%E3%83%B3%E3%82%B5%E3%83%BC%E3%81%AF%E3%83%AD%E3%83%BC%E3%82%B6%E3%83%B3%E3%83%8C%E3%81%A7%E6%B4%BB%E8%BA%8D%EF%BC%9F/>

「バレリーナの給料、年収」

<https://careergarden.jp/ballerina/salary/>

Protect the Animal from poaching

~Read to Them and Eliminate the Demand~

5222 Saki Fukushima

Abstract

Animals are extinct every day. This is happening all over the world, and it is estimated that 40,000 species will become extinct in a year. At this rate, the food chain would not work. It has a negative impact on our lives. And the causes of extinction vary. For example, environmental collapse, forest fires, poaching. I focused my research on poaching. There are many animals that have been negatively impacted by poaching, but I am talking about the African elephant. As a solution to this problem, I decided to compile a book about African elephants and read it to a large number of children in an institution.

1 Introduction

Why did I decide to research the issue of African elephant poaching? Because I felt serious about the declining numbers of endangered species. The rate of extinction was one species per thousand years two million years ago, one species per four years two hundred years ago, and now four million species per year. This is very serious, because once the species is extinct, it cannot be created by human power.

If the number of animals decreases, it will affect the ecosystem of all animals on the earth and jeopardize the survival of humans. There are examples of how extinction has affected people's lives.

In some areas of the U.S wolves have been wiped out and the number of deer has increased, destroying fields and preventing the harvest of plants.

I knew I could not go on like this. And I want to keep the creatures safe.

2 Discussion and implications

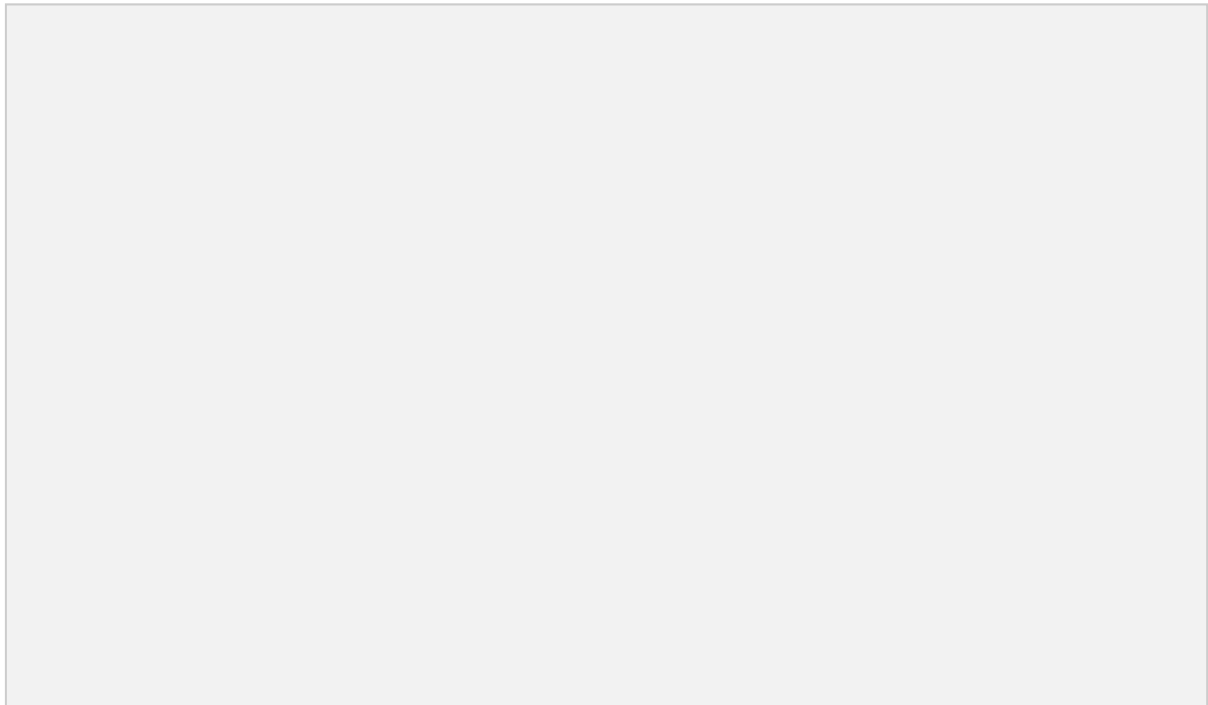
There are many endangered species. That is why I decided to do a detailed study of the African elephant, for which there is a lot of specific research material available.

In recent years, I have learned that the lives of African elephants are being taken by poachers. This is three percent of the number of elephants killed 100 years ago. This number is still increasing at a rate of one elephant every 15 minutes, and an African elephant is dying as a result of poaching. The reason for this is the ivory that can be extracted from the tusks of African elephants. Ivory is used as an accessory or decoration, but most of it is used as seal material. Japan imported 14,000 pieces of ivory, or 1.85 million tons, in one year last year, and with China is tough crackdown on ivory imports, there is a good chance that it could become a new market. Although there is a certain crackdown on ivory in Japan, it is not as strict as it is overseas, and the fact is that the number of imports is increasing every year because it is often allowed to be brought in easily. There are about 8,000 stores in Japan that deal in ivory, and it can be said that Japan needs to take the serious situation seriously. This is Why do we need to reduce the amount of ivory coming into Japan? For this reason, I need to I know from my childhood that ivory is something that should not be bought. In this way, poachers will not be able to sell ivory and African elephants will not be killed.

3 Conclusion

We need to reduce the demand for ivory. If demand is eliminated, there will be no more African elephants to lose their lives. For this purpose, I would like to propose a project in

which students draw a picture book about African elephants and read it to children, in addition to a project in which they teach children that ivory should not be bought by children by reading a picture book called "Lema, the Boneless Elephant," which I saw on the Internet site Tears of an African Elephant. This year, due to the coronavirus, it was not possible to have a storytelling session at a children's home. We also had to change the way we do things, such as using a remote. I see this research as being directed at all living things with a future.



[ecology0055](#) gakken kids net

4 References

【 1 】 TEARS OF THE AFRICAN ELEPHANT

<https://www.taelephants.org/index.html>

【 2 】 WWF japan

<https://www.wwf.or.jp/activities/project/4292>

All reference above is viewed on October8,2021

To Raise Awareness of Organ Transplantation

~To Use Debate and Social Networking Sites~

5223 Hikari Makino

Abstract

Currently, there are about 15,000 people in Japan who wish to have an organ transplant, but only 2-3 percent of them are able to receive an organ transplant in a year. This is a very low percentage. Therefore, I came up with two proposals to encourage everyone in Japan to make a decision on whether or not to consent to organ donation. The first proposal is to hold debates about organ transplant in school classes, and the second proposal is to use mass media and social networking sites. I would like everyone to have a discussion with their family and make their own confident decision.

1 Introduction

Currently, there are about 15,000 people in Japan who wish for organ transplants. However, only 2-3% of them are able to receive an organ transplant in a year. According to the website of the Japan Organ Transplant Network, organ transplant means "the treatment of people whose organs have lost their functions because they get a serious illness or have accidents by replacing them with healthy organs from other people. The decision to donate or not is very important for not only you but also your family.

However, according to the website of the Organ Transplant Network, the percentage of people who have discussed organ donation with their family is 35.4%. This is a very low percentage. Furthermore, the percentage of people who have made a decision to donate one's organs is very low at 12.7%.

Therefore, I came up with two proposals not to increase the number of people who wish to donate their organs but to make an opportunity for discussion with families and encourage everyone in Japan to make a decision about whether or not to donate their organs.

2 Prosal and implications

The first proposal is to add school lessons on debate about organ transplant. Concretely, we hold debates about organ transplants on parents' day. The topic of the debate is " Do you agree with organ donation?" According to the website of the All Japan Debate Federation, debate means a discussion in which the participants are divided into affirmative and negative sides in order to persuade the judges.

There are two main reasons why I decided to use debate. First, debate divides us into affirmative and negative sides without our own intentions, so we have to consider not only the arguments and evidence of our own position, but also the arguments and evidence of the other side in order to persuade the other side and judges. Secondly, debate is a kind of active learning, so it is a very good activity to develop logical thinking skills. Furthermore, the reason why I chose to have the debate on parents' day is because we want the parents to participate in the debate as judges and learn about organ transplants and have the opportunity to talk about organ transplants at home.

However, it is very difficult to carry out this proposal. Therefore, I came up with a proposal that we can carry out, such as cooperation with the mass media and the use of social networking services. Concretely, we will ask the mass media for cooperation to report about organ transplants to promote understanding of the correct knowledge of it. In addition, we can use social networking accounts to raise awareness, some people do these activities, however, none of them is famous.

Therefore, I propose new ways which use mass media and social networking sites. In concrete detail, I make the day when we think about organ transplants and express one's opinion on the 16th of every month, based on the Green Ribbon Day on October 16, a day to discuss life with family or other important people. Nowadays, mass media and social networking sites are essential and the most familiar tools for all people, so I want people to become more interested in organ transplants to decide a day.

My two proposals are based on the Spanish Model, which is the Spanish policy for organ transplantation. The Spanish model is divided into seven sections, and I based my proposal on two of the sections: "A good education program for medical professionals" and "Cooperation with mass media. Spain is one of the countries where the number of organ donations is the highest in the world. According to a graph on the Japan Organ Transplant Network's website, the number of organ donors around the world in 2008 was 0.77 per million people in Japan, but Spain's donor rate was 48.00 per million people, which is much higher than Japan's rate.

The reason why there is such a big difference between Japan and Spain is that Japan has a system of "OPTING IN" which means that organs are donated only if the donor has expressed his or her intention to donate before death or if the family agrees to the donation. However, Spain has a system of "OPTING OUT," which means that transplantation is performed regardless of the people's decision. There are big differences between Japan and Spain, but there are many things that Japan can learn from this Spanish model.

3 Conclusion

So far, I have given my own suggestions for raising awareness of organ donation, but the most important thing is to get the right knowledge about organ transplant and what you want to do. If your family member dies of brain death or heart failure, it is important to be clear about what you want to do and what decision you will make.

Instead of trying to make everyone agree to donate their organs, I think it would be better if everyone could make a decision and as a result, more people would agree to donate. This is because one's body is one's own from start to finish and belongs to no one but oneself. There is freedom in how to die, like there is freedom in how to live. I hope that everyone can find a way to be satisfied with their life and end their lives. And I hope that as many people as possible will be saved.

4 References

- 「Japan Organ Transplant Network」 (12th, September)
<<https://www.jotnw.or.jp/>>

- 「System Format and Economic Basis for Transplant Organ Procurement in the United States」 (12th, September)
<[http://nrichd.ncchd.go.jp/MONTHREPT/bunken/enosawa2_14\(2\)07.pdf](http://nrichd.ncchd.go.jp/MONTHREPT/bunken/enosawa2_14(2)07.pdf)>
- 「Organ Donation Promotion Systems in Many Countries」 (12th, September)
<https://www.jstage.jst.go.jp/article/jst/48/1/48_006/_pdf>

To Develop Human Resources Who Can Respond to Globalization through Environmental Design

~Provide a Place to Generate Creative Thinking~

5224 Rika Maruhashi

Abstract

I decided to do this research because I thought about what kind of environment would be good for cultivating imagination and creativity, and then I wanted to make it myself. By creating a better environment, I thought that I could improve the efficiency of my daily work and learning, and help to make new discoveries and create something new. Therefore, I tried to make the office design with software with reference to the design of the Seto SOLAN school that I was very interested in. I would like to further develop this idea and I want it to be useful in the future.

1 Introduction

I have learned in long English sentences that our concentration and creativity change depending on the color of the room and the environment we spend in. Also, in another article, he mentioned that our creativity and ideas themselves would develop by working in a place with something rare and a new environment. Then, I was interested in what kind of environment was required and decided to do this research. I study at the SDGs business school as an external activity personally and I talk to Japanese people and foreigners through various events. I learn new things every day by changing opinions with the entrepreneurs I met there, even in private. The entrepreneur trains many people of all ages, but he says that it is necessary for entrepreneurship and new business development to have a lot of experience, receive new stimulation on a daily basis, and tell many people himself. Today's society requires innovative and global human resources. Therefore, I thought that having the ability to adapt to society is the first step to becoming a person needed in this era, such as thinking

from a different perspective, coming up with something that no one thinks about, creating something, and doing things from a variety of perspectives to work at the company, to start new projects and to study. I wanted to be able to enrich such abilities while staying indoors. However, at present, it is not possible to talk directly to friends and acquaintances, or to visit museums and learn from them in order to prevent COVID-19 infection. Therefore, I decided to use online to ask my friends who are engaged in SDGs activities and social contribution activities, and entrepreneurs who often talk with me about my research. I think it would be good if we could continue to use online conferencing systems such as zoom, communicate with many people remotely, and have more opportunities to come into contact with various opinions and ideas. However, the main means is the Internet. I decided to go to the homepage for related information that I found on Twitter.

2 Discussion and implications

The Information on Twitter that inspired me to do this research is a post from an elementary school called SOLAN school. The design and photos of the school's facilities were new, something I had never seen in a traditional school. So, it was very impressive. It seemed to be a form of freedom, not a general form of "school". Looking only at the facility, it feels a little different from the atmosphere of studying. The elementary school where I spent my childhood had a desk, a chair, and a blackboard in the classroom, and it was a place that was easily associated with the word "school", just "to work hard at studying". Therefore, I thought that I might not be able to concentrate on studying compared to conventional school, but when I looked at the school's homepage, Seto SOLAN school was designed by Takaharu Tezuka who is famous all over the world, and I found that each thing had an intention. The school has a classroom, Davinci-Labo, and a music room. I would like to summarize the points that I was particular about the classroom and Davinci-Labo. The classroom has a high ceiling and is separated by a movable whiteboard and curtains instead of doors, so it is an open space. Movable desks can be rounded or lined up to suit the lesson and can be changed to various layouts. Also, Davinci-Labo is like a technical room in a general school. They can create a variety of things, from handicrafts to video biased images

using videos and modeling using 3D printers. There is also a computer room next to the room, so they can spread their opinions and their work on the Internet. I am very interested in being able to send what was created by the original ideas of elementary school students to the world. From now on, global human resources will be needed, so I think it will be possible for elementary school students to become the main players in the future by coming into contact with the global world.

3 Conclusion

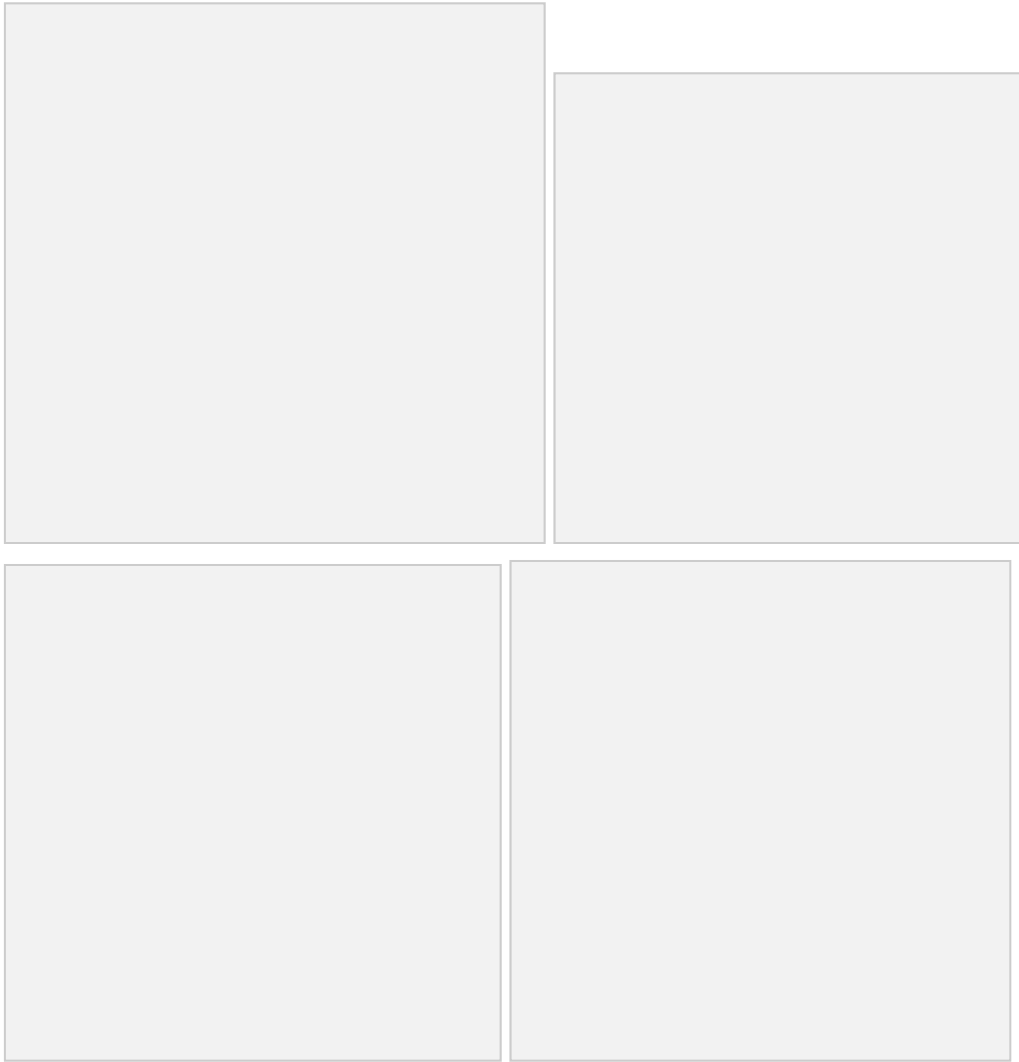
In this way, I found that design is the most important factor in improving children's education and imagination in the environment at school and one facility. So, I tried to visualize the office room I thought of using IKEA's design software. It is also the purpose of this research, I would like to explain what I have devised in terms of ideas and creativity with the created figures. First of all, regarding the entire room of ①, the door was removed and the partition was a glass partition. Each place is separated according to the purpose, but since the partition itself is transparent, you can feel the atmosphere of the entire office and a sense of unity. I thought that communication can be facilitated in an open space rather than a closed space. I also placed plants throughout the office. There is a reason. I found research results that stress substances were reduced by spending 20 minutes in an environment with plants and an environment where you can feel green. A substance called "phytoncide" released by plants has the functions of reducing stress hormones, stabilizing blood pressure and heartbeat, and prioritizing parasympathetic nerves. In addition, green has a relaxing effect because the color that enters the eyes is mild and the eyes do not get tired easily. Increasing the green vision rate leads to stress reduction and concentration improvement, which can be expected to improve performance and increase intellectual productivity in fields that require creativity. The room is mainly white and the color doesn't interfere with anything, so I thought I could cherish my ideas at my own discretion. And ② was a place for group discussion. I put a place for each group and individual because we always need both in business. A cork board and a whiteboard were also set up so that opinions could be gathered and materials could be posted while having group discussions. Also, it is easy to create a sense of unity within the company, and it may be possible to maintain a bright atmosphere by creating a community in

the middle of the room. And about ③, it is a space where two people can talk. I think there are some things that I do not want others to hear, so by creating this space, I can reduce the consideration of those around me and concentrate on the conversation. On the other hand, ④ is a personal space. I think it is effective when you want to concentrate on your own. As long as I am in this room, I can not be completely alone because there are people, but I think that is why I can maintain a moderate sense of tension and motivation, so I decided to install it in the same room. Also, you can work while posting tasks by installing a whiteboard, it will be more efficient. And finally ⑤. Entering the room, there is a large whiteboard on the left and a wall-mounted board on the right for installing disinfectants. The whiteboard can be used effectively, although it can be used in various ways, such as checking the schedule of the day after going to work, writing messages to communicate, and writing opinions.

These are the results of this study. These is still not enough ingenuity in terms of things and materials, so I would like to further develop these and proceed with research so that it can be realized in the future.

1





4 References

[HOME | 瀬戸SOLAN小学校 \(seto-solan.ed.jp\)](http://seto-solan.ed.jp)

The Recent Status of African Education and The Effect of Edtech

~To Increase The Understanding of The Primary Education~

5225 Miyazawa Yusa

Abstract

Recently, the importance of education is becoming more popular. In Africa, however, the quality of education is very low because of the shortage of teachers and schools. This study explained the necessity of introducing the EdTech system to African education. Edtech will realize personal and cooperative studying. Also, it reduces the labor for teachers. In addition, the size of the African continent is very large and it is difficult to build enough schools for every student who lives in Africa, so using EdTech is a better way to give a chance for students who cannot go to school now to take classes. Introducing EdTech can make the environment that every student in Africa can take the classes at schools, and at home, and it will be helpful for improving the achievement that students in Africa will be able to reach.

1 Introduction

Now 59 million children around the world could not go to school, and 32 million children of them were biased to Sub Saharan Africa. When I knew it, I became interested in African education. The quality of education is poor in Africa, so the understanding of primary education is lower than other regions. Also, the number of teachers is not enough to teach all children in Africa. Teachers in Africa have to teach 40 students at most, but according to UNESCO, teachers should teach 25 students at most to provide comprehensible classes. Furthermore, according to unicef, African children have to walk an unimproved road for a long time to go to school, and take classes that the teachers are not willing to teach. Also, in 2013, only 6.3% of third grade students could achieve the study level which they have to

master until third grade of elementary school. I think it is important to use EdTech which is gradually becoming more famous now. Therefore I provided the importance of introducing Edtech.

2 Discussion and implications

EdTech

Increasing the opportunity to take easy to understand classes is essential to improve the quality of education, and EdTech will realize that. EdTech is a term that comes from the combination between education and technology. EdTech is becoming popular for businesses, services, and start-ups that bring innovation to the education field. In other words, using EdTech means using devices such as computers and smartphones in education to improve the understanding of classes.

Merit of EdTech in Africa

EdTech has three advantages, called tripleA, Active, Adaptive, Assistive. Active means it realizes independent and collective learning. Students can research about what they are interested in and express their thoughts using technology. Adaptive means it gives education which is fit to each students' level of study. Assistive means it allows people to connect people in far and also to increase the teacher's work efficiency, which makes time for teachers to provide children with more comprehensive lessons. In addition, it will solve the shortage of teachers because EdTech makes it possible to provide lessons which were shot as a video, or other countries' trained teachers teach. It is problematic to build enough schools in Africa because Africa is a very large continent and has a lot of mountains or uphill and downhill, so making the environment that students do not have to go to school every day is essential to decrease the difficulty to take classes.

How to use EdTech

Next, I mention how to use EdTech effectively to improve the ability of students. Only learning at home, they cannot interact with other people, which is necessary to grow, and in the society. Also they cannot take P.E. class to make them healthier. Then it is also necessary for them to directly interact and take classes at schools. Therefore the government should make the system that schools and EdTech are used together. In concrete terms, they should go to school twice a week, and other times, they study at home while helping their families.

3 Conclusion

In conclusion, using EdTech in Africa has merits to increase the understanding of primary education. The system that African children have to go to school twice a week and the other time they study at home will help them to study more comfortably and to take the classes which are easier to understand. However, it is difficult to make the internet system sufficiently in Africa, and they do not have enough knowledge of using technology, but the plan to build sea cable, which was announced by Facebook, already exists, and the importance of developing Africa is becoming famous. So the difficulty of making the internet system may be solved. And if there are guidelines for EdTech, African students can use it easily. Therefore introducing EdTech is as necessary for African education as building the schools.

4 References

JICA (2021/6/16)

<https://www.jica.go.jp/activities/issues/education/SMASE-WECSA/approach.html>

https://www.jica.go.jp/mobile/hiroba/program/practice/education/materials/jhqv8b000005wd9w-att/2_1.pdf

JICA (2020/12/3)

<https://openjicareport.jica.go.jp/pdf/12245551.pdf>

Ministry of Education, Culture, Sports, Science and Technology Major recommendations on school education (especially compulsory education) (2021/8/10)

https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo3/gijiroku/04053101/007/001.htm

Ministry of Internal Affairs and Communications Educational ICT guide book (2020/12/14)

https://www.soumu.go.jp/main_content/000492552.pdf

unicef (2020/11/2)

<https://www.unicef.or.jp/news/2018/0155.html> (2021/8/15)

<https://www.unicef.or.jp/sfa/report/reason.html>

5 Bibliography

Education Career (2021/4/28)

<https://education-career.jp/magazine/career/2018/what-is-edtech/>

Edusys (2021/8/15)

<https://www.edusys.co/blog/edtech-disadvantages-and-advantages>

digital knowledge (2020/2/15)

<https://www.digital-knowledge.co.jp/edtech/>

unicef | education field (2021/8/15)

https://www.unicef.or.jp/about_unicef/about_act02.html

The Effectiveness of Foods To Prevent Migraine

~What Is a Diet That Suppresses Migraine Pain? ~

5226 Miyamura Riho

Abstract

Now, according to the Mainichi Newspapers, there are 8 million migraine patients in Japan. One of the main treatments is drinking drugs. However, the drugs that have a strong effect are not freely available to buy, so when you want the drugs, you need to go to the hospital. And drinking drugs also causes a headache. According to Dr. Takeda, Migraines cause bad conditions in their life. On the Internet, the migraine patients had better not eat cheese and chocolate, wine, etc. In other ways, they had better eat spinach, beans, and almonds etc. My experiments are that I tried to eat these foods weekly when I have dinner, and not to eat a meal.

My outcomes of experiments are that cheese and chocolate cause more headaches, and spinach and soybeans were not caused by strong headaches. Therefore, My suggestions are that people should eat more spinach and soybeans, also they have three meals a day. My idea: make spinach into a paste and crush soybeans because It is easy to eat.

1 Introduction

For these reasons, I decided to focus on food. because recently the number of people who have migraines has increased in the world. In Japan, 8 million people have migraines. In the world, 1 billion people have this. I have had a migraine too since I was 13 years old. My doctor said it is caused by lifestyle. Many people have this issue. On the internet, many foods cause headaches. Foods have a lot of vitamins. If these foods are good for our health, we want to eat more. Eating foods is easy for us , and Eating foods is an important activity in our

lives. And if we can solve the problem with food, it won't cost us much.

Migraines have been countered mainly by medication. However, medication is expensive. Also, many people don't go to the hospital.

2 Discussion and implications

According to Prevalence of Migraine in Japan: a nationwide survey, 72 percent of Migraine people said that it is prevented with their daily life. Actually, many people who have migraines do not go to the hospital.

My experiment is that I eat some kinds of foods, spinach, soy beans, seaweed, almond, cheese, chocolate, cocoa. I eat them every day a week.

	Effect	Increased pain
soy beans	○	×
seaweed	△	△
almond	○	×
spinach	○	×
cheese	×	○
cocoa	△	△
chocolate	×	○

This experiment's conclusion is that spinach and soybeans have good effects of migraine. Eating spanish and soybeans, the pain of headache was decreased, and headaches have become less frequent. But cheese and chocolate have bad effects. Eating chocolate and cheese, the pain of headache increased, and I felt nausea.

According to the Matsumoto Medical Association website, there is a relationship between migraines and nutrients, and a lack of magnesium or iron can cause migraines. According to

the Headache University website, 30-50% of migraine patients are deficient in magnesium. Magnesium deficiency is closely related to the development of migraine. Migraineurs often experience stress-induced magnesium depletion. They need to eat foods that contain more magnesium than healthy people. According to the Headache University website, taking 400 grams of magnesium daily can reduce the frequency of headaches.

It is important to eat foods rich in magnesium and iron every day. According to the Dietary Reference Intakes for Japanese (2015 edition), the dietary reference intakes for magnesium are 260 grams for girls and 300 grams for boys aged 15-17. The dietary reference intakes for iron are 8.0 grams for boys aged 15-17 years 7.0 grams for girls during non-menstrual periods, and 10.5 grams during menstruation.

3 Conclusion

My conclusion is that let's eat spinach and soy beans, and we have to eat three times a day. Also, My suggestion would be to make a paste of the spinach. That way, you can use it in a variety of dishes and never get bored of it. However, I do not research other ingredients. so I want to try them.

4 References

[1] Taisho Pharmaceutical 「Can you prevent headaches by changing your diet? Let's find the right way to prevent headaches for you!」

〈https://brand.taisho.co.jp/contents/naron/detail_300.html〉 (March 12, 2021)

[2] Saiseikai Social Welfare Foundation 「Migraine」(2013)

<https://www.saiseikai.or.jp/medical/disease/migraine/#:~:text=%E7%89%87%E9%A0%AD%E7%97%9B%E3%81%AF%E3%82%BA%E3%82%AD%E3%82%BA%E3%82%AD%E3%81%A8,%E5%A4%9A%E3%81%8F%E3%81%BF%E3%82%89%E3%82%8C%E3%82%8B%E7%97%87%E7%8A%B6%E3%81%A7%E3%81%99%E3%80%82>

(March 12, 2021)

[3] General Social Corporation Matsumoto Medical Association (2019) 「Relationship between migraine and nutrients」

<https://www.matsuyama.ehime.med.or.jp/info/dictionary/14597.html> (March 12, 2021)

[4] Headache Online 「What is a headache ? 」

<https://zutsu-online.jp/headache/about.shtml>

(March 12, 2021)

[5] Health topics 「How to Deal with Migraine」

<http://www.kagoshima.med.or.jp/people/topic/H16/184.htm>

(March 15, 2021)

[6] Ministry of Health Labor and Welfare

「Dietary Intake Standards for Japanese」

(2015)

<https://www.mhlw.go.jp/file/04-Houdouhappyou-10904750-Kenkoukyoku-Gantaisaku-kenkouzoushinka/0000041955.pdf>

[7] Headache College 「Magnesium」

http://zutsuu-daigaku.my.coocan.jp/kusuri/k_magnesium.htm

(March 22, 2021)

[8] Health Nihondo of Medicine

<https://k-nihondo.jp/gold/column/%E6%88%90%E5%88%86/%E3%83%9F%E3%83%8D%E3%83%A9%E3%83%AB%E3%83%A9%E3%83%B3%E3%82%AD%E3%83%B3%E3%82%B0/%E3%83%9E%E3%82%B0%E3%83%8D%E3%82%B7%E3%82%A6%E3%83%A0%E3%81%AE%E9%A3%9F%E3%81%B9%E7%89%A9TOP100.html>

(March 22, 2021)

Solving Foreign Worker Problems

~Aiming to Create a Fair Working Environment~

5227 Yamakawa Hina

Abstract

In all ages, there are a lot of management problems in Japan. According to the Japanese management association, there are three main problems now. First is “Earning improves”, Second is “strengthening human resources”, Third is “Expanding market share”. I referred to the efforts of large companies and venture companies which are getting attention now to solve these three problems. Then I found one common effort. It is that these famous companies are hiring many foreigners actively. Hiring foreigners has a lot of advantages. For example, Foreigners may not only help solve the Japanese workforce shortage, but also they help create new ideas by different values foreigners naturally have. I think that this effort will help to reduce three problems. However there is a big problem about foreign workers. I would like to search this problem.

1 Introduction

Do you know the management problems of Japanese companies? There are a lot of management problems in Japan, but especially there are three major problems now. I decided to make a proposal that can solve all three of these issues as my research goal.

2 Discussion and implications

The method of research is to refer to the efforts of successful large companies and venture companies. The reason is that I thought successful companies had already solved these three issues and these companies' efforts will help my research. Also I searched not only large companies but also venture capitalists because I wanted to help various types of companies.

For large companies I chose “TOYOTA ” and “HONDA ” because these two companies of

profit were first and second place in Japan. And for venture companies, I chose "MERCARI" and "RAKUTEN" because these two companies were mentioned as famous and attention companies on many internet sites.

As a result of researching the efforts of these four companies, I found one company that is actively accepting foreigners. To put it simply, "TOYOTA" is accepting a lot of foreigners, not only new graduates but also mid-career recruitment to grow human resources who are likely to be an exec of production bases around the world, and it is trying to increase foreign managers. Also it conducts large scale training for foreigners. "HONDA" has a special selection course that is for international students, so foreigners feel free to apply to the company.

"MERCARI" adapts many foreigners. 90% of the new graduate engineers are foreigners. Also it installed a support team called 「GOT」 for foreigners, and thanks to the team, foreigners feel free to work. Last, "RAKUTEN"'s official language is English to promote globalization. Also it made a recruitment home page written in English, so foreigners can apply to the company actively. Like this, I found that successful companies are positively accepting of foreigners. So I suggest all Japanese companies should accept more foreigners to solve these issues.

However I found one big problem with this proposal. It is foreign worker problems. Japanese work style is regarded as a big problem now, but especially, foreign workers are forced to do more bad things than Japanese such as long working hours, low wages, unpaid wages, bullying and power harassment. Regardless, there are a lot of merits to accepting foreigners such as securing human resources, getting new values, advancing globalization etc.. I think these merits will help to solve Japanese management problems.

Then why is this problem happening? The main reason is the difference in the way of thinking and culture. This difference causes stress for workers, and occurs trouble. It seems that foreigners are not familiar with the Japanese view of labor, such as not being able to leave the office until the boss returns. In addition, although it is transmitted to Japanese through unique communication such as "SONTAKU", Japanese people may not be understood unless they tell them "clearly" when talking to foreigners. I thought such differences create a sense of discomfort, discrimination, and stress, leading to bullying,

power harassment, and labor problems.

3 Conclusion

Then how can we reduce the troubles caused by differences in culture and the way of thinking. I had an opportunity to talk with “RECRUIT”, so I looked into the company. Then I found that “RECRUIT” values the corporate culture of “respect for the individual”, and learned something called “DEI” related to the culture. DEI (Diversity Equity Inclusion) means to value every difference between people. Recruit Group recognizes the differences and respects different opinions regardless of class, race, color, gender, language, religion, gender, age, property, disability, etc. I think that the promotion of DEI would eliminate the foreign workers problems. Therefore I believe that DEI should be spread more in Japan. I would like to think about a concrete way to spread it from now on.

4 References

- ・一般社団法人日本能率協会 KAIKA研究所 (2020) 「日本企業の経営課題2020」
https://www.jma.or.jp/img/pdf-report/keieikadai_2020_report.pdf
- ・外国人採用HACKS
<https://recruit-guide.jp/>
- ・2020年 東証一部 売上高ランキング
<https://strainer.jp/markets/%E5%B8%82%E5%A0%B4%E7%AC%AC%E4%B8%80%E9%83%A8?column=revenue>
- ・厚生労働省「外国人雇用状況」の届出状況のまとめ (令和2年10月末現在)
https://jsite.mhlw.go.jp/kagoshima-roudoukyoku/content/contents/2021-0129-1_1.pdf
- ・厚生労働省「外国人雇用状況」の届出状況のまとめ 本文 (平成29年10月現在)
<https://www.mhlw.go.jp/file/04-Houdouhappyou-11655000-Shokugyouanteikyokuhakenyukiroudoutaisakubu-Gaikokujinkoyoutaisakuka/7584p57g.pdf>
- ・総務省統計局 第1就業状態の動向 1労働力人口
<https://www.stat.go.jp/data/roudou/sokuhou/nen/ft/pdf/index.pdf>

The Shining World Owing To Education For Women

~Importance of women education~

5228 Rin Watanabe

Abstract

Last year, I learned about gender problems in developing countries. Then, I found that there are gender discrimination which deep-rooted even now. Women in developing countries have no choice but to resist. There are four problems. I focus on human right discrimination. There is a big gap between advanced countries and developing countries. I think it is the most important that there are no differences between them because people are all the same. So I suggested four attempts to save the lives of women in developing countries. When I continued researching about gender discrimination, I found that education is a key to solve the gender discrimination. So I advanced research about girl's education by learning from Ms.Malala Yousafzai. She won the Nobel peace prize in 2014. I respect for her because she never give up even if she risks herself.

1 Introduction

This research applies for 3 SDGs goals. 4 Quality education, 5 Gender equality, 10 Reduced inequality. It is very difficult for women in developing countries to get enough education. Also, many people there think that girls should not be educated. There are many girls who want to study, but they cannot. And bad conditions have emerged in developing countries. Boys can go to school and get education, but girls cannot. I think there should be no inequality between girls and boys, and also people or countries. We must make

it clear that girls cannot go to school, and encourage girls to get education.

My research question is “What should the world do to provide more education for women all over the world?”

Therefore, many studies about girls' education have been done since I started researching. Some researcher studies why girls in developing countries cannot go to school and get education. And they probably know why these problems happened, but they do not have any solutions. Even if they suggest that they solve this problem, it is very difficult to realize or less meaning. So I decided to study about this problem basically, and I will suggest as many solutions as possible that we can do.

First, I research about girl's education in developing countries on the Internet. I studied about gender discrimination in developing countries last year, so I have some knowledge about it. I want to make use of what I did last year. Then, I would like to do some activities that can contribute even a little.

2 Discussion and implications

① gender problems

There are mainly four problems there. One problem is inequality of education. It can be seen especially in South Asia and Sub-Saharan Africa, the literacy rate of women is much lower than that of man. And basically, it is male donated for everything. Second problem is economic disparity. No country has a higher average estimated income for women than men, but the differences are becoming larger in developing countries now. Third is gender differences between people with 23 complications of the HIV human immunodeficiency viruses such as AIDS. Women are overwhelmingly more infected than men. In sub-Saharan Africa, there are many infected people about 7% of men are infected, while about 21% of

women are infected. Because there are many people who are called sugar daddies and people who give grace (Existence of older men dating young women using their financial resources).

Fourth is human rights disparity.

Women are suffering from many damages of human rights violation such as human trafficking.

②four suggestion

I propose four initiatives to protect the lives and health of women. Because I found that it is a very high mortality rate in developing countries. One of the main problems is human resources development. I think it is very important that fostering community health personnel, training for young people in Japan, dispatching and accepting instructors. Second is the community network. It will be able to improve the quality of pregnant women. Third is facility improvement. I found that there are so many expectant and nursing mothers. It is very important to take care of them in childbirth and postnatal to reduce maternal mortality. Now, many women in Africa and South Asia unable to receive medical care because they do not have much money. Fourth is supported by recycling. Clothing is very valuable for people living in rural areas of developing countries with low income. UNIQLO, a major fashion brand, is doing this. It will be an opportunity to receive medical services and health care services. And it leads to improvement of reproductive health. Reproductive health is the thinking of individuals, women especially have the right to make decisions about pregnancy, childbirth and contraception. Also, it is “health” and “rights” related to reproduction. Although these two things are not separated clearly, “health” is “Safe and satisfying sex life.” and “Safety childbirth.”, “rights” is “Freedom to decide whether or not to have children, and when and how many.” and “Rights to access information and receive much services of

reproductive and sexuality.” Not only medical services, but also gender equality, population problems and bioethics it includes. So I suggest four attempts to save the life of women in developing countries.

③Ms.Malala Yousafzai

I focused on Ms.Malala Yousafzai who won the Nobel Peace Prize in 2014 at the age 14, then advances my research. In the world, there are 130 million girls who cannot go to school and get an education. It is not standard that girls can go to school. Ms.Malala said, “Investigating in girl’s education helps world prosperity and benefits everyone.” She did so many things to save the lives of girls. She continues to advocate for the importance of girls' education. I think that there are a lot of things which I can learn from her belief.

“Malala Yousafzai, who was shot in 2012 for opposition to the Taliban's crackdown on women's education in her native Pakistan, has become an international symbol of the struggle for education for girls. In 2009, Malala began talking about her growing military activity in her local town and her fears of attacking schools on her pseudonym blog. Malala continued to appeal for her right to education with her father, Jia Woodin, even after her identity was revealed.” (source from United Nations Information Center)

In 2008, the town where Malala lived was suppressed by the Taliban, and prohibit women education. The Taliban hate women learning opportunities and discrimination of women is a also one problem. The Taliban’s theory is “Womens are to be protected and must be guarded at home.” Malala blamed them.

Malala did so many things to save women's education. I focused on two things she did. One is established as “Malala Day ” on July 7th. United nation decided July 7th that Malala day, because she stood up to the world and raised her voice that all children have the right to

study. Because of the day, many people remember to Malala's achievements and importance of women education on Malala day. The other one is "Malala foundation." In 2013, she and her father increase awareness of importance of the impact of girls education on society and the economy. Then they launched the Malala foundation. The purpose of it is women can seek changes. And they make a strong effort for activities to spread women's voices.

Like this, Malala did so many things, and is doing to give girls education even now. First I saw her on TV, I was very impressed because it is incredible for me that a girl whose age is not far from mine. Not only Malala, but also some teenager activating. I will continue make an effort and I want to be like them in the future.

3 Conclusion

After I learned about women education by Ms.Malala Yousafzai, I considered what should we do for women in developing countries, also cannot go to school and get education. I suggest three ideas that we can do.

One is to volunteer. Because it's a COVID-17 now, to go to developing countries and help them is too difficult for us. But I want to volunteer when COVID-19 is gone. There are many volunteer activity in Japan. We can find many volunteers on the Internet. Second is to donate. We can donate in different ways. If we donate for developing countries, we can support support activities include health, nutrition, water and sanitation, education, protection from violence and exploitation, HIV and AIDS, emergency assistance and advocacy. Why don't you start donating with only one yen. Third is to know. I think it is the most important thing of all. It is very easy to know about developing countries. In the world, there are many countries which are hard to live that we can't consider. We can research about countries in poor anywhere, anytime. So I think the most important thing is to know the reality in

developing countries. I also think that I don't want to go to school, but I must remember that there are many children in the world who want to go to school but cannot. Thank you for my current environment and saving the place of children's education.

From now on, I continue studying about girl's education in developing countries. And I want to suggest a structure for changing the girl's education system. I will propose something way to change this bad situation. Studying is the first step to change it. Let's know!

4 References

「The amazing half-life of the youngest Nobel Peace Prize laureate Malala Yousafzai.」

<<https://www.businessinsider.jp/post-106137>> (2021/9/17)

「Women's education in the world:Three reasons why girls cannot go to school.」

<https://www.worldvision.jp/children/education_05.html> (2021/8/27)

「Column "What did Malala appeal to girls' education and gender?" "SDGs classroom to learn from the basics" [11]」

<<https://www.asahi.com/sdgs/article/14383505>> (2021/9/22)

「Malala Yousafzai」

<https://www.unic.or.jp/activities/celebrities/peace_messengers/malala/> (2021/9/22)

「[Special feature] Malala Yousafzai and girls' education」

<<https://www.plan-international.jp/special/malala/>> (2021/9/23)

「Strengthen community network」

<https://www.joicfp.or.jp/jpn/project/approach/community_development/> (2021/2/14)

「What measures are needed in Africa, where maternal mortality is high? What is the support being provided?」

<https://gooddo.jp/magazine/health/africa_health/4027/> (2021/2/16)

「All over the worldUNIQLO developsWomen support program」

<<https://www.uniqlo.com/jp/ja/contents/sustainability/people/diversity/gender/globalempowe>

[rment/](#)> (2021/8/9)

「Reproductive health」

<https://share.or.jp/health/knowledge/reproductive_health/> (2021/2/16)

「Akira Ikegami reveals! introduction to Islamic business」

<https://www.jica.go.jp/aboutoda/2014_Pakistan_Bangladesh/pakistan_vol4/page4.html>

(2021/10/26)

「Malala Yousafzai's Speech at United Nations Headquarters (July 12, 2013, Malala Day)」

<https://www.unic.or.jp/news_press/features_backgrounders/4790/>(2021/10/26)

「July 7th is a day called “Malala day”」

<https://www.unicef.or.jp/kodomo/news/2013/07_12.htm>(2021/10/27)

「12 things you need to know about Malala Yousafzai」

<<https://www.harpersbazaar.com/jp/lifestyle/womens-life/g28370943/malala-yousafzai-facts-190712-hns/>>(2021/10/28) 「Those who want to participate in international cooperation」

<<https://www.jica.go.jp/for/join.html#a01>>(2021/11/6)

『Nihon Keizai Shimbun』 July 12, 2018

「Lack of girls' education "losses \$ 15-30 trillion" Malala complains」

Eliminating the Discrimination against Black People That Remains at the Bottom of Our Hearts

~Mutual understanding through active communication~

5301 Ryogo Onishi

Abstract

I think that the cause of discrimination against blacks is the fact that in the past. Laws were justify discrimination against blacks, and this idea is deeply rooted in people's minds as a fixed concept. I wanted to help people who are suffering from discrimination, even if only a little, so I thought of a way to improve the situation. One way is to communicate with people. By talking to my family and friends, I can share ideas that I don't have and the ideas of both sides, and I can deepen my thinking. It is also important to use the Internet to research discrimination against blacks and learn about what is happening around the world. If you are able, you can also take direct action, such as donating to IMADR (International Movement Against Discrimination). By actually taking action, you will be able to support black people and improve the current situation, even if only a little.

1 Introduction

The reason why I chose this topic is because I heard the news about the death of George Floyd on May 25, 2020, near Minneapolis, Minnesota, USA. However, a police officer held Mr. Floyd's head down hard with his knee for 8 minutes and 46 seconds, killing him but the white police officer continued to hold Mr. Floyd down and killed him. At the time, I was not really interested in black racism, and I realized that this kind of thing is happening in the world today, so I decided to do this research in order to help as many people as possible and to prevent such tragic incidents from happening.

The goal of the research is to eliminate discrimination against blacks and solve the problem completely. However, it has not been solved even though the top people in the world

have been meeting and making treaties all over the world. I think it may be difficult for me to solve this problem, but if I can get many people to cooperate with me, it may be possible to solve this problem. I think I can improve the current situation.

The research method will mainly use the internet. I have to know the current state of discrimination against blacks and what causes it in the world.

2 Discussion and implications

current status

The first is the income disparity. There is a difference in income between whites and blacks. Black men in particular have lower incomes because of discrimination even though they are doing the same work. In addition, educational opportunities may be different. For example, white people can have a good educational environment from a young age and can learn enough to do what they like. They receive a lot of simulations and are able to develop rich human beings. On the other hand, black people do not have access to adequate education which limits their job opportunities and leads to low-paying jobs.

Secondly, racist acts are still occurring. This is mainly seen on social networking sites, where there are many insulting remarks. There was even an incident where a supporter of a soccer team had a banner that read "ONLY JAPANESE" displayed at a game. I was surprised that there is actually racism in Japan. Today, there is no treaty or law that justifies racism, so why does this kind of racial discrimination occur? I think there are two possible causes.

causes

The first is the historical background. In the past, there were laws that justified racism. For example, slaves, black people, were forced to work long hours for low wages in order to develop the economy of the United States in the late 18th century. Jim Crow laws also created laws that justified racism in the United States. Blacks were banned from using public facilities, and where to sit and what car to ride on buses and trains were determined. They were completely separated from whites and discriminated against. Other countries in Africa also had a policy of racial segregation called apartheid. This was similar to Jim Crow laws, which were laws that justified racial discrimination in the United States. For example, I was

struck by the fact that when watching sports in a stadium, the seats were divided between whites and blacks.

The second is the fixed concept. There are currently no laws based on historical background. However, it is a fact that discrimination against blacks does occur. In other words, discrimination against blacks is still deeply rooted in our minds. One of the reasons for this is the inability to understand and respect others. We judge people by their appearance. They change their attitude based on the color of their skin. They also have a desire to look down on others in order to gain their own self-esteem.

3 Conclusion

At the conclusion of my research, I realized that it is a very difficult problem to solve because it cannot be solved even though so much of the world is taking measures to eliminate racism. Perhaps many people unconsciously discriminate against people in spite of the fact that they recognize that racism is wrong. While we are still considering effective solutions, I believe that the problem can be improved by thinking about what each of us can do. For this reason, I thought it would be a good idea for me to have conversations with people about racism. I think that communicating with others who have different opinions from my own will deepen my thinking. Donations to organizations are also effective. For example, IMADR (International Movement Against Discrimination) is a good example. You can also sign a petition or participate in a demonstration. In the future, I would like to make more original and effective proposals. In order to do so, we think it is important to collect more information and learn more about racism. By learning more about what is happening through discrimination against blacks, I can make concrete, effective, and unique suggestions.

4 Bibliography

BBC NEWS JAPAN, "The Case of George Floyd."

<https://www.bbc.com/japanese/54459128> June 10, 2021

Asia Pacific Human Rights Information Center, "What is Racism and Racial Discrimination?" <https://www.hurights.or.jp/archives/newsletter/section2/2001/01/part2.html>

May 12, 2021

FX Baibeau, "Deeply rooted discrimination against blacks in America, what is the history of discrimination underlying it?"

<https://fxbible.jp/blog/easy-news/2269/> April 22, 2021

gooddo, "What are the causes of racism?"

https://gooddo.jp/magazine/inequality/racial_discrimination/11290/ June 30, 2021

SDGs media, "The Problem of Black Discrimination"

<https://sdgs.media/blog/4871/> May 14, 2021

From an article by Kaori Sugita, "Trends in education policy toward the elimination of racial discrimination," June 29, 2021

http://www.human.tsukuba.ac.jp/~tfujita/archives_2003-2007/sugita/desegregation.html

Gendai Business, Kodansha, "Disadvantage from the moment of birth"

<https://gendai.ismedia.jp/articles/-/73864?page=5> May 29, 2021

NHK article "U.S. settles black man's death case by paying over 2.9 billion yen to man's family"

<https://www3.nhk.or.jp/news/html/20210313/k10012913041000.htm> July 12, 2021

English article "SAGE journals" "Discrimination and Telomere Length Among Older Adults in the United States: Does the Association Vary by Race and Type of Discrimination?"

Discrimination?" June 9, 2021

<https://journals.sagepub.com/doi/full/10.1177/0033354916689613>

Improving the Recycling Rate

～To Solve the Waste Problem～

5302 Kanamoto Ryuki

Abstract

Currently in Japan, the amount of garbage is increasing along with the economic growth and population increase, causing a garbage problem. The waste problem caused by the increase in waste is the shortage of landfill space and the deterioration of the global environment.

Regarding the shortage of landfill sites, Japan's final disposal sites have only about 10 years left. As for the deterioration of the global environment, there is carbon dioxide from the disposal of garbage and illegal dumping. Currently, Japan has established laws such as the Basic Law for Establishing a Sound Material-Cycle Society and the Law for Promotion of Effective Utilization of Resources to deal with the problem of waste, and has been promoting effective measures for the establishment of a sound material-cycle society and the 3Rs. It is important to increase the recycling rate in order to solve the waste problem, but Japan's recycling rate is low compared to other countries. Germany, which has the highest recycling rate among OECD countries, has a law that imposes a compulsory deposit system if the rate of use of returnable containers falls below 72% for two consecutive years. Although the introduction of a deposit system has many challenges, it should be introduced in Japan in order to improve the recycling rate.

Introduction

Currently in Japan, the amount of garbage is increasing along with the economic growth and population increase, resulting in a garbage problem. The waste problem due to the increase of garbage includes the shortage of landfill sites and the deterioration of the global environment. According to the Ministry of the Environment, the life expectancy of final disposal sites is said to be about 20 years more on average nationwide. In addition, burning garbage in incinerators produces carbon dioxide, a greenhouse gas, which increases global warming.

Furthermore, littering and illegal dumping of garbage will destroy the environment of mountains and oceans. In order to solve these problems, it is necessary to increase the recycling rate, which is why I started this research.

Discussion and Implications

First of all, we can reduce the amount of garbage by recycling. According to the Ministry of the Environment, the life span of final disposal sites in Japan is said to be about 20 years more on average nationwide. However, Environment at a Glance - OECD Indicators shows that Japan's recycling rate is 19 percent, the fifth lowest among OECD countries. In addition, the percentage of waste disposal by "incineration and energy recovery" is overwhelmingly the highest at 71%. Compared to the rest of the world, Japan has a low recycling rate and relies heavily on incineration. One of the reasons for this is that Japan is a small country compared to other countries. Therefore, incineration has become the mainstream method to bury as much waste as possible in a small area. Japan has been promoting recycling by enacting the Basic Law for Establishing a Sound Material-Cycle Society, but the recycling rate is not as high as in other countries.

In Germany, which has the highest recycling rate among OECD countries, according to the Ministry of Economy, Trade and Industry (METI), the "Packaging Decree" enacted in 1991 "imposed a compulsory deposit on all beverage containers. However, it also includes a provision that if at least 72% of all beverage containers are returnable, the mandatory deposit requirement for all beverage containers is waived." According to Daisuke Numata (2008), a deposit system is "a system in which a customer pays an extra amount of money when purchasing a product and receives a certain amount of money when returning the used product after consumption. I think this deposit system can be introduced in Japan to increase the recycling rate. The deposit system would make it easier to separate waste. However, there are some problems that will arise from the introduction of this system. It would require a lot of work for stores. There is also the problem of fraudulent behavior with old bottles, etc. and a decrease in demand for the items covered by the system. We need to think of ways to solve these problems in the future. I would like to see if it is possible for manufacturers to collect used bottles in bulk, rather than retailers, to reduce the time and effort required by stores.

Conclusion

The garbage problem is not a problem that can be postponed, but one that needs to be solved as soon as possible. In order to do so, it is necessary to increase the recycling rate. Japan has been promoting recycling, but compared to other countries, the recycling rate is not very high. While it is important for each individual to make efforts to reduce waste, it is also important for the government to take action on a large scale through binding laws, as Germany has done. Furthermore, we should actively introduce a system that can help improve the recycling rate, such as the deposit system in Germany.

References

- 「Environment at a Glance - OECD Indicators」 〈
<https://www.oecd-ilibrary.org/sites/ac4b8b89-en/index.html?itemId=/content/publication/ac4b8b89-en#chapter-d1e6>〉 (accessed 2021-10-10)
- 「本の廃棄物処理の歴史と現状」
〈https://www.env.go.jp/recycle/circul/venous_industry/ja/history.pdf〉 (accessed 2021-10-10)
- 「廃棄物等の発生、循環的な利用及び処分の現状」
〈<https://www.env.go.jp/policy/hakusyo/h30/html/hj18020301.html>〉 (accessed 2021-10-10)
- 「ドイツにおける強制デポジットの現状」 〈
https://www.meti.go.jp/policy/recycle/main/data/research/pdf/model15-2_ap2.pdf〉
(accessed 2021-10-10)
- 「ドイツのデポジットシステムから学ぶ、リユース重視の循環型社会のつくりかた」
〈https://organic-press.com/column/kohgi_column_vol34/〉 (accessed 2021-10-10)
- 「東京23区のごみ問題を考える」 〈
<https://blog.goo.ne.jp/wa8823/e/17a19ce5f6e144b30ccfee9b5a7ad096>〉 (accessed

2021-10-10)

「海外における容器廃棄物のリサイクル」〈

<https://www.env.go.jp/council/former2013/03haiki/y030-18/mat04.pdf>〉 (accessed

2021-10-10)

Education and ICT in Developing Countries

~To Increase Children's Literacy Rate~

5303 Masahiro Kaneko

I

Abstract of the study

The literacy rate, which is the ratio of the number of people who can read and write per population in a country, varies greatly between developed and developing countries. In many developed countries, the literacy rate is close to 100%, but in some developing countries, the rate is below 50%. This disparity is a serious problem that leads to poverty, creates economic disparity, and deprives children of their dreams. For this reason, I have been conducting research for a year to improve the literacy rate of children in developing countries. However, there is no budget to build facilities to educate children, and even if I do, there are many children in developing countries who work to support their families, so they cannot attend. There is a need for a solution to improve children's literacy without being affected by the current situation. For this reason, I propose education through video lessons. However, at present, there is no good communication environment in poor areas. Therefore, I have been conducting research that includes the improvement of the communication environment.

1 Introduction of the study

Literacy is very important for a child's future. If a child is not literate, he or she may suffer from various damages or be left behind by society. In addition, as people become adults without understanding the importance of education, they do not allow their children to receive education, which leads to a negative spiral of poverty. However, there is a huge gap in literacy skills between countries and even within countries, which leads to economic disparity. Education is essential to correct the gap in literacy rates between the developed and developing countries of the world. I have been researching to establish a system to provide free education to children who currently do not have a school in their community or are not allowed to attend school due to economic reasons, in other words, children who are not receiving an education. My goal is to contribute to a world where children in poor areas can learn to read and write just like in other countries by utilizing the advanced ICT

technology of developed countries, and to bring us closer to a world where children around the world are given equal opportunities to grow up.

〈Method〉

Gather information from multiple perspectives using literature on the Internet and consolidate it to form my own opinion. I will read articles on ICT education and education in poor areas, consider the advantages and disadvantages of current solutions, and come up with proposals that can compensate for the disadvantages without wasting the good points. Repeat the process for that proposal, listing the pros and cons.

2 Discussion and implication

In terms of literacy, there is a difference of about 50% between developed countries and some developing countries. In some areas, there are still only a few people who can read and write among the residents of a town. Low literacy rates have a huge impact on individuals and society. For example, when a person becomes ill, they may not know how to take proper medication because they cannot read, they may only be able to choose a job related to manual labor, or they may not be able to educate their children because they do not understand the importance of education. This is the situation in developing countries, but no effective remedial measures have been taken in the country. Conventional solutions, such as building schools, cost a lot of money, and even if the schools are built, they do not attract students due to the economic situation of the families, which require their children to work or help out at home. Therefore, in order to improve the literacy rate in developing countries, it is necessary to have educational institutions that are relatively inexpensive and can be compatible with working and helping at home.

I propose a system to improve the literacy rate through ICT-based video lessons, in which qualified teachers in Japan or abroad film their lessons for the children, and build one or two facilities with sufficient communication environments in each town of the poor area. A few adults like teachers will be sent to each facility or selected from the town. There will be no set hours for the children to study, but they will be able to come at any time when the facility is open and study according to their family circumstances.

However, in poor areas of the country, there is not even a television, much less a good communication environment. Therefore, in order to provide education through video lessons,

it is first necessary to establish a communication environment. Of course, it costs a lot of money to set up a communication environment. In Japan, the average cost of setting up a communication environment in a single-family house is 20,000 to 40,000 yen per month, and the initial cost is much more than that. The initial cost is even higher than that. In some poor areas, radio waves cannot reach, so radio towers are also needed. It is true that the initial cost of the project will be a lot of money, but the maintenance cost will be far cheaper than running a school.

The merit of this proposal is not only that the cost is relatively low. As I mentioned earlier, one of the problems with the solution of building a school is that the students may not be able to attend due to family reasons. Video lessons are filmed and watched, so even those who can only attend school in the evening and have more time to study than others can study at a pace that suits them.

ICT-based education is currently attracting a great deal of attention in developed countries. Many studies have been conducted in developed countries, and it is a well-known fact that the quality of children's learning can be improved by incorporating ICT into the classroom. There are also many cram schools for high school students in Japan that mainly use video lessons. Developed countries should make use of such technologies for the benefit of poor children in developing countries.

Issues

In my proposal, I have only created an opportunity for children to come into contact with the written word. It is difficult to provide advanced education through video lessons alone, and there are some subjects that cannot be taught. Therefore, unless we can further improve the academic ability of children and increase the rate of advancement to higher education and universities, poor children in poor countries will not be able to escape the negative spiral of poverty. However, achieving those goals will cost a lot of money and will not be easy to solve in terms of working with the country itself and combining it with economic problems. The world's poverty problem is a complex mix of issues. I have only approached this issue from the perspective of improving the literacy rate, and I would like to consider it from new perspectives in the future.

4 reference

「世界の識字率 最低は15%」 〈https://www.worldvision.jp/children/education_03.html〉 10月7日

「識字率とは？」〈<https://gooddo.jp/magazine/education/4077/>〉 10月7日

「途上国の子供に読書を」〈<https://synodos.jp/international/17011/2>〉 10月7日

「JICA 教育事業プロジェクト」<https://www.jica.go.jp/activities/issues/education/index.html>
10月7日

「国際協力機構2012年 JICA WORLD 特集識字教育 NO41」 10月7日

「モンゴル、ネパール、スリランカのIT事情」 占部 浩一郎 著 10月7日

Shopping for Patients with Food Allergy Disease

~Quickly, Easily, and Accurately Identify Allergens~

5304 Takehiro Koike

Abstract

I have an allergy. From my past experience, I have seen my parents feel uncomfortable when shopping for a long time, and I have often felt uncomfortable myself. To be more specific, when I was a child, there were few kanji characters that I could read, so it was difficult for me to shop by myself. Also, my parents felt inconvenienced by the small font size of the ingredient labels. Thus, I thought of a way to solve the inconvenience of shopping for allergy sufferers, and considered the possibilities and the benefits. There are two solutions I came up with. The first method is to put an enlarged copy of the labeling for a total of 27 items, which is seven specified ingredients such as milk and eggs, and 20 items which is recommended to be written on labels, next to the price tag, like the price tags on many product shelves. This can improve the difficulty of reading text due to the size of the letters and prevent people from misreading of raw materials on the label that are difficult to understand. The second method is to use an app to check for allergens. If consumers register their allergens in the app in advance, by scanning the barcode when shopping they can instantly know whether the product contains the allergen or is on the same production line as the product with the allergen. In addition, how much materials contained in the product can be listed to support a wide range of patients. Based on the two solutions, it's necessary to predict the advantages, disadvantages, and new accidents that may be involved, and to create rules and regulations.

1 Introduction

The purpose of my study is to reduce the shopping burden for allergy patients. The burden means the act of people who are suffering from food allergies having to look at the back of the product every time they want to see if they can eat it, and check if the ingredients contain

allergens. Speaking about this, Mr. Shintaro Imamura, President of the “アレルギーっ子パパの会”, said, "I had to turn over the processed products one by one to check the labels...it was really hard," This indicates that allergy patients and their families are feeling the burden. One of the inconveniences I felt was that the text was too small and difficult to read, and when the same kanji characters are used for a raw milk, a powdered milk, an emulsifier, a lactobacillus, lactose, etc., but there are differences in the ingredients, or when the ingredients are lumped into one ingredient, such as spices. I considered the solutions, advantages and disadvantages, and the possibilities of realization for the two mentioned in this research. In addition, I had to consider the people who can't read Japanese and have various cultures and I revised the value for more people around the world.

The following are the research methods

1) Indicating the research's worth.

Since this research was started based on my own experience, it is necessary to indicate how the people with allergic diseases feel these inconveniences. I would take a survey about the people's inconveniences but because of the corona pandemic, I couldn't do it.

2) Thinking about solutions

I will consider solutions for the points mentioned above: I) difficulty in reading due to the size of the text, and II) difficulty in recognizing the ingredients. I need to consider the following three points: the speed of recognizing the raw material, the ease for the consumer to handle, and the accuracy of the information provided when I think about solutions.

3) Considering the generality of the solutions.

It is necessary to consider whether the idea of the solution is broad and can be used by many people. In this case, we need to make sure that the solution is easy to understand, not only for children and the elderly, but also for Japanese and foreigners. The target at this time is to consider considerations for foreign people who cannot read kanji or regarding expressions that may cause misunderstandings depending on their culture.

4) Discuss the possibility of the solution.

I will consider how realistic the solution is. In this process, it is necessary to consider every imaginable case, including the disadvantages and troubles of this system. At the same time, I also consider what kind of cooperation is necessary to realize this solution.

2 Discussion and implications

Regarding the inconvenience and difficulties that patients with allergic diseases and their families face, Shintaro Imamura, president of the NPO Allergic Papa's Association, said, "I had to turn over each processed product one by one to check the raw materials...it was really hard." From this point, there are two problems (1) difficulty in reading because of the size of the letters, and (2) difficulty to recognize the ingredients, it would be beneficial to have a solution that takes into concern the ease with which people with allergic diseases and others around them can recognize the ingredients, whether they can be easily handled, and whether relevant information can be provided.

The solution to (1) problem is to put up enlarged labels and illustrations of 27 items in total, including the names of raw materials, 7 specified raw materials, and 20 items for which labeling is recommended, next to the price labels, just like price labels are put up on many product shelves. This will improve the difficulty of reading text due to the size of the letters that elderly people face and prevent them from misreading raw materials on the label that are difficult to understand.

The solution to (2) problem is to use an app to check and know allergens.

If consumers register their allergens in the app before shopping, they can scan the barcode when shopping and instantly know if the product contains the allergen or if it is on the same production line as the product with the allergen. In addition, by listing how much material is contained, the app will be easier to use for allergy sufferers who are restricted in their intake.

3 Conclusion

I suggested two solutions to solve the problems.

The solution to solve (1) problem also has the disadvantage of making product packaging harder to see and shop , but with the advent of subscription services, according to Teppei Yuzan, "the era of mending the surface with design is over," the value of the goods' design will decrease, and safety will be a priority, so this is not a major disadvantage.

About the resolution, the app will be able to handle a total of 27 items other than the 7 specified raw materials and 20 items recommended for labeling, so that it can be used to control the calorie intake of people on a diet. However, in order to realize this, information

such as the name of the raw material of the product must be linked to the barcode beforehand, which increases the burden of the registration process. In addition, it is necessary to consider what kind of amendments to laws and regulations are needed to ensure safety.

The above is the issue of this study.

4 References

社会の食物アレルギー対応力向上を支援するNPO法人「アレルギーっこパパの会」

<https://www.food-allergy.jp/use/scene/interview/detail/id=873> (R2 3月24日)

パッケージデザインは新時代に順応できるか。

<https://www.pkg.tokyo/magazine/1180/> (R2 3月24日)

独立行政法人 環境再生保全機構 すこやかライフ

<https://www.erca.go.jp/yobou/zensoku/sukoyaka/46/topics/topics05.html> (R2 3月24日)

表示レイアウト及び文字の大きさについて (消費者庁食品表示企画課)

https://www.cao.go.jp/consumer/history/03/kabusoshiki/syokuhinhyouji/doc/k140320_shiryou2.pdf (R2 3月24日)

栄養科だより

<http://www.bmk.or.jp/fukui/201703eiyoukadayori.pdf> (R2 3月24日)

ウィルモア

<https://www.willmore.jp/> (R2 3月24日)

Game Dependence Cure Complement Project

~Always Be a Gamer~

5308 Shutaro Takahashi

Abstract

Game is one of the most favorite play in the world. Old, game is play one person. But now, spread the internet and spread online game, so we can play the game with many people to indirect. And now game is renamed to e-sports and playing many countries to one of the new sports. Now world e-sports market size is larger and larger. By the way, the price of e-sports winner get 3 million \$ (300 million yen). That tournament was opened in the US. So now e-sports player is one of the sports player and one of the favorite job.

But, that game having a problem. That is in 2019/5/25 WHO was presented a new sick name. That sick's name is "game dependence". Game dependence, other names are game sick, game reliance, and game addiction. That sick's symptoms are they can't stop play the game and don't sleep and don't go to school and any more. The game dependence is one of the most scary dependence. So the game and e-sports are not good things to many people. But, game having many merits to us and e-sports is very big economic development. So game and e-sports having very good things. But the game dependence was put on the bad impression. I think that is not good. So I search the good cure way of game dependence.

The new guidelines

The searching purpose is reduce the game dependence patients and enlarge the e-sports industry.

The way of searching is the internet and playing the game in real way.
And search and compare existing cure ways.

3 Conclusion

The outcome of this study. Think about normal, we can't reduce patient and enlarge the e-sports industry. But this time, I made good way of cure the game dependence. That way is the patient of game dependence are grow up to the pro gamer. But many people say "that way is not good". Because, this plan is game dependence patients playing the game. That is like as pour oil in fire. But that is not. Because pro gamer having exclusive manager. The manager managed many things in their life. Like meal time, study time, sleep time, and time of practicing game. And if end the practice time of game, the manager collect the game. And the existing cure way is game dependence patients are

can't play the game. But this way is very big to game dependence patients load. But my cure way is limit only time, but in the time, game dependence patients can play the game. That is very healthy to body and health. And more, game dependence patients having more than one person of motivation and skills. So these people can fight in the world by the game. And last, if they couldn't be the pro gamer, but that time, maybe they can stop playing the game. So I think, if we use this way for game dependence patients, we can reduce game dependence patients and we can enlarge the e-sports industry.

This study's task is that cure way is can't adaptation to the severe patients, Many countries include Japan are not big the e-sports industry, return of failure is too big. If improvement these problem, this cure way is to be a very good things. So I think improvement this plan to more good way.

4 References

<https://nakaimachi-yakkyoku.co.jp/topics/gameaddiction/>

ゲーム依存症の診断と治療

https://www.oca.ac.jp/work_books/5714/

job book 仕事図鑑

<https://mira-i.jp/step/>

MIRA-i ネット・ゲーム依存と回復のステップ

<https://www.bbc.com/japanese/49148262>

BBC NEWS Eスポーツ フォートナイト

Solving The Medical Area In Depopulated Area

~use technology for medical~

5309 Yumu Takei

Abstract

The depopulation of rural areas in Japan has become a serious problem. One of the problems is medical care. One of the problems is the shortage of doctors. There are 637 doctorless areas in Japan. However, the number of doctors in Japan has been increasing every year, and in 2008, the number exceeded 300,000. As a result, the number of doctors in Japan as a whole is sufficient, but the number of doctors differs from place to place, resulting in a shortage of doctors. One of the reasons for the decrease in the number of doctors in rural areas is the lack of funds to provide them. I would like to propose a solution to this problem.

Donation Details Research Details

First, let me explain the motivation for this research. Recently, the medical field has been under pressure due to a new coronavirus. It has become a global problem, and there are various problems. One of them is the lack of human resources. That is why I started this research to investigate the problems in the medical field. According to one survey, the problems in the medical field are the shortage of doctors, medical accidents, and the quality of life of workers. Of these, the most important was the shortage of doctors. Depopulation in Japan is becoming increasingly serious. The first thing we need to know about the current situation of depopulated areas is the financial situation. According to the Ministry of Internal Affairs and Communications' "Current Status of Depopulated Areas and Measures Taken to Date in Depopulated Areas," depopulated areas have a financial strength index that is smaller than the national average. 817 municipalities, or about half of all municipalities, had depopulated areas in fiscal 2018, and 10 million people, or 8.6% of the total population, live in a vast area that covers about 60% of the country! Japan's population is 127 million people. Ten million people, or 8.6% of the total population, live in a vast area that accounts for about 60% of Japan's land mass. (From Hekiji Network) Currently, mergers with other regions are taking place to counter depopulation. According to the same survey, one of the effects of mergers is a "decline in financial services. According to the same survey, the impact of mergers is a "decline in financial services," and it is safe to assume that this includes healthcare. Next, let's take a look at the current situation in healthcare. Lack of human resources and inadequate medical systems have been cited as issues in the medical field in Japan. Here, I would like to discuss the shortage of doctors in depopulated areas. Currently, there are 637 "doctorless districts," which are areas where there are no doctors or

hospitals at all, even though more than 50 people live within a 4km radius. However, the number of doctors in Japan is on the rise. However, the number of doctors in Japan is on the rise. The survey found that there are many doctors in populous areas such as Tokyo and Osaka, as well as in Tokushima and Kagawa prefectures. The survey also took a closer look at Saitama Prefecture, where the number of doctors is particularly low. According to a survey by the Ministry of Health, Labor and Welfare, we found that the number of doctors is low in rural areas and in the suburbs of the Tokyo metropolitan area. The reason for this is that there are large hospitals in the cities and patients are concentrated there, making the surrounding hospitals unsustainable. On the other hand, let's talk about depopulated areas. Dr. Yanagawa of Teikyo University pointed out the lack of funding and inadequate environmental maintenance. There are many other problems as well. For example, there are problems unique to depopulated areas. Lack of sufficient supplies of daily necessities is thought to be one of the reasons for the shortage of doctors. In fact, the number of supermarkets in depopulated areas is much smaller than in urban areas. There are many issues that can cause a shortage of doctors, but here we will focus on the lack of funding, considering the ease of research. In this case, funding means money to build hospitals in rural areas, doctors, and poor living conditions. In my research, I researched ways to solve the funding shortage from the perspective of ease of research proposals. One of the specific ways to raise funds is through crowdfunding. This makes it easy for anyone to raise funds. The advantages and disadvantages of crowdfunding are as follows.

Advantages Anyone can use it, regardless of age or occupation. (Some restrictions apply.)
Can be used to raise funds from low amounts.

Disadvantages Collection may not be successful. A return is required (some crowdfunding services such as MacAke do not require a return o).

Taking these factors into consideration, we would like to incorporate them into the collection of funds for medical treatment. The type of crowdfunding to be used is donation-type crowdfunding. However, the question is what to do in return.

So, I am thinking of applying for a hometown taxation. The idea is to have people donate local specialties to the medical field in return. For example, if a person donates funds for medical treatment, the local specialty will be returned in return. However, there are a number of problems. First of all, donation-type crowdfunding is not always easy to raise funds. In fact, crowdfunding is not really suited for donations, as it is essentially a way to invest in startups and create products in return. However, as mentioned earlier, crowdfunding is easy to adopt because it is easy to do. For this reason, I would like to propose the donation type. The following are some of the current donation-type crowdfunding.

camp fire donation type crowdfunding ready for donation type crowdfunding

These have a good track record, but there are not many examples of donation in Japan.

Therefore, this research will be challenging. These crowdfunding methods also have their challenges. There is also a problem with these crowdfunding programs: they do not offer anything in return that can be used for money. The proposed projects are based on local

products, but these cannot be used. Therefore, we need to propose a new type of crowdfunding. I would like to try to solve these problems in the future.

Finally, I would like to introduce some of the measures that are currently being taken to deal with the shortage of doctors. First is Jichi Medical University. Jichi Medical University sends students to depopulated areas for two to three years after graduation from the university. Some local governments also provide subsidies. Modern technology, such as remote diagnosis and robotic surgery, is also being tested. However, since these are not so familiar and difficult to study, we focused our research on the lack of funding.

And I think using front line technology. For example Hitachi is studying VR medical treatment in depopulated areas.

References

<https://gemmed.ghc-j.com/?p=31602> GEM MED

<http://www.hch.coop/hch/syakaihosyou/iryohoukai>.<https://www.minnanokaigo.com/news/kaigogaku/no796/>
みんなの介護

<https://www.hekichi.net/about/medical>

Health Care Delivery System and the Health of the Elderly

~Thinking from Walking Ability~

5310 Takuro Takemura

Abstract

This study considers the walking ability of the elderly to provide medical care to underdeveloped areas. The elderly may unintentionally injure their knees or ligaments, and these injuries can prevent the elderly from visiting hospitals. Therefore, we will be involved in the medical care of the elderly by promoting the use of mobile Magnetic Resonance Imaging(MRI) · Computed Tomography(CT)-equipped tracks produced using the concept of economies of scale. In addition, we will also conduct this research on how to detect nerve abnormalities, which are difficult to find.

1 Introduction

Currently, the geriatric population ratio, which is the ratio of elderly people (65 years old and older, Japan Geriatrics Society, 2017) to the Japanese population, is 26.1% (High School Map p. 149), the highest in the world. Having suffered my own anterior cruciate ligament injury, I am acutely aware of the importance of the ability to walk. Therefore, the purpose of this study is to consider and disseminate how to provide medical care to elderly people whose walking ability declines (age-related changes in the gait cycle of healthy men walking at maximum speed, Gen. Ito, Hiroshi Nagasaki, Hitoshi Maruyama, Ken Hashizume, Ryuichi Nakamura, 1989).

I learned from my doctor when I was injured and from the physiotherapist when I was rehabilitated that the medial meniscus and anterior cruciate ligament are sometimes injured unconsciously in the elderly. In this study, we confirmed this fact and found it to be true. In addition, it was found that the injuries occurred at a relatively young age of 40 years, not at the age of 65 years, which is the age at which the definition of elderly is reached. (Japanese Orthopaedic Association)

In addition, the anterior cruciate ligament and medial meniscus are not contrasted by X-rays, so it is necessary to perform an MRI examination to contrast them by magnetism. However, the installation cost is 1.2 billion yen (MRI by Hitachi, Ltd.). It is considered to be economically difficult for small hospitals and clinics in depopulated areas to install this expensive device. In such depopulated areas, it is not easy for some patients to travel to areas where they can receive adequate examinations and medical care. We wanted to minimize the impact of the hollowing out of local medical care by making it possible to receive the same medical services as in urban areas with less risk of travel.

There are depopulated areas and areas with few large hospitals in the world. Therefore, we can present our research by applying it to depopulated areas overseas, and generalize it to "medical care for depopulated areas," not only in Japan. This is the first axis of our research.

In addition, based on his own experience of injury and illness, he realized that there was no easy way to contrast and diagnose nerves; CT and X-rays can diagnose bones, and MRI can diagnose the brain, blood vessels and ligaments, but this is not possible for nerves. Therefore, he developed a method to contrast the nerves as the "second axis."

2 Discussion and implications

I . research objectives

In this study, I based on 2. Contents of research below

- (i) To prevent medial meniscus injuries and anterior cruciate ligament injuries in unconscious situations. To provide necessary and sufficient medical care to the elderly whose ability to walk is declining.
- (ii) To find a way to contrast the nerves.

II . research methods

- (i) Formulate a research plan.
- (ii) Confirmation of research objectives.
- (iii) Review of previous research. Research preparation.
- (iv) Research
- (v) Research results and reflections on the current study
- (vi) Summary of Research

III . research results

In the course of this study, we have found that there are mobile MRI-equipped and CT-equipped tracks. Although these vehicles are large, we believe that they can provide prompt and appropriate medical care by eliminating the disadvantages of having to go to a large hospital for examinations and the difficulty of driving or traveling by public transportation for people who are injured. Therefore, we thought it would be a good idea to promote the use of these tracks.

However, it turned out that there were some disadvantages, such as the large size of the tracks, which made them difficult to maneuver, and the high cost of installing an MRI scanner. However, there are areas where medical care is not available not only in the 47 prefectures in Japan but also in other countries. In addition, we believe that the system using these vehicles can be applied to areas where the distance to medical facilities is far, such as Hokkaido in Japan, and inland areas of the United States, Australia, and Africa in other countries.

Therefore, I thought that MRI-equipped and CT-equipped tracks should not be abandoned solely because of costs, and as I was conducting research, I thought that the concept of "economies of scale" might provide a clue to a solution. Economies of scale refers to a system in which the more products are produced, the lower the fixed costs become as a percentage of the product's cost, and the more products are produced in large quantities, the lower the cost becomes.

(<https://product-senses.mazrica.com/senseslab/business-efficiency/scale-merit>)

MRI-equipped cars and CT-equipped tracks aren't ordinary cars, so I don't know if this system can be fully applied. I am not sure if this system can be fully applied to MRI equipped tracks and CT-equipped tracks, but I believe it can be applied in some small way. If mass production becomes possible due to economies of scale, it will be possible to reduce costs and expand from depopulated areas to the entire country, creating a system that allows people to receive medical care without having to travel far when they are injured. It will also enable us to provide medical care to people in Africa and other areas where proper medical care is not available due to lack of technology to detect diseases and injuries.

By expanding the number of MRI-equipped and CT-equipped tracks and making them available for testing, we believe that we can prevent medial meniscus and anterior cruciate ligament injuries in unconscious situations and provide necessary and sufficient medical care for elderly people whose walking ability is declining.

Next, the second axis was about nerves, and we came to the conclusion that it is difficult to contrast the nerves themselves because of their nature. However, it was found by Optimal Reagents for Neuroproteomics: Understanding the Molecular Organization and the Complexity of Brain However, we found that it is possible to detect The interaction of these secreted proteins in the brain influences learning ability, memory, sensory organs, motor functions and their coordination, and emotions. Therefore, early detection of protein dysfunction and dysregulation in the brain can reveal neural abnormalities without contrast. Although various reagents can be used to determine the state of the brain, they are all based on the detection of cells in the brain. It is difficult to say that it is beneficial in many respects to perform an operation just to collect cells, although there are no more obvious findings.

However, it turns out that there is nothing that can be done for nerve abnormalities. In the future, we will be able to provide better medical care by searching for a method to collect brain cells without using a scalpel.

3 Conclusion

(i) To provide necessary and sufficient medical care to elderly people whose walking ability is declining. The spread of CT and MRI-equipped tracks by taking advantage of economies of scale.

(ii) To find a way to contrast the nerves. To be discovered by detecting components from brain cells. I have come to the conclusion that.

In the future, I'd like to conduct research while also considering practical aspects such as how much cost performance there is in them. We would also like to conduct research that considers the provision of mobile medical sites other than CT and MRI.

4 References

• The Japan Geriatrics Society (Reading 11/18/2021)

(https://www.jpn-geriat-soc.or.jp/proposal/pdf/definition_01.pdf)

Age-related changes in the gait cycle of healthy male subjects during maximum speed walking

• Original Author: Motoi Ito, Hiroshi Nagasaki, Hitoshi Maruyama, Ken Hashizume, Ryuichi Nakamura (Reading 11/18/2021)

(https://www.jstage.jst.go.jp/article/geriatrics1964/26/4/26_4_347/_pdf/-char/ja)

Japanese Orthopaedic Association

(https://www.joa.or.jp/public/sick/condition/meniscal_tear.html)

• Optimal Reagents for Neuroproteomics: Understanding the Molecular Organization and the Complexity of Brain / Nervous System Suzanne Smith, M.S; Scott Meier, M.S.; Hai-Yan Wu, Ph.D.; Kay (Reading 11/18/2021)

(http://apps.thermoscientific.com/media/cmd/HUPO_2012/569_iHupo2012.pdf)

• Economies of scale are a way to reduce costs. (Reading 11/18/2021)

(<https://product-senses.mazrica.com/senseslab/business-efficiency/scale-merit>)

Practical Application of Allelopathic Conversion to Pesticides and Its Drawbacks

~Potential of Allelopathy as a Pesticide~

5311 Tsuganezawa Sora

Abstract

Rather than planting allelopathic* plants on the land to benefit from them, we should consider whether we can extract the allelopathic substances themselves as medicines and use them by sprinkling them on the land. Since different types of allelopathic substances inhibit or promote different things, we can expect to reduce the negative effects on the plants we want to grow. Compared to direct planting of allelopathic plants, the land can be used for agriculture and the plants do not die and become fertilizer. However, the use of hairy vetch, which is said to have strong allelopathic properties, as a pesticide is not realistic at the moment due to the cost of the land needed to grow the allelopathic plants and the labor required to produce the allelopathy. It will be a challenge to try other plants than hairy vetch and to estimate the labor required to grow and produce allelopathy.

※Allelopathy

A phenomenon in which a chemical substance released by a plant exerts some kind of inhibitory or facilitative effect on other organisms.

1 Introduction

When dealing with pesticides in Japan today, there are many things to be aware of, such as the storage environment, the weather at the time of use, and the environment of the vehicle used. In fact, according to the "Guide to the Safe Use of Pesticides - Fukui Prefecture", "People with the following conditions should refrain from working: 1) Those who are fatigued, 2) Those whose physical strength, especially liver function, is deteriorating" and "Hot weather is dangerous because sweat glands open up and absorb pesticides more easily.

Today, Japan's agricultural workers are also aging. Farming is hard work, and as people get older, their physical strength naturally decreases. Even if the pesticides sold in Japan are designed to be safe for pesticide users, the risk of harm to the human body is not zero. In addition, for example, for pesticide users in countries where the temperature is high all year round near the equator, we can expect a high possibility of pesticides causing harm to the human body, not only in terms of temperature but also in terms of pesticide safety. Therefore, I thought that by proposing pesticides with only natural ingredients, we could take into consideration the health of pesticide users in countries other than Japan. For example, asparagus has such strong allelopathy that its own allelopathy can cause continuous crop failure, but I have never heard of anyone dying from asparagus. Since there is already a method of planting allelopathic plants directly on the land and receiving their effects, the purpose of this project was to see if the substance itself, which is the source of allelopathy, could be extracted as a medicine and used in the form of spraying on the land.

The sandwich method is used to observe the growth inhibition rate of only the allelopathic plants used on other plants, and to examine the effect of allelopathy alone, without the influence of shading or fertilizer on the allelopathic plants. If the growth inhibition rate of larval sprouts of lettuce in the sandwich method of plants studied in the previous research is X (%), then X (%) of the plants that should have grown in the same range as the sandwich method will not grow. Based on the live weight of the plant needed in this case and the live weight of the part of the plant used in the experiment, determine how much of the area can be covered by one plant. If possible, it would be desirable to study the labor required to extract the allelopathy, the labor and equipment required to grow the plants, and the difference in allelopathic effect between the larval shoots of lettuce and "weeds" in general, but this was not possible this time.

2 Discussion and implications

In the case of hairy vetch, according to "Weed Suppression by Allelopathy of Hairy Vetch - Core", 10mg of hairy vetch leaves and stems allelopathically alone will prevent 70% of 10 weed plants in 9.6cm² size from germinating. In 2014, Japan's cropped area was 1.92 square

meters. In Japan in 2014, the total area of cropping was about 4 millions ha, so we need 21593.75 allelopathic plants. This amount of hairy vetch is expected to take a lot of time and effort to grow, collect, sort out the parts, and extract. Therefore, at least, the use of hairy vetch as a pesticide is not practical at the moment.

3 Conclusion

I should try other plants and to predict the labor required for cultivation and extraction. In addition, since we assumed that lettuce, which is susceptible to allelopathy, and weeds in general have the same resistance to allelopathy, we need to investigate the resistance of weeds.

4 References

「アレロパシー研究の最前線 - 農研機構 – affrc」 <www.naro.affrc.go.jp/techdoc/inovlec2004> (2020/7/22)

「ヘアリーベッチのアレロパシーによる雑草抑制効果-Core」
<<https://core.ac.uk/download/pdf/59164339.pdf>> (2021/1/6)

「5 アレロパシーの効果に関する実験」 (2021/1/6)
<http://www.rinya.maff.go.jp/j/kokuyu_rinya/kakusyu_siryu/pdf/00446_4_h14_002.pdf>

「ヘアリーベッチ - 農研機構」
<https://www.naro.affrc.go.jp/org/niah/disease_poisoning/plants/hairyvetch.html> (2021/1/13)

「セイルミツギ 植物性除草剤」 <<http://sil.sub.jp/zyosozai.html>> (2021/1/20)

「除草剤を使わず、塩で安全除草！！ - 暮らしの読みもの - EM ...」
<<https://www.em-seikatsu.co.jp/contents/reading/detail.php?id=133>> (2021/1/20)

「農地面積の動向：農林水産省」 (2021/1/20)
<https://www.maff.go.jp/j/wpaper/w_maff/h27/h27_h/trend/part1/chap2/c2_0_02.html>

「農薬安全使用ガイド - 福井県」

<www.pref.fukui.lg.jp/noujou-nouyaku_guide_d> fil> (2021/3/21)

Reduce Paper, Reduce Luggage, and Protect the Earth

~Using Electronic Devices to Go Paperless in Schools~

5313 Name:Soken Nakayama

Abstract

There is one thing that I have always complained about in our school life. One of the reasons is that my luggage is heavy. This is because of the large amount of paper. According to the World Wildlife Fund(WWF), using too much paper has a negative impact on the environment. Therefore, my goal was to reduce the amount of paper used, thereby reducing the amount of luggage and protecting the earth. To achieve this goal, I am trying to use the Global and Innovation Gateway forAll school(GIGA school) concept to reduce the amount of paper used and provide everyone with equal IT skills so that there is no information gap.

1 Introduction

1 – 1 Purpose of the study

I use a bicycle to get to school, I have always been frustrated by one thing. One thing I have always complained about is how heavy my luggage is. I looked into what was making it heavy and found out that it was the paper (textbooks, notebooks, newsletters, class prints). I know some of you may say, "Maybe it's because you don't organize your stuff well." I don't think so. Especially before a test, you need to bring home a lot of textbooks, notebooks, and handouts. Some people even bring all their textbooks, notebooks, and handouts home to study all their subjects on weekends. In a previous presentation on this research, I focused on the amount of luggage, and many people shared this opinion. In addition, I used to carry a large amount of luggage by using a handbag, which caused an inflammation of my wrist called carpal tunnel syndrome, and even now, six months later, I cannot carry heavy luggage. Furthermore, since I couldn't use my hands to carry the load, I had to use a bag instead, which worsened my herniated disc. I also had a question here. We use a lot of paper in school, not

only textbooks and notebooks, also printed materials, I wondered if we were using too much paper. According to the WWF, "Japan's annual paper consumption is 201 kg, far more than the world average of 56 kg per capita, and the country consumes the most paper in the world. In addition, Indonesia, a country that exports many paper products to Japan and accounts for 63% of the copy paper imported to Japan in 2019, has been losing large areas of its rich tropical forests to plantations of trees used to make paper for many years. In these areas, not only have forest ecosystems, symbolized by the now endangered tiger and elephant, been damaged, there are also reports of violations of the rights of indigenous and local people." According to the Food and Agriculture Organization of the United Nations (FAO), "10 million hectares of forests were lost between 2015 and 2020." On the other hand, it is also reported that some forests have increased due to afforestation and natural regeneration. The environment of artificial forests planted for industrial purposes differs greatly from that of natural forests, and it generally takes many years to restore a lost forest and the ecosystem that existed in it to its original state. For these reasons, simply offsetting the area of deforestation with the area of increase may lead to an underestimation of the reality of deforestation, which should be faced. This situation is happening all over the world." For this reason, I decided that I wanted to protect the earth by reducing the amount of paper used. Even more conveniently, reducing paper consumption means less baggage. In other words, I realized that reducing the amount of paper consumption would be kind to the global environment, and we would also be able to reduce our baggage, which would benefit both parties. That is why I started my research on the theme of "Reduce Paper, Reduce Luggage, Protect the Earth" with the sub-theme of "Using Electronic Devices to Go Paperless in Schools. However, I thought it would be difficult to achieve the goal of reducing paper use if it became more inconvenient than before. Therefore, I decided to conduct my research with the idea of reducing the amount of paper used without lowering productivity by making it as convenient as before or more convenient than before.

1 – 2 Research Method

- 1) Think.
- 2) Research on the Internet.

- 3) Thinking based on this information.
 - 3) Based on this information, think.
 - 4) Use electronic devices and try it out.
 - 5) Summarize again.
- Repeat 1) ~ 5) steps.

2 Discussion and implications

When I explored how electronic devices could be used to replace them, I found that the iPad was the best choice. First, according to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), there are three types of computers that are given to each student: Windows PCs, iPads, and ChromeBooks. Secondly, the size of the iPad is almost the same as that of an B5 sheet of paper, and the screen ratio is the closest to that of an B5 sheet of paper, making it possible to view regularly distributed school communications in data format without stress. Thirdly, the iPad comes with an accessory called Apple Pencil, which allows you to write handwriting without stress. Moreover, if the Apple Pencil is expensive and your budget is high, you can substitute it with a third party one. There are also many different types of keyboards to choose from, and you can buy one within the government subsidy, or if you have the budget, you can go for a slightly higher grade.

3 Conclusion

There are schools that hand out Windows PCs and ChromeBooks instead of iPads, so we need to find a way to replace these two devices. In addition, due to the fact that the iPads are distributed to all elementary and junior high school students, some of them may not be good at operating machines, so it is necessary to improve the system so that it can be used by anyone. We will continue our research on these issues.

4 References

「森林保全と持続可能な紙利用」

〈<https://www.wwf.or.jp/activities/basicinfo/1382.html>〉 (2020/09/02)

「GIGAスクール構想について」

〈https://www.mext.go.jp/a_menu/other/index_0001111.htm〉 (2021/02/10)

「iPad」 〈<https://www.apple.com/jp/ipad-10.2/>〉 (2021/02/10)

「ロジクール ワイヤレスキーボード」 〈[ロジクール ワイヤレスキーボード K480BK Bluetooth キーボード ワイヤレス 無線 Windows Mac iOS Android Chrome K480 ブラック 国内正規品 2年間無償保証](#)〉 (2021/02/12)

「ととゆめぶろぐ「【2020年】iPadでも使える！『logicool K480 マルチデバイスワイヤレスキーボード』レビュー！」 〈<https://osakanadream.com/logicool-k480>〉
(2021/02/12)

「iPad in education: A case study of iPad adoption and use in a primary school」

〈<https://a.storyblok.com/f/62420/x/6bde1f6bb0/2012-hicss-ipad-in-education.pdf>〉

(2021/11/19)

Bringing High Technology to Foreign Workers' Home Countries

~Workforce for the Mother Country~

5315 Fujino Toji

1 Perpas

Every year, about 160 million people worldwide are affected by disasters, which claim about 100,000 lives and cause more than 40 billion dollars in damages. In the last decade, both the number of incidents and the number of people affected have tripled compared to the 1970s. In some of the least developed countries, the amount of damage can be more than twice the GDP, and disasters affect these countries in many ways.

2 Disaster Reduction Strategies in Developing Countries

Establishment of disaster management system and legal framework. In developing countries, there is no department in charge of disaster management in the central or local governments, and in some countries, when a disaster occurs, it is left to the Red Cross Society. Therefore, the first task for developing countries is to establish a national disaster management system and legal framework. For example, it is important to lay the foundation for a national disaster prevention system by developing a basic law on disaster countermeasures and establishing a central disaster prevention council.

Next, I would like to talk about the integration of the perspective of disaster reduction into development planning. In order to build a disaster-resilient country, it is necessary to incorporate the perspective of disaster reduction into development planning. In order to achieve this, risks should be identified, analyzed and assessed, disaster reduction should be recognized as worthy of investment at the national level, and effective measures with high priority should be identified and incorporated into national development plans.

3 About LDC

There are 9 countries in Asia, 33 countries in Africa, 3 countries in Oceania, and 1 country in North America. In those countries, the percentage of people who lose their lives due to natural

disasters is high due to the lack of infrastructure, even in urban areas, and this is considered a problem. It is necessary to improve the infrastructure and disaster prevention in those countries.

4 Hazard map

I decided to prepare hazard maps. In poor countries, there are many areas where hazard maps are not widely available. At first, I wanted to create a hazard map that could be viewed on the web and show in real time the availability of open spaces, food, and whether the area was safe or not, but I decided against it because the infrastructure was not well developed and the internet penetration rate was 28.0% in post-developing countries. So we decided to use the analog method of writing on paper. However, there are two problems so far: first, the low literacy rate means that people may not understand what is written on the maps, and second, there is a need to build safe shelters in the first place. The first problem can be solved by increasing the literacy rate, but it is not an easy problem to solve. The first problem can be solved by increasing the literacy rate, but it is not an easy problem to solve, and it cannot be solved in a short time, so alternative measures must be taken. The first step is to simplify the hazard maps as much as possible. For the second problem, we will probably be able to find cheap and effective shelters from Michael Dachniel on the Internet, as well as many other people's research.

5 Issue

One of the challenges of this research is that we need to come up with a more specific hazard map, and in order to do that, we need to survey and compile the topography of all developing countries. In addition to hazard maps, we need to create a safe evacuation shelter and create an environment where people can live in comfort and privacy. There are people and companies that have developed simple tents, so we need to refer to them and think of more specific facilities. We also need to think about how to solve this problem, because in areas where it is difficult to get water even in daily life, it will be even more difficult to get water in times of disaster.

References

- <http://www.bousai.go.jp/kaigirep/hakusho/h17/bousai2005/html/honmon/hm140107.htm>
- https://www.hungerfree.net/hunger/background/special9_1/
- <https://www.apiste.co.jp/column/detail/id=4629>
- https://www.u-tokyo.ac.jp/adm/fsi/ja/projects/sdgs/projects_00184.html

https://www.jstage.jst.go.jp/article/tits1996/12/11/12_11_42/_pdf

Revival of Japanese Motorsports

~Environmentally Friendly "Hands-on" Motorsports~

5317 Fujiwara Toranosuke

Abstract

Now, spectators of Japanese motorsports are decreasing year by year. I think it is a problem from the view of the economy and sustaining motorsports. Nakajima (2010) claimed that there are fewer opportunities to experience than other sports. Thus we should make such chances because experiences can be a reason for participation and improving interest. Then I think a competition that we can participate freely without any tools is needed. I suggest using "Auto test" and "VR technology" to resolve the issue. Auto test is a competition that we can participate in with our own car. In addition, VR technology enables people of all ages to experience motorsports. I believe that they will revive Japanese motorsports.

1 Introduction

What should be solved in the field of motorsports is the lack of opportunities to experience it. Thus I think it's necessary to provide a competition in which people can participate freely. Moreover I will try to think about what is needed for such competition in this research. Previous research clarified the positioning of Japanese motorsports and raised issues. My research's purpose is to resolve the issues to make people interested in motorsports. I will try to verify my hypothesis by using previous research and the internet. Finally, I want to suggest how to revitalize the local economy by increasing Japanese interest in motorsports and revitalizing the Japanese motorsports industry, which has been in decline. Another purpose is to prevent young people from drifting away from cars.

2 Discussion and implications

As I told, Japanese motorsports don't have enough opportunities to experience for both children and adults.

What I thought was needed here was a "motor sports competition or event that does not require anything special and can be experienced easily. I found out that a competition that fits this description has recently begun to be held in Japan. It is called "Autotest" and originated in the UK. There is no need for a special vehicle or license to participate, the entry fee is only 3,000 to 5,000 yen, and the event can be held in the parking lot of a shopping mall. On the other hand, one of the challenges is that the sport has only recently started, so the awareness and the number of events are low compared to the UK, where the sport originated. I thought that by solving these problems and promoting the sport, I could contribute to increasing interest in motor sports.

In addition to Auto Test, another idea that can contribute to increasing interest in motorsports is the use of virtual reality (VR) technology. In recent years, there has been a worldwide debate on the environmental impact of motorsports. As a result, races are being held in which only electric vehicles are allowed to participate, and motor sports are required to consider the environment in accordance with the SDGs. VR technology is advancing day by day, and it is now possible to experience the same sense of realism as riding in an actual racing car. Further, since you are not driving a real car, there is no negative impact on the environment, and even minors can have a quality experience. In addition to this, the advantage of VR experience is that it can be experienced anywhere. Many motor sports circuits are located in the suburbs of cities and are not easily accessible, so we thought that setting up venues where people can experience such experiences at motorsports circuits during events would help increase interest.

3 Conclusion

As I told in Discussion and Impacts, I propose two ideas, Auto Test and VR experiences. They solve the problem that there are few opportunities to experience Motorsports, and increase the interests. Specifically, Autotesting will resolve the problem with chance to experience because it is easy to participate in and costs little. Additionally, though, Today's motorsports need a special car and license, it doesn't require anything. Also VR technology can solve the problem with age. It's impossible for children to experience driving cars. However it is available for all ages. Besides, we will experience it anywhere because it

doesn't need large equipment. Moreover, it is a very eco-friendly event.

However there are some problems with them. About the Auto Test, the number of this event in Japan is small. That's why I think it is a good idea to hold large scale competitions because there aren't such competitions in Japan. By holding them and cooperating with local governments, we can increase the number of them to make people interested in it. Also this measure has nothing to do with the environmental dimension. Thus competition only for electric cars will contribute to conservation of the environment. About VR experiences, most VR videos of motorsports are made by CG. Therefore I think it will make experiences realistic to use actual race footage from a racer's-eye camera attached to a car participating in a famous race such as F1 or superGT.

I propose these measures to increase the interests of Motorsports. In future, I would like to try to think about regulation of such large Auto Test competitions. Also, it is necessary to think about the way to make it environmentally friendly because there are no ideas in terms of environmental protection.

4 References

Nakajima Kazuki (2010) 「Four-Wheel Motorsports Culture and Issues in Japan: A Study of Racing through Sports Culture Systems」 Waseda University Graduate School of Sport Sciences (10/11, 2021)

<http://www.waseda.jp/sports/supoken/research/2010_2/5009A061.pdf>

5 Biography

「Saitama's JAF Registered Club Holds First Auto Test at Tsukuba Course 1000」
(JAF MotorsportsNews) (10/18, 2021)

<http://jaf-sports.jp/topics/detail_000478.htm>

「Spectator numbers for the F1 Japanese Grand Prix」
(Formula1Data) (11/3, 2021)

<<https://formula1-data.com/media/8870>>

「What is Auto Test?」

(JAF Motrsports Auto Test) (10/18, 2021)

<<http://jaf-sports.jp/autotest/summary.htm>>

「Experience Motorsports in VR, VR Park Tokyo, Shibuya」

(GazooOffisialHP) (8/7, 2021)

<<https://gazoo.com/column/daily/17/06/14/>>

PJ Tranter (2005) 「The place of motorsport in public health: an Australian perspective」

(11/3, 2021)

<<https://www.sciencedirect.com/science/article/abs/pii/S1353829204000632>>

The Ways of the Orchestra

~To Increase the Number of New and Young Audiences~

5319 Kento Homma

Abstract

The orchestra is suffering from the aging of the classical music fans who are the chronic audience, anxiety about the declining population, and lack of funds. In order to solve these problems, it is necessary to implement sustainable and sound management by reforming the aspect of attracting audiences. To solve this problem, it is necessary to implement sustainable and sound management by reforming the way of attracting visitors. The first is to provide mobile music classes and instrumental lessons by the group members to the school-going generation, which is relatively more familiar with music, referring to the example of the UK. The second is to provide concerts for children and performances with famous artists for the child-rearing generation and their children (mainly preschool children), who currently have the smallest audience. The second is to provide concerts for children and performances with famous artists for the child-rearing generation and their children (mainly preschoolers), who are currently the smallest audience.

1 Introduction

In Gunma Prefecture, there is a thriving music culture centered on the Gunma Symphony Orchestra, and there are music facilities and organizations that are closely connected to the community. However, in recent years, the number of fans of the Gunma Symphony Orchestra and other orchestras in urban and regional areas in Japan has been "about 3.5 million and has been leveling off in recent years" (Statistics Bureau, Ministry of Internal Affairs and Communications, 2015), but "the number of young people in their 20s and 30s who visit concerts has been decreasing, especially in rural areas, and the audiences are also expected to decrease in the future. Many orchestras are concerned about this. (Kyushu University QR Program Tsubasa Project, 2019) The orchestra has been planning programs for parents and children and beginners, but the reality is that they have not been very effective. According to "Organizational Issues of Japanese Orchestras" (Yuko Ohki and Akira Negi, 2001), orchestral issues can be divided into three categories: governance (budget allocation in the organization, etc.), business (implementation of new projects, etc.), and management (changes in personnel and employment systems, etc.). Many of these issues have not yet been discovered, or even if they have been discovered, they are still unresolved. In other words, Japan's regional orchestras are in a state of complete darkness. It cannot be called sustainable management at all. Later, it was found that "many regional orchestras have begun to work on governance and management in recent years" (Nissay Basic Research Institute and Affinis Foundation, 2013). In this study, we decided to focus on the business side, which has yet to be reformed.

In this context, "70% of Japanese people in their 20s to 50s have insomnia or are suspected

of having insomnia.” (Ajinomoto, 2015), and that “listening to classical music before bedtime leads to a good and restful sleep” (sleepedia, 2019), I decided to clarify the relationship between classical music, including orchestral music, and sleep, and set my research question as "What are effective efforts to increase the audience? This study reaffirmed the research path in the direction of proposing 'Concerts for Sleep'.

2 Discussion and implications

① Research Methods

As a method of research, many things can be considered in today's society where information is available on the Internet, in libraries, etc., but I chose the following.

I chose the following methods.

1) Searching for previous research and statistics on universities, foundations, orchestras, etc., which are available on the Internet.

2) Search for literature on orchestras at public libraries and reading rooms in Gunma Prefecture.

② Results and Challenges

First, we studied the relationship between sleep quality and classical music. Although there are few scientific studies in this field, and although it is said to be effective for some people, it is believed that classical music contains "1/f fluctuation" ("a rhythm of nature that is said to be present in almost everything in nature" (Yusuke Iwai, 2020)) and "alpha waves", and that the relaxation effect of the music is involved. It is said that "music that does not stimulate the brain (e.g., up-tempo classical music), quiet music (which changes brain waves into a-waves for relaxation, theta-waves for sleepiness, and delta-waves for sound sleep), and music that reminds us of nature (including 1/f fluctuation)" are effective for a good night's sleep. In fact, using two weekends (four nights in total) and referring to "Yusuke Iwai, 2020," I set the sleep function to classical music (two movements of Dvorak's "From the New World" and Bach's Orchestral Suite No. 3 in D major) and the music playback mentioned as precautions, and used my own body to see if I could get a good night's sleep. In all four experiments, I was able to fall asleep easily, sleep for more than eight hours continuously, wake up easily, and get a good night's sleep without drowsiness during the day. According to "FRANCEBED/Frequently Asked Questions/Sleep/Recommended Music and Listening for Better Sleep Quality," sounds emitted from nature are highly effective, so we decided that a live performance using musical instruments would be even more effective and decided to propose a "concert for sleep.

In order to make the proposal more realistic, we decided to use the concert format of regional orchestras (excluding subscription concerts) as a standard. In formulating the criteria, we referred to the "Yearbook of Professional Orchestras in Japan 2020" and "Concert Information" (both published by the Japan Federation of Orchestras).

Standards for concert format

- (1) Performed mainly in halls with a capacity of 1,000 people or more
- (2) Performed with an ensemble of about 50 to 80 guest performers.

(3) Performances begin in the afternoon on weekends and last about two hours including intermission.

First, we discussed the location of the performance. As for the required sleep environment, (Ajinomoto National Sleep Awareness Survey, 2015) states that "using a smartphone before sleep interferes with a good night's sleep," and (Ezaki Glico, 2018) states that bedding is important. Initially, we were planning to hold the event in a hall such as a cultural center where classical concerts are mainly held, but since it is difficult to prepare seats where people can lie down in those places, we changed our plan to hold the event in a "planetarium" that is set up in a local children's center and has seats where people can lie down. However, compared to conventional halls, it was difficult to publicize the event, and since the number of seats was small, the question arose as to whether it would be profitable.

Next, considering the composition of the orchestra, it was decided to change the concert to mainly chamber music with around 10 musicians, since a regular concert of 50 to 80 people could not be held at a local planetarium. This also had the advantage of cutting costs, as it eliminated the need for labor costs (about 200,000 yen per person) for the 20 or so extra members required for a normal concert.

3 Conclusion

As a result, we ended up with this format. The problems that arose will be solved in future research.

The format of the concert for sleep

- 1) Mainly at planetariums such as children's museums
- 2) Performed by a group of about 10 people
- 3) On weekend afternoons for about two hours, including breaks.

Finally, when we surveyed 102 students of the Central Secondary School to find out if they would like to attend this concert, those who answered that they had been to a classical concert before in their 30s or younger generation answered "Tokyo Symphony Orchestra's Questionnaire for Concertgoers and Internet Survey Results (Summary) (Tokyo Symphony Orchestra) (2016)", 35 respondents answered that they would like to or would rather like to go to a classical concert, while the percentage was less than 10% across the board. Through my research, I also found out that research and surveys in this field have not progressed. I would like to be involved in the development of this field by continuing research and surveys in the future.

Due to the spread of the new coronavirus, I have not been able to visit or make proposals to orchestra organizations, but when the situation improves, I would like to visit them and obtain their opinions. Thank you for your cooperation in this research and for pointing this out to us. I would like to express my heartfelt gratitude to the students and teachers of the Central Secondary School.

4 References

- Saeki, Shigeki (2010) "The World of Orchestra" Kawade Shobo Shinsha

Results of the questionnaire survey and internet survey for concertgoers of the Tokyo Symphony Orchestra <<http://tokyosymphony.jp/common/tso/images/pdf/report2016.pdf>> (2021/6/19)

- Ministry of Internal Affairs and Communications, Statistics Bureau, "Culture and Art Activities from the Statistical Perspective: In the Wake of 'Culture Day' <<http://www.stat.go.jp/data/shakai/topics/topi1050.html>> (2021/6/19)
- "Issues and Social Roles of Japanese Orchestras: Focusing on the Situation of Professional Orchestras in Tokyo" (Kenji Arai) (http://www.sangiin.go.jp/japanese/annai/chousa/rippou_chousa/backnumber/) 2016pdf/20161201073s.pdf> (2021/6/19)
- "Organizational Issues of Japanese Orchestras" (Yuko Ohki and Akira Negi) [Research Report of Nagaoka University of Technology No.23 (2001)] (2021/6/19)
- The Role of Regional Orchestras in Society and Culture and Recommendations for Management for the Next Generation: A Report of Interviews with Management and Administration Teams (Kyushu University QR Program Tsubasa Project) <<https://www.kidnext.design.kyushu-u.ac.jp/wp-content/uploads/2019/06/.pdf>> (2021/6/19)
- Ministry of Health, Labour and Welfare e-Health Net > Rest and Mental Health > Sleep and Health > Deep relationship between sleep and lifestyle-related diseases <<https://www.e-healthnet.mhlw.go.jp/information/heart/k-02-008.html>> (August 14, 2021)
- Research and Study on the Nature of Orchestras | Report - To be More Connected with Society- (August 2013) (Nissay Research Institute and Affinis Cultural Foundation) (<https://www.affinis.or.jp/research/info/pdf/all.pdf>) (Sep. 1, 2021)
- sleepedia / 7 recommended classics to listen to during sleep for a good night's sleep (Yusuke Iwai) <<https://sleepedia.jp/classic/>> (2021/9/1)
- Ajinomoto National Sleep Awareness Survey <<https://digitalpr.jp/r/14018>> (2021/9/1) (Sep. 1, 2021)
- The Effects of Relaxing Classical Music on the Body and Brain <<https://beaire.com/en/aire-magazine/classical-music-and-relaxation>> (2021/9/1)

- The Effects of Relaxing Classical Music on the Body and Brain <
<https://www.francebed.co.jp/umoureform/faq/sleep/sleep-music.html>> (2021/9/1) -
FRANCEBED / About Sleep / Recommended Music and How to Listen to it to Improve
Sleep Quality <<https://www.francebed.co.jp/umoureform/faq/sleep/sleep-music.html>>
(2021/9/1)
- Ezaki Glico/Rehydration and citric acid reset the body What is good sleep? What is a good
night's sleep? What you can do right now to improve the quality of your sleep
<<https://cp.glico.jp/powerpro/citric-acid/entry91/>> (2021/9/1)
- Japan Orchestra Federation/Concert Information <<https://www.orchestra.or.jp/concerts/>>
(September 1, 2021)
- Japan's Professional Orchestra Yearbook 2020" ()
(https://www.orchestra.or.jp/library/uploads/orchestra_yearbook2020-all.pdf)
(September 1, 2021)

Rubik's Cube in Early Childhood Education

~Improving Intelligence by Using Rubik's Cube~

5320 Haruto Miyaguchi

Abstract

According to the Japan Rubik's Cube Association, the population of Japanese competitors is small compared to other countries. In this study, I considered the usefulness of the Rubik's Cube by comparing it with China. It is connected to improve intelligence to solve rubik's cube. Practically according to a study conducted by Tokyo Rika university,

1 Introduction

Based on the research conducted by the Tokyo University of Science Suwa, we concluded that there is a sufficient relationship between Rubik's Cube and academic achievement, and discussed ways to spread it.

First of all, we collected information about Rubik's Cube in Japan by researching the literature. The first step is to collect information about Rubik's Cube in Japan, such as the number of competitors, production volume, and the level of competitors. Next, we collected the same information in China and compared them. Secondly, based on the information we collected, we discussed and investigated ways to increase the number of competitors.

2 Discussion and implications

According to information from the Japan Rubik's Association, the percentage of Rubik's Cube competitors in the Japanese population is low compared to the rest of the world. I also checked the Japanese record and the world record as an indicator of the level of competitors, and found that the world record is 3.47 seconds in China, while the Japanese record is 4.80 seconds. The Japanese record is 4.80 seconds, while the Chinese world record is 3.47 seconds (as of March 22, 2022).

I also looked into the production of Rubik's Cube and found out that 100% of the competition Rubik's Cube is made in China. The difference between the competition Rubik's Cube and the puzzle Rubik's Cube is that the competition Rubik's Cube has a corner cut. Competition Rubik's cubes have a magnetic system and the rotation is smoother than that of puzzle cubes. Since there are many Rubik's Cubes produced in China, there is a difference in the way they are accepted by people in China and Japan. For example, in China, there are Rubik's Cube classes, and it has become a popular learning activity, but in Japan, there are no such classes. The following table summarizes the information so far.

<Table1>

	record	awards	production output	recognition
Japan	4.80sec	2007year	0%	no school
China	3.4sec	2020year	100%	exist school

From the above, it can be said that there are two reasons why Rubik's Cube has not spread in Japan today: production volume and the way it is perceived. In this study, we decided to focus on the way it is perceived. Since it was found that playing with Rubik's Cube at a young age helps to improve academic performance, we thought that introducing Rubik's Cube to kindergartens would help to improve academic performance. I thought that introducing Rubik's Cube as a toy would save the maintenance cost of Rubik's class and would also attract young children. There are two main reasons why we chose to target young children. The first reason is that young children benefit more from Rubik's Cube for their brain development than other age groups. By using their fingertips a lot while they are young, their brain development is stimulated. Secondly, young children have more time to spare than other age groups. For these reasons, I thought of introducing Rubik's Cube to kindergartens, targeting young children. One of the biggest problems is that there are not enough instruction manuals. The ideal instruction manual would have fewer steps to remember and be easy to understand and put together. It would be ideal to start with the fun part of putting the steps together, and then gradually increase the number of steps. What is important here is the order of the steps to be learned. Many of the current instruction manuals are just a list of steps, and the problem is that it is not possible to become faster efficiently.

3 Conclusion

I would like to increase the number of Rubik's Cube competitors by making an efficient instruction manual and using it to spread Rubik's Cube to kindergartens.

4 References

AFP BB NEWS

<<https://www.afpbb.com/articles/-/2294910>>

TriBOXstore

<<https://store.tribox.com/>>

PRTIMES

<<https://prtimes.jp/main/html/rd/p/000000480.000005808.html>>

くるくる会

<<https://kurukurukai.com/?p=853>>

日本ルービック協会

<<https://jrca.cc/>>

ベネッセ教育情報サイト

<<https://benesse.jp/>>

The Assurance of Elementary Education by Using E-Learning Systems

~The Learning Style Which Allows African Children to Study Continuously and Peacefully~

5322 Akuzawa Kaho

Abstract

Now the educational gap in the world is a serious problem. I concentrated on Africa, and researched the best educational style for children there. The reason why they cannot go to school is different from country to country, but this time I focused on destruction of school buildings, lack of teachers, low quality of education, and difficulty of commuting. As a result, it turned out to be effective that local people who have teaching licenses make movie contents and children learn through the movie by using an e-learning system.

1 Introduction

As mentioned above, the educational gap is a global issue. It is the case that one student out of 11, who should be provided with education, can not go to school now. And these children are concentrated in the south of the Sahara. Elementary education is a minimum requirement of academic ability. Lack of this is the cause of poverty's reproduction. Without elementary education, they can not acquire literacy and basic knowledge. Then, the work they can take will be limited. Therefore such work may provide unstable income. If we do not enable those children to take a job with a guaranteed stable income, this reproduction of poverty will last. Thus I focused on Africa and researched which style is best suited to African children. The reason why I paid attention to the style of study is that children will not be motivated if children have to walk to faraway schools like the present, and also it is possible that they repeat construction and restoration due to the constant conflicts. Then I came up with a study with an e-learning system, which many schools adopted in this pandemic. What is the merit of this learning system? It can be a solution to teachers'

shortage and improving the quality of lessons. I set the research question to “ Is the e-learning system effective for the assurance of elementary education?” and advanced this study toward a suggestion of a practical new style of study.

2 Discussion and implication

First, it turned out that the reasons why children can not go to school vary. According to JICA, they can not go to school because they have their own work to support their family income, or school buildings are destroyed by conflicts, They can not go to school safely owing to conflicts and wild animals, or they are lacking in teachers, and the quality of lessons. Taking Central Africa as an example, worldbank.org said in 2021 the student number per teacher is 83.41. It is clear that each child can not get enough education. Then I thought, what if schools are nearer than now or they can study on the Internet. UNICEF said once children get not to go to school, they tend not to go anymore, because they can not catch up with the progress of classes, and there are age limitations. However, they can study at their own pace and take the same lessons any number of times, so there is no worry about delay. Then I researched the preceding study on the introduction of e-learning systems at a Kenyan university. The study showed that students who used the e-learning system earned higher marks on the test on average than students who normally studied. Also they could succeed in reducing the number of teachers. In the study, they also examined the utility of video, and movie distribution and it was proved to be useful for student's understanding.

3 Conclusion

Through literature survey, I think of the studying system where children can study by watching video contents made by qualified local teachers. However I hit a wall : In Africa few students have access to the internet. According to the Ministry of Internal Affairs and Communications, in 2015, the adoption rate of the Internet was under 25 percent. When it comes to providing all children with tablet terminals, it

costs too much. Then I recommend studying at a community center instead. This style specializes in studying aspects of school. It offers children with terminals and they go to study there. Community center is on a modest scale, so it is easier to build and nearer than schools. Also some teachers go to a community center, and support children's study.

We would be able to solve the lack of teachers and quality of learning, but there is still a financial problem. Taking Niger as an analogy, a country with the lowest literacy rate, there are about 40,000 children whose age is from 5 to 9. The area is about 126700 square kilometers, assuming the route is within 3 kilometers, we need 140000 community centers, also we need some tablet terminals per community center. Now I think used tablet terminals are good to save the cost, but it is difficult to collect enough apparatus.

4 References

- ・「ケニア国教育の質向上のためのeラーニングシステム導入に係る案件化調査」（独立行政法人JICA株式会社教育情報サービス<https://openjicareport.jica.go.jp/pdf/12306619.pdf> 最終閲覧日(20210315)
- ・総務省 | 平成29年版 情報通信白書 | 世界におけるICTインフラ...
<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h29/html/nc144210.html>(20210318)
- ・ユニセフ・ユネスコ最新報告書発表12~15歳の青年期の子ども5人にひとりが、小学校年齢時の11人にひとりが学校に通えず <https://www.unicef.or.jp/news/2015/0014.html>(20210321)
- ・学校に通えない子どもたち
_JICAhttps://www.jica.go.jp/mobile/hiroba/program/practice/education/materials/jhqv8b000005wd9w-att/2_1.pdf(20210321)
- ・世界の果ての通学路 学び！ とシネマ
<https://www.nichibun-g.co.jp/data/web-magazine/manabito/cinema/cinema096/> 日本文教出版 (20210321)
- ・【アフリカ発！ Breaking News】南アの劣悪すぎる教育環境。9,229人の”二セ教師”が教壇に立つ。（南ア） https://www.excite.co.jp/news/article/Techinsight_20101021_46224/ (20210321)
- ・中央アフリカ共和国の教師1人当たりの小学校(初等教育)
<https://graphchart.com> > ... > 中央アフリカ共和国(20211222)

Making Origami Community for Elderly People

～Prevent Dementia with Origami～

5324 Araki Kanon

Abstract

I paid attention to the power of origami that provides us a chance to think about what we want to do or which color fits our own expression in daily life. It is effective in preventing dementia.

- ①the place where people can show their work
- ②the place where people can communicate with each other
- ③the place where people can challenge test

About ③,I try to connect nurture a community with using “Origami teacher qualification class system” that is sponsored by Japan Origami Association.It is becoming more and more important to extend the healthy life span of people who can live on their own.

1 Introduction

The number of patients with dementia is increasing. In 2020 it was 602 million and it is said that the number of people will reach nearly 700 million.

I focused on origami to develop the ability to make things with our own feelings. Origami is also excellent in that it is easy to do. Lotte has a campaign called "Origami Club" that gum wrappers have cut lines to make squares. It is easy to do, and you can see other people's work on social media.

There are no special tools or rules to follow, and I hope that people will enjoy using origami to activate their brains. In order to create more opportunities for people to interact with origami, I would like to create an origami community, a place where people can communicate with each other through origami.

2 Discussion and implications

The detailed movements of the fingers in the space of origami stimulate our brain. In addition, I thought that origami might be effective for dementia because we can use the brain in a different way from daily life. However the effects of origami are very different among individuals, and the communication that takes place when folding origami and showing them to each other is said to be more effective in preventing dementia (Nakagawa 2006). In this study, autonomy in communication or selection of color, motif, information etc were admitted. This ability is essential to live an active life and is also necessary for dementia prevention. Therefore, I consider that a place with conversation is necessary when people fold origami.

Furthermore, according to Kondo (2018), when the rate of people requiring nursing care was measured for five years by dividing the number of people who participated in salons held by citizen volunteers at community halls (not only origami, but also chatting, exercising, making something, etc.) into those who did not participate and those who did not participate, the rate was 6.3% for those who did participate, compared to 14% for those who did not participate. The rate of those who did not participate in the salon was about twice as high (14%) as that of those who did participate (6.3%). In addition, about 40% of those who participated in the salons also started participating in community activities. It indicates that participation in the salon leads to other activities. Therefore, I believe that the combination of the salon system with more proactive communication will help prevent dementia from becoming serious or even preventing it from happening in the first place.

3 Conclusion

It needs to get people interested in origami. I propose to hold an event to collect origami works in the community and display them at museums, community centers, train stations, and other places where the elderly often use. By going to see the works of the elderly, they may be able to expand their range of activities and have the

opportunity to participate in unexpected events. At the same time, I would like to create an environment where people who are slightly interested in origami can try folding by putting up information about the origami salon. It is important to take measures to convey the message even to the elderly, such as soliciting works in local magazines and newspapers, and introducing excellent works.

In order to hold a salon, it is necessary to have a main person like an instructor. Most of them have been conducted by citizen volunteers, and the location is often chosen to be a community center or the host's home, where there is no need to charge a fee from the users. In a questionnaire survey conducted by Ishitobi, Uemura, Kanda, Takeda, Tsujihara, Hayashi, Hirase, Fujikawa, Yamane, Oda, and Ochiai (2011) on issues related to the operation of salons for the elderly, the following questions were asked

- (1) Non-participation by elderly people living alone,
- (2) Difficulties in maintaining motivation to participate,
- (3) Difficulties in the activities of male welfare committee members in their prime working years,
- (4) Difficulties in caring for elderly people
- (4) Difficulties in activities due to the aging of caretakers and lack of human resources
- (5) Difficulties in devising plans
- (6) Inadequate storage and utilization of activity records
- (7) Lack of communication and awareness of social support
- (8) Difficulty in securing a budget and difficulty in using subsidies due to restrictions on their use
- (9) Lack of places to hold salons and the number of times to hold salons
- (10) Lack of environmental maintenance of places to hold salons (Shimane Prefectural University Junior College Izumo Campus Research Bulletin, Vol. 6, p. 125).

To hold salons on a regular basis, it is not possible to rely entirely on volunteers, and cooperation with the government is necessary. The Ministry of Health, Labour and Welfare Bureau of Health and Welfare for the Elderly (2019) introduces salons as "places to go" in order to revitalize towns. In addition, the "Grant for Strengthening Insurer Functions" was newly established in FY 2008, and financial support can be received depending on the status of the development of "places to go. This will increase the budget for securing space and tools to be used, and is expected to further enhance salon systems.

However, as mentioned in (2), (3), and (4) of Ishitobi et al. (2011), even if salons are held once a month, it is necessary to take measures to compensate for the shortage of human resources, such as the aging of the organizers themselves and the lack of successors, and to devise ways to motivate participants to continue participating. As with funding, local governments may need to provide support in the area of human resources. If people can be dispatched, the scale can be increased. If cooperation with outside organizations becomes stronger, it will be possible to dispatch specialists. Also, if there is a place where people can consult about the plans for the salon, they will be more aware of the contents and details, and the burden on the organizers will be reduced. If you specialize in origami, the Japan Origami Association already has a system to qualify as an origami instructor. Once you complete the assignments and get the instructor certification, you can open a workshop. Some of the people who have established Origami groups overseas use this system. Individuals challenging such a system may also be a reason to continue Origami in that they can set a single goal and create an environment to work towards it. I think it would be a good idea to introduce this system at salons and community centers.

Many origami NPOs have been established to promote origami in welfare and public places and to develop human resources. If a mechanism to collaborate with such external organizations can be established, we can expect more active participation in salons.

In addition, we would like to adopt a system where participants can choose their own activities in order to make interaction in the salon more active. This would be an effective way to start conversations and prevent dementia by increasing independence. If they can make friends to talk to, they will be motivated to come back the next time.

The works made at the salon will be exhibited at events to raise self-affirmation and appeal to people who are newly interested in origami, which will lead to the formation and development of an origami community.

4 References

Ministry of Health, Labour and Welfare, Bureau of Health and Welfare for the Elderly (2019) "Comprehensive promotion of dementia measures (reference material)".

<<https://www.mhlw.go.jp/content/12300000/000519620.pdf>>

Lotte, "Lotte Origami Club." Accessed 2 15, 2021.

<<https://www.lotte.co.jp/products/brand/origamibu/>>

Nakagawa, Yoshiko (2006) "An attempt of Japanese paper Chigiri-e for the elderly" Bulletin of Tokai Women's University (26), 191-198

Tokai Gakuin University

Kondo, Naomi (2018), "Community development as a measure against health disparities."

<<https://www.tyojuu.or.jp/net/topics/tokushu/koreisha-kenkokakusa/taisaku-machidukuri.html>>

Ministry of Health, Labour and Welfare, Director-General of the Bureau of Health and Welfare for the Elderly (2019), "Future Community Development Strategies.

<<https://kouseikyoku.mhlw.go.jp/kantoshinetsu/houkatsu/roukennkyokutyoul.pdf>>

Taeko Ishitobi, Naoko Uemura, Shiori Kanda, Mai Takeda, Nobue Tsujihara, Aoi Hayashi, Yuri Hirase, Makiko Fujikawa, Yamane, Natsuo, Oda, Mikiko, Ochiai, Noriko, "Issues and Measures in the Operation of Salons for the Elderly by Residents" (2011)

Journal of Shimane Prefectural University Junior College Izumo Campus, Vol. 6, 125-133

The World with Zero Hunger Created from Education for Adults

~How to Break the Cycle of Poverty in Africa~

5325 Ayu Koyama

Abstract

According to "The State of Food Security and Nutrition in the World"(FAO, 2020), 690 million people are suffering from starvation in the world now. It also said, Africa is the region where starvation is the most serious especially. The purpose of this research is to find one of the most effective ways to make the undernourished population zero. In order to do this, I searched on the internet to investigate the current situation of world poverty and the cause of that problem. Also, I hold seminars with my classmates or teachers and discuss how I can help people who live in famine areas. Through my research, I found that the biggest cause of chronic starvation is the bad cycle of poverty. From these consequences, I propose to make educational institutions for adults in Africa. This school must contribute to society because it will be able to break the bad cycle of poverty. Then, it expects that the living level of people who live in famine areas, the number of poor families are decreasing and the chronic starving population is declining. In addition, I also propose to establish a nursery school as an annex to that school. Thanks to this, women who have many children can come to school and study easily.

1 Introduction

Food is something that is absolutely necessary for humans to survive. In Japan, it is no wonder that we eat three times a day. Most of us are fond of eating and some of us are enjoying deciding what to eat next. However, there are a lot of people in the world who cannot take what is normal for us for granted. At the same age as me, so many people are

suffering from starvation.

According to "The State of Food Security and Nutrition in the World (FAO, 2020) , the total number of undernourished people in the world today is about 690 million, or one in 11 of the world population. However, the world as a whole is not suffering from food shortages, and there are some developed countries where food loss has become a national problem.

The goal of this research is to reduce the world's undernourished population to zero.

I set the theme of "Zero Hunger" after learning about the hunger situation in the world. This is because I would like to create a world where all people can afford to eat and enjoy food as a matter of course. The goal of this research is to find a way to eliminate hunger in Africa, where the number of starving people is currently the highest. Diet helps to build a healthy body, and is also very important in the medical field in terms of making the body less susceptible to diseases and reducing the number of people suffering from diseases. I would like to utilize the knowledge and understanding I have gained through this research when I become a doctor, which is my dream for the future.

The research procedure is as follows.

- ①Using the Internet, I researched the current state of food shortages and hunger in the world.
- ②Based on the information obtained, I did a self-brainstorming session to find out what the underlying cause of the chronic starvation was. (Figure 1)
- ③From the results obtained in ②, I selected "poverty" that I thought was solvable, and used the Internet to research areas where poverty was serious and the status of poverty in those areas.
- ④I considered the reasons why poverty in impoverished areas is not disappearing, and proposed the establishment of educational institutions for adults as a solution.
- ⑤I held several seminars with my classmates to discuss the proposal.

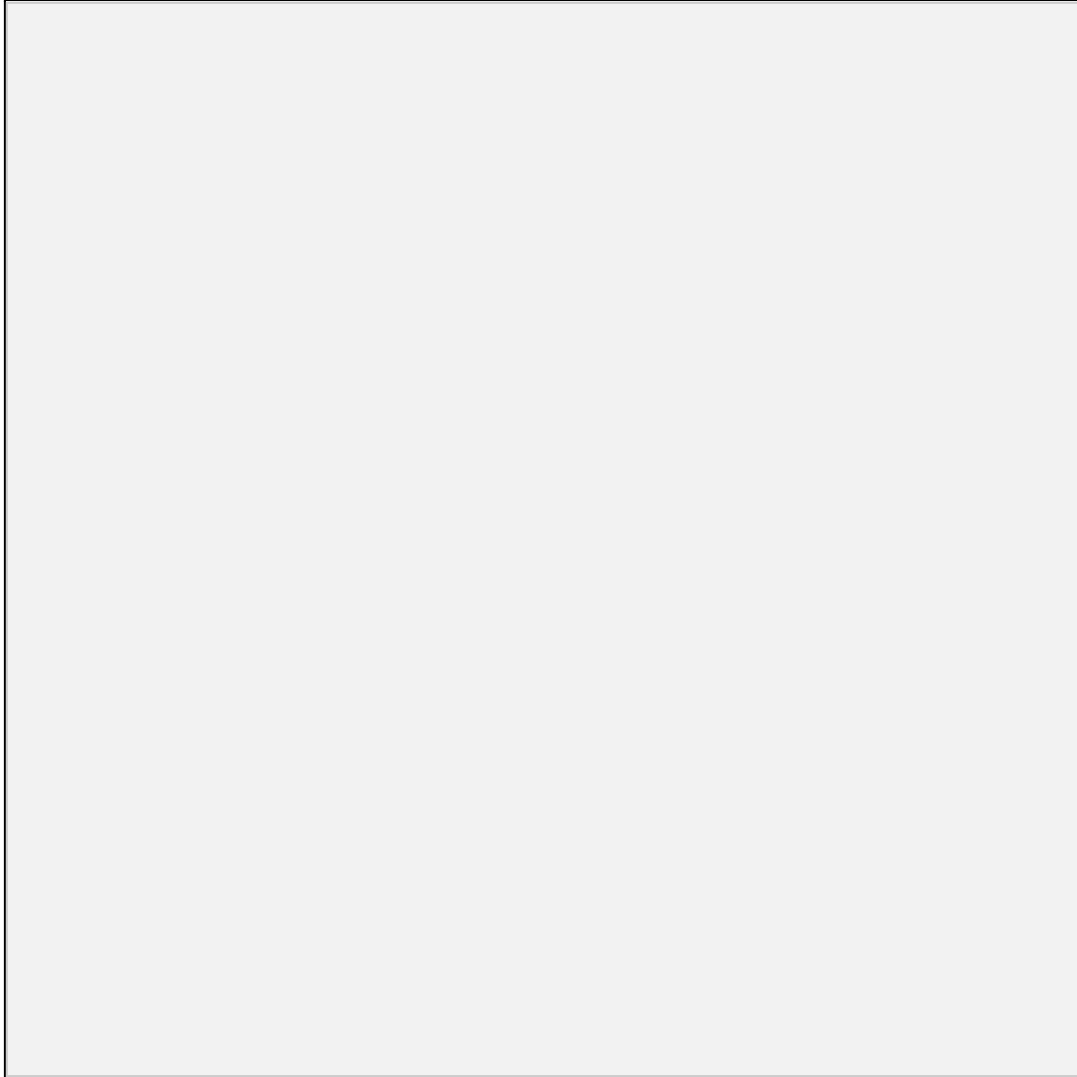


Figure 1: Brainstorming on starvation (conducted on August 31, 2020)

2 Discussion and implications

From "The State of Global Food Security and Nutrition (2020)," this study defines undernourishment as "a condition in which an individual's daily food consumption is insufficient to provide the amount of dietary energy needed to maintain a normal, active, and healthy life. This condition shall also be referred to as "chronic starvation."

I The current situation of the world starvation

According to "The State of Global Food Security and Nutrition (FAO, 2020)," the world's undernourished population is currently about 690 million, which means that one out of every 11 people in the world is hungry. According to the same data, the prevalence of undernourishment and the undernourished population in the world have been on a gradual upward trend since 2014, after once decreasing, and are expected to account for 15% of the total population by 2030. (In addition, the WFP's "Hunger Map 2020: Undernourished Population as a Percentage of the Total Population" (Figure 3) shows that countries in Africa have the highest percentage of undernourished people in the total population. For this reason, and because it is difficult to generalize about world hunger due to differences in background and national policies, I decided to focus on our research on the hunger problem in Africa.

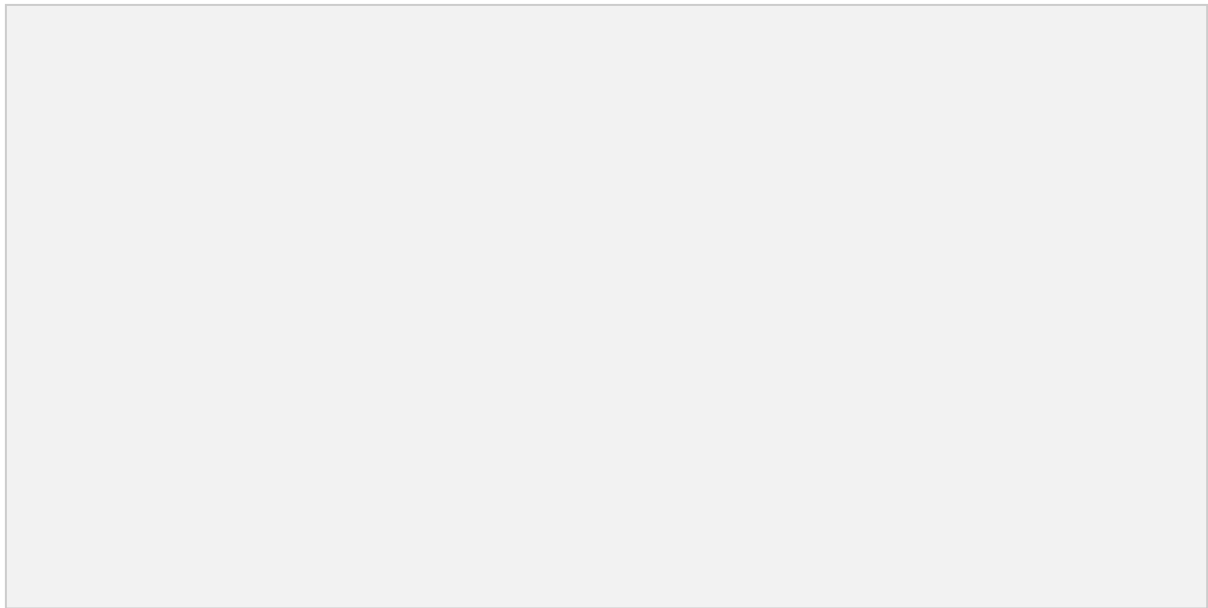


Figure 2: Trends in the prevalence of undernutrition and undernourished population in the world (from FAO State of the World's Food Security and Nutrition 2020)

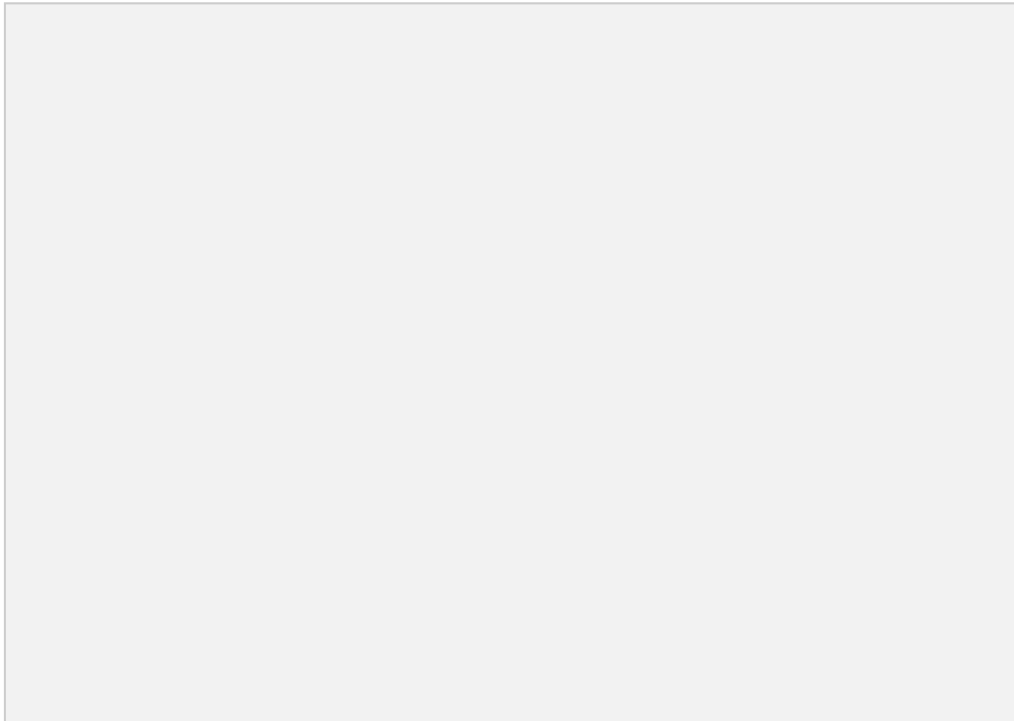


Figure 3: WFP, "Hunger Map 2020: Undernourished Population as a Percentage of the Total Population"

II African poverty

According to JICA's "Do you know the MDGs?", it says that the main causes of hunger today are poverty, natural disasters, food shortages, and conflict/war. This time, the goal was to solve poverty, which is the biggest chronic cause of hunger. According to the Japanese Association of UNESCO Associations, the reason why chronic poverty is not disappearing is due to the negative cycle of poverty. This is a negative loop in which children born into poor families are forced to work as child laborers in order to support their families. So as a result, they are unable to go to school and their literacy rate declines, and when they start a family in the future, the family falls into poverty again. (→Figure 4)

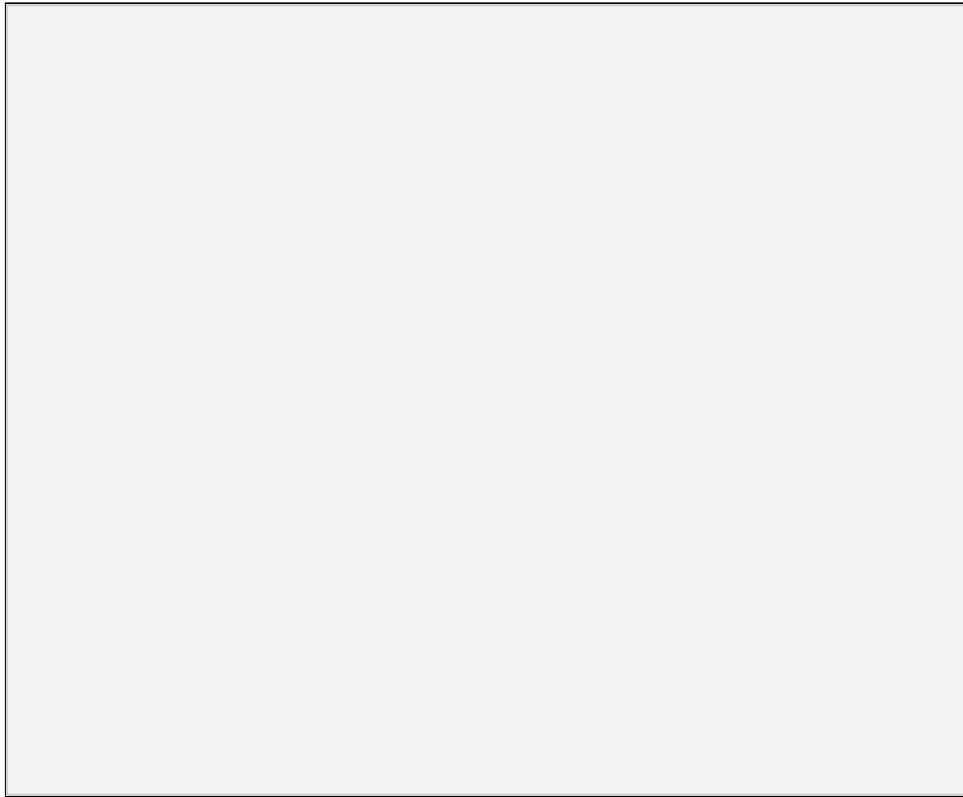


Figure 4: The Negative Cycle of Poverty (Created based on the website of the Japanese Association of UNESCO)

I thought that in order to solve hunger in Africa, it was necessary to eliminate this negative cycle of poverty. Currently, efforts to support children who are unable to attend school are being made by the World Terakoya Movement of the Japanese Association of UNESCO, but the number of people living in chronic poverty has not significantly decreased. Therefore, I thought that reviewing the education of adults would be an effective measure in eliminating the negative cycle. One of the reasons why people cannot escape from poverty is that adults who could not attend school due to child labor are employed in low-income jobs, and manual laborers and agricultural workers are cheated and receive only unfair amounts of income when they deal with employers.

III Suggestion

From I and II, I have learned that the cause of chronic hunger in Africa is a negative

cycle of poverty. Therefore, I propose the establishment of a school for adults in Africa with a nursery school.

Specifically, I propose

- Reading and writing in the native language and English
- Basic arithmetic (such as the four arithmetic operations)
- Reading and writing in the native language and English

First of all, being able to read and write in one's native language and English will prevent people from being cheated by unfair transactions because they cannot understand the contents of contracts. Being able to read and write will also increase the number of careers they can enter. Also, learning basic calculations will prevent you from being cheated in transactions related to wages.

In addition

- Engineering
- Agriculture
- Medicine
- Nutrition

In addition to the above, we would like to elective classes in other fields of study.

The purpose of this is to allow students to choose the career they would like to pursue in the future and the knowledge they would like to use in their future life, according to their individual needs. For example, if there are no hospitals or clinics in the immediate vicinity of their current residence, they can reduce their medical expenses by learning accurate first aid procedures that they can perform at home. Also, if they want to continue farming after attending school, learning about soil and vegetable characteristics professionally will enable efficient mass production and increase their income potential. Since it is not always possible to find a new job right away, the way to improve the current working environment should also be considered with the students.

The reason for having a nursery school is to make it easier for people of all ages and

genders to attend school. In many parts of Africa, the birth rate is high, and there are so many cases, especially among women, where they take care of their children during the day, that unless there is a place where they can take care of their children, women will not be able to attend. In addition to a daycare center, babysitters and childcare workers will need to be hired, which will create new jobs.

Since most people have jobs that they currently hold, they can set up their personal schedules in different areas, such as two days a week, so that it does not interfere with their current lives.

IV subject for future

- 1) What kind of classes are needed in Africa?
- 2) How to adjust the class time to the rhythm of African people's life?

In order to make the proposal more concrete and feasible, we would like to examine these two points.

3 Conclusion

Through this research, I have tried finding the current situation of hunger in the world and its causes, and to find one way to help reduce the number of hungry people in the world to zero.

Here is what I found out through this research. There are two types of hunger, chronic and acute, and it is chronic hunger that we should be working to reduce. In addition, the chronically hungry population is especially large in Africa, and the rate of increase is expected to be the highest in Africa in the future. I focused my research on Africa in particular and found that the cause of hunger in Africa is due to the negative cycle of poverty. Therefore, I concluded and proposed that educating adults would lead to breaking the negative cycle of poverty.

4 References

- WFP (2020) 「Hunger map 2020 Undernourished population as a percentage of total population」 <<https://ja.wfp.org/publications/hankamatsufu-2020>>
- FAO, IFAD, UNICEF, WFP, WHO (2020) 「The State of Food Security and Nutrition in the World」 <<http://www.fao.org/3/ca9699ja/ca9699ja.pdf>>
- National Federation of UNESCO Associations of Japan 「World Terakoya Movement」 <<https://www.unesco.or.jp/activities/terakoya/>>
- WFP 「World hunger situation」 <<http://119.245.211.13/kyokai/hunger.html>>
- WFP 「Zero hunger」 <<https://ja.wfp.org/zero-hunger>>
- FAO (2018) 「The State of Food Security and Nutrition in the World」 <<http://www.fao.org/publications/sofi/en/>>
- JICA 「Do you know MDGs ? 」 <Microsoft Word - 110202_01.doc (jica.go.jp)>
- UNICEF 「Indicator to measure level of poverty」 <https://www.unicef.or.jp/kodomo/teacher/pdf/fo/fo_45.pdf>
- Breaking the cycle of poverty: challenges for European early childhood education and care : European Early Childhood Education Research Journal: Vol 22, No 3 (tandfonline.com)

Reduction of Flower Disposal Rate with Using Mobile Sales Car

~The Way of Using Loss Flowers to Improve Happiness in Japan ~

5326 Juna Suda

Abstract

In a typical flower shop in Japan, 30% to 40% of all flowers are discarded and those flowers are called loss flowers. There is a relationship between flowers and happiness. Based on the facts, this study proposes the use of mobile sales cars as a way to get more people to buy flowers to reduce the waste rate of flowers and improve the level of happiness in Japan. According to a survey conducted by the Japan Flower Promotion Center, there were opinions about flower shops that people do not know the prices and that they were closed and difficult to enter. Mobile sales cars, which are relatively open, could solve such problems. Also, as the name implies, mobile sales cars can move around and sell flowers, so they can go to places where flowers are needed and provide it to people who buy them. In this mobile sales car, loss flowers would be sold. They will be sold in quantities of one or two, and the price will be set at around 200 yen so that people can easily buy them. Loss flowers will be collected from wedding halls and other flower shops and advertise the information through SNS.

1 Introduction

I Background and purpose

Many flowers are discarded at flower shops in Japan. Those flowers are called “loss flowers”. The purpose of this study is to propose a way to get more people to buy flowers in order to reduce the loss flowers. In this study, I would like to propose a way to increase the number of people who buy flowers intending to improve their happiness. Also, the research question is: How can we encourage Japanese people to buy more flowers to reduce the loss flowers?

II Method

Internet

-Statistical surveys (World Happiness Survey, annual per capita flower consumption in the world)

-Current situation (flower disposal rate, why young people do not buy flowers)

Proposed solutions (examples of florists around the world)

2 Discussion and implications

3-1 Disposal rate of flowers

The disposal rate for a typical flower shop in Japan is said to be 30-40%, and even in the case of flower shops with good data management, about 10% of the flowers are discarded. In addition to this, there are flowers that are thrown away after being used in events such as weddings, even though they are still in beautiful condition.

3-2 World Happiness Survey

Norway ranked first in the World Happiness Survey in 2017, followed by Denmark, Iceland, Switzerland, Finland and the Netherlands. Also, according to the Ministry of Agriculture, Forestry and Fisheries' survey of annual per capita flower consumption in the world, Switzerland ranked first, Norway second, the Netherlands third, the United Kingdom fourth, Denmark fifth, and Austria sixth. Comparing these two statistics, we can find a point in common. The higher the happiness ranking is, the more flowers are consumed in that country.

3-3 Current Situation of Florists

According to a survey conducted by the Flower Promotion Center in Japan Flower Trade Code Promotion Council, the common complaints about flower shops are that they are difficult to enter because they do not know the market price of flowers, flower often do not have price tags on their flowers, which tends to make them feel uneasy. Also, once they enter a flower shop, they feel as if they cannot leave without buying something. The percentage of people who buy flowers 7 times or more per year increases after the age of 50. On the other

hand, half of the young people do not buy any flowers per year. According to Ota Seminar at Aichi University, there are three main reasons why young people do not buy flowers, first their family has a habit of buying flowers, second young people have few opportunities to come into flower shops themselves, and third, young people buy it only on special days, such as Christmas and Mother's Day.

3-4 Mobile sales car of loss flowers

Flowers have a relaxing and stress-reducing effect. According to a study by Chiba University (2012), the parasympathetic nervous system is promoted and the sympathetic nervous system is suppressed when people see flowers. Bringing loss flowers into our life is not only good for the environment in terms of reducing garbage but also has an impact on individual happiness. In order to reduce the loss flowers, I would like to propose the use of mobile sales cars to increase the number of opportunities to purchase flowers. This mobile sales car will only sell loss flowers. One of the reasons for proposing a mobile sales car instead of a store is that it can be moved to places where there is demand. The other reason is that it is not closed so people do not feel an obstacle to enter. This mobile sales car will visit flower shops or wedding halls to collect loss flowers. I would like to sell a small amount of flowers at a low price and display the price clearly. In a survey conducted by a flower promotion center in 2012, there was a result that people had trouble finding a vase when they brought flowers, so I would like to package flowers in vases that are not made of glass. As a way of spreading information, I would like to use SNS and post posters in flower shops we collect loss flowers,

3 Conclusion

To promote buying flowers using mobile sales cars in Japan, I suggest using mobile sales cars. It will be able to make it easier for us to enter flower shops. People in Japan tend not to buy flowers as I mentioned earlier. I would like to learn about behavior of purchasing to make people buy flowers.

4 References

https://www.maff.go.jp/j/seisan/kaki/flower/pdf/kakimeguji1404_1.pdf

<Current status of flowers> Ministry of Agriculture, Forestry and Fisheries
2020/10/21

https://www.maff.go.jp/j/shokusan/export/e_enkatsu/pdf/flowerh2.pdf

<Overview of the Flower Industry in the Netherlands>
Ministry of Agriculture, Forestry and Fisheries
2020/10/21

<https://worldhappiness.report/ed/2017/>

WORLD HAPPINESS REPORT 2017
2020/11/15

https://www.mizuho-ir.co.jp/case/research/pdf/flower2012_01.pdf

<Physiological Relaxation Effect of Visual Stimulation of Flowers>
Center for Environmental Health Field Science, Chiba University
2020/09/4

Bibliography

<https://www.otalab.co.jp/>

Ota Institute of Floral Life, Inc.
2020/08/26

Reduction of Wasted Food by Introducing Disposal Quota Trading

~To Improve Nutritional Condition in Developing Countries~

5327 Yuna Takahashi

Abstract

Today, there are about 149,000,000 babies and infants in the world who are suffering from malnutrition. However, it is wrong that the global food production is not enough to feed all people in the world. If all people consume as much grain and many vegetables as Japanese, the annual consumption of them would be much less than their annual production. What matters here is “food waste” or “food loss” and in fact, about 1.3 billion tons of food is wasted every year, which is equivalent to 30% of annual food production worldwide. Therefore, I suggest “disposal quota trading”. In this commitment, we decide the goal about the amount of the world’s wasted food, distribute quotas for wasted food to each country, and enable each country to buy or sell the quota. By introducing this system, we can certainly reduce the total disposal. Moreover, we may be able to improve infrastructure in developing countries through establishing relationships between advanced countries which provide technological backing for underdeveloped infrastructure concerned with food supply and developing nations that sell a part of their quotas at a low price.

1 Introduction

According to UNICEF, there are as many as 690 million people in the world who are suffering from malnutrition and the number of undernourished babies and infants is about 149 million. In addition, nutritional conditions vary greatly from country to country and developing countries tend to have more people who are suffering from hunger than other countries do. In Sub-Saharan Africa and South Asia, where the problem is more serious, one

third of children are malnourished. When I learned this fact, I thought it was a big problem that children in developing nations could not get enough food while many people in advanced countries, including me, got more food than we really need. Thus, I took an interest in how we could change this situation into where all people can eat adequate food. Today, many people are concerned about this situation, but most of them only give food to poor people and there are not many measures to solve it fundamentally. The final goal of this research is to suggest one measure to realize a world where all people can get enough food for their growth and no one is suffering from starvation. In order to achieve this, I clarify why “lack of food” is happening now by searching on the Internet for information on some kinds of food in terms of their production and consumption, and think about how to solve the problem that I find.

2 Discussion and implications

I World Production and Estimated Consumption (*1)

The annual world grain production is about 2.7 billion tons (FAO) and estimated consumption is less than 1.2 billion tons (*2) which is less than half of the annual production. In case of vegetables, the annual world consumption would be about 766 million tons (*3) while the production is about 1.13 billion tons (statista). Even if I take into consideration a prediction of population growth (*4), the grain consumption per year would be approximately 1.5 billion tons and the vegetable consumption per year would be nearly 962 million tons. It means that we produce more grain and vegetables to feed all people in the world. On the other hand, the annual meat production is about 342 million tons (our world in data), and it is not much enough. The world annual meat consumption is 297 million tons (*5) and when we consider population growth (*4), it would be 370 million tons.

*1 I assumed that the world population is 7.8 billion according to worldometer and one year is equivalent to 365 days.

*2 A Japanese consumes 415g of grain a day (the Ministry of Health, Labor and Welfare).

*3 A Japanese consumes 269g of vegetables a day (the Ministry of Health, Labor and

Welfare).

*4 According to the United Nations, the world population will increase by 2 billion by 2050.

*5 A Japanese consumes 104.5g of meat a day (the Ministry of Health, Labor and Welfare).

II Examination and Proposal

As stated above, the production of grain and vegetables is ample for feeding all people in the world. However, there are many people who cannot get enough food. Then, I paid attention to wasted food as a reason for this situation. In fact, according to UNEP, 1.3 billion tons of food is thrown away, which is equal to 30% of annual food production. Given this fact, I supposed that wasted food was a reason for “lack of food”. Then I thought if the amount of wasted food is reduced, there will be more food for their citizens in developing countries or a decline in food prices caused by an increase of food distribution. If it really happens, it will be easier for poor countries or people to get more food. Therefore, I decided to think about how to reduce the total amount of wasted food and propose it. There are two kinds of wasted food: “food waste” and “food loss”. The former refers to food wasted during a process from production to retail, while the latter refers to one wasted by us, consumers. Among these two, “food loss” is popular in advanced countries and the problem of wasted food of these countries are related to its citizens’ consumption behavior, such as leftovers, excessive disposal or disposal of expired food. Therefore, though governments’ efforts are also important, it is essential to improve each person’s consciousness and change their ways of living. On the other hand, most developing countries have “food waste” problems instead of “food loss”, and it stems from their lack of technology related to storehouses or refrigerated transport vehicles. Thus, it is not the problem that they can solve by changing their thoughts or lifestyles, but the one that they need to try to solve as a whole country. For these reasons, the problem is more clear and easier to solve in developing countries than developed countries. However, one reason for their lack of facilities is their lack of technology and it is difficult to solve by themselves now, even though it is easy for developed nations. Nonetheless, we cannot

wait until technological development happens in developing nations because lack of food will be accelerated during the term.

3 Conclusion

Given what I mentioned above, I propose “disposal quota trading”. This is what I thought of by applying greenhouse gas emissions trading to disposal of food. In this commitment, we set the upper limit on wasted food as a whole world. Then, we distribute quotas for wasted food to each country, and enable each country to buy or sell a part of its quota. I think we can not only reduce the total amount of wasted food certainly, but also encourage advanced nations to willingly support undeveloped nations in terms of technology. As mentioned above, it is difficult to reduce “food loss” in developed countries because we cannot achieve it now despite many existing efforts. Meanwhile, “food waste” in developing countries is easy to decrease if there is backing from advanced nations. Therefore, I aim to construct the relationship between developed and developing countries: advanced nations support developing nations technologically in exchange for the right to buy a part of the partner’s disposal quota at a low cost. If we can establish this relationship, it is expected that infrastructure is improved in developing countries and the disparity between developed and developing countries will be corrected. On the other hand, the meat production is not ample. Thus, in addition to the above-mentioned commitment, we need to increase its production or find a new source of protein.

In this research, I only took into account cereals which humans eat directly. However, if I calculate again considering grain for livestock feed, it doesn’t have much quantitative leeway. Thus, we also need to multiply its production. Moreover, I need to carry out further experiments on other kinds of food and how to deal with the lack of meat production.

4 References

- 「栄養素等摂取状況調査の結果」 〈 <https://www.mhlw.go.jp/content/000615343.pdf>〉

(2020/12/23)

- 「Current World Population」 〈 <https://www.worldometers.info/world-population/>〉

(2021/1/6)

- 「FAO Cereal Supply and Demand Brief」

〈 <http://www.fao.org/worldfoodsituation/csdb/en/>〉 (2021/3/22)

- 「Global production volume of vegetables from 2000 to 2019」

〈

<https://www.statista.com/statistics/264059/production-volume-of-vegetables-and-melons-worldwide-since-1990/>〉 (2021/10/2)

- 「Levels and trends in child malnutrition」

〈 <https://www.who.int/nutgrowthdb/jme-2019-key-findings.pdf?ua=1>〉 (2020/12/14)

- 「Meat and Dairy Production」

〈 <https://ourworldindata.org/meat-production#global-meat-production>〉 (2021/10/2)

- 「No time to waste: using data to drive down food waste」

〈

<https://www.unep.org/news-and-stories/story/no-time-waste-using-data-drive-down-food-waste>〉 (2020/12/21)

- 「World population prospects 2019」

〈 <https://population.un.org/wpp/Download/Probabilistic/Population/>〉 (2021/1/6)

How to Spread Carbon Recycling

~The Way to Stop Global Warming by Using Algae Fuel~

5328 Kaho Tateno

Abstract

These days, global warming is becoming one of the biggest problems in the world. The goal of this research paper is to suggest ways to reduce CO₂ emission which is the cause of global warming by using carbon recycling. Carbon recycling is the skill of correcting CO₂ in the atmosphere and recycling CO₂. There are a lot of kinds of carbon recycling. Algae fuel is one of the carbon recycling methods. The algae fuel is made from algae, which is a plant growing in water. It is not food, so there is no possibility of raising the problem of competition with crops. Also, algae is more efficient than other bioethanol. However, the cost of it is very high. So this study suggests the way to spread such expensive fuel. It is a new price plan in the airline industry. It is a kind additional plan and the customer can add it to any normal price plan.

1 Introduction

This research focuses on global warming and considers it a big issue. Then this research pays attention to algae fuel which is one of the bioethanol. The goal of this research is to suggest a way to stop global warming. There is some research about producing algae fuel. This study suggests a way to spread algae fuel. The research question of this research is what to do to stop global warming. To inspect it, this study indicates carbon recycling and algae fuel. Then, this research shows the problem of algae fuel. Finally, this suggests the means to spread algae fuel.

2 Discussion and implications

First, there is carbon recycling. According to the Agency for Natural Resources and Energy, carbon recycling thinks of carbon dioxide as a resource and collects them and recycles them as a diverse carbon compound. Then steady promotion of carbon recycling can reduce carbon dioxide emitted in the atmosphere and contribute to solving the climate change issue and make sure that new resources are provided stably. According to the Carbon Recycling Technology Roadmap, There are some carbon recycling products such as chemical

products or fuel or minerals. According to Hitachi Research Institute, algae fuel is alcohol fuel or syngas made from algae and it is looked forward to as an alternate fuel of transportation fuel for automobiles and aircraft. According to IHI corporation, compared with biofuel made from food such as corn, sugar cane, soybeans, algae fuel has no possibility to compete with food and it can use land which food can not use. Also, according to Thomas F. Riesin, the amount of oil per acre per year of algae fuel is 5000 ~ 15000 gallon. That of corn is 18 gallon. That of soybeans is 48 gallon. The amount of sunflower is 83 gallon. That of a sunflower is 102 gallon. That of oil palm is 625 gallons.

Second, however, algae oil has a problem. The problem is that the cost of algae fuel is high. According to the Ministry of Economy, Trade and Industry, in June 2019, the existing equivalent fuel is 100 yen per liter. On the other hand, algae fuel is 1600 yen per liter. Also according to BUSINESS INSIDER, bio fuel of Euglena costs about 10000 yen per liter to make it.

For this information, this study suggests the way to spread such expensive fuel. It is the new price plan in the aircraft industry. This system refers to the price system of TEPCO. The name of the electric charge system is aquaenergy100. According to TEPCO, this plan is an eco-plan in which all power consumption is considered to be hydraulic power generation. TEPCO always generates more electricity from hydraulic power generation than the power consumption of all users of this price plan. The base rate of the standard price plan of TEPCO is 28600 yen per 10 amperes. However, the base rate of the eco-plan is 56100 yen. A part of paid electric charge is used for eco-friendly activities such as highly efficient by improving facility and maintenance and extension of power source of hydro-power.

The new price plan of the aircraft industry which this research suggests is a type of additional charge. The consumers can add this to any conventional charge. The price of this is the cost of algae fuel per person. The airlines buy more algae fuel than the amount of algae fuel which the users of this plan consume with the profit of this system. So, the consumers are able to think that they use airplanes without consuming fuel which has a bad influence on the environment. If this plan spreads, the amount of algae fuel which the airline purchases will increase and it will lead to spread of algae fuel and it will reduce the amount of carbon dioxide. Then if algae fuel spreads, the producers of algae fuel will be able to more funds and it will lead to the cost of producing algae fuel falling. By continuing it, good circulation will occur. These days, there are some companies or people who are interested in environmental problems. Those people will use this plan. Also if the airline gives some special points or the rights to get particular goods for the users, the number of users will grow.

3 Conclusion

This research proposes that the airlines make a new additional charge plan to spread algae fuel to stop global warming. However there are some issues in my study.

First, the number of users is not able to be predicted. If few people use it, it is not worth doing. To prevent such a situation, the way to spread it should be considered more. Second, this suggestion is a burden on the consumer. The manner of lowering the load is necessary to think about. Finally, this proposal is able to solve global warming only in the airline industry. However, other transportation systems also emit carbon dioxide, and not only transportation but also the generation of electricity and other industries are involved in global warming.

Only reducing the amount of carbon dioxide in the airline industry is not the perfect solution. That this system is applied to other industries is ought to be discussed.

4 References

「About carbon recycling」

〈https://www.enecho.meti.go.jp/category/others/carbon_recycling/〉

(November 18th, 2021)

「Carbon Recycling Technology Roadmap」

〈<https://www.meti.go.jp/press/2021/07/20210726007/20210726007.pdf>〉

(November 18th, 2021)

「Algae biofuel」

〈<https://www.hitachi-hri.com/keyword/k070.html>〉

(November 18th, 2021)

「explanatory material of effort of algae biofuel」

〈

https://www.meti.go.jp/committee/kenkyukai/energy_environment/jisedai_karyoku/pdf/002_02_04.pdf〉

(November 18th, 2021)

「Cultivating algae for liquid fuel production」

〈

<http://www.geni.org/globalenergy/library/technical-articles/generation/future-fuels/permacultureactivist/cultivating-algae-for-liquid-fuel-production/index.shtml>〉

(November 18th, 2021)

「”There is no intention of using euglena yet” Euglena, the nature of business of bioethanol」

〈<https://www.businessinsider.jp/post-237366>〉

(November 18th, 2021)

「Aqua energy 100 | introduction of price plan」

〈<https://www.tepco.co.jp/ep/eco/plan/private/detail.html>〉

(November 18th, 2021)

「Standerd plan」

〈<https://www.tepco.co.jp/ep/private/plan/standard/kanto/index-j.html>〉

(November 18th, 2021)

Revival of department stores by holding events

~Cause of decline and foreign examples~

5329 Rika Tanaka

Abstract

Most modern people go to shopping malls. On the other hand, there are few people who go to department stores. The top department store “Macy’s” holds a Christmas event every year. Other department stores in America also provide customers with something such as chocolate or wine for free on special days. They provide their customers with opportunities to visit there. Japanese department stores have fairs, but they focus on not entertainment but sale. To compensate for the lack of entertainment, I suggest they should hold fairs of their local products on special days. By combining with other events such as Valentine fairs or Christmas fairs, they can have an additional effect. These days, the word “retailtainment” is focused, which means the commercial form mixes retail and entertainment. 73% of foreign people spends more money on shops which give emphasis on entertainment. Many famous companies in Japan also use the effect. Department stores should refer to those examples.

1 Introduction

According to the Development Bank of Japan, the sales of Japanese department stores are decreasing. Major stores in big cities have a big influence on people’s lives. However, the impact of stores is decreasing in other places. Because of such circumstances, each store in department stores moves to other commercial facilities. After that, the number of customers decrease more. This bad cycle continues for a long time. Commercial facilities are related to local life. In that way, I decided to study to revive local department stores.

Mr Kitayama says, “most European department stores were opened to target ordinary people, but most Japanese department stores have run as elite stores. At the same time, they seem to have been trying to spread the range of the customers. However, it is impossible to get many kinds of customers at the present.” Like this, it can be said that the number of customers coming to department stores which target a particular group is decreasing due to the change of age.

In my research, I consider the way to get more customers like they were before. First, I use the Internet and search the survey of the image of Japanese department stores to figure out the issue. After knowing the situation of Japanese stores, I get information of foreign ones. Mainly, the information about American ones which have a culture of going to department stores is essential. Then, I compare foreign countries with Japan and think of the best way to make good use of foreign examples. At the same time, I collect information about familiar companies in Japan. By knowing such precedents, I can imagine how to deal with this circumstance clearly. In considering the way, I consider the merits and demerits about cost, how big the effect is. The scale of the stores may be different between countries or areas, so I take how big a burden is on consideration.

2 Discussion and implications

Some people like businessmen use the products of department stores as presents to give to others. They are suitable for such situations. Contrarily, people rarely visit there in their daily lives. The reasons why people don't come to visit department stores are “price is too high”, “there is no department store near their house” and “have no chance to visit there”. From this result, we can know that people do not have a good image of department stores very much. Therefore, most modern people visit shopping centers instead of visiting department stores. Then, I searched foreign countries to compare with Japan. The top American department store “Macy's” holds a Christmas event every year. It started such big events the earliest in the world and most residents visit there when the event is held. One of the examples of events is to be able to meet Santa Claus started in 1862. Another is Holiday Window, to display

windows with many things of a theme started in 1870. In 1924, it started Thanksgiving Day Parade. The image of them is traditional and fantastic events. Also, other department stores in America provide their customers with something such as chocolate or wine for free on special days. Those events are familiar to local people. On the other hand, Japanese department stores don't have such events. At the moment, they cannot have big events because if they do so, they may feel a burden and it will cause the opposite effects. Therefore, I suggest that they should not increase the number of events, but make events better. These days, the word "retailtainment" is focused. It means the commercial form mixes retail and entertainment. More and more managers provide the opportunities of trying products in person, communicating with staff, and encountering products. These points surpass shopping through the Internet.

There are many successful examples of retailtainment. One of them is the staying event of IKEA, a furniture company. It is called a "pajama party". The members of IKEA who are selected can participate in the event. The content of the event is seminars on how to choose bed or other products, and dinner in the IKEA restaurant. Customers can experience and enjoy the products. After that they can stay there and use beds in the shop. They can experience special feelings there. Also, newsworthy events will benefit after that.

Another example of retailtainment is about House of Vans in London. It collected restaurants, theaters, art galleries, and so on. The experience that they had a lot of fun will have a good effect on Vans. This event's goal is not to make customers buy products, but to make customers experience the culture of Vans. The special opportunity represents the feeling of the manager of the company. This kind of event can make customers have a good image and dreams of buying the products.

These measures can provide customers opportunities to experience products and make customers become a fan of the brand through fantastic memories. There are more examples of the shop focusing on the effect of retailtainment around the world.

Japanese department stores need to improve entertainment like these examples. According to TechHQ, "73 percent of UK consumers would spend more time and money in stores that offered up experiences as well as just products, according to research carried out by

RetailEXPO”. Many companies are using this effect. Imitating successful examples will help to manage companies. So, they should know about these topics and adopt the things which they learned from these examples.

3 Conclusion

I think holding events of the local products on special days will work. Now, a lot of department stores have fairs. They attract customers all the time. However, most of those fairs are events about Hokkaido, Okinawa, and so on, famous sightseeing spots. Department stores do not have fairs of their own products. Though some stores sell their products in small spaces usually, they do not have something special such as a fair. They should make some opportunities for customers to become interested in what kind of products local farmers, artists, or craftsmen make. By focusing on local products, they can connect with local people and local residents come to the event and increase knowledge of the products. Local workers want residents to enjoy their products. The attention will bring benefits to both local workers and department stores. Also, by combining other special days and events, more customers will attract the fair and they do not have to be worried about cost. Almost all department stores are carrying their products in circulars, so they must use the media effectively. In the process of thinking about what they should do at the event, they can find what customers require for them.

I knew that “retailtainment” is a keyword the present. Japanese department stores’ layout, service, and fulfillment of the products are admired not only in the country but also outside of the country. Therefore, only changing the image of them to an exciting place will make a big difference.

In this research, I do not know the possibility of carrying out my suggestion and how big the effect is. How to maintain the effect of the events is also a problem. I am going to gather more information about foreign countries to deal with these problems from now on.

4 References

- archetype corporation <https://archetype.co.jp/aboutus/> (2020.11.13)

- DIG IN <https://www.showcase-gig.com/dig-in/retail-tainment/>

- decline of Japanese department stores

https://www.dbj.jp/topics/report/2012/files/0000010913_file2.pdf (2020.9.25)

- questionnaire about use of department stores

https://www.lisalisa50.com/research20180420_3.html (2020.10.21)

- Christmas of Macy's

<https://mikiysh.com/diary/macys-holiday-windows-nyc/> (2021.1.12)

- questionnaire about department stores

<https://www.dims.ne.jp/timelyresearch/2007/071002/> (2020.10.23)

- difference between department stores and shopping centers

<https://www.google.co.jp/amp/s/shopcounter.jp/magazine/knowhow/difference-between-shopping-mall-and-department-store/%3famp> (2020.10.25)

- The rise of 'retailtainment'

<https://techhq.com/2019/06/the-rise-of-retailtainment-in-store/> (2021.1.12)

- survey of businessperson and department stores

https://www.jrta.co.jp/research/person_vol15.pdf (2020.10.25)

School Elections That Make Politics Closer

~How to Be Interested in Politics~

5330 Rikako Nakagawa

Abstract

In Japan, voting rights are given to all citizens over 18 years old. According to the Ministry of Internal Affairs and Communications, however, the turnout of national elections is decreasing now, especially for teens and twenties.

Why don't the youth go to vote? I made the hypothesis "they don't go to vote because they don't have enough interest in politics and election and also have little opportunities to get involved in politics" And I have followed it and continued my research.

My suggestion is to introduce "School Election" to Japanese high schools. The purpose of my suggestion is to have students understand politics and establish their own opinions, which cannot be got only by receiving information from the media.

School elections can provide opportunities for students to talk about politics. On the other hand, I worry that the more the opportunities will increase, the more students will depend on friends' or their parents' opinions.

1 Introduction

Now that Japanese youth turnouts are decreasing, it will be a disadvantage for us to make our own future. In order to make Japanese future society better, and have Japanese youth be interested in politics, I have continued this research.

I searched the Ministry of Internal Affairs and Communications homepage, then I checked that Japanese turnouts are decreasing overall especially for teens and twenties. And by reference to some questionnaires conducted by some universities and companies, I made a

hypothesis. So I have followed the hypothesis to propose my solution, and create a plan.

2 Discussion and implications

Comparing Japanese turnouts of the early Heisei period with that of the Reiwa period, it has been about 20 percent, decreasing from about 73 percent to about 54 percent. And the differences of turnouts among age groups are big. Although the voting rights have been given to all citizens over the age of 18 in 2016, teens turnouts have never reached 50 percent. (Ministry of Internal Affairs and Communications 2020)

Why haven't they been to vote? From the questionnaire for teens who didn't go to vote which was conducted after the first election for teens, there are some answers of the reasons why didn't you go to election, such as "Troublesome" "I don't understand politics" "I can't vote where I live" (by Syowa girl's university) Many students after graduated from high schools, they go to universities and start to live in somewhere apart from their hometowns. Then, if they forget to move their own resident's cards, they cannot vote in the areas, but they have to go back to their hometowns to vote.

Next, I made a hypothesis that "youth don't go to vote because they are not interested in politics and elections". As the answers of the questionnaires, not knowing about the candidates, they may hesitate to vote.

However, according to the OECD questionnaire "not interested in politics" (for 15~29 years old) which shows how many people in the country are not interested in politics, Japanese are the lowest proportion following countries such as Germany and Denmark which have high turnouts. That shows many Japanese are more interested in politics than that of some other countries.

Also according to the questionnaire (by Syowa girl's university, for teens) which asked if you talk about politics with your families, the answer of "Yes" (containing often and sometime) was 36.0%, the answer of "NO" (containing not much and rare) was 59.4%. Also, the answer of the questionnaire which asked if you talk about politics with your friends of "Yes" (containing often and sometime) was 26.0%. And the answer of "NO" (containing not

much and rare) was 69.0%. (according to Ryutu Research Co., Ltd)

From those information, I found that many young people have interest in politics not enough to go voting rather than not, and they have a little opportunities for them to be exposed to politics.

Then I made the hypothesis that “youth don’t go to vote because they are not interested enough in politics and election, and have a little opportunities to touch politics” As the answers of questionnaires, if they don’t know about the candidate, it’s difficult to vote. Also the environment where it is difficult to talk about politics with people close to you, such as friends and family, even though you are interested in politics. In these circumstances, they are difficult to tell and listen to others' opinions.

3 Conclusion

Having continued research following my hypothesis, I suggest that I introduce “School Election” to Japanese high schools. The purpose of my suggestion is to have students deeply understand politics and establish their own opinions, which cannot be obtained only by receiving information from the media. By discussing it with their close people.

In the first place, “School Election” is that an election held by students before the voting date, which is exactly the same as the actual national election. In Norway, although the results don’t affect to the real voting, the media close up to the results and many adults in the country are interested in the results. And the politicians which contain office workers and also students come to high school and talk with students about politics. Though it isn’t forced to the students, a lot of high schools and the students join it and vote it.

To realize my suggestion, I came up with a concrete plan.

1, I will create a new election commission which manages all of school elections. (like Akasi project in Chuo Secondary School)

2, In the first few years, we will force all students in the school to join these events so that as many students as possible will be able to be interested in politics.

3, the election commission will aggregate and publish the results.

4, To make the school election bigger and bigger, inviting such other school teachers and media, we introduce the state of the school election or recommend establishing the election commission to each school.

5, inviting those who belong to the actual political party, we will hold a place for discussion with students.

6, And we will have the school election for all Japanese students someday.

I have some problems with my suggestion such as law, time and method.

I'd like to research my problem, and come up with some solutions.

4 References

Distribution Research Co., Ltd.

https://www.soumu.go.jp/main_content/000457171.pdf (3/3/2021)

Ministry of Internal Affairs and Communications

https://www.soumu.go.jp/senkyo/senkyo_s/news/sonota/nendaibetu/ (3/3/2021)

Ministry of Internal Affairs and Communications

https://www.soumu.go.jp/senkyo/senkyo_s/news/sonota/ritu/index.html (3/3/2021)

Social facts data catalog

<http://honkawa2.sakura.ne.jp/5230e.html> (3/3/2021)

Japan Trade Union Confederation (Union) General Political Bureau

https://www.jtuc-rengo.or.jp/campaign/data/18sai_senkyoken_ver2.pdf?40 (1/21/2021)

Showa Women's University Institute for Contemporary Business 2017 Bulletin <Activity Report>

http://swubizlab.jp/wp/wp-content/uploads/2018/03/2018_014.pdf (9/25/2021)

18-year-old election right NHK new voters' awareness and voting behavior

https://www.nhk.or.jp/bunken/research/yoron/pdf/20170401_8.pdf (10/10/2021)

Yahoo! News

<https://news.yahoo.co.jp/byline/abumiasaki/20170906-00075422/> (10/10/2021)

facebook of OECD

https://www.facebook.com/theOECD/?_tn_=%3C%3C*F (10/10/2021)

The prevention of dementia by Brain training game

~Prevent dementia by new brain training system~

5331 Chihiro Fukushima

Abstract

Dementia is “a syndrome in which there is deterioration in cognitive function beyond what might be expected from the usual consequences of biological ageing. ” (WHO,2021)
As a cause of that, “especially, the brain parts considered that related to dementia are the outside and inside of temporal lobe, projection system of striatum, the inside, orbital surface and outside of frontal lobe, parietal lobe and vision union field.”
(Shunya Fukui,2008) Analyzing their own roles, mainly, it can be classified as recognition of information, memory, judgment of action and action. Also, Nouchi and Kawashima (2014) made clear that “The group of Brain training games improved executive function and processing speed more than the group of Tetris.”
Applying these roles from the brain parts, I found that the frontal lobe can improve their functions. However, Brain training games are difficult to improve “the recognition of eyesight and space, calligraphy”, “long term memory”

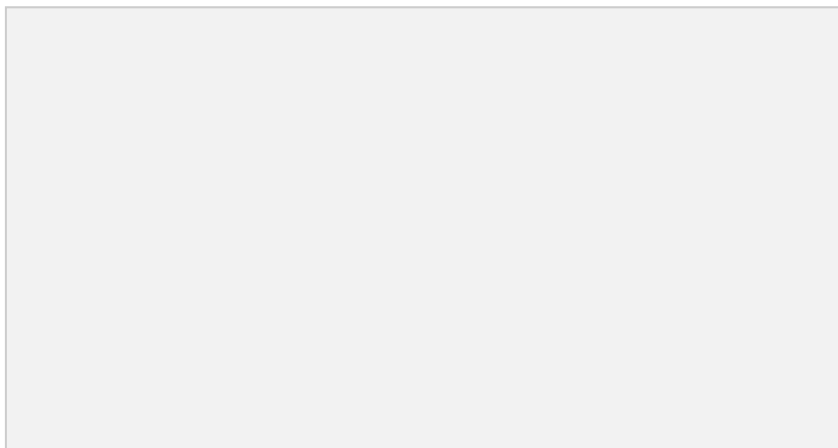
1 Introduction

Dementia as social issue

Today, dementia has become a social issue. Then, how many dementia patients in the world?

According to PRB (2012), “Across the globe, more than 35 million people are living

with dementia, according to recent World Health Organization (WHO) estimates. This number is expected to more than



triple to reach 115 million by 2050 in the wake of world population aging.

Dementia is

2 Discussion and implications

I About Dementia

What is Dementia? According to WHO, they mention that “Dementia is a syndrome in which there is deterioration in cognitive function beyond what might be expected from the usual consequences of biological ageing. ” As the symptoms of dementia, “Early stage: forgetfulness, losing track of the time, becoming lost in familiar places,” ”Middle stage:becoming forgetful of recent events and people’s names, becoming confused while at home, having increasing difficulty with communication, needing help with personal care, experiencing behaviour changes, including wandering and repeated questioning, ” “Late stage: becoming unaware of the time and place, having difficulty recognizing relatives and friends, having an increasing need for assisted self-care, having difficulty walking, experiencing behaviour changes that may escalate and include aggression.”(WHO,2021) Simply the symptoms of dementia can be grouped into the disability of memory, ability to grasp, executive function, faculty of orientation.

And I research what the aberration of the brain parts brings on dementia with “Focus of dementia : dementia with seeing from the brain parts” (Shunya Fukui, 2008).

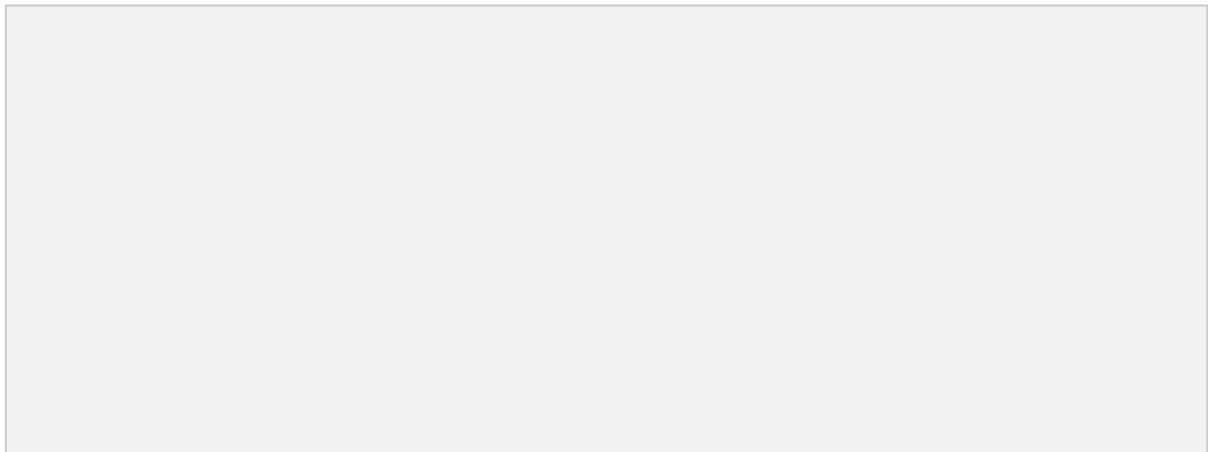
First, we can divide dementia into two groups: “cortical dementia” and “subcortical dementia.” Cortical dementia comprehends Alzheimer (AD). AD is caused by pathological alteration of cortex of the brain and takes on pathognomonic selectable cortical missing symptoms. In contrast, subcortical dementia is another AD such as Parkinson's disease, Corticobasal degeneration and Dementia with Lewy Bodies. Causality is the disability of subcortical core (as Caudate nucleus, Putamen, Globus pallidus, Substantia nigra, Thalamus) and subcortical white matter lesions. Symptoms are the disability of executive function, affections and memory, noematic slower pace, amnesia, selectable cases of the frontal lobe as using behavior, imitation behavior and grasp reflex. Also, according to Shunya Fukui (2008), “Especially, the

brain parts related with dementia are the outside and inside of temporal lobe, projection system of striatum, the inside, orbital surface and outside of frontal lobe, parietal lobe and vision union field.” Their role is as indicated below.

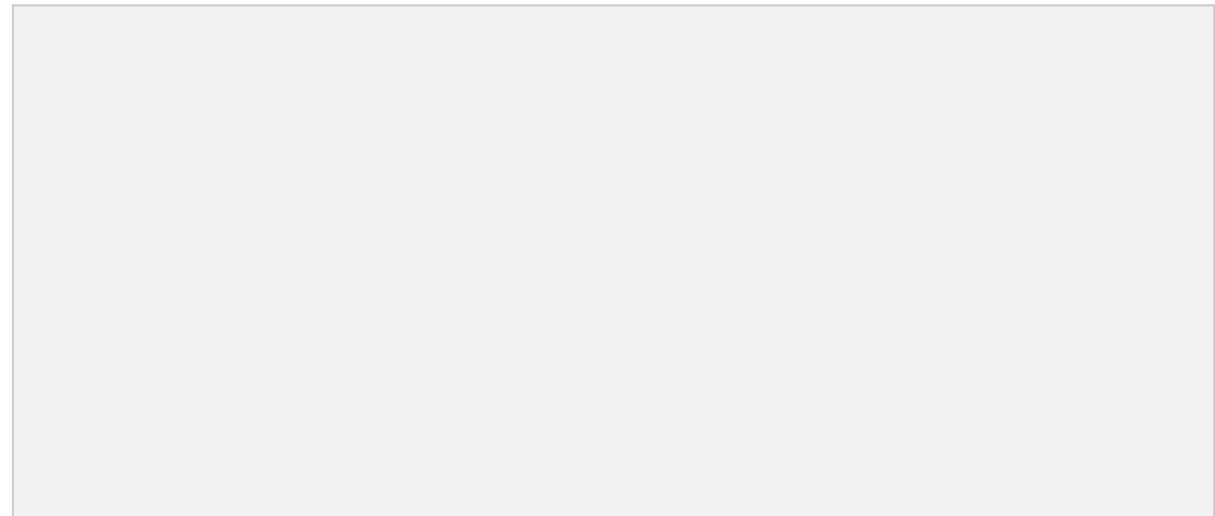
Brain parts	Role
Temporal lobe	Input of acoustic information, Verbal recognition, Memory
Projection system of striatum The outside of Frontal lobe	Executive function
The inside of Frontal lobe	Cogitation and judge about action
Orbital surface of Frontal lobe	Cause of social action
Parietal lobe	Vision and spatial recognition, calculation, calligraphy
Vision union field	entire recognition, sail of moving

Then, is it true that the brain training game led to prevention of dementia?

Nouchi and Kawashima(2014) correct healthy elderly from local community magazines and are divided into two groups: “cohort of the brain training game” and “cohort of Tetris.” After 4 weeks they conducted a cognitive functioning test and analyzed the conclusion in the vicinity of weight in games.



Following are mini games including The Brain training game.



As a result, it becomes clear that the brain training game can improve executive function and processing speed. Contrastly, the ability of whole cognitive and attention were not increased. For these results, I thought that the brain training game can improve the frontal lobe but also cannot improve the temporal lobe and parietal lobe.

3 Conclusion

From my research, I found that The Brain training game cannot improve the ability of whole cognitive and attention. The brain parts related to attention are Parietal lobe and Temporal lobe. Each role is "Input of acoustic information, Verbal recognition, Memory" and "Vision and spatial recognition, calculation, calligraphy ." In the brain training game, there are "triangle calculations", "timing measurement", "phonetic calculations", "reading of masterpiece" and "counting the number of people" so we can consider that these mini games include stuff of calculation, memory and Input of acoustic information.

Thus The Brain training game falls out of the realm of vision recognition and calligraphy. I will research how The Brain training game system can improve these abilities.

4 References

1 PRB (2012) Dementia Cases Expected to Triple by 2050 as World Population ages

<<https://www.prb.org/resources/dementia-cases-expected-to-triple-by-2050-as-world-population-ages/>> (access day: 10/27,2021)

2 WHO(2021) Dementia <<https://www.who.int/news-room/fact-sheets/detail/dementia>> (access day:10/20,2021)

3 福井俊哉 (2008) 「認知症の病巣:脳部位から見た認知症」

<https://www.jstage.jst.go.jp/article/ninchishinkeikagaku1999/10/3-4/10_3-4_267/_pdf>
(access day:6/9,2021)

4 野内類、川島隆太(2014) 脳トレゲームは認知機能を向上させることができるのか？

https://www.jstage.jst.go.jp/article/hbfr/34/3/34_335/_pdf
(access day:6/9,2021)

How to Improve the Efficiency of Medical Care

~ Reduce the Waiting Time in the Hospital~

5332 Fujii Chiho

Abstract

According to the Patient's Behavior Survey conducted by the Ministry of Health, Labor, and Welfare, the number of people who are not satisfied with the waiting time at the hospital is significantly higher than other items that patients do not feel satisfied with. Thus I started this study. I found two reasons for the long waiting time at the hospital. There is a long examination time, and the shortage of doctors. Also it increases patients' dissatisfaction not to inform the length of waiting time. Therefore I suggest patients use an application to decrease the waiting time. The specific contents are online diagnosis, appointment, displaying the waiting time, and medical consultation. Online diagnosis is for patients who have chronic disease. They do not have to go to the hospital so often if they get a prescription with this system. Patients can come to the hospital after the application tells it. And the medical consultation connects to the examination reservation and the smooth diagnosis.

1 Introduction

As the Ministry of Health, Labor, and Welfare indicated in "Patient's Behavior Survey" in 2019, the waiting time at the hospital is decreasing. However, the number of people who are dissatisfied with the waiting time is 26.3% which is about four times higher than other items. This is why I started this study. The purpose of this study is to find a way to reduce the waiting time at the hospital.

I mainly use the internet to do research. I searched about a company that makes applications of medical care, and a home page of a hospital. I also use the statistics of some laboratories and ministries.

2 Discussion and implications

Why is the waiting time at the hospital so long? I found two causes of it. The first one is that it takes a long time to do an examination. According to the public relations magazine published by Tottori University Hospital, the long examination time has a reason. It is that doctors decide what examination patients are going to do after a consultation. Then medical technologists carry out the examination based on the doctors' orders and check it. After that, the consequences come through the doctors. It is necessary to examine depending on each patients' body conditions, so it needs time and becomes a cause of long waiting time.

The second one is that there is an uneven distribution of doctors. According to "Statistics of Physicians, Dentists and Pharmacists." conducted by the Ministry of Health, Labour, and Welfare in 2019, the number of doctors has increased by 2.5% compared in 2017 due to the government increasing the capacity of the medical faculty of the university. However, doctors are biased in specific areas like Tokyo, so there is a shortage of doctors in the local area. In addition, the gap of doctors in the medical department occurs. For example, there are not enough doctors in obstetrics and gynecology, accidents and emergencies, and anesthesiology. In the first place, why do many doctors connect to decrease the waiting time? It is because if there are a lot of doctors, they can see many patients at once, so it can decrease the time.

It does not decrease the waiting time directly, but I found that "experience waiting time" is decreased by knowing how long patients should wait. As reported by Medi Web, the rate of people dissatisfied with the waiting time increases rapidly 3.2 times when the waiting time exceeds one hour, compared thirty minutes to one hour. On the other hand, the number decreased by one-fifth when they were informed of the waiting time. Thus we can reduce the complaints by this system.

3 Conclusion

In conclusion, I would like to suggest three things. They are that Japanese hospitals introduce ①online diagnosis, ②setting the system of appointment and displaying the waiting time, and ③previous medical consultations. I am going to talk about each of them.

①online diagnosis

This is the solution for the bias of doctors. As stated by “Nihon Keizai Shimbun”, the diffusion rate of online diagnosis in Japan is lower than that of other developed countries. And the article said it has become popular in China because of the shortage of doctors. I think that local areas in Japan are in the same condition as in China, so we can reduce the number of people who come to the hospital and wait time. In particular, this online diagnosis is for patients who have chronic disease such as Atopic dermatitis, allergy, and Dyslipidemia. These patients have to go to the hospital only to get their medicine. If they use online diagnosis, patients do not need to go to the hospital so often. Also we can reduce the number of people who come to the hospital, then the waiting time will decrease. Having said that, doctors cannot understand the patients’ conditions completely by the online diagnosis yet, so I suggest the combination of online diagnosis and face-to-face diagnosis for the chronic disease patients.

② setting the system of appointment and displaying the waiting time

This is the solution for “ experience waiting time ”. Patients make an appointment with doctors on an application and it displays the waiting time on the day. We calculate the waiting time accurately based on the prediction system that averages and analyses the time or symptom for each department. I expected it to reduce the complaints. Additionally patients do not have to go to the hospital to make an appointment.

③previous medical consultations

This is a solution for the long examination time. Doctors can see their patients after getting to know patients, so it is going to be smooth. Although in the case of doing consultation at the hospital, nurses who are in charge of it are needed, we do not need to prepare these people and can use them in other situations in the case of using the application that I mentioned ②.

These three things are what I suggest to the hospital in Japan. Some people think that elderly people cannot use the application or online diagnosis due to not having smartphones. However, the government decided we should use cellphones for online diagnosis and the display of waiting time, making an appointment, and medical consultation easily. Therefore it can respond to the aging society. Now I cannot make the contents of the application clear, so I

would like to consider that and create a better one.

4 References

「平成29年 受療行動調査（概数）の概況」

The Ministry of Health, Labor, and Welfare (10 / 14)

<https://www.mhlw.go.jp/toukei/saikin/hw/jyuryo/17/dl/gaikyo-all.pdf>

「大学病院の謎 第2回 待ち時間が長い理由」 Tottori university hospital (10 / 14)

<https://www2.hosp.med.tottori-u.ac.jp/kanjiru/backnumber/vol2/series/27892.html>

『診療所の「待ち時間」対策』 Medi web (10 / 14)

<https://www.3bees.com/blog/%e8%a8%ba%e7%99%82%e6%89%80%e3%81%ae%e3%8%8c%e5%be%85%e3%81%a1%e6%99%82%e9%96%93%e3%80%8d%e5%af%be%e7%ad%96/?p=3137>

「オンライン診療の先進国はどこ？」 Nippon keizai shinbun (10 / 14)

<https://www.nikkei.com/article/DGXMZO59220090X10C20A5I10000/>

5 Bibliography

「クラウド時代の医療 ICT の在り方に関する懇談会」

The Ministry of Health, Labor, and Welfare (10 / 14)

https://www.mhlw.go.jp/file/05-Shingikai-12601000-Seisakutoukatsukan-Sanjikanshitsu_Shakaihoshoutantou/0000097878.pdf

「日本初、禁煙治療用アプリの保険適用を承認」 Nikkei medical (10 / 14)

<https://medical.nikkeibp.co.jp/leaf/all/hotnews/int/202011/567850.html>

Solving the Frailty Cycle with Hakko Line System

~Improvement of Malnutrition for the Elderly~

5333 Matsubara Kotomi

Abstract

In Japan, a lot of elderly people have some nutritional problems, such as the double burden of malnutrition, the state people are both undernutrition and overweight, and the frailty cycle. I suggest a system called “Hakko Line” which is aimed at candidates for elderly care receivers. In this system, an elderly person provides children with their own recipes of fermented foods and receives the foods from children made using the recipes. Through the interaction between older people and children with fermented foods, we can expect not only the improvement of senior citizens’ malnutrition but also the promotion of their appetite and the reduction of loneliness. Additionally, it can contribute to handing Japanese fermented culture down. Moreover, children’s curiosity will be stimulated by watching the process of fermentation. Therefore it is clear that the “Hakko Line” brings benefits for both elderly people and children.

1 Introduction

According to the International Food Policy Research Institute (2016), among about six hundred sixty-seven million children under five years of age, approximately one hundred fifty-nine million children are suffering from stunting and fifty million children are suffering from wasting. Surprisingly, although these two problems are caused by lack of nutrition, there are about forty-one million children who are overweight, which is caused by excess nutrition. This nutritional problem is called “the double burden of malnutrition”(International Food Policy Research Institute, 2020).

Since I have known this situation of children in developing countries, I supposed that it is

also true for Japanese elderly people. In fact, the most common cause of requiring long-term care is a lifestyle-related disease and a joint disease (32.9%) and the second one is debility, fall, and fracture (the Ministry of Health, Labor and Welfare, 2013), so we can consider this situation as “the double burden of malnutrition”. That’s because the former comes from excessive intake of energy but the latter is caused by undernutrition, especially the “frailty cycle” whose cause is lack of protein.

When basal metabolism or a body’s faculties decline because of undernutrition, people will come to reduce their activities. As a result, they lose their appetite, eat less amount of foods, and they will have a problem of undernutrition again. The Consumer Affairs Agency (2015) says that this bad cycle is a frailty cycle.

Therefore, in order to cut this cycle off, it is essential to provide a food which has a high nutritional value and older people can eat easily and also to promote their appetite. Thus, this paper will argue for a food providing system which meets both of these two points.

The Japanese population is rapidly aging, which is becoming a serious problem for us. It is significant to extend not only the average life-span, but also healthy life expectancy to create a society in which the senior citizens will be able to play an active part in the future. To realize this society, it is necessary to help “candidates for a person requiring long-term care” as well as to enhance medical care and long-term care. I use “candidates for a person requiring long-term care” as people who have not reached long-term care yet but are living at home worrying about some health trouble. Because of the progress of nuclearization, the number of older people living alone is increasing. They surely feel loneliness or anxiety about the risks of falls and fractures, which are the second-largest factor of requiring long-term care. In other words, they are worried about both the decline of health and mental burden. I believe that the system focusing on this kind of person called a candidate for a person requiring long-term care is necessary.

2 Discussion and implications

Hakko Line

I suggest the “Hakko Line” system as the means of solving the double burden of malnutrition and frailty cycle among elderly people. This system can contribute to improve the quality of nutrition, promote appetite, and relieve loneliness an elderly person has by connecting with the outside through fermented food, even though he or she is at home.

1. An elderly person at home writes down a recipe of fermented food which has been handed down in the family or the region.
2. Using the recipe from the older person, the fermented food handmade event whose target is children is held.
3. Children write a letter to the older person who provided the recipe to tell him or her what they felt from making the fermented food and give it with food or drink they made to the older person.
4. The older person receives letters and food from the children.

The foregoing is an explanation of the “Hakko Line” system. As you know, we can provide a place for senior citizens who tend to stay at home due to the decline of their health and the outside to mingle through the exchange of a recipe and a letter or food.

The most unique point of this system is using fermented food. Japan's warm and humid climate is suitable for fermentation. Some fermented foods have been made at home such as pickles or miso. I find it interesting that these foods may have “regional taste” or “family taste”. Elderly people have the wisdom to know these kinds of “taste”, so I think using these hidden wisdoms will contribute to improving malnutrition. I think this system can also have cultural meaning that is passing down the fermented food which has been handed down from generation to generation to children holding the next generation.

The solution about malnutrition and appetite

Then, is it possible for this system to solve two big problems in the frailty cycle, malnutrition and low appetite?

First, I will talk about malnutrition. We can expect an improvement of this problem by using fermentation. “Kikkoman Kenya sweet rice porridge project” is one of the examples of using fermentation to improve the quality of nutrition (Kikkoman, 2016). In this project, they tried to solve the excess intake of the sugar by adding Japanese koji amazake to UJI, a traditional food in Kenya. According to the report, they create an instant seasoning for sweet rice porridge. It is a fermented food that local people can naturally include in their daily meal. It is effective for their health to produce natural sweet coming from fermentation without using sugar, and the unique taste or flavor of fermented food was accepted. In addition to koji amazake, I think elderly people will be able to make good use of miso or salted rice malt which children have made for cooking.

Second, the improvement of the reduction of appetite. In my opinion, elderly people will want to try to eat fermented food through being given the foods children made using their own recipe. Also, having written the recipe on the purpose of teaching children how to make it, older people can have an opportunity to adapt fermented foods to their daily lives again or reconsider the quality of nutrition of their meal. They will feel less loneliness by getting food and letters from children and it will be connected to prevent eating alone.

Children’s advantage

Finally, I will think about what the advantages are for children. In the modern Japanese society that our eating habits have been westernized, the number of children who are not familiar with fermented foods or do not like the flavor has increased. However, considering the nutritional value, fermented foods is a dietary culture we should inherit. Many children do not know that ordinary foods and seasonings for Japanese people such as soy sauce, natto or miso are fermented foods. Experiencing making fermented foods, children can rediscover them in their daily life and become familiar with them, so this project has great importance for the inheritance of food culture and dietary education. Moreover, children’s scientific curiosity will be stimulated by watching the process of fermentation.

3 Conclusion

In conclusion, “Hakko Line” will be able to bring benefits to both children and elderly people, which means demand-side and supply-side. I believe in the “Hakko Line” system for candidates for a person requiring long-term care to solve the double burden of malnutrition and frailty cycle they have and reduce their loneliness.

4 References

- [1]International Food Policy Research Institute.(2016).*Global Nutrition Report 2016*.Retrieved from <https://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/130354/filename/130565.pdf>
- [2]International Food Policy Research Institute.(2020).*Global Nutrition Report 2020*.Retrieved from https://globalnutritionreport.org/documents/566/2020_Global_Nutrition_Report_2hrssKo.pdf
- [3]キッコーマン.(2016).ケニア国 日本の伝統的発酵技術を活用した 栄養食品事業準備調査 (BOPビジネス連携促進) 報告書.
<https://openjicareport.jica.go.jp/pdf/12269403.pdf>
- [4]厚生労働省.(2013).国民生活基礎調査.
<https://www.mhlw.go.jp/toukei/saikin/hw/k-tyosa/k-tyosa13/dl/05.pdf>
- [5]消費者庁.高齢者の低栄養予防.
https://www.caa.go.jp/policies/policy/food_labeling/health_promotion/pdf/health_promotion_180402_0005.pdf

5 Bibliography

- [6]Katz, S.(2016).*The Art of Fermentation* 発酵の技法.(B.MIZUHARA 水原文, Trans.).Shinjuku,Tokyo:O'Reilly Japan オライリージャパン
- [7]一般社団法人Jミルク.(2016).ファクトブック日本人の栄養問題の変遷と 今、直面する “栄養 障害の二重負荷” .<https://www.j-milk.jp/report/study/fl3cn000000013td.html>

[8]公益財団法人長寿科学新興財団.(2021).フレイルの原因 | 健康長寿ネット.

<https://www.tyojyu.or.jp/net/byouki/frailty/genin.html>

[9]国連WFP協会.(2018).肥満と飢餓の「深い」関係

<https://ja.news.wfp.org/18-45-86e4da49faec>

The New Trade System to Rescue the Coffee Industry

~To Solve the Farmer's Poverty ~

5401 Kanato Abe

Abstract

This study investigated what will occur in the coffee bean's industry and proposed one solution to the problem of farmers in the "coffee belt". Coffee is one of the most popular and widely consumed beverages worldwide. Now, the consumption of coffee is more and more increasing, but, according to WCR(WORLD COFFEE RESEARCH), there is the risk of decreasing to half of Arabika's bean's production. It means the price of coffee will become expensive and it may become difficult for people to enjoy drinking coffee. The decrease is caused by global warming and poverty of farmers. I picked the latter. The suggestion, named "Twin Fair trade system" may be able to solve the problem. The system is formed by the UN. It has two merits. First, the number of demerits of There are few companies. Second, support for farmers is not only now or in the future. It can be said to be the hope for helping the coffee industry.

1 Introduction

Decades ago, when people mentioned coffee, a Cafe came to their mind. There are also spaghetti, omelet containing fried rice, hamburg steak, and so on. However, these days, people often drink coffee in convenience stores. The style of enjoying it has changed. According to Japanese coffee association, the number of cafes which are not chain stores was declined to 67198 in 2016 from the largest number ,154630 in 1983. Nevertheless, the

consumption of coffee is growing now, according to the data from the Japanese coffee association. The reason why it became bigger is the appearance of convenience store's coffee served at a low price. The static byFuji keizai said proceeds of coffee of convenience store have been rising since 2013 when 7-11 starts its sales. It is said there will be more demand for coffee in the future. However, the fact that producing coffee beans became more difficult should be challenged.

2 Discussion and implications

My first solution is "New Fair trade system". It contains some points. First of all, coffee bean farmers can get not only money but also help and daily necessities. According to report of transeed group, "Farmers in developing country don't have information about the price in the market. Moreover, they are not necessarily in an association with other small farmers. In such a situation, they have to trade with brokers so that they will be bought off cheaply." Also almost all of them are in poverty. To solve this problem, buyers ought to pay more money so some groups in the world promote Fair trade. However, most companies don't want to increase the cost. My suggestion clears it. They need not add anything. Instead of them, the UN dispatches people to developing countries and sends daily necessities instead of money. "People" are staff who are employed as the technologist of agriculture. The staffs who are familiar with agriculture will help farmers and advise them about how to grow them. Daily necessities are from disaster relief supplies. In 2016, a big disaster hit the Kumamoto prefecture. And a number of Japanese sent disaster relief supplies such as food, water, towels there. As a result, there was too much surplus. To cut the cost of supplies, it is good for the UN to use them. However, the current society has an idea that all countries should stop the mono-culture economy. My idea didn't cover it.

3 Conclusion

To solve the weak point of the “New fair trade system”, my solution became better. The new One's name is “Twin fair trade system”. It has one big point. There is the task of companies which want to buy coffee beans. In the first suggestion, the task was only the UN's. What companies have to do is to make new farms in developing countries which don't grow coffee beans. They trade coffee beans and money, people, supplies but in the future, the new farm trade with their coffee farm. To say it's about trade for the present, but also preparing farmers in developing countries to break out of the monoculture economy in the future.

4 References

- Transito Group Report (2013) "Business and Human Rights Issues" (1-3)
- Leppänen Petri Salomaa Lari Serbo, Takako (Translation) (2019). Leppanen Petri Salomaa Lari KAHAVI-VALLANKUMOUS (Translation) (2019) "Before Coffee is Gone from the World" Seidosha
- Hiroki Kikuchi (2020) Coffee Farmers: In Search of Freedom
<https://www.ganas.or.jp/20200223cafe/> July 5, 2020
- All Japan Coffee Association (2017) Trends in domestic coffee production
<http://coffee.ajca.or.jp/data> 2020/6/23
- AGF Growing conditions for coffee
https://www.agf.co.jp/enjoy/cyclopedia/flow/know_02.html 2020/11/23
- Nagahama Coffee (2021) Refining and processing methods
<http://www.ncafe.co.jp/2016/07/21/post-419/> 2020/7/30

How to Solve Vacant House Problem

～Town Development by Unoccupied House～

5402 Sota Abe

Abstract

This year, I have continued my research on the theme of "solving the problem of vacant houses. Since many vacant houses are not well maintained, they have disturbed the surrounding landscape and the danger of collapse has threatened the safety of the surrounding residents. As a result of my research, I would like to make two proposals. One is to purchase vacant houses and turn them into private accommodation. The first is to buy vacant houses and turn them into home-stays, which has the drawback that it can only be done in tourist areas. The second proposal is a vacant house bank. (For the second proposal, I referred to the book "Strategies for Utilization of Vacant Houses by Local Governments" by Mr. Nakagawa)

Introduction

It is a well-known fact that the number of vacant houses is increasing year by year, but I think that few people are aware of the problems caused by vacant houses. Therefore, I would like to present some examples of the negative effects of vacant houses here. Some examples are the deterioration of the landscape, the creation of a breeding ground for crime, and the deactivation of the external economy. Why is it that despite all these problems, people are not letting go of their vacant houses and the number of vacant houses continues to increase? There are three main reasons. The first is the problem of utilization. There are few people who are actually making use of vacant houses. The reason for this is the lack of time and effort to utilize them. One example of utilizing vacant houses is a café, but it is expected to cost close to 3 million yen if you consider the cost of renovation, research, and military funds before opening. It is very risky to spend a part of one's life and money like that.

Secondly, there is the issue of buying and selling vacant houses. There are several reasons why it is difficult to buy and sell vacant houses. The market for vacant houses in Japan is not well developed. In the West, vacant houses are considered popular properties. This difference comes from the sense of value. In Europe and the U.S., houses that have already been inhabited tend to be preferred over new ones, while the opposite is true in Japan. Therefore, it is inevitable that the market for vacant houses has not developed in Japan.

The third problem is the demolition of vacant houses. Some people may think that demolishing vacant houses is the only way to solve the two problems I mentioned above. In fact, I think the problems of vacant houses can be solved by doing so. Here, let's think about the owners of vacant houses. The reason why vacant houses are created in the first place is that there were the previous owners of the current owner, that is, the parents or grandparents of the current owner. Although their houses were inherited as a legacy, they are left unused, without being torn down or put to use, causing many problems.

Then, why do so few people dismantle their vacant houses? The reason lies in Japan's tax system. When a vacant house is dismantled, only the land on which the house stood remains. The property tax and city planning tax on that land will increase as the vacant house disappears. This is why many people do not dismantle their vacant houses.

Since it is meaningful to solve the problem of vacant houses in this way, I would like to propose a plan to solve this problem.

Discussion and implication

Last year, I conducted research on the same theme. I will omit it here since it has the same purpose and method, but I thought of one idea to solve the problem of vacant houses last year as well. This year, we came up with a similar idea to solve the problem of vacant houses: "guest houses. In Japan, there are fewer people running guest houses than in other countries. As I mentioned earlier, people in other countries tend to prefer houses that have already been inhabited to new ones, while the opposite is true in Japan. I thought that this was the fundamental problem.

My Ideal Reusable Straw

5403 Masaki Ishihara

Abstract

From the perspective of the SDGs, this research focuses on reusable straws as one of the concrete means against marine pollution caused by plastic waste, and aims to promote their use with more ideal performance by reviewing their concrete structure and materials.

As a result, I have devised an alternative to plastic straws using metal and silicon that complies with the Food Sanitation Law.

Among the many reusable straws currently in widespread use, metal straws (stainless steel and anodized aluminum) have many advantages in terms of performance, productivity, and cost, and this specific reusable straw structure proposal reflects the results of actual use and consideration.

1. introduction

In recent years, the SDGs, the development goals for a sustainable society, have been emphasized and some restaurants have switched from plastic straws to paper straws. Starbucks, a coffee chain, has been selling its own brand of silicone reusable straws and switching from plastic straws to paper straws. This is an improvement in response to the recent increase in awareness of environmental issues.

On the other hand, there is a lack of awareness of the problem of plastic straws, as there are no significant measures to prevent disposing of straws, as seen in the case of My Chopsticks and My Bags, which are popularly used in one's daily life. There have been many cases of unused plastic straws being disposed of into the ocean, affecting the natural environment.

In one specific case, a small piece of plastic was swallowed by a sea turtle, damaging its internal organs and causing death in the worst case scenario.

I was shocked to see the video "Removing a plastic straw from a sea turtle's nostril" that I found on YouTube®. I was shocked to see the above case study in its entirety as a video. In

the video, the loggerhead was crying and bleeding as the charity worker pulled out the straw that was stuck in its nose. I got the feeling that the direct impact of ocean pollution caused by plastic waste was being brought into focus all at once. The straw could have been the one that came with the latte I ordered at Mac. It could be seen as a sign that I had hurt the turtle.

There are many different types of marine plastics, and based on the above experience, I decided to promote the use of reusable straws as one of the measures that a high school student can take.

2. Discussion and complication

Since the theme of the study was to "consider ways to promote the use of reusable straws in order to reduce the amount of plastic straws used," there was a limit to the depth of the study unless reusable straws were actually used. In this study, I used metal straws to identify the causes of the difficulty in popularizing reusable straws.

For further information in using reusable straw, I chose stainless steel straw made by iPOW and used them for approximately one month before applying the above method.

The specific evaluation items were

1. Advantages and disadvantages over plastic straws

2. Problems in use

these two.

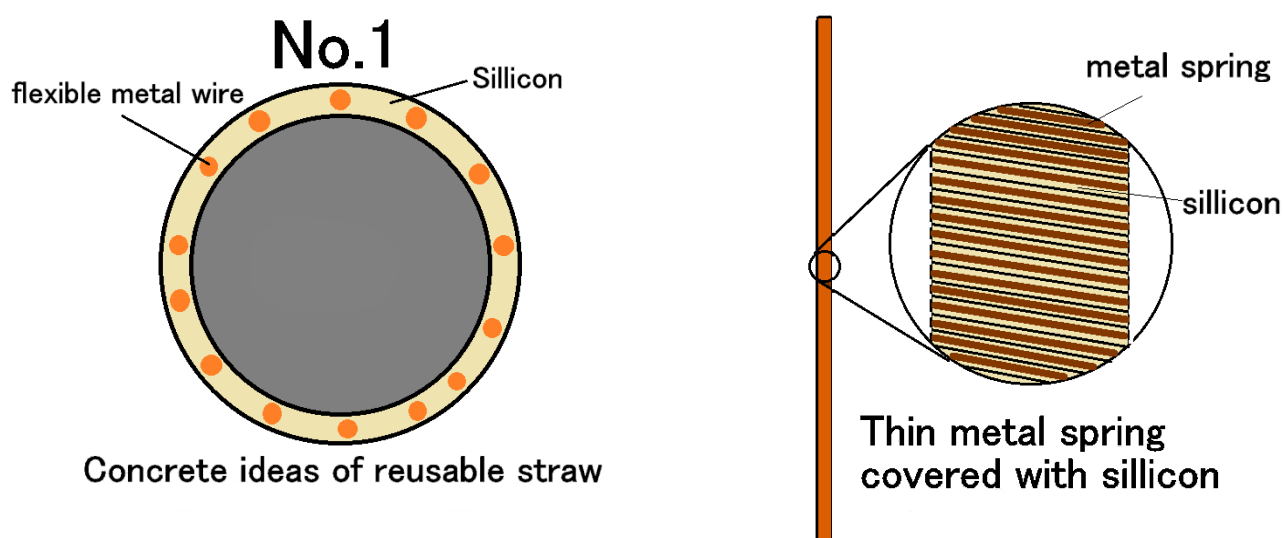
In the end, I will create a structure plan for a reusable straw that has been improved through the above method.

3. Conclusion

When using the ipow stainless steel straws, I felt that they are not similar to plastic straws. Due to its high thermal conductivity, the temperature of the straw drops to the same level as the temperature of the drink, making it cold to the touch. The main discomfort I felt was the sense of foreignness in my mouth due to the material, which is not soft like plastic and has a strong presence. In addition, the sharpness of the edges could cut the mouth, which was an improvement for straws that are often used by children. The sharpness of the edge could be improved by tapering the cross section or changing the material of the drinking part.

Furthermore, the noisiness peculiar to metal was also noticeable. The clinking sound it makes when it hits the rim of the glass is so annoying that it makes me wonder if straws are part of the cutlery category. This point could be improved by making the outer part of the straw made of silicon.

Based on the above, I studied the hybridization of metal and silicon, and came up with two concrete structure plans.



4. Bibliography

”Removing a plastic straw from a sea turtle's nostril” from Youtube 閲覧2020/6.13
([Removing a plastic straw from a sea turtle's nostril - Short Version](#))

”三商 シリコンスプリングチューブ” モノタロー 閲覧2020/11月
(<https://www.monotaro.com/g/04298417/>)

【8本セット】 IPOW ステンレスストロー 繰り返し利用可能 ストロー エコ マイストロー マドラー ステンレス製 カラフル おしゃれ 洗浄用ブラシ付+収納袋付

Amazon.co.jp
閲覧2020/9月

(<https://www.amazon.co.jp/%E3%80%90%E6%9C%AC%E3%82%BB%E3%83%83%E3%83%88%E3%80%91-IPOW-%E3%82%B9%E3%83%86%E3%83%B3%E3%83%AC%E3%82%B9%E3%82%B9%E3%83%88%E3%83%AD%E3%83%BC-%E7%B9%B0%E3%82%8A%E8%BF%94%E3%81%97%E5%88%A9%E7%94%A8%E5%8F%AF%E8%83%BD->)

[%E6%B4%97%E6%B5%84%E7%94%A8%E3%83%96%E3%83%A9%E3%82%B7%E4%BB%98/dp/B07L8YSWWK\)](#)

New Type Music Distribution Agency Service

~To Increase Opportunities for Major Debut~

5404 Fumiya Iso

Abstract

Music distribution agency services used by artists aiming to make their major debuts - services that distribute the songs of registered artists instead - have almost no connection with record companies, so I decided to propose my own distribution agency service, in which major labels would participate, and I planned to research what kind of advantages it would create. In this research, I believe that we can encourage service users to increase their contract opportunities by considering a distribution service which many record companies take part in. In addition, I believe that holding events regularly will help the service users become more known and popular among the public and record companies.

1 Introduction

Nowadays, music distributed on video posting sites such as "YouTube" and "TikTok" can get sudden popularity. Basically, the music which made a buzz spread from distribution through the Internet. As the way of providing music has changed from CD form to Internet distribution, there are more unknown musicians who want to get rich. Some use music distribution agency services which distribute the songs of registered artists instead. However, music distribution agency services used by artists aiming to make their major debuts have almost no connection with record companies, so I decided to propose my own distribution agency service, in which major labels would participate, and I planned to research what kind of advantages it would create. I will examine systems that can increase the opportunities for artists by referring to the forms of music distribution agency services through the Internet and

the flow of major label contracts.

2 Discussion and implications

(1) Current status of service forms

There are six ways to return revenue to the users in the service.

①100% revenue return, per-release subscription type

This is a subscription type where you get 100% of the revenue though there is an annual fee for each release. If only the initial regeneration is expected, the annual fee will be negative in the end as it will be charged every year. In addition, each release costs money, which makes it increasingly difficult to maintain releases. I recommend this system in cases that long-term recovery is expected.

Ex.) TuneCore Japan, SPINNUP, BIG UP! [Basic Plan]

②100% revenue return, subscription type per artist

Though there is an annual fee for this, it allows for unlimited releases on each artist, so it is recommended for those who release frequently. Compared to ①, it is possible to keep the cost constant per year.

Ex.) DistroKid, Ditto, Level Music [Premium Plan] (Up to 200 songs by 5 artists) , Amuse [Professional Plan], LANDR [Unlimited Plan]

③Profit-sharing type that distributes the profit earned (Free)

There is no initial cost at all, and the revenue that artists earned is shared with the service provider. You can start for free, but the rate of return is low.

Ex.) BIG UP! [Free Plan], Frekul, TOWER CLOUD

④100% revenue return type with restrictions

Despite being completely free, this is a 100% revenue return type. However, there are some limitations such as late release, so you need to pay close attention to the specifications. Also, since it is an overseas music distribution service, Japanese is not supported.

Ex.) Amuse [Free Plan], Level Music [Free Plan], TOWER CLOUD

⑤ Initial cost per release and revenue sharing type

It is a version that combines the advantages of the subscription type and revenue sharing type. This requires an initial fee for each release, but it provides a high rate of return. There is no annual release fee, so you only need one payment for each release.

Ex.) CD Baby, LANDR [Light Plan]

⑥ Label type (Free)

This is a form of collaboration with a label, and there is a strict screening process, but if it goes well, they will handle distribution as well as management and promotion. Since earnings are distributed with the label, it can be said to be a real profit-sharing type.

Ex.) Amuse (After Contract Decision), AWAL

As I described above, we can see services provided in various forms. Among them, I believe that ⑤ Initial cost per release and revenue sharing type is the most appropriate for users.

(2) Proposal of my service form

The business example I have in mind is the entry of multiple labels to bring unknown

artists to the attention of a large number of music professionals.

The first thing that needs to be done is to develop a service that is easy for artists to use. As I mentioned in (I) above, I propose that the method of returning profits to artists should be ⑤ Initial cost per release and revenue sharing type. The cost to the user would be the initial registration fee and the release fee for each song. Another example of this in practice is the creation of a "Weekly Featured Playlist" on SPINNUP.

The second is to hold in-service competitions and events on a regular basis to increase contract opportunities for artists. Examples of such competitions include competing for the number of views of songs distributed within a certain period of time, or inviting artists who have already made their major debuts to serve as judges and auditioning among the songs submitted to create contract opportunities.

In recent years, the music industry has been damaged by the combination of the Corona disaster and the continued decline in CD sales, etc., so I thought that increasing opportunities like this to find new talent and boost the music industry could be an example of business recovery.

3 Conclusion

In this research, I suggest that we can encourage service users to increase their contract opportunities by considering a distribution service which many record companies take part in. In addition, I believe that holding events regularly will help the service users become more known and popular among the public and record companies. However, I haven't yet figured out how I'm going to distribute the profits to the record companies, so I'll think about it more fully later.

4 References

- ・大都市圏におけるスーパーマーケットの市場競合度
https://www.jstage.jst.go.jp/article/srs/48/1/48_85/_article/-char/ja/

- ・ 競争市場 vs. 独占的競争 : 非競合的技術進歩のマ クロ的効果

file:///home/chronos/u-6fedde6ae211ae0ca0b39c7477b9f7d6c287b83c/MyFiles/Downloads/80-3okuyama.pdf

- ・ 複雑ネットワークを用いたサービスの普及過程に関する研究 (第3報)

https://www.jstage.jst.go.jp/article/pscjspe/2010A/0/2010A_0_589/_article/-char/ja/

- ・ 【自作曲を配信】 音楽配信代行サービス12選の比較とおすすめの選び方！ 音楽ディスト リビューションによる違いは？

<https://dtmer.info/music-distribution-comparison/>

- ・ 独占的競争 - YavLabo

<https://yavlabo.jimdofree.com/%E5%A4%A7%E5%AD%A6%E3%83%8E%E3%83%BC%E3%83%88/%E3%83%9F%E3%82%AF%E3%83%AD%E7%B5%8C%E6%B8%88%E5%AD%A6/16-%E7%8B%AC%E5%8D%A0%E7%9A%84%E7%AB%B6%E4%BA%89/>

Thinking about How to deal with Plastics in a Sustainable Way

~Utilization of New Resources~

5405 Koki Egawa

Abstract

I have been conducting research on the plastic problem. In my research, I found that Japan does not have legally binding measures to deal with plastic problems, and that this is the reason why Japanese people are not interested in plastic issues. In order to solve these problems, I have considered and proposed measures from familiar areas.

1 introduction

All of the sudden, do you have any plastic products? Probably no one would answer that they don't have them. Yes, this world is full of plastic. This is because it is very convenient and easy to use. According to WWF Japan, the amount of plastic flowing into the ocean each year is 8 million tons, or at least the equivalent of 50,000 jumbo jets. And the annual production of plastic is increasing every year. How many people know this situation? Probably not many. I had no idea until I started this quest. And this problem is harmful to the world's environment, affecting not only the oceans but also the creatures on land. This is a problem that needs to be solved not only by Japan but also by the entire world. Last year's study showed that to solve the problem of ocean plastic, it is important to improve the fundamental plastic problem. In this study, we focused on the plastic problem and the ocean plastic problem.

2 Discussion and implications

The reason why I was interested in this topic is because recently, I have seen a movement to reduce the use of plastic in our daily lives, such as the elimination of plastic straws at Starbucks and the charging for plastic bags in Japan. I was also interested in marine plastics because my senior's research included the issue of marine plastics, and I began my research with these issues in mind. The purpose of my research is to make people know the seriousness of the plastic problem, including ocean plastic, and what is being done about it, and each of us can know this problem and think about what we can do about it.

3 Conclusion

First of all, I would like to point out that Japan has not taken enough counter-measure to deal with the plastic problem. Certainly, There are companies in Japan that are working to solve the plastic problem. However, they are only plans and are not legally binding. This led me to believe that the lack of laws about plastic issues is the reason why Japanese people have little knowledge and interest in plastic issues. For example overseas, one state in the U.S. has a law called the Microbead Removal Waters Act. The law completely bans the manufacture and sale of products containing microplastics in that state. Japan needs to think of concrete and legal measures to deal with the plastic problem in this way. Of course, it is a law and there are penalties when breaking it. If we don't solve the root of the problem, we won't be able to solve the other problems. And Japan is the second largest user of plastic in the world. As a developed country, we need to focus on environmental issues as well. So I came up with the following suggestions

- 1.Mandatory use of eco-bags when shopping at supermarkets and the elimination of plastic bags.
- 2.Use plant-derived packages in stores.
- 3.Limit the amount of plastic waste that can take out the garbage each week.

The aim is to reduce the consumption of plastic by eliminating the plastic bags completely that are currently charged for in supermarkets. In addition, Japan is currently researching new materials to replace plastic,.It is limestone which can be produced 100% in Japan.,and even if it is thrown away, it will decompose in relatively short time, making it environmentally friendly. The third, limiting the amount of trash is to raise public awareness about plastic and to encourage people to reduce their use of plastic. These are just my own ideas, and there are still more measures to be taken. As I mentioned earlier, Japan is one of the usest plastic producing countries in the world and is also a developed country. As a developed country that leads the world, Japan should focus more on environmental conservation, including the issue of marine plastics.

4 literature

海洋プラスチックについて WWFジャパン

[https://www.wwf.or.jp/activities/basicinfo/3776.html#:~:text=%E6%97%A2%E3%81%AB%E4%B8%96%E7%95%8C%E3%81%AE%E6%B5%B7%E3%81%AB,%E3%81%A6%E3%81%84%E3%81%BE%E3%81%99\(%E2%80%BB2\)%E3%80%82](https://www.wwf.or.jp/activities/basicinfo/3776.html#:~:text=%E6%97%A2%E3%81%AB%E4%B8%96%E7%95%8C%E3%81%AE%E6%B5%B7%E3%81%AB,%E3%81%A6%E3%81%84%E3%81%BE%E3%81%99(%E2%80%BB2)%E3%80%82)

海洋プラスチック問題について 環境省

<https://www.env.go.jp/council/03recycle/%E3%80%90%E8%B3%87%E6%96%99%EF%BC%93%E3%80%91%E6%B5%B7%E6%B4%8B%E3%83%97%E3%83%A9%E3%82%B9%E3%83%81%E3%83%83%E3%82%AF%E5%95%8F%E9%A1%8C%E3%81%AB%E3%81%A4%E3%81%84%E3%81%A6.pdf>

Modification of Public Transportation to Suit a Declining Population

~Enhance the Convenience of Transportation by Conducting Light Rail~

5406 Oikawa Yuta

Abstract

Recently, The populations of developed countries are not growing very fast, except for the United States. In Japan and Italy, the population is declining. The railway corporations confuse the number of passengers by local residents, so I researched how to increase riding local transportation. My idea is building the Light Rail and growing more connections with other public transportation. Light rails' good points are easy riding and existing cars. I want more people to use Light Rail so the train company collaborates closely with nearby public and commercial facilities and makes parking space for people who ride it. Light rails' bad points are costing money and cannot be built without full understanding of the residents as well. The city best suited to build light rail is a city with a population of about 300,000 because it is not economically feasible to set up a train. Although, it has a good economic impact to build it. I need to simulate contractions.

1 Introduction

Including Gumma prefecture, due to the lack of public transportation, areas with high automobile use are often in the suburbs of urban areas. The ratio of elderly people to total The population living in these areas grow so the number of elder drivers increases year after year. People apprehend the increase of car accidents by senior citizens. Car manufacturers will realize to make perfect autonomous driving car in 2030s, but their safety is questionable, and it is uncertain whether they will be ready in the 2030s. The only feasible way to do this now is to improve the public transportation system. I think that public transportation is not convenience, so I prefer to build light rail in the center of the city. Morimoto Akinori, a professor at Waseda University, studied the convenience of light

rail(light rail is called LRT for short.) and promoted building of the light rail. I examine what new tram way construction can do for people in Japan.

2 Discussion and implications

To put the situation of Japan's route buses in a nutshell, the Ministry of Land, Infrastructure, Transport and Tourism's fiscal 2018 revenue and expenditure figures for route buses show that they are in the black in large cities, but in rural areas they are in the red with only ¥86 in operating revenue despite spending ¥100. Looking back to, during the period of high economic growth, with the increase in population and the rapid increase in commuter transportation, bus operators were profitable for a long time, and even though the number of passengers was decreasing, there were no major problems in management as they also focused on real estate development. However, with the bursting of the bubble economy and the slump in the real estate business and other sectors, management of local transportation deteriorated and the national and local governments have been forced to subsidize funds.

Based on the research I studied at the Period of Integrated Study last year, Utunomiya city and Yoshiga Town spend 68.4 billion yen for Utsunomiya LRT on the Internet, this means that each citizen of Utsunomiya will have to pay 130,000 yen. If light rail was monorail, Construction costs would be triple. The LRT is economical. In this article, we will discuss ideas for improving transportation in local cities, because even if the number of people transported by buses still play a central role in public transportation along with railroads. In this article, we will look at some of the patterns of local cities in Japan and plan a better transportation system. We chose Koriyama City, Takasaki City, Kakogawa City, Shimonoseki City, and Kurume City as the five regional cities to consider for the transportation system. The cities were chosen for the reason that they are located outside of the metropolitan areas

designated by the Ministry of Internal Affairs and Communications, or at the outer edge of the metropolitan areas, and have a population of 200,000 to 400,000.

What these five cities have in common is that the number of bus users is stagnant or declining. The decline is especially large on routes connecting the city center to the suburbs. Each city has been encouraging people to use public transportation such as railroads and buses, but none of them have taken significant measures to improve transportation, and the effects have not been apparent. Kurume City is also encouraging students to use public transportation to go to school under the title of "Eco Commuting". However, as the population of young people continue to decline, it will not be effective in the long term. We thought it would be easier to increase the use of public transportation by encouraging the elderly, whose population is increasing. Light rail is also good for health. The effect of light rail transit on body mass index and physical activity(MacDonald et al., 2010) ,by using the light rail, you can walk 1.2 miles more per day.

The system that I found to be effective after searching the Internet is to build an LRT (streetcar) line from the center of town to the center of the suburbs, and use buses or demand cabs from the center of the suburbs to the end of the suburbs. By changing the role of the buses, it will be easier to narrow down the number of users and change the location and number of stops according to the number of users. It will be easy to change the location and number of stops according to the number of passengers. According to Professor Akimichi Morimoto of Waseda University, when looking at the number of users of bus routes and rail routes in Toyama City, the decrease in the number of users of rail was smaller than that of bus routes. In another paper by the same professor, using the CUE system, it was found that traffic congestion tends to occur more frequently on arterial roads that pass through the center of the city, but is less likely to occur because residents flow to the LRT; the

LRT reduces the number of lanes for automobile traffic, but there is no need to worry because fewer cars will pass on the roads as a result.

3 Conclusion

As of September 8, 2021, there are no newly built streetcars in Japan, but the Haga-Utsunomiya LRT is being developed with the goal of opening in 2023. However, since many residents cannot reach residential areas immediately with the LRT alone, they have to use buses or shared cabs from the bus stops, but this is rather inconvenient as it requires multiple transfers. In order to accommodate private cars, park-and-rides, or parking lots, will be built nearby at major stations to make it easier for people to travel from home to home by private car. This will make it easier for people who are not willing to change trains. Finally, we have studied how the introduction of LRT will affect the transportation system, and we will continue to work on the financial aspects, the calculation of the number of users, and the specifics.

4 References

MacDonald, J. M., Stokes, R. J., Cohen, D. A., Kofner, A., & Ridgeway, G. K. (2010). The effect of light rail transit on body mass index and physical activity. *American journal of preventive medicine*, 39(2), 105-112.

Hidetora Tomioka, & Akimichi Morimoto. (2018). A Study on the Population Induction Effect of LRT Introduction Using the CUE Model. *Journal of Urban Planning*, 53(3), 1348-1354.

Why the decline of bus services? Rural areas are losing money. The former "golden age of buses" gone wrong? <https://trafficnews.jp/post/92121/4> (viewed 2021/08/09)

Next-generation transportation and compact cities

<https://www.env.go.jp/press/y0618-04/mat06.pdf> (viewed 2021/08/09)

Change the Mottainai Condition

~Using a Food Sharing Service~

5407 Otomo Takeshi

Abstract

Food waste and food loss are increasing recently in the world. About 6,430,000 tons of food waste and loss are caused every year in Japan. Half of them are caused by our house and the other are caused by factories. Focusing on the waste from restaurants, the percentage of recycling food waste is very low. I propose the promotion of food sharing services to improve this situation. To say it simply, this service is an application to directly connect consumers and stores. One of the most popular services in Japan is "TABETE". Comparing "TABETE" with "Too Good to Go", a leading service in Europe, I found that there are significant differences in the number of contracted stores, the number of users, and the evaluation of the app. While the number of users of TABETE is increasing, the number of subscribing stores is still low. In order to increase the number of contracted stores and users, it is necessary to steadily increase the visibility of the app through SNS and so on. In addition, to improve the low evaluation of the application, it is necessary to link the map and the application, enhance the search method, and make the application lighter.

1 Introduction

According to the Consumer Affairs Agency(2019), about 6,430,000 tons of food wastes and losses were caused in Japan in 2019 and this is equivalent to about 1.7 times the food assistance amount. Food wastes and losses are caused in many situations in the food supply chain. For example, in the production stage, there are non-standard products and printing errors on packages. In terms of consumption, there are unsold foods in restaurants and uneaten food in our houses. There is a system called "one-third rules" in Japan, which separates the time from the day of manufacture to the expiration date into third. It was started to deliver fresh foods to consumers, however, the more times it is divided, the more food loss is likely to occur. Therefore Japan is now trying to change "one-third rules" to "one-second rules." In addition Japan is also trying to promote the use of year and month displays. The

breakdown of food loss generated from these various causes is about 3.52 million tons of business waste and 2.91 million tons of household waste, which shows that food waste from households also accounts for about half of the total. Furthermore, the respective breakdowns of business and household wastes are shown in Figure 1. Business food losses are approximately 39% in the food manufacturing industry, 5% in the food wholesaling industry, 19% in the food retailing industry, and 38% in the food service industry. In addition, 30.6% of household food waste is directly disposed of, 30.9% is excess removal, and 38.5% is leftover food. It is important to note that food loss in the food service industry. The food service industry accounts for 38.5%, which is the same amount of waste as the food manufacturing industry in terms of business-related waste. Please look at Figure 2 below. This figure shows the implementation rate of reuse of food wastes (including food losses) in the food industry. It can be seen that the reuse rate of the food manufacturing industry is as high as 95%, while that of the food service industry is as low as 32%. Increasing the rate of food waste recycling in the food service industry is an issue that needs to be addressed in the future.

2 Discussion and implications

To solve the problems of the restaurant industry

Leftovers are one of the most common types of food loss generated by the food service industry, but there are also cases where restaurants fail to sell all the food they have left over and dispose of it by the end of the day. In order to reduce such food loss generated by the restaurant industry, I think one way to do so is to spread the use of food sharing services (I will write "food sharing" from here). Food sharing is a direct link between restaurants and consumers. By directly connecting consumers and producers, surplus food and products from restaurants can be easily sold. There is a similar system called a food bank, which collects and distributes food to where it is needed. I believe that one way to reduce food loss in the restaurant industry is to spread the use of food sharing, which is easy for restaurants to use.

Improving food sharing services

One of the most famous food-sharing services in Japan is TABETE, and according to

PRTIMES, the number of users of TABETE continues to grow as shown in Figure 3. According to PRTIMES, the number of users of TABETE continues to increase as shown in Figure 3, especially in May and June of 2020. This is thought to be due to the increased awareness of food loss reduction caused by the coronavirus. Although the number of users is steadily increasing, the scale of TABETE is very small compared to Too Good to Go, which originated in Denmark and is widely used in Europe. "Too Good to Go" has more than 39,000 stores, about 30 million users, 4.8 stars in the app store and 4.8 stars in the google store. In contrast, "TABETE" has 1,450 stores, about 300,000 users, 1.9 stars in the app store and 2.3 stars in the google store. Thus, when we compare Too Good to Go and TABETE, we can see that TABETE is inferior in all three comparisons.

3 Conclusion

I think the only way to improve the number of subscribers and users is to continue to promote the app through SNS and other means. What I want to consider in detail is the evaluation of the application. As shown earlier, the evaluation of the TABETE app is not as good as that of Too Good to Go. Therefore, I think it is necessary to take the evaluation seriously and use it to improve the application. What we feel is especially necessary is a tie-up between the app and maps, and a more extensive search method. Even if the app shows how many minutes it takes to get to a station or what kind of buildings are nearby, users will be able to clearly recognize the destination by showing the specific location. In addition, since there are currently only searches by prefecture and region, search methods such as genre search and distance search should be introduced.

4 References

- Consumer Affairs Agency (2019). Reference materials for reducing food loss, August 20, 2019 edition.
https://www.caa.go.jp/policies/policy/consumer_policy/information/food_loss/efforts/pdf/efforts_190820_0001.pdf. 9/20/2020
- Ministry of Agriculture, Forestry and Fisheries (2019). Annual Amount of Food Waste Generated and Recycling Rate of Food Recycling Resources in 2017
<http://www.maff.go.jp/j/shokusan/recycle/syokuhin/attach/pdf/kouhyou-11.pdf>. 9/20/2020
- Co-cooking. Tabete homepage.
<https://www.cocooking.co.jp/food-sharing/> 5/6/2020
- Too Good To Go. Too Good To Go Home Page
<https://www.toogoodtogo.com/en-us/> 20/6/2020

5 Figure



Figure 1: Causes of food loss (Ministry of the Environment, Ministry of Agriculture, Forestry and Fisheries)

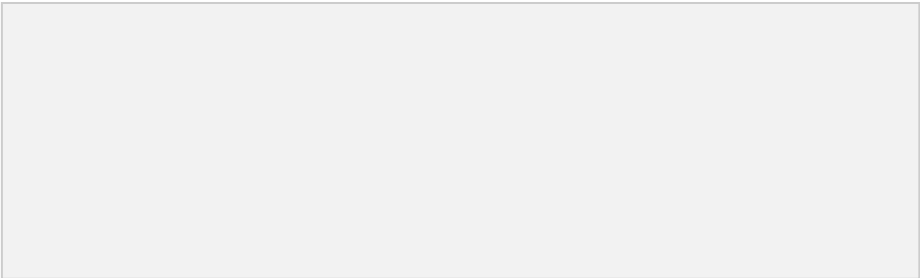


Figure 2:
Implementation
rate of recycling

and utilization of food resources (Ministry of Agriculture, Forestry and Fisheries)

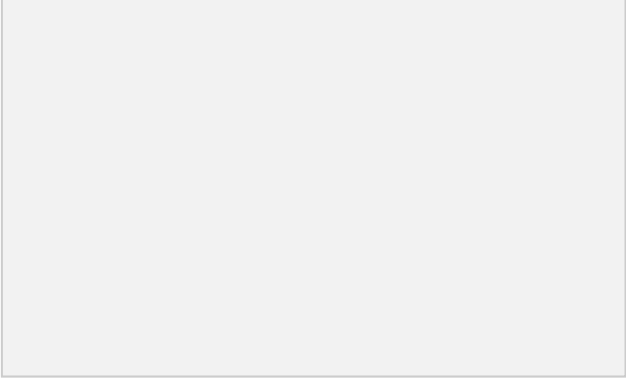


Figure 3: Number of "TABETE" users (PRTimes)

Using AI for Effective Education

~Education with Less Burden for Both Students and Teachers~

5409 Kashima Kanata

Abstract

I suggest Using AI to streamline the input of class contents and to do activities based on individual interests or learning that suits each student in the time which made by streamline learning in my research. Then I set the research question as “What is the good education for both students and teachers”. I thought about effective education using AI. First, when I checked the merits and demerits of current status Japanese education, passive education and excessive burden on both students and teachers were cited as bad points. Based on this, I thought about the pros and cons of the introduction of AI in school education. Then I understood that although AI can provide us with individualized curriculums, and it was concerned that AI wouldn't be able to answer students' questions directly. Finally, through examples of overseas introduction, I suggested it.

1 Introduction

Recently, there are increasing demands for people who can work internationally. Then, I examined Japanese educational standards. I found Japan's rank has decreased by looking at the PISA International achievement test. At the same time, I found that there is little education using AI. Therefore I started this research.

2 Discussion and implications

Japan now seems to have been maintained high level standards of education in the world perspective. However, looking at the PISA international achievement test by Ministry of Education, Culture, Sports, Science and Technology International Academic Achievement Survey , it was observed that rankings were declining in all three perspectives, mathematical literacy, scientific literacy, and reading comprehension. Then, I thought there might be caused by the current Japanese education style, and started investigating the reason for that. I found that the Japanese education style had a burden on both students and teachers then. I learned that many students take classes in a passive style, just processing the assigned tasks, which is repetitive and makes them feel more constrained. In addition to the repetition of the same lessons, the teachers also had to deal with each student in a more or less precise manner, which seemed to be more or less of a burden. Therefore, I would like to think about new education using AI, which has been growing rapidly in recent years. According to the AI specialist Newsopedia, AI is said to derive its rules by "categorizing" many things. In addition, in one actual experiment, 10 million images of cats made it possible to identify them. It is said that AI would be able to classify "images", "sounds", "text", and "actions", and by using these technologies, it would be able to provide optimized learning for each student. For example, in the situation of speaking and listening skills, the use of AI will improve accuracy and reduce the burden on teachers. In addition, it is said to be able to improve classes by automating grading and measuring the level of concentration of students in the class. The site said that these technologies would reduce the burden on teachers and allow them to provide education at a lower cost. According to Data Artist Corporation, more than 1,200 schools in the U.K. offer distance learning, and in the U.S., AI is being used as a

course and career advisor. Also in Canada, AI is being used as a way to check student attendance.

3 Conclusion

In light of the above, I propose that we use AI to streamline the input of class content, and then use the available time for individualized learning. This will reduce the burden on teachers and make it easier for students to learn in a way that suits them. Also I thought it would be a good idea to use AI to fill in the gaps in teachers' teaching. In this way, both students and teachers can have an effective time.

4 References

"Advantages and disadvantages of implementing AI and artificial intelligence"

<

<https://ai-products.net/12906/what-are-the-disadvantages-of-introducing-ai-and-artificial-intelligence/>

>

(R3, August 28)

"Will we no longer need teachers?"

<<https://ai-products.net/11637/what-are-the-advantages-and-disadvantages-of-ai-for-education/>>

(R3, September 16)

"Differences in Education in Japan and Abroad"

<

https://haa.athuman.com/media/japanese/world/2891/?doing_wp_cron=1634193054.2226169109344482421875

(R3, September 17)

"Current status of education using the latest technology"

https://www.jstage.jst.go.jp/article/serviceology/4/2/4_6/_html/-char/ja

(R3, September 18)

"Can Japan's academic skills be applied overseas?"

<https://passing-notes.com/column/223103/>

(R3, September 18)

Make Aerogel Familiar

~The Car Window Made by Aerogel~

5410 Kazuya Koshikawa

Abstract

I suggest a car window made by aerogel.

When I was searching for a theme of my research on the Internet, I found “aerogel” that has great insulation properties, so I came up with a car window whose thermal insulation is especially good thanks to aerogel.

In recent years, because of high temperature outside cars and direct sunlight, the temperature inside cars became so hot that some people were taken to the hospitals. To use air conditioner is one of the countermeasures, but it takes a long time and produces a large amount of CO₂.

Then if we use aerogel windows, it can curb the rise of car temperature. It also makes cars cooler soon by air conditioner thanks to little amount of in and out of heat and keep them at a low temperature. Furthermore, I am worried about its transparency, we use aerogel other than front glasses. I am also anxious about the strength in addition, I suggest a structure where glasses clip aerogel to reinforce weakness. This window can be helpful even if it is so hot or cold. When we use it, we can reduce the use of air-conditioning apparatuses and heating systems and the reduction of using them will connect to decrease the emission of CO₂. Thus I think windows made by aerogel may play an important role to the earth.

1 Introduction

As I wrote above, I have been interested in global warming and how to deal with it. While searching for a material helpful to it, I happened to see news of great behavior of aerogel. It

keeps fifty degrees celsius higher than other materials when it was put on Mars. From this fact, I can use aerogel in products which require great thermal insulation. To use great heat cutting products means to reduce the use of apparatuses which greatly produce heat and CO₂. If this argument actualizes, an aerogel window becomes a creative product.

2 Discussion and implications

If we use aerogel windows instead of car windows, a lot of people suffering from severe heat and sunlight during summer will decrease. These days there are many people who don't feel well or have serious illnesses due to the summer climate. According to Japan Mobile Federation (JAF), the number of accidents of leaving children and pets in the car keys locked away during August, 2020, was 75 in case of children and 23 for pets, so there are 98 accidents in total. As you can see, so many bad cases have happened in only one month. Thus you can find that the sunlight and heat effect on cars is so serious and to hinder them from coming into cars is essential to save people's lives.

The work of aerogel may also be applied when it is cold. With using a heating equipment in just a moment, the aerogel window can imprison hot air and little amount of warm air is able to escape from inside the car, so someone in it during winter may not be in danger of death because of the intense cold.

As a result, aerogel windows can help people from severe climatic environments and make them drive and spend time in the car more comfortably without much use of temperature control devices.

3 Conclusion

Aerogel car windows are useful for people who use cars. Seemingly they are good products, but they have some drawbacks.

First, aerogel has weakness. Aerogel has a number of holes in its body, so it becomes flexible. I cannot use an aerogel as itself in a window, so I suggest a structure that is glass

covers.

Second, it costs a lot. It is made through a unique process. The process makes aerogel cost much. However, recently a new aerogel has been released and it is cheap because it goes through that unique process.

If I can solve the problem, this window will be a great product.

4 References

[1]Low cost and high performance at the same time! How did Aerogel, a lightweight transparent heat insulator, come into being? (2020) minsaku
<https://minsaku.com/articles/post607/>

[2]SUFA: Transparent thermal insulation material (2018) Aizawa Mamoru
<https://www.newglass.jp/mag/TITL/maghtml/124-pdf/+124-p023.pdf>

[3]Cold and condensation on windows is caused by heat escaping through windows (2021) window-ledge
<https://www.34al.com/insulation/cause.html>

How Should Pediatric Care Be?

~To Save the Lives of Future Children~

5412 Sato Go

First, let's talk about the motivation for this research. Recently, we often hear the word "doctor shortage". I have always been interested in the medical field, so I decided to research the shortage of doctors. According to the number of doctors per 100,000 people in each OECD member country, we can see that the number of doctors in Japan is particularly low compared to other countries. In addition, from the number of medical visits per capita in developed countries, we can see that Japanese visit the hospital more frequently than other countries. Moreover, it takes five minutes on average per visit in Japan, while it takes 30 minutes in Western countries, about six times longer than in Japan. From these facts, we can say that the burden on a single doctor is extremely high in Japan. I think this has to lead to a decline in the quality of medical care. Here, the major problem is that the severity of the shortage of doctors varies depending on the department. I would like to focus on pediatrics in particular. There are two reasons for this. Pediatrics has the aspect of General Medicine more than other medical departments. For example, internal medicine is divided into respiratory sections, cardiology, neurology, hematology, and so on. Pediatrics, however, has to do all of these. Second, pediatrics has a high percentage of female doctors. The second reason is that pediatrics has a high percentage of female doctors, many of whom are unable to work long hours due to life events such as marriage and childbirth. This is one of the reasons why the shortage of pediatricians is so serious. Shortage of pediatricians leads to inadequate pediatric care. Therefore, the purpose of this study is to propose the future of pediatric care. Let's look at the example of Miyagi Prefecture. In order to solve the shortage of pediatricians and obstetricians, Miyagi Prefecture set up a system to invite doctors from other prefectures and give them subsidies. As a result, the shortage of pediatricians was solved. Next, let's look at the example of the United States. There is a big difference between pediatric care in the US

and Japan. In the US, pediatrics belongs to children's hospitals, which are large hospitals specializing in pediatrics. In Japan, however, it is treated as a department in a general hospital. There are two major advantages of a children's hospital. One is that it can specialize in pediatric care. In larger children's hospitals and wards, pediatrics is divided into more detailed specialties. This allows doctors to provide more detailed services with their patients. The other benefit is that it can improve the training system for medical students after graduation. I would like to propose the establishment of a children's hospital, following the example of the United States. Also, I'd like to propose the establishment of courses at universities to train pediatricians. Finally, I'll talk about future issues. Japan has taken measures such as increasing the income of pediatricians and making clinical training for doctors mandatory. Thanks to these measures, the environment surrounding pediatric care has been gradually improving. However, there is no fundamental solution for urgent pediatric emergency care. In addition, there is a lack of cooperation with departments other than pediatrics.

References

http://www.jpeds.or.jp/modules/guidelines/index.php?content_id=87

(Recommendations for the Pediatrician Shortage)

https://soshin.pcmcd-tsukuba.jp/education/report/pdf/04_001.pdf

(Comprehensive Comparison on General Practice)

<https://www.med.or.jp/people/info/kaifo/compare/>

(Medical care standards and costs in Japan and other countries)

<https://prtimes.jp/main/html/rd/p/000000381.000059861.html>

(Global Pediatric Industry - by Drug Class (Antibiotics, Analgesics, Antidepressants) and Disease (Allergy, Respiratory, Oncology, and Cardiovascular)

)

Promoting Health with Organic Produce

~Aiming to Coexist with the Environment and Nature~

5413 Kanata Suzuki

Abstract

The reason for the shortening of healthy life expectancy is the "unhealthy diet" of junk food such as McDonald's and convenience store food, which contains many food additives and pesticides that are carcinogenic and destroy nerves. This has led to an increase in the number of allergy and cancer patients today. People who eat a lot of convenience foods now and think they are fine will suddenly become ill due to the accumulation of poisons. Japan is the only country in the developed world where the number of cancer patients is increasing. In summary, what I would like to say is that even if you are eating sweets and convenience foods now and you are fine, you will suddenly become ill due to the accumulation of poison. It's too late for that to happen, so I would like to suggest that people start paying attention to their food even now.

1 Introduction

There are two reasons why I decided to do this research. First, I was interested in health after watching a tick-tock about health. The second reason is that I saw a graph of the difference between average life expectancy and healthy life expectancy by country, and I realized that although Japan is one of the top countries in the world in terms of average life expectancy, ranking third for men and first for women, there is a difference between average life expectancy and healthy life expectancy. In short, the difference between average life expectancy and healthy life expectancy is that in Japan, men suffer from some kind of illness or disability for 9 years and women for 12 years, making it difficult to live without help. According to the Japan Association for the Prevention of Lifestyle-related Diseases, one of the reasons for the shortening of healthy life expectancy was found to be "unhealthy eating. I was surprised to learn that there were problems with foods that we tend to eat because they are tasty, like convenience store foods and junk foods like McDonald's. So I did a lot of research on food and found something called "organic". I tried to find out what "organic" meant in the first place. "Organic" refers to agriculture, forestry, fisheries, and processing methods that do not rely on pesticides or chemical fertilizers, but instead utilize the blessings of nature, such as the sun, water, land, and living organisms. In Europe and the U.S., there is

an organic movement to create a natural and social environment that is peaceful and healthy for all life. I thought that Japan should also be involved in this movement. As I mentioned earlier, "unhealthy diet" is the reason why healthy life expectancy is shortening. This has led to an increase in the number of allergy and cancer patients today. People who eat a lot of convenience foods now and think they are fine will suddenly become ill due to the accumulation of poisons. Japan is the only country in the developed world where the number of cancer patients is increasing. In summary, what I would like to say is that even if you are eating sweets and convenience foods now and you are fine, you will suddenly become ill due to the accumulation of poison. It's too late to get sick, so I would like to encourage people to be a little more particular about the food they eat even now.

2 Discussion and implications

There are two reasons why I decided to do this research. Firstly, I was interested in health after watching a tick-tock on health. The second reason is that I saw a graph of the difference between average life expectancy and healthy life expectancy by country, and I realized that although Japan is one of the top countries in the world in terms of average life expectancy, ranking third for men and first for women, there is a difference between average life expectancy and healthy life expectancy. In short, the difference between average life expectancy and healthy life expectancy is 9 years for men and 12 years for women in Japan, and it is difficult to live without help. According to the Japan Association for the Prevention of Lifestyle-related Diseases, one of the reasons for the shortening of healthy life expectancy was found to be "unhealthy eating. I was amazed to learn that there is a problem with foods that we tend to eat because they taste good, like convenience store foods and junk foods like McDonald's. Therefore, my goal is to make everyone aware of the scary situation and have them review their dietary habits and their own health consciousness.

3 Conclusion

Looking at the graph of the difference between average life expectancy and healthy life expectancy by country, Japan ranks third in the world in terms of average life expectancy for men and first for women, and while it is one of the top countries, the difference between average life expectancy and healthy life expectancy, healthy life expectancy refers to the period of time that a person can live independently and in good health. In short, the difference between average life expectancy and healthy life expectancy is 9 years for men and 12 years for women in Japan, and it is

difficult to live without help. According to the Japan Association for the Prevention of Lifestyle-related Diseases, one of the reasons for the shortening of healthy life expectancy was found to be "unhealthy eating. I was surprised to learn that there were problems with foods that we tend to eat because they are tasty, like convenience store foods and junk foods like McDonald's. So I did a lot of research on food and found something called "organic". I tried to find out what "organic" meant in the first place. "Organic" refers to agriculture, forestry, fisheries, and processing methods that do not rely on pesticides or chemical fertilizers, but instead utilize the blessings of nature, such as the sun, water, land, and living organisms. In Europe and the U.S., there is an organic movement to create a natural and social environment that is peaceful and healthy for all life. I thought that Japan should also be involved in this movement. As I mentioned earlier, "unhealthy diet" is the reason why healthy life expectancy is shortening. This has led to an increase in the number of allergy and cancer patients today. People who eat a lot of convenience foods now and think they are fine will suddenly become ill due to the accumulation of poisons. Japan is the only country in the developed world where the number of cancer patients is increasing. In summary, what I would like to say is that even if you are eating sweets and convenience foods now and you are fine, you will suddenly become ill due to the accumulation of poison. It's too late to get sick, so I would like you to try to be a little more particular about food even now.

4 References

What is healthy life expectancy?

[<https://www.jili.or.jp/lifeplan/lifesecurity/oldage/3.html>]

Do you know the average life expectancy and healthy life expectancy?

[<https://www.taisho.co.jp/locomo/ba/sp/q1.html>]

Education for All People around the World

~A Practical Way to Support People in Poverty~

5414 Tanaka Tomorrow

Abstract

Poverty is one of the biggest problems around the world. Needless to say, to solve it is so important, but no effective support system has been provided. Effective support means sustainable assistance. I think sustainable support is building something that will leave in the future. My solution to solve it is building a functional complex facility that contains the roles of a house and a school. We have to continue to give the poor sustainable support. Realizing this solution, the situation of poverty in Africa will improve.

1 Introduction

Needless to say, poverty still exists in the world. Especially in the African region, poverty is common. My research aims at solving such problems in African countries. And also my study is trying to find out what is essential as an element of the method.

I defined poverty as being the least developed countries. In 1967, The United Nations designated 53 countries as Least Developed Countries based on three criterias, GNI, HAI, and EVI. The criteria of GNI is calculated from national accounts data converted into USD using the World Bank Atlas method (to reduce impact of short-term exchange rate fluctuations). GNI per capita is derived by dividing GNI in USD by the annual population of a country. The HAI is a measure of the level of human capital. Low levels of human assets indicate major structural impediments to sustainable development. The HAI is composed of six indicators grouped into a health and education subindex with each indicator carrying an equal weight of one-sixth. The EVI is a measure of structural vulnerability to economic and

environmental shocks. High vulnerability indicates major structural impediments to sustainable development. A higher EVI represents a higher economic vulnerability. The EVI is composed of eight indicators, grouped into an economic and environmental subindex with each indicator carrying an equal weight of one-eighth. 「LDC Identification Criteria & Indicators - the United Nations」

<<https://www.google.com/url?q=https://www.un.org/development/desa/dpad/least-developed-country-category/lc-criteria.html&sa=D&source=docs&ust=1635584187426000&usg=AOvVaw0KTxVPSEqSs4MdD9TLXkSb>

>(2020/11/12) I seek to make improvements to the problem by raising these three factors.

2 Discussion and implications

The new guidelines of supporting

Only 3 countries of the 36 African countries set aside for the Least Developed Countries in 1967 have graduated from the Least Developed Countries. 「UN list of least developed countries | UNCTAD」 <<https://unctad.org/topic/least-developed-countries/list>>(2020/11/14) It means that conventional aid to developing countries is not very effective. Why can't such countries escape from poverty in the first place? One of the biggest reasons for this is the negative cycle in developing countries. Uneducated parents force their children to work because parents' income is not enough to support their family. They will grow up and force their children to work as well. Once they are in this loop, it is not easy for them to get out. In this case, simply building a school is not an accurate strategy because adults do not understand the importance of education. Parents have the final decision making power for their children. In other words, there is a need for the support that provides education for both children and parents. However, if such support would be given to people in Africa, they would never accept that support due to the penury. And then, how can the support be widely spreaded? It is indemnification that will encourage the support to be rationally and efficiently. To sum up, there are some important supporting points. First, the support must be sustainable. Second, the method should be that it can educate both children and parents. Third, that educational support should be accompanied by enough compensation to allow the poor in Africa to live well.

The detail of the supporting

Next, I will mention the details of the solution. I consider that the way of supporting which fulfills the aforementioned three elements is building a structure. The building contains the roles of a house, a school, and a work space. The structure is divided into three, a living area, an educational area, and a working area. The residents can live comfortably and learn the skills and knowledge to live themselves.

3 Conclusion

In conclusion, the guideline of my solution for reducing poverty is in 2 Discussion and implications. It is a good way to eliminate poverty, but it is so difficult to realize the way because there are a ton of obstacles. I have to consider how to gather the participants and the contents of educating and working.

4 References

「UN list of least developed countries | UNCTAD」

<<https://unctad.org/topic/least-developed-countries/list>>(2020/11/14)

「LDC Identification Criteria & Indicators - the United Nations」

<<https://www.google.com/url?q=https://www.un.org/development/desa/dpad/least-developed-country-category/ldc-criteria.html&sa=D&source=docs&ust=1635584187426000&usg=AOvVaw0KTxVPSEqSs4MdD9TLXkSb>>(2020/11/12)

How to Improve One's Specialty Skills

~For Working in One's Strong Field~

5415 Takamasa Chigira

Abstract

I learned that one of the reasons why young people in Japan leave work is because the job is not suitable for them or they are not good at it. In order to solve the situation, I started my research to find out what kind of study should be done to develop their strong points, or their strong subject in school. I thought that there were problems with individual study methods and the educational system, and I came up with a plan to improve these two areas. As a result, I propose an educational system that incorporates an online learning service for subjects in which students excel and a grade skipping system that I learned from overseas.

1 Introduction

According to a survey conducted by the Ministry of Health, Labor and Welfare, the turnover rate of new graduates in Japan is currently decreasing year by year, and in fiscal 2014, the rate decreased to about 30% for college graduates and about 40% for high school graduates, but the turnover rate is still high. Also according to it, one of the reasons for leaving a job is that "the job was not for me or I was not suited to it." I wondered if this meant that they were unable to find a job in their field of expertise due to their lack of ability, and ended up taking a job that they were not good at, and as a result, they could not maintain their motivation and left their jobs. I wanted to think about what I need to do to improve my abilities in order to get a job in my field. Therefore, the purpose of this research is to propose a way to further develop one's ability in one's specialty subject.

In order to develop one's ability in one's specialty subject, it is necessary to consider it from two directions: "personal learning method" and "educational system."

In terms of personal learning methods, I thought that using online learning services such as "Classi" and "Study Supplement" would be an efficient way to improve abilities in

subjects one is good at. Online learning services are "a form of learning that primarily uses the Internet." Hao Yasheng (2014) stated. However, traditional online learning services seem to focus on supplementing individual weaknesses rather than developing students' abilities in their strongest subjects.

In terms of the education system, Japanese education tend to favor well-balanced individuals who can work in many fields rather than those who specialize in one field. Therefore, I wondered if it would be possible to introduce a new education system, referring to the education systems of other countries where it is considered better to specialize in one field whereas in Japan.

Based on these ideas, we researched "What functions and services are necessary for online learning services to develop the ability of each student in his or her specialty subject?" and "How can we introduce some of the overseas educational systems into Japan and create a circumstance where students can easily develop their strengths in their subjects?"

2 Discussion and implications

I researched the requirements for developing the ability in the subjects they are good at on the Internet, etc. Then I looked at the functions and services of several online learning services to find the missing functions and services needed to develop the subjects they are good at. After that, I will propose or create an online learning service that adds those features.

I researched the education systems of Japan and other countries (in this case, the U.S.) on the Internet, etc., and proposed a new education system based on what points are better in other countries than in Japan and what points of Japanese education should be retained.

3 Conclusion

First, let me explain online learning services. I believe that an online learning service that helps students improve their abilities in their favorite subjects needs to have two main functions and services.

The first is the ability to identify each student's favorite subject. If you think about it, you can usually figure out what subjects you are good at, but sometimes you may find that a

subject you thought you were bad at is actually your strong point. For example, even if you do not study a certain subject well and your scores on regular exams and mock exams are poor because you cannot solve knowledge problems, you may find that your original thought process is specialized in that subject. The way to do this is to use the results of mock exams and in-service tests to determine what skills are needed to correctly answer questions in each subject, and which subjects are easiest to solve. In other words, they do not simply decide which subjects they are good at based on their scores in mock tests or field tests, but rather on their innate abilities.

The second function is to issue assignments in the subjects identified in the first function. Specifically, there are three types of assignments. (1) assignments to improve weaknesses in the subjects in which the student excels, (2) assignments to improve abilities in the subjects in which the student excels, and (3) assignments to develop the thinking skills necessary to solve problems in the subjects in which the student excels and to apply those skills. The reason why (1) was necessary was because I thought that by overcoming weaknesses in my strong subject, I would improve my overall ability in my strong subject, which would make it easier for me to go to universities that focus on that subject. I also believe that it will make it easier to enter workplaces that require people with high ability in that subject. (2) I thought it was necessary to have strengths in the subjects I am good at. The only way to differentiate yourself from others who are good at the same subject is to develop your strengths. (3) is the most important of (1) to (3). No matter how good you are at a subject, it is meaningless if you cannot utilize and apply it.

However, as Benesse says in its FAQ, "It is necessary to improve your strong subjects. However, if you do nothing about your weak subjects, you will not be able to cover them with your strong subjects." It is important to spend more time on the subjects you are weak in. Also, by improving your ability in your weak subjects, you will be able to look at your strong subjects from a different angle. Therefore, it would be a good idea to use both the online learning service proposed in this study and the online learning services of other companies.

Next, let's talk about the education system.

The first thing that comes to mind as a difference between the American and Japanese educational systems is whether or not there is a grade skipping system. In the U.S., there is a grade skipping system that allows students to advance to the next grade depending on their ability. I think that this system should be incorporated into Japanese education as well. I think this system should be incorporated into Japanese education as well. I think this system should be incorporated into Japanese education, because it allows students to advance according to their abilities, which will motivate them to learn more. If the system allows students to skip grades by improving their skills in the subjects they are good at, they will become more interested in the subjects they are good at.

On the other hand, I think it would be better to keep the current Japanese education system and make education compulsory for a total of nine years, six years in elementary school and three years in junior high school. Compulsory education in the U.S. consists of elementary school, junior high school, and high school, in that order: 5, 3, 4, or 6, 2, 4, for a total of 12 years (depending on the region), and a long time is spent on compulsory education. However, with Japan's nine-year system, students can learn the minimum requirements in a short period of time.

In the future, I would like to pay more attention to the aspects that are not taught in schools. In this article, I talked about the subjects I excelled in at school, but in actual work, I may demonstrate my abilities in more specialized areas.

Also, when thinking about overseas educational systems, I referred only to the U.S., but I think we actually need to learn from more countries.

In my future research, I would like to revisit this issue with these points in mind.

4 Bibliography

- Regional and International Challenges to Higher Education in Latin America
- Internationalisation of Higher Education in the United States of America and Europe
- 「雇用の構造に関する実態調査（若年者雇用実態調査）」
<<https://www.mhlw.go.jp/toukei/list/4-21.html>>
- 「オンライン学習サイトの新しいビジネスモデルの探求」

<https://www.econ.nagoya-cu.ac.jp/wp-content/uploads/2014/07/h25_20_2.pdf>

- 「スタディサプリ」 <<https://learn.studysapuri.jp/ja/dashboard>>
- 「マナビジョン」 <<https://manabi.benesse.ne.jp/>>
- 「Classi」 <<https://classi.jp/>>
- 「河合塾One」 <<https://www.kawaijukuone.co.jp/>>
- 「短期海外研修による教育的効果の再検討 学生の報告書の多面的な分析を通して」

<<http://hermes-ir.lib.hit-u.ac.jp/hermes/ir/re/25558/jinbun0000701620.pdf>>

- 「飛び入学について」

<https://www.mext.go.jp/a_menu/koutou/shikaku/07111318.htm>

Receive Space Debris

~Space Cleaning with Dilatancy~

5416 Kanata Hagiwara

Abstract

Today, there is a lot of space debris in space, and satellites are in danger of being destroyed by collisions with debris. In order to protect the safety of outer space, it is necessary to remove them. I have devised a method to remove debris by colliding it with a pack-shaped shock absorber filled with a dilatancy fluid to remove its kinetic energy and re-enter the atmosphere. In this study, I verified the practicality of this method.

I did two experiments: one was to investigate the durability of packs filled with dilatancy fluid. To collide plastic bullets with a balloon filled with potato starch dissolved in water, which is a dilatancy fluid. And the other was to investigate the change in acceleration when a 2L plastic bottle was dropped on the water-soluble potato starch. In both of these experiments, I was able to demonstrate that the dilatancy fluid has high durability and shock-reducing and shock-absorbing ability. Therefore, it was concluded that the space debris can be removed more efficiently by using the shock-absorbing material with dilatancy fluid. In the future, I would like to investigate in detail what is necessary for practical use.

1 Introduction

Today, space development is becoming more and more active, and many satellites and other man-made objects are being launched into space. It is very intriguing to see how it makes human life more comfortable. However, as a byproduct of space development, there are countless amounts of garbage and space debris in space. Environmental degradation may be an inevitable part of development, just as environmental destruction was during the period of rapid economic growth. However, the risk of an accident in space is far greater than on Earth, and people need to take immediate action.

It is said that there are currently 500,000 to 700,000 pieces of space debris larger than 1cm in diameter in space. Relatively large space debris is monitored by space guards to prevent collisions with satellites. According to JAXA's website, debris protection shields have been installed on important parts of satellites and other spacecraft, but these measures are not sufficient, and collisions and damage have occurred many times. As can be seen in Figure 1, debris from a single collision or the destruction of a satellite can generate countless new pieces of space debris, and if I do not take action soon, the safety of space will become increasingly unsafe in the future. Figure 2 shows the projected change in the number of large pieces of space debris when several pieces are removed per year. This is the case of large debris, but it can be read that the total number of space debris will decrease more than the number of debris removed, as the active removal of debris reduces the possibility of collision accidents.



Figure 1: Number of man-made objects in Earth's orbit (Ministry of Foreign Affairs, 2012)

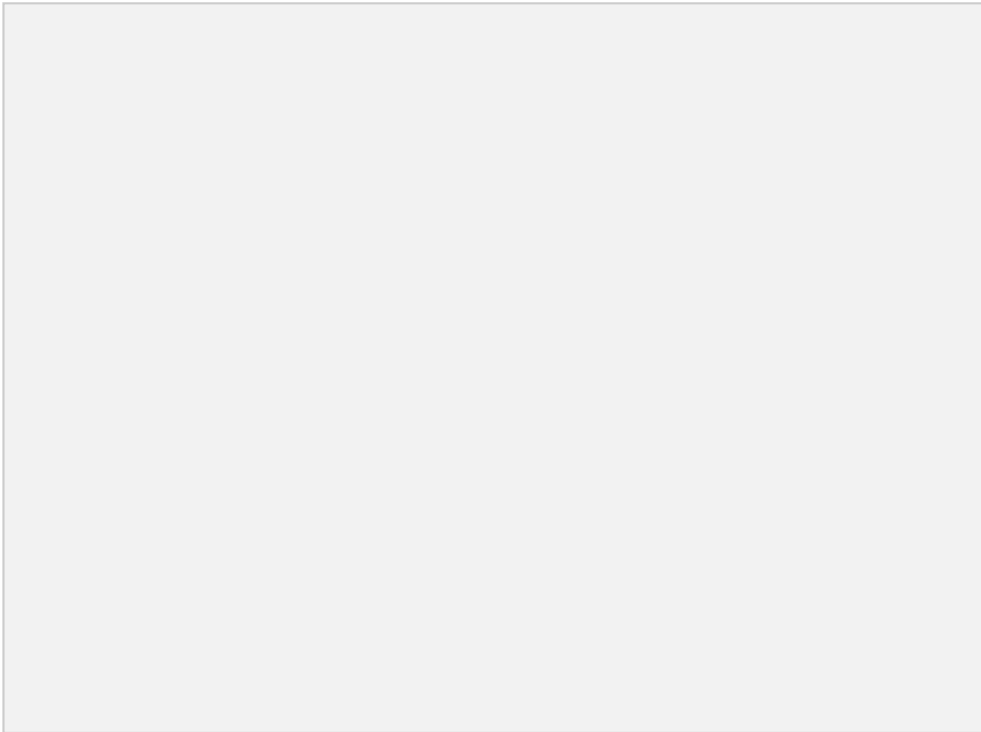


Figure 2: Effects of removing 1-5 pieces of debris per year (JAXA, 2013)

In order to protect satellites from the threat of space debris and to make space safer, it is necessary to take proactive measures to remove space debris, not just passive measures to prevent serious collisions. However, it is too inefficient to remove the countless space debris one by one.

I hypothesized that space debris could be removed by intentionally colliding with some kind of object with large mass and durability (hereinafter referred to as "shock absorber"), which is released into space. This method would allow us to remove a large amount of space debris simply by keeping the shock absorber in orbit, and would eliminate the need for precise positioning of the space debris. In addition, although there is no clear data, it is often stated that meteorites of several meters in size are likely to burn up before reaching the ground, so space debris as small as 10 cm in diameter is considered safe from burning up and falling to the ground.

As the material for the shock absorber to collide with the space debris, I devised a bag-like material filled with dilatancy fluid. A dilatancy fluid is a fluid that behaves like a liquid when subjected to weak shear forces, and as if it were a solid when subjected to strong shear forces. When space debris collides with a shock absorber, shear forces act on the circumference of

the collision surface, causing the shock absorber, which is normally filled with liquid, to harden instantaneously and locally. This will create enough drag force to take away the kinetic energy of the space debris.

I did some rough calculations to see how efficient the shock absorber removal method would be. First of all, let's assume that the size of the shock absorber is a mat of 10m in length and width, and the moving speed is 10000m/s. Then, $10 \times 10 \times 10000 = 1$. Then, $10 \times 10 \times 10000 = 1,000,000$ m³ per second = 0.001k m³ of area can be removed. However, only space debris in opposite directions can be removed, so at least two shock absorbers must be orbiting in opposite directions. Based on this calculation, if I take as an example the area of 50 km above and below the altitude of 400 km, where the actual ISS orbit is located, the size of the space is $\frac{3}{4}\pi(450 \times 450 - 350 \times 350) \approx 19100$ km², which means that the entire area can be removed in 19100000 seconds, or about 220 days. This calculation does not account for the fact that the space debris will pass through the same space on the way to the ISS, so it will take more time if the space debris orbits like a longitudinal line with two poles, but it is still very efficient when you consider that two shock absorbers can eliminate all the space debris near the ISS in a short period of time.

Space debris often orbit in groups if the source is the same. In other words, as mentioned earlier, if a group of space debris can be detected without flying over the entire space, it is possible to remove only that group at once. In this case, only the necessary areas will be needed, so more efficient removal will be possible.

I thought that one of the advantages of filling the inside of the shock absorber with fluid instead of solid material is that it will return to liquid form afterwards, no matter how strong the shear force is, and thus, unlike solid plates, it will not leave any damage such as cracks or flaws during a collision and will be highly durable. Therefore, the purpose of this research is to verify whether the use of dilatancy fluid inside the shock absorber can sufficiently improve the absorption performance and durability based on experiments and literature, and to consider what specific method should be used.

2 Discussion and implications

2.1.1 Method of the experiment1

First, as a preliminary experiment, I conducted a test to confirm that the strength is increased by dilatancy fluid.

I filled water balloons with water-soluble potato starch, which is a dilatancy fluid, and the same volume of liquid water, gel slime, and gaseous air for comparison, and collided them with plastic balls to verify durability. The plastic balls were so-called "bb" bullets and were fired using an airsoft gun.

Plastic balls: Acrivis bio-BB bullets (diameter: 6 mm, mass: 0.25 g, velocity: 76.5 m/s, kinetic energy: 0.73 J)

Airsoft gun: S&T HK417D 16-inch full metal G2 electric gun (This airsoft gun is intended for people over 18 years old, so I asked my parents to manage and shoot it.)

Water-soluble potato starch: 1:1 potato starch and water

contents	Number of bullets fired when balloon is torn (shots)	what it looks like when it's torn
potato starch dissolved in water	10	A hole the size of a plastic ball was made and flowed out (Figures 3 and 4).
water	5	Ruptured (Figures 5 and 6)
slime	7	Ruptured (Figures 7 and 8)
the air	8	Ruptured (Figures 9 and 10)

Table 1: Results of preliminary experiments.

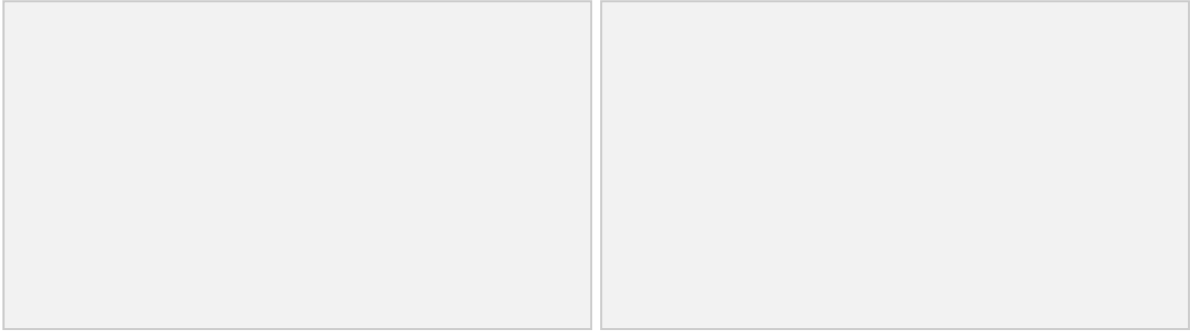


Figure3 and 4: potato starch dissolved in water(the moment of rupture)

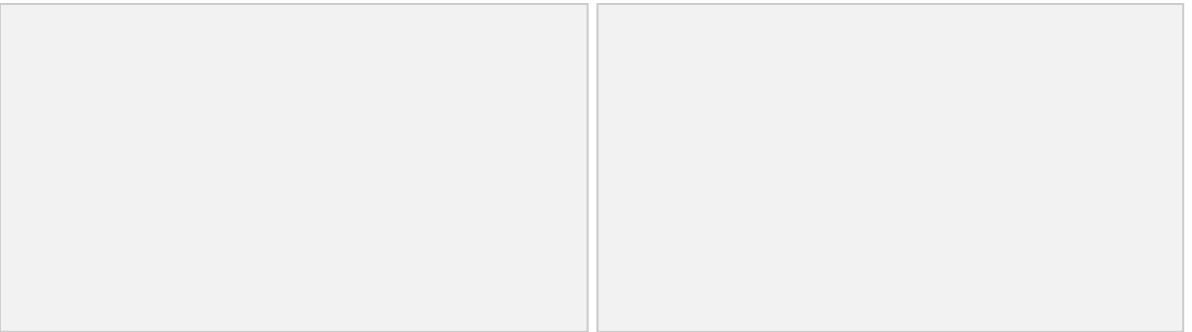


Figure5 and 6: water(the moment of rupture)

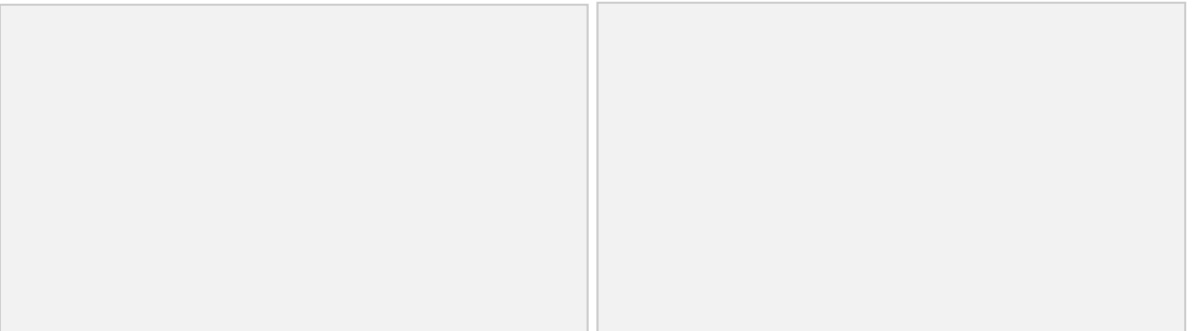


Figure7 and 8: slime(the moment of rupture)

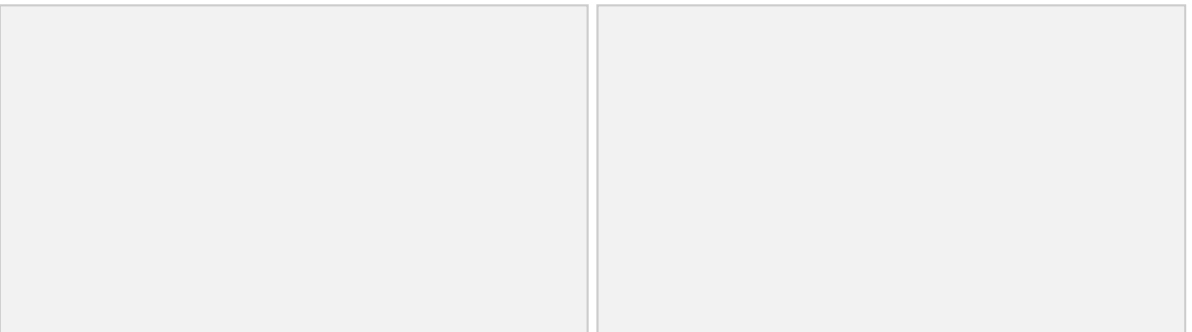


Figure9 and 10:air(the moment of rupture)

2.1.2 Results of experiment 1

The number of bullets fired when the balloons were torn was the highest for the water-soluble potato starch, but the difference was not that pronounced. However, what was noteworthy was the way the balloons burst. The other three balloons all burst completely at the time of breakage, but only the water-soluble potato starch did not burst, leaving a hole the size of a plastic ball through which the contents flowed out. The reason for this is that with the other materials, the ball was held in place by the tension of the rubber of the balloon, whereas with the water-soluble potato starch, the contents of the balloon absorbed some of the shock and the rubber was only locally loaded. Therefore, it can be said that the dilatancy fluid has the ability to absorb shock. The reason why the balloons filled with water-soluble potato starch broke without any significant difference from the other balloons in this experiment was that the kinetic energy of the plastic balls was too small for the dilatancy to be effective, and the inflated water balloons themselves were weak against shear force, so even a small force could break them. It was also thought that the inflated water balloons themselves were vulnerable to shear forces and could be torn by even small forces.

2.2.1 Method of the experiment2

Next, I conducted an experiment to investigate the difference in the force applied when colliding a dilatancy fluid, a liquid, and a solid with a larger mass. Since I concluded that the shear force may have been too small in the previous experiment, this time I will use the potential energy of a 2L PET bottle (19.6J), which is much higher than the kinetic energy of an air gun (0.73J).

The weight (2L PET bottle) was dropped horizontally from a height of 1m, and the collision surfaces were a vat filled with potato starch, a vat filled with water, and the concrete ground to investigate the force applied during the collision. The weight was dropped with an acceleration sensor and the change in acceleration was observed.

Weight: 2L natural water bottle

Water-soluble potato starch: 4:3 potato starch and water (4.2kg, 5cm depth)

Water: 10L, depth: 10cm

Sensors: MPU6050 (acceleration sensor), Raspberry Pi Pico (microcontroller board)

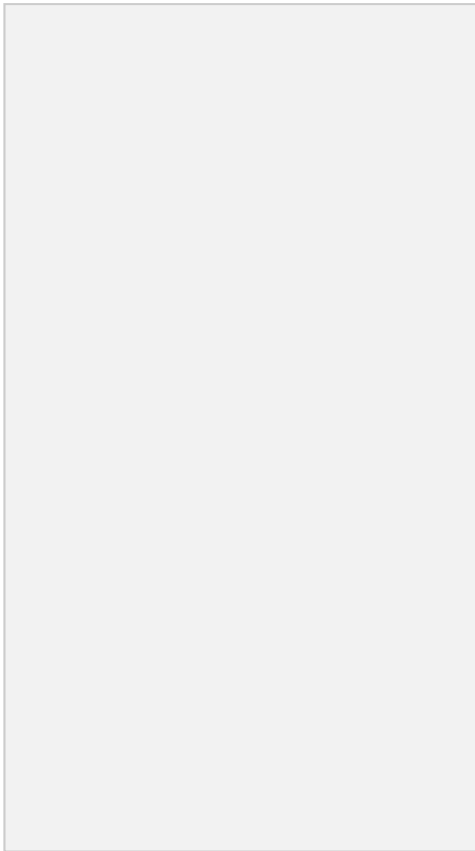


Figure 11 2L plastic bottle

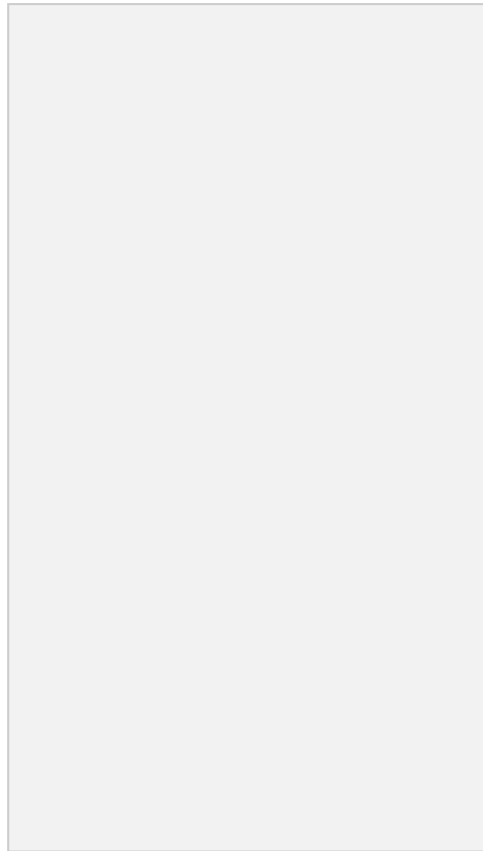


Figure 12 Tub of potato starch
dissolved in water (same for water)

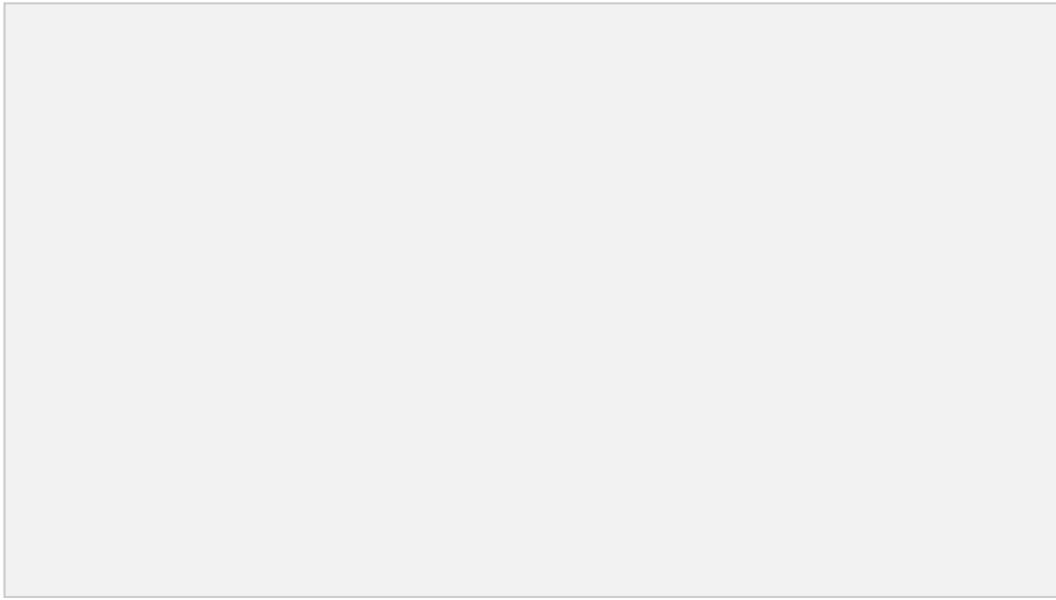


Figure 13 MPU6050 (accelerometer) on the left and raspberry pi pico (microcontroller board) on the right

2.2.2 Results of experiment 2

The experimental results are shown in Figures 14, 15, and 16.

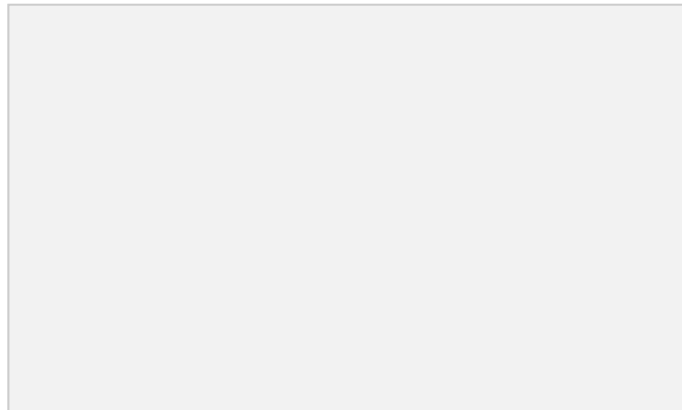


Figure 14: Change in acceleration during a collision between a 2L PET bottle and asphalt

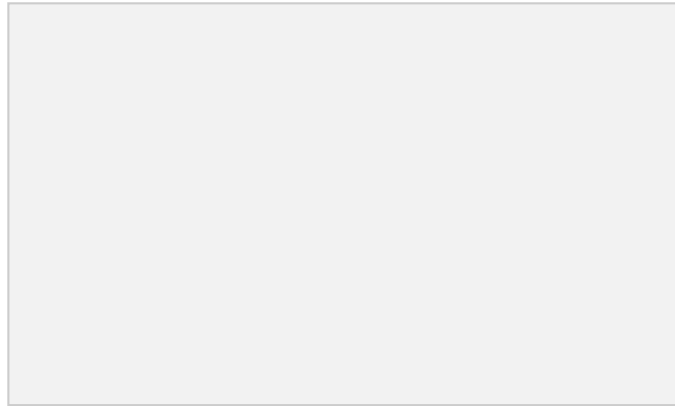


Figure 15: Change in acceleration at the time of collision between a 2L PET bottle and the water surface of a tub filled with water

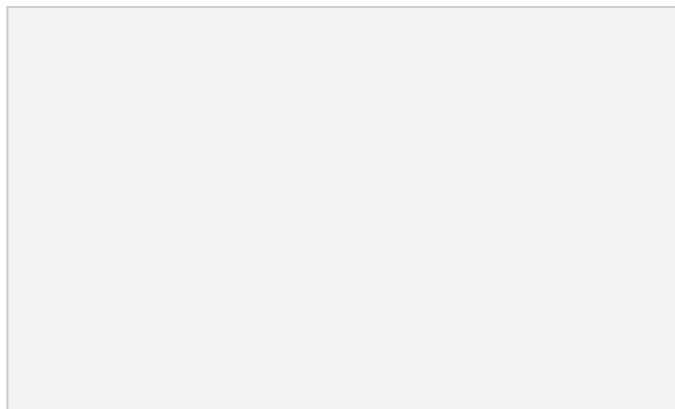


Figure 16: Change in acceleration upon impact between a 2L PET bottle and the surface of a tub filled with water-soluble potato starch

The horizontal axis of the graph is time (10ms) and the vertical axis is acceleration (m/s^2).

Since it was difficult to make the fall angle uniform, only the most correct fall angle for each term is shown.

In the graph, 9.8m/s^2 is at rest, 0m/s^2 is in free fall, and the first big peak is the moment of impact.

From the equation of motion $F=ma$, the force is proportional to the acceleration, so the units and magnitude of the vertical axis change, but the shape of the graph is the same as that of the force applied.

The first thing that can be read from this result is that water and water-soluble potato starch have a higher acceleration at the moment of collision than concrete, and they are

superior in terms of receiving energy instantaneously. The instant energy is received, the shear force applied is reduced, thus reducing the risk of damage to the shock absorber and making it more durable.

Secondly, the time from collision to standstill is about 0.4 seconds for water-soluble potato starch, while it takes about 2 seconds for concrete and water. It is thought that the smaller the coefficient of repulsion between the PET bottle and the ground or water surface, the shorter the time to stand still. Therefore, it can be seen that the colliding object loses energy without bouncing back when the water-soluble potato starch is used.

The third factor is the damage to the colliding object. When a PET bottle was dropped on the asphalt, it rubbed against the asphalt and eventually made a hole in it. But in the case of water or water-soluble potato starch, it goes without saying that the collision will not cause a single scratch. This result is very important because it is meaningless if the debris is damaged by the impact and becomes fine debris when the space debris is received.

Fourth, in the case of asphalt and water, the acceleration stagnated around zero after the collision, but this did not happen with the water-soluble potato starch. The acceleration sensor values are filtered to reduce noise and programmed to output the average value of the last 10 measurements (0.1 seconds). Therefore, I thought that this phenomenon was probably caused by the small changes in acceleration due to bouncing, and that these changes were canceled out. In other words, the water-soluble potato starch takes away most of the kinetic energy instantaneously, and the object immediately comes to rest without bouncing back after the collision.

3 Conclusion

From the two experiments, it was found that the dilatancy fluid has enough ability to catch the colliding object and take away its energy. Therefore, I believe that space debris can be removed more efficiently by using a bag-like shock absorber filled with dilatancy fluid. The energy of this experiment was about 20 J, which is far less than the energy of 5 million J of a 1 kg space debris collision at 10 km/s. Therefore, I have not established a method of receiving space debris by dilatancy in this research alone. However, when I was gathering information on dilatancy fluids, I found something called liquid armor. Liquid armor is a

bulletproof armor that stops bullets and explosive fragments by filling the armor with dilatancy fluid instead of solid material such as plates. Liquid armor is currently under development and has not been put to practical use. However, BAE Systems, the company that is developing it, claims that it can be developed. Research is underway in the field of using dilatancy fluid to take away the kinetic energy of colliding objects, and I feel that there is great potential for the development of shock absorbers that can be successfully applied to the space field and actually remove space debris.

Ignoring the aforementioned question of whether or not it can be developed, the following are the current issues that need to be investigated for practical use

- (1) Types of dilatancy fluid
- (2) How to avoid boiling of dilatancy fluid in vacuum.
- (3) Power source of the shock absorber
- (4) Construction and transportation methods.

I have decided that I cannot draw any conclusions on these issues with my current level of knowledge because they require more specialized knowledge.

4 References

• STABILITY OF THE FUTURE LEO ENVIRONMENT – AN IADC COMPARISON STUDY, IADC Last view: 20210824

<https://conference.sdo.esoc.esa.int/proceedings/sdc6/paper/199/sdc6-paper199.pdf>

• Liquid armour to become a future choice for protecting soldiers, BSE systems Last view: 20210824

<https://www.baesystems.com/en-ca/article/liquid-armour-to-become-a-future-choice-for-protecting-soldiers>

• スペースデブリ環境のモデリング・評価技術の研究, JAXA 研究開発部門

Last view: 20210824

<https://www.kenkai.jaxa.jp/research/debris/deb-model.html>

・スペースデブリに関してよくある質問（FAQ）,JAXA研究開発部門

Last view: 20210824

<https://www.kenkai.jaxa.jp/research/debris/deb-faq.html>

・わかる！国際情勢,Vol 85 宇宙ゴミを減らせ！～国際的な宇宙空間の利用とルール作り,外務省 Last view: 20210824

<https://www.mofa.go.jp/mofaj/press/pr/wakaru/topics/vol85/index.html>

・有吉雄哉 花田俊也 河本聡美,デブリ推移モデルによる将来予測 Last view:

20210824

https://jaxa.repo.nii.ac.jp/?action=repository_uri&item_id=3909&file_id=31&file_no=1&nc_session=8da90usim4bk4jb6hd2fan0um3

・風間卓仁,重力加速度は9.8じゃない！？,京都大学大学院理学研究科地球惑星科学専攻 京都大学理学部地球惑星科学科 Last view: 20210824

<http://www.eps.sci.kyoto-u.ac.jp/research/introduction/07/index.html>

Establishing Good Manners at Tourist Sites

~For Comfortable Sightseeing~

5417 Ryota Hasegawa

Abstract

The purpose of this study is to ensure good manners at tourist sites. First, the number of foreign tourists has tripled in Japan's tourist destinations between 2014 and 2018. Of course, Japanese tourists were the mainstay of the tourism industry in Kyoto. However, Japanese tourists are decreasing in Japan's tourist destinations due to over-tourism. I thought it was a very serious problem. Therefore, I studied this phenomenon in detail. And I learned that there is a problem with the manners of foreign tourists. We need to spread good manners to foreign tourists as well. However, the spread of the new coronavirus infection has changed the tourism industry dramatically. Therefore, I need to think of ways to spread manners that fit the times. And, I decided to use online tourism to establish good manners for foreign tourists.

1 Introduction

The spread of the new coronavirus infection has changed the tourism industry dramatically. It is becoming more and more difficult for tourists to do tourism. In this situation, I thought about what I could do to create better tourism. That's why I started this research. The method was mainly based on the Internet to collect information.

2 Discussion and implications

Japan National Tourism Organization found that the number of foreign tourists in Japan tripled from 2014 to 2018. There are some disadvantages to increased tourism in Japan. If the number of tourists increases drastically, it will lead to over-tourism and the tourist spots will be punctured. Therefore, Japanese tourists are decreasing in Japan's tourist destinations due to over-tourism. The number of Japanese guests at major hotels in Kyoto fell by 9.4 percent in 2018. I divided the problems caused by this into two categories. The first is the concentration

of tourists. According to the 2018 Kyoto Tourism Survey, more than 40% of respondents said that they had a bad experience while sightseeing in Kyoto. The reason for this is that the city is crowded with too many tourists and manners are not thoroughly enforced. The second is the problem of cross-cultural contact. The difference in perception between Japanese and foreigners has caused manners problems. For example, maiko paparazzi and eating too many food samples or staying without asking for anything, etc. This led me to believe that we need to enforce good manners for tourists. Also, in Gion, Kyoto, there is a sign board to promote good manners. For example, the picture is of smoking, eating and drinking while walking, and littering. There were also cases of tourists entering houses without permission, or tearing the sleeves of maiko to take pictures. Therefore, the Gion Town South District Council in Higashiyama Ward, Kyoto City, has set up an illustration to encourage foreign tourists to improve their manners. However, the bad manners of foreigners will not disappear. Maybe many foreign tourists do not see the signboard. It must be visible to all foreign tourists. And I found that online tourism, where people enjoy sightseeing at home, is becoming more popular as the new coronavirus spreads. There are also many online tourism events in Kyoto.

3 Conclusion

First, I wondered if it would be possible to use online tourism to enforce good manners among tourists. The Gion Town South District Council in Higashiyama Ward, Kyoto City, has set up an illustration to encourage foreign tourists to improve their manners. However, maybe many foreign tourists do not see the signboard. It must be visible to all foreign tourists. When we introduce manners in online tourism, many people will find the information. Online tourism in Kyoto is very popular. It can be highly effective. The spread of the new coronavirus infection has changed the tourism industry dramatically. It is a good way to spread manners that fit the times. After gaining information through online tourism, they will be able to enjoy sightseeing in Kyoto. Next, the problem with this proposal. Online tourism was spread by the spread of a new coronavirus. After the new coronavirus infection is contained, we will not be able to disseminate information. The number of people using online tourism will decrease. This is a problem. I have to think about what to do after the spread of the new coronavirus has been controlled.

4 References

「withコロナの観光業を救う10のキーワード」〈yamatogokoro.jp〉 (2021/8/5)

「あの京都から日本人観光客が減った深い理由」〈<https://toyokeizai.net/articles/-/31549> 1
〉 (2021/9/15)

「祇園 マナー向上促すルール看板」〈<https://kyotopi.jp/articles/95ZXg>〉 (2021/9/18)

For All Poor Children

~Let's Provide School Lunch For Free~

5418 Takeshi Miyamoto

Abstract

I was working on making school lunches free. However, I ran into various obstacles and tried to overcome them by using various means, but I ended up frustrated because there were many things I could not do. I will now talk about the outline of my research. First, the question of whether school lunches are necessary. Most elementary and junior high schools have school lunches, but in some parts of Kanagawa Prefecture, there are not many junior high schools that have school lunches. At first, my goal was to implement school lunches in high schools. However, there are only a few schools in Gunma Prefecture that have implemented school lunches, and I had to give up because it was difficult to conduct research. I then decided to think about the relationship between school lunches and poor children. We decided to consider the relationship between school lunches and poor children, and tried to make school lunches free for poor children. However, poor families were originally exempted from paying half, but not the full amount, of the school lunch fee. I gave up on this idea as well. Therefore, we set a goal to revitalize the local governments that are involved in the free school lunch program. But I think

1 Introduction

While enough food is being produced to feed everyone on the planet, one in nine people are hungry, unable to eat enough to survive or socialize. In 2018, the number of hungry people in the world was 821 million, which is the third consecutive year of increase since 2015. So I want to help many people that they are hungry. In East Africa, where TFT supports, one third of the population is undernourished, and one in three children is stunted. But One in four people in the world suffers from obesity, which is caused by overeating, poor diet, and lack of exercise. The number of adults (18 years and older) with a BMI of 25 or higher increased

from 472 million in 1975 to 1.957 billion in 2015. The obesity problem is most pronounced in North America, with rising trends in Africa and Asia as well.

2 Discussion and implications

Many children around the world go to school hungry every day, and are therefore unable to concentrate in class. Many children cannot even go to school because they have to help in the fields or with household chores. School lunches would not only improve the nutrition and health of these children, but also improve their attendance and performance. School lunches are also a strong incentive for families to send their children to school every day. In 2019, UN-WFP provided school meals to 17.3 million people in 59 countries. An additional 39 million children in 65 countries are receiving school meals, which are provided as a national project with the support of UN WFP. Of the more than 100 countries that UN-WFP has supported over the past 60 years, 44 have ceased to support school feeding since 1990 and are now providing their own school meals. School lunches vary from breakfast or lunch, or both. Some are complete meals, while others provide nutritious snacks such as dried fruit bars or high-calorie fortified cookies. In some cases, cash and food to take home may be distributed to encourage parents to send their children to school. Food is sourced locally whenever possible, and we have connections with local small-scale farmers in 46 countries, which positively impacts the local economy in addition to benefiting nutrition and education. Working with local communities to provide school lunches also helps to build confidence in the country's education system and create a society where citizens help each other. In Tunisia, 240,000 children in 2,500 schools are covered by the national school feeding program, which fosters a sense of ownership by hiring local youth as cooks. School feeding can have a targeted effect on specific populations, such as children forced into child labor, or children with HIV/AIDS who are in danger of dying. For girls, it can help prevent early marriage and pregnancy, and help them get better paying jobs through education. In Malawi, the government, UN WFP, UNICEF, and UNFPA are working together to break down various cultural barriers and get girls into school. During a state of emergency, school meals can bring children back into the classroom and provide them with the nutrition they need. In Egypt, Jordan, and Lebanon, Syrian refugee children have been able to improve their nutrition and continue their studies through school feeding. School lunches are an investment

in their own future, and in the future of their communities. So we should help poor children to invest in the future.

3 Conclusion

We should donate for the poor children. And I do not have any idea to solve poverty. So I want to find way to solve this problem myself .

4 References

Make school lunch free and visible

https://www.komei.or.jp/news/detail/20170920_25674#:~:text=%E3%81%BE%E3%81%9F%E3%80%81%E7%B5%A6%E9%A3%9F%E7%84%A1%E5%84%9F%E5%8C%96%E3%81%8C,%E2%80%9C%E8%A6%8B%E3%81%88%E3%82%8B%E5%8C%96%E2%80%9D%E3%82%92%E3%82%81%E3%81%96%E3%81%99%E3%80%82

Advantages and disadvantages of free school lunches

<https://www.city.karatsu.lg.jp/kikaku/kyoiku/documents/shiryoku4-2017-2.pdf>

Nayi City, Okayama Prefecture Support for children

<https://www.sbbit.jp/article/cont1/34214>

school lunch and poverty

<https://news.yahoo.co.jp/byline/adachiyoshimi/20200224-00164378/>

Child Poverty and Free School Meals

<https://ascii.jp/elem/000/001/854/1854300/>

Make the Existence of Huge Government Bonds Known and Outlook of Japanese Economy

~What is the Temperature Difference between Japanese people and the Government as Seen
from the Media?~

5419 Yuta Morino

Abstract

JGB(Japan's government bonds) are currently on the rise. As you know, "kokusai" is also called "syakkin". According to the data from MIC(Ministry of Internal Affairs and Communications) in 2016, JGB was the world's largest in terms of GDP(Gross Domestic Product) amounting to 1114 trillion yen. The cost is 7,620 trillion yen all over the world. The crucial reason is buying deposits from banks every year. The cost is 30 trillion yen. However, the public may not be aware that Japan has a large amount of money. Financial assets (cash) are 574 trillion yen, net foreign assets are 366 trillion yen, and household financial assets are 1,700 trillion yen, far more than the amount of government bonds. So why doesn't the Japanese government pay back its debts? The reason is that it is concerned about the possibility of extreme inflation. It is too obvious that printing paper money will cause the value of paper money to plummet. It is no secret that the Japanese economy is in such a dangerous state that it is hard to get a good impression of it. I wondered why there is such a bad difference in the way the people and the government are concerned about the economy. I think it lies in the media coverage.

1 Introduction

I believe that the public has a bad impression of government bonds, which all Japanese citizens will learn about. Why do they have such an impression? I thought it was because of the TV and the Internet that we see all the time. Also, the problematic behavior of the legislators, who are supposed to represent the people, may have something to do with it. The only image that comes to mind is that they are wasting the people's tax money and falling

asleep during meetings instead of playing politics properly. However, Japan is doing a good job of dealing with its government bonds. Unless the public is made aware of this fact, the number of people buying Japanese stocks may disappear in the future, and Japan may lose the trust of the world in its money. Therefore, the first step in this research was to come up with a proposal to change the image of government bonds in Japan by pursuing the content of news reports.

2 Discussion and implications

The total amount of Japanese government bonds is about 1114 trillion yen (insurance ROOM). If we look at the total amount of government bonds in the world as a whole, we find that it is about 7,620 trillion yen, which is also higher than the (insurance ROOM). When calculated as a percentage of GDP, the ratio is 237.1%, the highest in the world. Given the seriousness of the situation, why hasn't the Japanese government made any major policy changes to repay the debt? To answer this question, we looked into how Japan's government bonds and debts are structured and what the government's opinion is on the matter. As I used the word "debt," I was curious about the question of whether the cost of policies for the new coronavirus could be a new spark for the growing debt of the Japanese government.

According to Gendai Business (Kodansha), the new government debt for the new coronavirus will amount to 112 trillion yen. This figure is so large that it can be compared to Canada's debt of about 169 trillion yen, which is the 10th largest in the world. Next, I looked into the structure of Japan's government bonds. Japan already had about 430 trillion yen in government bonds around the year 2000. However, since that year, the government has been buying about 30 trillion yen in deposits from banks. The government has been doing this for the past 20 years, and as a result, we can estimate that 600 trillion yen of government bonds have been accumulated. The total amount is about 1,100 trillion yen. In addition, the aforementioned ratio of government bonds to GDP is the highest in the world (FINDERS) because one-third of the budget is covered by government bonds. So far, we have looked into the structure of the government bonds held by the Japanese government, and in this context, we looked into what the government's opinion is. The answer is "There is no need to pay back the government bonds and debts immediately" (Hoken ROOM). The answer was "There

is no need to pay back the government bonds and debts immediately" (Hoken ROOM). As I looked into the reasons for this, I came to the conclusion that Japan has more assets than people think and there is no need to rush into anything. The first reason why Japan has not gone bankrupt like Greece despite having such a huge amount of debt is that almost all of its government bonds are issued in yen. Japanese investors account for 96% of JGBs and foreign investors account for 4%. Furthermore, the fact that the Bank of Japan is the largest holder of JGBs also helps. This means that it can print Japanese yen at any time to pay off its debts (HOKEN ROOM). So why isn't the Japanese government paying back its debt sooner? There is a very good reason. What are the disadvantages of printing paper money? It is a collapse in the value of money. The value of the Japanese yen will fall and the world will lose confidence in it.

The value of the Japanese yen will fall and the world will lose confidence in Japan. This will lead to extreme inflation. In addition, Japan has enough assets to cover its government bonds. The first is financial assets. The first is financial assets, which are all assets minus real assets. The second is net external assets. The second is external net worth, which is the sum of external assets and external liabilities. The government has 366 trillion yen. The third is household finance. The third is household finance, which has been increasing year by year, amounting to 1,700 trillion yen (2016). The third is household finance, which has been increasing year by year to 1,700 trillion yen in 2016. I thought that the majority of people in Japan do not know what this survey revealed. The people may also be under the misconception that the government cannot manage money. And I think there are many people who think that Japan is on the verge of bankruptcy.

3 Conclusion

I wondered where the cause of this lies. We thought that it probably lies in the news programs and news that the Japanese people watch every day. There is still a lack of information about this, and we have not been able to obtain statistics on various things such as the bias of views on news stories. Therefore, we have not yet been able to make a proposal for this research.

The issue for the future is that, as mentioned above, there are many areas that have not

been fully investigated. We have not yet considered the benefits of this research for people in all fields.

4 References

logmi.com(2014)

<https://logmi.jp/business/articles/14626>

2021/10/13

HealthROOM (2020)

<https://hoken-room.jp/money-life/8614>

2021/10/13

FINDERS (2019)

<https://finders.me/articles.php?id=1444>

2021/10/13

Mr. Kazuya Sugiura and Mr. Tatsushi Maeno (2016)

<https://gentosha-go.com/articles/-/4212>

2021/10/13

livedoorNEWS (2015)

<https://news.livedoor.com/article/detail/10224660/>

2021/10/13

gavage news (2021)

<http://www.garbage news.net/archives/2126503.html>

2021/10/13

Ameba (2014)

<https://ameblo.jp/d5808hbv/entry-11962058867.html>

2021/10/13

Gendai Business Kodansha

<https://gendai.ismedia.jp/articles/-/47156?page=5>

(currently no page)

Kingdom of Norway (2020)

<http://www.yu-cho-f.jp/wp-content/uploads/Norway-1.pdf>

2021/10/13

Mr. Raizo Fuwa (2019)

<https://news.yahoo.co.jp/byline/fuwaraiizo/20210111-00215874/>

2021/10/13

NIRA General Research and Development Organization (2021)

<https://www.nira.or.jp/past/pubj/output/dat/3406.html>

2021/10/13

To Solve Residue Medicine Problem

~Let's Apply ICT between Medical Institution~

5420 Yoshida Asahi

Abstract

Recent years, the residue medicine problem that patients forget to take medicine prescribed by doctors is paid attention. And elderly people mainly cause the problem. For example, government's finances are pressed and the health of patients would deteriorate because of sub-effect of that medicine. Therefore the problem is a strain on our country.

According to 「Qlife」 that is a company that tries to research health, patients have more causes than people who provide patients with medical care. However, the countermeasure to the problem has not been conducted yet. Then, I focused on people who provide patients with medical care positions and considered the countermeasure.

I want to propose a system that can keep in touch with patients and medical institutions by ICT. As a result, the safety and affection of medicine for patients can improve because pharmacists will grasp the background of medicine permanently and centralized and double prescription and medical sub-effect between some medical institutions.

Therefore this new system suppresses the harm of a patient's health condition and solves the residue medicine problem.

1 Introduction

The first objective of the research is to solve the problem of leftover medicine. Currently, with the development of medical technology, leftover medicine has become a major problem. Leftover medication refers to the medication left at home after a patient has received it from a hospital or other institution because the patient forgot to take it. According to data from the Ministry of Health, Labor and Welfare, the amount of leftover medication is said to be as much as 50 billion yen per year, and it is increasing every year. The amount is increasing year

by year, and it is also putting pressure on the finances of medical insurance. Remaining medication is a common problem in many countries around the world, including developed countries. For example, the World Health Organization (WHO) estimates that the adherence rate for medications prescribed for the treatment of chronic diseases is only 50% worldwide. Adherence means following the doctor's decision to take the treatment, which means that half of the people do not follow the doctor's instructions.

2 Discussion and implications

There are various problems and causes for the problem of remaining medication. For example, patients decide to take their medication at their own discretion. For example, patients may decide to take their medication at their own discretion, or they may take their medication during the day but sleep during the day and wake up at night. In addition, some people, especially the elderly and those who live alone, are unable to manage their medication. If patients do not take their medication as directed, they may not get the desired effect and may end up prolonging the treatment period.

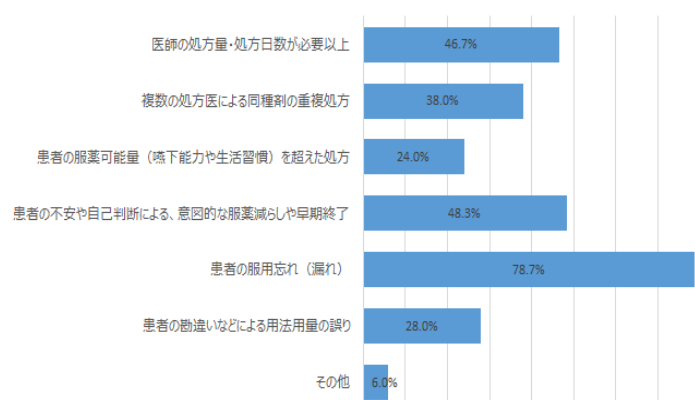
Many measures have been taken so far. One example is the campaign to collect leftover medication. Pharmacy Co., Ltd. is running a campaign to save money by collecting leftover medicines. The pharmacists will intervene and sort out the medicines if the patients bring their leftover medicines to the pharmacy in a "leftover medicine collection bag". The Fukuoka Pharmaceutical Association and Kyushu University have been experimenting with the collection of leftover medication as part of a pharmaceutical-pharmaceutical collaboration project, and some results have been achieved. The use of the medication handbook is also being promoted. An application that can be used with a smartphone has also been developed.

Remaining medication is also considered a problem overseas. According to Yaku Carry Plus, for example, in the U.K., the NHS (National Health Service) covers medical expenses. In the U.K., for example, the NHS (National Health Service) covers the cost of medical care, so the cost is a problem, and the loss is about 300 million pounds. Therefore, "Only Order What You Need" is being called for in the UK. In the U.S., there are also problems caused by leftover drugs. One is environmental pollution. In the U.S., there is a practice of flushing excess medication down the toilet, and in 1999 and 2000, tests of river water quality showed

the presence of pharmaceuticals. Secondly, there is an increase in the number of people who are addicted to drugs due to the misuse of drugs that have accumulated in their homes. In response, the U.S. has launched a nationwide campaign to collect prescription drugs. In the U.S., a nationwide campaign to collect prescription drugs was launched.

According to Qlife, Inc. (Figure 1), patients are more likely to have leftover medication than pharmacies or hospitals that provide medical care. (In addition, according to Qlife, Inc. (Figure 1), the causes of leftover medication are more often caused by patients than by medical providers such as pharmacies and hospitals ("patients forgetting to take medication," "patients intentionally reducing or prematurely terminating medication due to anxiety or self-judgment," "patients mistakenly taking the wrong dosage"). However, the reason why there are so many leftover medications despite these measures is that there are some shortcomings in the measures that are difficult to solve. On the other hand, the second item from the top in Figure 1, "Duplicate prescriptions of the same type of drug by multiple prescribers," is what I want you to pay attention to. If we consider the other items to be the responsibility of the patient, this item can be classified as the responsibility of the healthcare provider. The reason for this could be the lack of relationship between the doctor and pharmacist who see the patient. In the original system, if a patient has leftover medication, the pharmacist should consult with the doctor to determine the number of leftover medication and suggest to the doctor to adjust the number of prescription days. Then, the doctor can suggest to the pharmacist to change the medication to one that suits the patient's situation. However, the current situation is that this is not being done in many places. This is why the problem of remaining medication is caused by medical providers. (Figure 1)

↓ Figure1



3 Conclusion

Therefore, we turned our attention to the causes of this healthcare system and tried to come up with countermeasures.

According to the Ministry of Health, Labor and Welfare, the current healthcare system is as shown in Figure 2. If a patient goes to one hospital 「A」, he or she can only go to one pharmacy. In addition, due to the lack of coordination among medical institutions, hospital b and hospital c do not know what kind of medicine the patient received or what kind of treatment the patient received. Therefore, if the same patient goes to a different hospital 「B」, he or she may receive the same medication or treatment, resulting in leftover medication. Alternatively, if different medicines are administered to the patient, they may be different medicines that, if taken together, will adversely affect the patient's health.

On the other hand, in the system shown in Fig. 3), since each medical institution is connected by ICT, it is possible to clearly identify who went to which hospital and what medicine was given for what symptoms, which not only prevents duplication of medicines but also takes into consideration side effects. It is as if the entire community is treating the patient. In addition, if we can collaborate not only with hospitals but also with other medical institutions such as dentists, we can check for side effects and increase the certainty and safety of the treatment itself. If this system is expanded nationwide, and hospitals across the country are linked by ICT, even if a patient suffers an unexpected injury or illness while traveling to an unfamiliar place, the patient will be able to receive treatment safely and quickly, taking into account the patient's medical history and prescribed medication.

In addition, the Ministry of Health, Labor and Welfare (MHLW) aims to establish a comprehensive community support and service provision system (community-based

comprehensive care system) by 2025 so that the elderly can maintain their dignity, support independent living, and continue to live their own lives in their familiar communities as long as possible until the end of their lives. We aim to establish a comprehensive support and service delivery system (community-based comprehensive care system). As part of this effort, if we can introduce this ICT-based system, we will be able to build a better comprehensive community care system. Currently, models for comprehensive community care systems include Setagaya Ward in Tokyo, Nagaoka City in Niigata Prefecture, and Nanbu Town in Tottori Prefecture.

However, there are several possible problems with this system that I am considering. For example, the construction of a new medical system is costly and without precedent. Also, when considered on a regional scale, there are concerns about medical disparities among regions. However, if such a system can be realized, it will not only bring us closer to solving the problem of leftover medication, but will also lead to improved safety.

Figure2↓

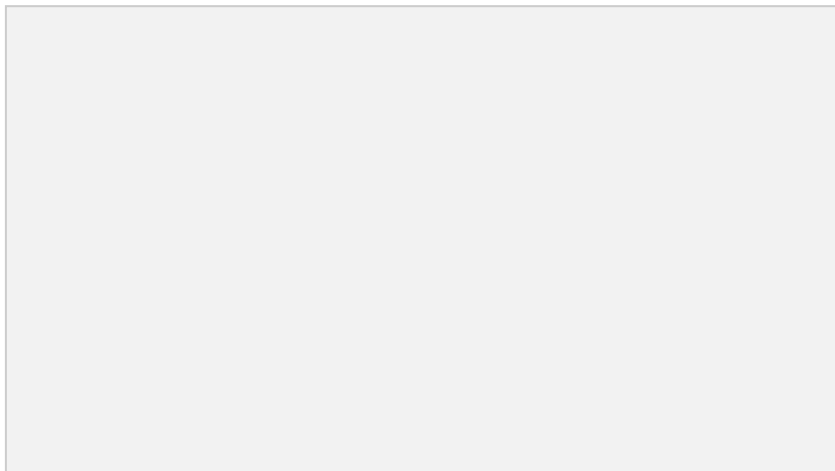
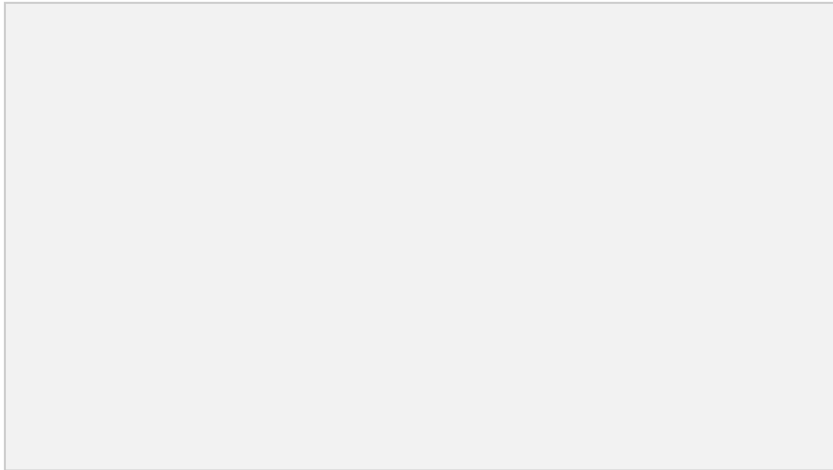


Figure3↓



4 References

「PHARMACY Co.Ltd」 <. <https://www.pharmacy-net.co.jp/>>6/30

「Saving medicine bag movement. Pharmaceutical Collaboration between Fukuoka City Pharmaceutical Association and Kyushu University. 」 TAKAO SHIMAZOE(2014)6/30

「Only Order What You Need」 .< <http://www.medicinewaste.com/>> 6/30

「Qlife」 <<https://www qlife.co.jp/news/7006.html>>6/30

「Ministry of Health, Labour and Welfare 」 7/5

<https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/hukushi_kaigo/kaigo_koureisha/chiiki-houkatsu/>

「The state of pharmacies and pharmacists, safe access to medicines、 Ministry of Health, Labor and Welfare

<<https://www.mhlw.go.jp/content/11121000/000366641.pdf> >

How to Increase the Number of Literate People

~Using Social Media and Electronic Book~

5421 Yoshida Shunsuke

Abstract

According to Japanese newspaper reports , the number of students who read book is increasing. Reading is good for the growth of children. I consider this situation is bad for Japanese children's future so I try to solve the problem that many young people don't read. First , I learn about the agenda and realize the number of reading children in elementary school and junior high school increases year by year. However the number of students in high school and college decrease year by year. By learning this fact I changed my target to only high school and college students. That's why I suggest "reading together".By using social media and electronic books , we can increase the number of reading students. There are three merits to use them . First , the layer of users. Second , the features of social media. Third , the number of devices.In conclusion , I suggest using social media and electronic books to solve this problem.

1 Introduction

The term "young people are losing interest in the printed word" is not a new one; it has been used for about 45 years, since the 1970s. Since there has been such a long period of time, the government has taken a number of measures. However, at least for elementary and junior high school students, there has been an improvement in their reading habits, partly due to activities such as morning reading. However, the reading rate of high school and

university students has been declining year by year, and it seems that effective measures have not yet been taken to prevent high school and university students from losing interest in reading. The theme of this study is to increase the reading rate, but some people may ask whether reading will improve the global environment. I am very concerned about the decline in vocabulary skills among young people in recent years. I believe that the decline in these skills will significantly lower the status of the Japanese people in the international community, and will become an obstacle for us as an advanced nation to take the lead in addressing international issues. This may lead to delays in solving global environmental problems. The purpose of this research is to avoid such a situation by improving the ability of Japanese people to read.

2 Discussion and implications

I thought of two approaches to increase the reading rate: one is the use of social networking services and the other is the use of e-books. Professor Hashimoto of the University of Tokyo pointed out the following five factors that have contributed to the spread of social networking services: First, cost. Second, ubiquity due to the connection with cell phones. Third, a wide range of synchronized transmissions. Forth, transmission of one's own information to many recipients. Uplifting and liberating feeling. Fifth, Realistic response. I focused on 4 and 5 of these, and thought that it would be possible to "read together" by connecting with people around us on social media to expand the horizontal circle. I think that this will bring about a good cycle, where people who have read a book post their impressions on social media, and people who are interested in the book will pick it up and post their impressions on social media. I propose the use of e-books to facilitate the process from

reading to posting. One of the advantages of e-books is that not only can you read and post on a single smartphone, but you can also easily search for unfamiliar words. With paper books, if you don't understand a word, you have to look it up in a dictionary. With e-books, however, you can find out how to read a word, what it means, and how to use it by pressing and holding on the word you want to look up. I think this is a good way to achieve the goal of improving vocabulary. For these reasons, the use of e-books and social media is a good idea. The current issue is whether this method will help people who have never read books to start reading, and the fact that the e-book system is not yet developed. I found it difficult to find the books I wanted to read when I actually tried to use the system. According to Mr. Isozaki, the author of "The Finance of Entrepreneurship," it costs a lot of money to convert books to electronic format, and it is difficult to increase the variety of books without increasing the number of users. Therefore, we need to come up with more effective solutions.

3 Conclusion

I propose social networking and e-book lingering to increase the reading rate of young people. Reading will improve the skills needed to live in an increasingly complex society.

4 References

文部科学省（2012）「平成22年度全国学力・学習状況調査」

<https://www.nier.go.jp/10chousakekkahoukoku/10_point.pdf>

2020年3月21日閲覧

清水一彦（2014）「「若者の読書離れ」という“常識”の構成と受容」

<https://www.jstage.jst.go.jp/article/jshuppan/45/0/45_117/_pdf>

2020年3月21日閲覧

公益社団法人全国学校図書館協議会（2019）

「全国学校図書館協議会、毎日新聞社」

<<https://www.j-sla.or.jp/material/research/dokusyotyousa.html>>

2020年3月21日閲覧

全国大学生協連（2019）「学生生活実態調査」

<<https://www.univcoop.or.jp/press/life/report.html>>

2020年3月21日閲覧

磯崎哲也（2010）「電子出版で「本のコスト」はタダになるか？」

<<https://agora-web.jp/archives/1017878.html>>

2020年3月21日閲覧

The Effect Way to Use a Park

~To Make it a Place to Interact with Others

5422 Mizuho Okonogi

Abstract

The purpose of this study is to use a park in an effective way. Anyone can use a park anytime for free. In addition, I came up with the idea of making the park to interact with others. Thus, I propose that they play games outside in the park, the number of children who play in the park increases, and increases chances to interact with local people. Furthermore, if they play online games, they will make teams among areas and will be able to play with teams in different prefectures or countries. They can band together as a team.

There are some problems. It is whether children go to the park and play games outside. I have to tell children some charms of the game. Of course, there are children who like playing inside and don't like exercise, so I must make an original appeal of the project.

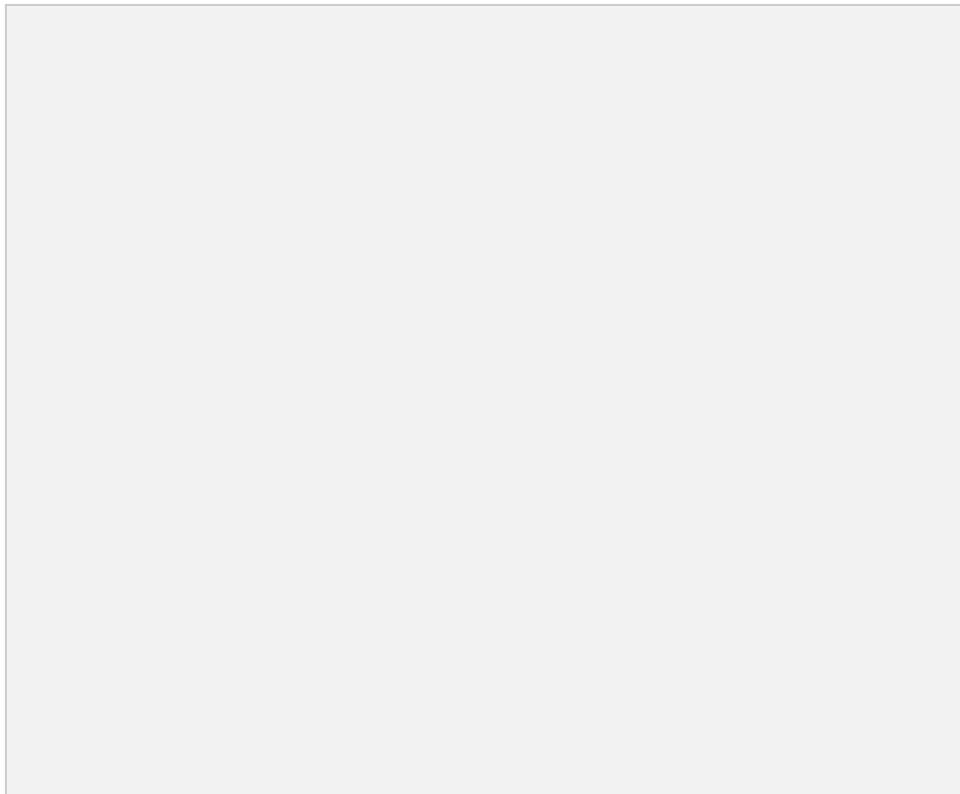
1, Introduction

I want to use the park for a lot of people. Anyone can use a park anytime for free. Recently, the number of children who play outside is increasing, because they play games after school. Now, some students go to lessons. According to a survey by Mr. Hiroyuki Tsuruyama of Toyama university, most of the playing outside like tag or soccer needs many people, so children who don't go to lessons can't play outside. And, there is a problem that some children exercise too little. Playing outside has a lot of merits which help to be cooperative and improve communication skills, so I want to solve this problem. I will enact this proposal, and I want to make a place for my children to play.

Furthermore, chances to socialize with the people in the neighborhood community are decreasing. According to the Cabinet Office, the number of people who often communicate with local people and sometimes communicate with them decreased by 60% during the period from 2000 to 2007. If I introduce this proposal, local people will be able to

communicate with them. Furthermore, children can make their whereabouts since they talk to children who are different grades or school. They can make more friends.

Also, there are problems about children's lack of playing. According to Japan Sports Agency, a change of the total score of strength in elementary school, the score is decreasing from 2004 to 2005. The sports agency said, the cause of decreasing is that children aren't play a lot of time and overweight child are decreasing, and increasing watching screen time. I found the reason that the cause happened. First, the time when to play outside. Second, increasing the number of playgrounds such as vacant or parks. Third, declining birth rate the study activities expect school.



2, Discussion and implications

I propose that local people enjoy playing games in the park, because I think child park users can increase, and make chances to be connected to the local community. And, not to be sorry for people who want to use it for different purposes, I will decide which day of the week

to use.I will change the concrete contents of the game regularly.

According to "Toshiriyousyakouenzisshityosa in 2014",the number of people who are under 18 years old who use a park is decreasing every year.

And, chances to play outside for children are decreasing ,because playing inside is fulfilling and makes strict rules.I will send some staff members not to prevent trable.

3, Conclusion

There are some assignments.First search's assignment is to make noise.Now, there are strict rules in the park because neighboring residents have difficulty in making noise in the park.

Second,the park isn't completely safe.

4, References

The Ministry of Land [Heisei 26 nendo toshikouennriyouzittaityousanogaikyou(the survey of using parks in a city in 2004.)]

1-256

Japan Sports Agency

[the result of custom and ability of playing in the whole country in 2019(Reiwagannenndozenkokutairyoku • undounouryoku,undousyuukantyoussakekka)]

https://www.mext.go.jp/sports/b_menu/toukei/kodomo/zencyo/1411922_00001.html (June 13th)

Specialty Childcare Facilities for Developmental Disorder Children Which is Specialized in an Area

~Support for Everyone Associated with Developmental Disorders People~

5423 Keina Kano

Abstract

People who are diagnosed with developmental disorders tend to be increasing and the level of cognition is higher and higher. However they and people who are involved in them have problems. Those are not a few. Then I'd like to suggest "specialty childcare facilities for developmental disorder children which specialized in an area". It expects to overtake its own weak points, care for childminders and provide training places for people who want to become one. The ways for children are making care programs and interacting with other children. To remove parents' anxiety or stress, it holds parent association with residents with developmental disability children in the area. For students who wish to work as childminders, it is used the place for childcare training.

1 Introduction

Nowadays it seems to be an increasing tendency of people with developmental disorders. According to the Ministry of Health, Labour and Welfare, the number is about 480,000. Also focused on child students, the number of child students who learn in special support classes in H29 is about 9.6 times larger than in H15.(figure 1) As the factors are gain of awareness by enformenting the developmental disorders people support low and multiplying the ratio of the appoliciate children by changing the diagnosing standard. Generally speaking of developmental disorder, there are various symptoms such as autism spectrum disorder, attention deficit hyperactivity disorder, learning disorder, stuttering and tic disorder and

particularly of action and mental by the difference of natural brain works. Pre-stage of compulsory education which is important to do collective action, in other words, on the childcare stage, it is important to realize the symptoms instantaneously and care to improve it.

2 Discussion and implications

My suggestion is “ specialty childcare facilities for developmental disorder children which specialized in an area”. Those need the cooperation of the other nursery school and kindergarten, parents who have developmental disorder children in the area, and people who want to be a childminder.

For children

This facility provides a way of childcare specialized in each child individually. It is as same as making programs based on the story of their parents and opinions of doctors in charge or occupational therapists. To be specific, in case of attention deficit hyperactivity disorder, making a small class, keeping in mind to make an environment that they can concentrate on and making lists when childminders give them assignments. Also, considering study disorders children, they act in a class of the extant number of children because they don't hinder daily life and they have learning time in childcare with various teaching materials to proceed studying little by little. I think they will be able to face their own symptoms and it will be the first step to play an active part in society. For developmental disabilities, the rate of becoming school refusal when they come to go to elementary school which has collective action much higher than the other children since they can not be familiar with the system. Then, it is very important to overcome their own poor parts. Moreover some nursery schools and kindergartens refuse to accept them but they can be relieved that they are easy to enter this facility. However there are some demerits. They limited communication partners because of their disease. To solve this problem, I suggest interacting with another kindergarten or nursery office in the same area. The frequency will be three times a month. It adjusts the times in order to be careful about each other. For developmental disorders children, it will be good opportunities to communicate or play with the same generations and

the improvement of communication skill can be expected. Also, for other children, it will be a chance to think about how to contact them and what developmental disorders are, then they can learn important things before advancing society.

For parents

The anxiety of their children is unfathomable. According to “ The study of factors associated with depressions of parents who have developmental disorders children”, the families have more spiritual burden and trouble than other families. To eliminate the anxiety and snuggle up with them , I suggest the parents association including the parents who have developmental disorders children in the area. They will be able to have a deep understanding about their children or how to grow up and feel that the other parents need their own experiences exchanging different opinions with parents who have the same circumstances. Also, it will make an opportunity to hear the story of their children or schools and find work in the future inviting parents in the area. In addition, it is important to rebuild the support system in which each child overcomes their weaks by talking with the childminder.

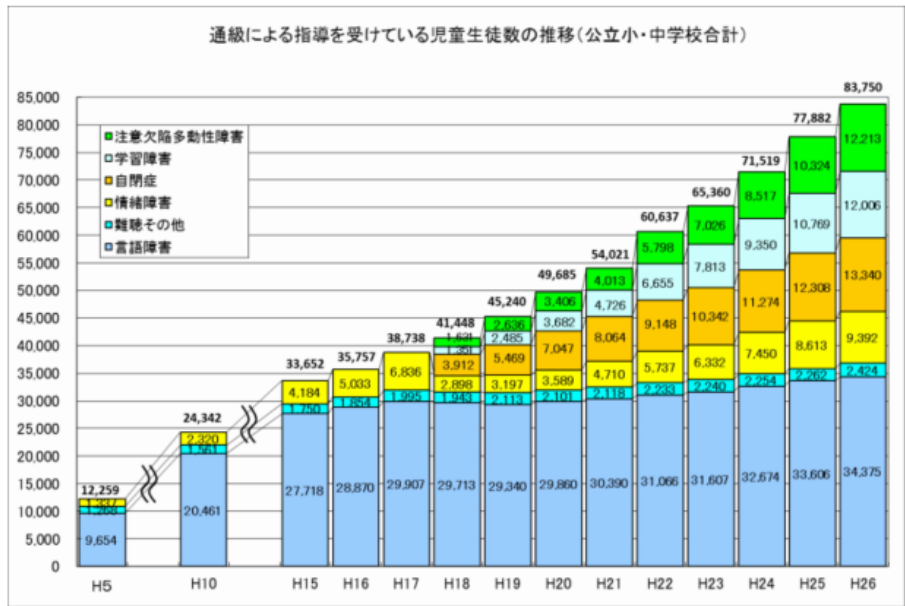
For childminder

From “ The study about care of children with disabilities in nursery school” of Mizuho zyoho souken kabusikigaisya, the concrete standard about the municipalities where set the same standard no matter the degree of the disabilities is “one childminder per one child with disabilities “ which occupy about three discount and “one childminder per three children with disabilities” which occupy about tew discount. In the case of regular nursery school or kindergarten, it has been decided that more than one child per six children of one and two years, more than one childminder per twenty children of three years,and more than one childminder per thirty children of four and five years. Therefore a lot of childminders are necessary for developmental disorders child care although there are differences of age. According to the ministry, there are lack of about 74,000 childminders in H29.Also about half of people who have the license of childminder don't work in nursery school.(figure2) As the reason, the weight of responsibility is the highest and followed relationship with parents,

the complaint for the education and training system. (figure3) In H22, the unit of care of children with disabilities was increased in the process to take the license. Based on it, I think about the training of students in colleges and vocational schools of the area in the facility. The students don't contact children with developmental disorders so it may be difficult. Especially, children with autism perhaps can not get involved with the students because they are not good at interpersonal communication. Then the students should take care to directly involve the children who can communicate smoothly and indirectly support the other children such as making lists of actions for autism or talking parents to make . To do that, I think the students can get the skill as childminders, in addition they can learn and get involved with the parents. They will have confidence and responsibility as a childminder. I think it encourages better childcare for children with developmental disorders in regular nursery schools, which of course can solve the problem of waiting children.

3 Conclusion

I think that such childcare facilities will contribute to approaching a society in which people with developmental disabilities, who are expected to increase in the future, and those involved in them can play an active role more easily. In addition, I think that the support of local communities and the correct understanding of people's developmental disabilities will create a comfortable society.



※各年度5月1日現在
 ※「難聴その他」は難聴、弱視、肢体不自由及び病弱・身体虚弱の合計である
 ※「注意欠陥多動性障害」及び「学習障害」は、平成18年度から通級指導の対象として学校教育法施行規則に規定
 (併せて「自閉症」も平成18年度から対象として明示：平成17年度以前は主に「情緒障害」の通級指導の対象として対応)

figure1 “Changes in the number of children receiving guidance through class” from developmental disability education support center

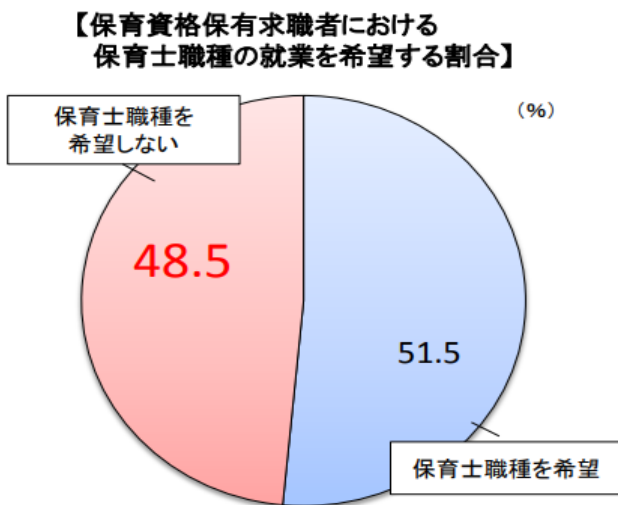


figure2 “Percentage of childcare qualification holders who wish to work in childcare position” from the Ministry of Health, Labor and Welfare

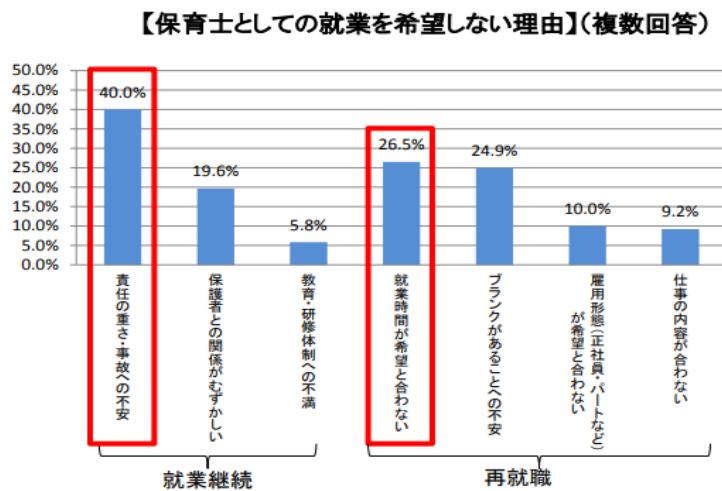


figure3 “The reason not to work as childcare worker” from the Ministry of Health, Labor and Welfare

4 References

Ministry of Health, Labor and Welfare(2011) “Let’s start knowing everyone’s mental health”

https://www.mhlw.go.jp/kokoro/know/disease_develop.html 2021. 6.22

Developmental Disability Education Promotion Center (2016) "Results of Survey on Guidance Implementation Status by Classroom 2016"

https://www.mext.go.jp/a_menu/shotou/tokubetu/material/_icsFiles/afieldfile/2017/04/07/1383567_03.pdf 2021.4.17

Ministry of Health, Labor and Welfare (2018) "Survey on the difficulty of living in 2016"

<https://resemom.jp/article/2018/04/09/43970.html> 2021.7.5

Rina Michihara, Sumiko Iwamoto (2012) "Study of factors related to depression in mothers with children with developmental disabilities"

<https://www.kurume-u.ac.jp/uploaded/attachment/2384.pdf> 2021.9.12

Ministry of Health, Labor and Welfare (2014) "Toward" Creating an Attractive Workplace "to Secure Childcare Human Resources"

<https://www.mhlw.go.jp/file/04-Houdouhappyou-11601000-Shokugyouanteikyoku-Soumuka/0000057898.pdf> 2021.9.12

Mizuho Information & Research Institute, Ltd. (2017) "Study on childcare for children with disabilities in daycare centers"

https://www.mizuho-ir.co.jp/case/research/pdf/kosodate2017_03.pdf 2021.9.12

To Reduce Food Waste

~In the World that Is Changing with Coronavirus~

5424 Aika Koyama

Abstract

Food waste is food we can still eat but it is thrown away. There are a lot of reasons to reduce food waste. For example, the prices of food will go up because the prices are including the prices of food which is abandoned. Moreover, the food for poverty will disappear. From these reasons, we can easily understand that it is worth solving the problem. My purpose of research is to create an innovative idea to reduce food waste. I learned about today's Japanese food waste. Then I researched about the Japanese government policy of food waste, Japanese major convenience stores' efforts, and an application development company. Based on this information, I think it is important to create circumstances where customers can cooperate to solve the problem. This research's conclusion is to create a new application of convenience stores. Its function is that we, customers can know the stock of products at convenience stores anywhere and anytime.

1 Introduction

Since the spread of the new coronavirus, exchanges with other countries have been restricted. On the other hand, Japan relies on imports for a lot of food, and its self-sufficiency rate is only 38 percent. With the further spread of infection, restrictions on exchanges with other countries will worsen, and if imports cannot be carried out normally, Japan may soon fall into a food shortage. In order to prevent such a worst situation, I have come to think that the food in Japan should be consumed without waste, that is, food waste should be reduced. The purpose of this research is to investigate food waste mainly at convenience stores that are close to us, and then think about ways to reduce overall food waste. I conducted a survey focusing on materials on the Internet regarding efforts to reduce food waste centered on

convenience stores. The survey items are the amount of food waste in Japan as a whole, the amount of food waste in convenience stores, the measures taken by the government for food waste measures, and the food waste measures for the two major convenience stores of Seven Eleven and Lawson.

2 Discussion and implications

Japanese food waste

First of all, I researched Japanese food waste. Actually, the total amount of Japanese food waste is about 6.12 million tons. 54% of this is food waste from companies. The amount of the waste is as much as about 48kg is thrown away a year per Japanese. According to Yamato Enelf Company, food waste that comes from one convenience store of value is about 20 to 50 thousand every day. Main of it is bread, onigiri, bento and side dishes. Especially, fried food and oden are thrown away a lot, because the time to be able to sell them is very short. They occupy the value of food loss comes from convenience stores about 20 thouthands in one store per day. The Ministry of the Environment said the weight of food loss from one convenience store is about 16 kilograms per day. From these data, it is easy to see that we must consider the problem seriously.

The Japanese government

The Japanese government enforces a law about promotion of reduction of food waste on October 1st, 1st year of Reiwa. The law is stipulated to help food bank activities, companies and customers to educate about food and so on.

Efforts to reduce food waste of three main convenience stores in Japan are following.

The efforts of Seven-Eleven

Seven-Eleven is doing an ethical project. This project is that we can receive five percent nanaco points when we buy products which are close to selling date. Then Seven-Eleven

advertises the ethical project for customers. Because of this project and other efforts to reduce food loss and waste, a store could reduce about 30 percent compared to the last year.

The efforts of Lawson

Lawson started cooking some food in the stores. It is called 'machikado kitchen'. They can control the production of food by customers' movements. In addition, they are using a system called 'Semi-automatic ordering system'. This is a system that automatically recommends 'optimal product lineup' and 'number of orders by product' by analyzing information. For example, sales status, customer base, and weather for each store.

Summary of Discussion and implications

Considering from these information, I found that the Japanese government encourages customers and companies to have interest in food waste by making the law.

Seven-Eleven gives privilege to customers who reduce food waste and encourage them to cooperate reducing them. Lawson strives to reduce product ordering and manufacturing waste. Then Lawson increases profits.

Consumers are always at the center of every effort to reduce food waste. I think the most important thing is to create an environment where consumers themselves are aware of it and cooperate little by little.

3 Conclusion

This research's conclusion is not to think that it is natural to have a life of 'you can eat as much as you like, deliciously and enjoyably' anytime and anywhere. Thanks to this way of thinking, consumers will be able to eat at a low price, companies' profit will increase and the lives of a lot of people will be saved by providing food. There are countless good things for all people. We should learn the possibilities and tell them to a lot of people.

In order to achieve the thinking, I propose to create an app that allows you to know the inventory of convenience store products in real time that are close to consumers. The benefit

to consumers with the app is that you can see where the product you want is in which store anytime. The benefit to companies with it is that they can reduce food waste because they can find the customers who really want products. In addition, the app should show not only information about food product inventory but also other things such as notification of the timing of fried food, notification of seasonal products and so on. Then more and more people will stop at convenience stores. Also I'd like to add a reservation system. Even if you know the status of the products in real time, you can not know whether the product which you are looking for remains until you arrive at the store. There are reasons to ask convenience stores to take advantage of this app. First, since there are many stores, it is easy for consumers to use the app. Second, if a major convenience store develops the app and succeeds, it will surely affect not only rival companies but also companies in other fields. Then, it may become common sense to know the product status in real time.

4 References

[1] Ministry of the Environment (2005). "Summary of publicly available information on the amount of food waste generated and control of food waste generated at supermarkets and convenience stores"

<https://www.env.go.jp/council/former2013/03haiki/y0314-05/ref01-4.pdf>

[2] Consumer Affairs Agency(2019). "Act on Promotion of Reduction of Food Loss"

https://www.caa.go.jp/policies/policy/consumer_policy/information/food_loss/promote/

[3] Seven-Eleven(2020) "Sustainability Action Book 2020-2021 ~ Aiming for a Sustainable Society" <https://www.sej.co.jp/library/csr/pdf/csr/actionbook/2020/all.pdf>

[4]Ministry of Agriculture, Forestry and Fisheries (2018). "What is food loss?"

https://www.maff.go.jp/j/shokusan/recycle/syoku_loss/161227_4.html

[5]Ministry of Agriculture, Forestry and Fisheries (2020). "Japan's Food Self-Sufficiency Rate" https://www.maff.go.jp/j/zyukyu/zikyu_ritu/012.html

[6]Yamato Eneruf Co., Ltd. "How much is food loss at convenience stores a day?"

<http://www.enelf.jp/archives/2613>

[7]Lawson (2020). “Proposing an earth-friendly life, a relieved project”

https://www.lawson.co.jp/company/activity/whew_kindness/

All references above are viewed on January 31, 2021.

Reduction of Food Waste

~Setting the Second Use-by Date~

5425 Kaho Sakai

Abstract

According to the Ministry of Agriculture, Forestry and Fisheries (2020), about 6.12 million tons of food are thrown away in Japan every year. The process of disposal causes a lot of CO₂, and these food Waste are mainly caused by expired use-by date. The use-by date indicates how long we can eat the food. To reduce food waste, I suggest setting the second use-by date. In fact, food makers multiply by a number less than 0 to ensure food safety because Food may not be squeezed at the proper temperature. However, this system makes the use-by date much shorter, and many people throw away food simply because it has expired the use-by date. Therefore, it's resulting in food waste. To solve the problem, I suggest showing the second use-by date which was set by tests, and telling consumers the last day when the food is still safe to eat.

1 Introduction

These days, we are in trouble caused by climate change, such as rising temperature, drought, natural disaster, and the population is growing year by year. If food waste occurs, CO₂ will rise during the process of food production and disposal, so greenhouse gasses that cause global warming will be generated. Therefore, it is necessary for us to reduce food waste and the burden on the earth. I set a research question, "What is the best way to reduce food waste and reduce the environmental burden on the earth?" First, I researched the process of how to set the use-by date using the Internet, mainly the Consumer Affairs Agency, and the Ministry of Agriculture, Forestry and Fisheries. Furthermore, I think it is a good way to set the second use-by date on food packages.

2 Discussion and implications

First, I researched why food waste occurs. According to the Ministry of Agriculture, Forestry and Fisheries, business food waste accounts for 54% of the total food waste, and Household food waste is 46% in Japan. These kinds of food waste are mainly caused by expired use-by date and lack of proper planning of food purchase.

Now, the use-date is set by various tests, such as Physical and chemical tests, microbial tests, sensory tests but the date is not shown on the food package. In fact, food makers multiply by a number less than 1 to ensure food safety because Food may not be squeezed at the proper temperature. However, this system makes the use-by date much shorter, and many people throw away food simply because it has expired the use-by date. Therefore, it's resulting in food Waste. To solve the problem, I suggest showing the two use-by dates. The first use-by date indicates the period showed the safety of food that we usually see on food packages. The second use-by date indicates the last day when the food is still safe to eat, and I think the second use-by date should be set by tests, not manipulated numbers. If the consumers can know the last date to eat, they can have an opportunity to check the food condition before they throw the food. As a result, there will be less possibility to throw away food simply because it has expired the use-by date.

Then, we need to tell consumers that the use-by date which is shown on the food package is shorter than the date which is set by tests, so we don't have to mind even if the food passed the date a little. I think the best way to tell the truth is commercial because most people have television. According to the Consumer Affairs Agency, 96.2 percent of the population in Japan has color television. For this reason, the television has much impact on consumers, so we can encourage people to have doubts about how to set a use-by date by using commercial. I want consumers to know that it is safe if we eat the food within the date which was set by a lot of tests, and I want to encourage them to reduce food loss caused by expired use by date of food because it will be a step to reduce the burden on the earth.

3 Conclusion

My research question is "What is the best way to reduce food waste and reduce the environmental burden on the earth?" I suggested showing the second use-by date which was set by tests, but encouraging consumers to buy whatever food we can eat is also important. Thus, I want to tell them about the system setting a use-by date now by using commercial.

However, it is difficult to realize the plan because I don't know the advertising effect in commercials. Moreover, it is much more difficult to encourage food companies to change the way of setting a use-by date. To solve these problems, I want to continue thinking about how to reduce food waste.

4 References

International Agriculture, Forestry and Industry Collaboration Association (JAICAF) (2014). Influence of Loss and Discards of Agriculture and Forestry Food Food in the World Give Environment

https://www.jaicaf.or.jp/fileadmin/user_upload/publications/FY2014/wns_14summer.pdf.

accessed 2021 July 24.

Ministry of Agriculture, Forestry and Fisheries (2020).

The current status of food loss.

https://www.maff.go.jp/j/pr/aff/2010/spe1_01.html.

accessed 2021 July 16

Consumer Court (2005). Guidelines for setting food expiration display.

https://www.caa.go.jp/policies/policy/food_labeling/food_sanitation/expiration_date/pdf/syokuhin23.pdf.

accessed 2021 August 7

Consumer Affairs Agency (2014).

Efforts to the Current Status and Reduction of Food Loss .https:

[//www.caa.go.jp/policies/policy/consumer_research/white_paper/2014/white_paper_109.html](https://www.caa.go.jp/policies/policy/consumer_research/white_paper/2014/white_paper_109.html)

accessed 2021 August 15

Cabinet Office Economic Social Research Institute Inc.

<https://www.esri.cao.go.jp/jp/stat/shouhi/honbun202103.pdf>.

accessed 2021 August 29

Yuki Makino (2008). A Study on the Influence of Content Information on Advertising Effects (2)

Management Information Research, Volume 16, 1-11

Space Food Could Work As Emergency Food

~Space Food Supports Eventuality~

5426 Tanaka Nonoha

Abstract

Tokyo's Disaster risk index is 710. It is the highest data in the world. This date shows that Japan is in a very dangerous situation now. If a disaster happens, we go to the emergency center. However the food's excess or deficiency was big in the emergency center when the Great East Japan earthquake hit in Japan. A lot of disaster victim's health was damaged by the situation. Thus I started my study to help their diet.

Finally, I would like to propose "Space Food". That is because Space Food has a long use-by date so we can use it at emergency time, do our mental care and reduce food's excess or deficiency. According to the local government of Tamamura town, it prepares rice, water and rice cookies. This result looks like the food's excess or deficiency graph. That is why I suggest using Space Food treat as plus α .

1 Introduction

As can be seen from Chart 1, the disaster risk in Tokyo and Yokohama in Japan is overwhelmingly more than seven times that of Los Angeles. This shows that disasters are a global problem because they occur in many parts of the world, and that the risk of disasters in Japan is much higher and more dangerous than in other countries.

The first place we go when a disaster strikes is an evacuation center. According to Chart 2, there is an excess of cereal food, but a shortage of vegetables, meat, and dairy products. Also, at the time of the Great East Japan Earthquake, the quantity and quality of food was inadequate and some elderly people suffered from lack of food, which led to pneumonia and loss of their lives. In addition, because the sewage system was not

available, people were instructed to drink up the soup of cup noodles, which led to the problem of excessive salt intake and unbalanced nutrition.

In other words, the food at the evacuation center was ruining their health. From there, I began researching ways to enrich dietary habits during disasters.

The goal of this research is to eventually be used around the world, but first we are focusing on Japan, where Tokyo has a high disaster risk index.

My study method is as follows. First using the Internet and researching the types of space food and their effects. Moreover, check the blogs of astronauts Soichi Noguchi and Naoko Yamazaki, who had actually eaten space food on the ISS (International Space Station), to see what they thought of space food and their food reports.

Next I tried tasting space food such as yakitori and rice balls.

In addition, I inquired about Tamamura Town's emergency food stockpile to a person in charge of the Fire and Disaster Prevention Section of the Environment and Safety Department, and compared it to the graph of food shortages and excesses at the time of the earthquake(Chart 2).

2 Discussion and implications

- Space Food and Disaster

First, what is space food? JAXA (2020) defines space food as "food to be served to astronauts who will stay in space for extended periods of time, such as on the International Space Station (ISS)". Thus why is space food necessary for a well-balanced diet in times of disaster? It is because the functions and required roles of space food can also be applied to disaster victims. There are four main functions of space food.

The first has a long use-by date. Since space food is provided to astronauts on long-duration missions on the ISS, the expiration date is set at a minimum of one and a half years, and the longest food has a semi-permanent shelf life. This means that we can eat as emergency food in times of disaster, and food loss due to expiration dates can be reduced.

The second is JAXA (2011) states that the purpose of providing space food to astronauts is to "reduce mental stress, refresh the mood, and maintain and improve performance. "Eating a familiar meal can alleviate mental stress. In the same way, I supposed that disaster victims can also relieve their stress by eating familiar food during a disaster.

Third, it is possible to consume space foods when distribution has been stopped. In times of disaster, distribution is often stopped. This was the case during the Great East Japan Earthquake. According to Mr.Beppu (2013), most of the food in the disaster area is "rice balls" and "sweet breads", which are mainly carbohydrates, and people get bored with the same flavor and find it painful to eat. However, by using space food, it is possible to eat meat, vegetables, and other delicacies such as jellies, even if distribution stops.

The fourth reason is a little similar to the third. It is good for nutritional balance. The premise is that space food is provided for astronauts on long-duration stays on the ISS. Therefore, the meals are nutritionally balanced and health-conscious.

- Disaster victims and Astronauts

In thinking about the function of space food, I realized that the situation of "astronauts" and "disaster victims" have several things in common. First is the location. Space and ground may seem completely different, but they have something in common. Astronauts are in the ISS, which is a very limited space. In the same way, disaster victims are in a limited place called an evacuation center and cannot easily leave. Both of them are in a place where they cannot come and go easily.

Next is equipment. There are only two types of equipment that astronauts can use on the ISS: water heaters and food warmers. In addition, hot water can only be used up to 80 degrees Celsius. In addition, water is precious because supplies have to be transported from Earth. Also, in times of disaster, cooking becomes difficult due to water cutoffs and power outages.

The last one is stress. Astronauts are selected through a selection test and represent the Earth, so to speak, and the missions assigned to them are very important, and even

the slightest mistake in operation can endanger their lives. Therefore, astronauts have a lot of stress. Disaster victims also have anxieties and fears due to the unusual situation caused by the sudden disaster. The Ministry of the Environment (2018) points out the uncertainty of the future, safety concerns such as housing and occupation, and social prejudice as stress factors for survivors.

- Space food and Emergency food

In order to make space food into emergency food, I looked into the emergency food actually stockpiled by the local government. I inquired at the Environment, Fire and Disaster Prevention Division about emergency rations in Tamamura Town, where I actually live. As a result, I was able to classify the emergency rations into three main categories: preserved water, rice, and crackers. From this, we can see that the situation is as shown in Figure 2. In other words, only staple foods are being stockpiled.

3 Conclusion

In order to provide a wide variety of meals, I suggested space food as an emergency food plus α . One of the issues is that space food is not well known and there are not many stores selling space food, even though it has more attractive elements than emergency food. It is necessary to further investigate the causes of such results.

4 References

[1] What is Space Food JAXA

<<https://iss.jaxa.jp/spacefood/overview/>>(2020/08/26)

[2] Role of Space Food JAXA

<<https://iss.jaxa.jp/spacefood/overview/function/>>(2020/08/26)

[3] Certified Japanese Space Food

JAXA<<https://iss.jaxa.jp/spacefood/about/japanese/>>(2020/08/26)

[4]Current Status of Space Food and Use in Disaster Food By Takashi Nakazawa

<<https://www.nistep.go.jp/wp/wp-content/uploads/NISTEP-STT144J-15.pdf>>(2020/11/09)

[5]West Japan News Paper

<<https://www.nishinippon.co.jp/item/n/592889/>>(2021/11/17)

[6]Disaster Prevention Information News Paper

<http://www.bosaijoho.jp/association/item_6468.html#:~:text=%E8%A2%AB%E7%81%BD%E5%9C%B0%E3%81%AB%E5%B1%8A%E3%81%8F%E6%95%91%E6%8F%B4,%E3%83%90%E3%83%A9%E3%83%B3%E3%82%B9%E3%82%82%E5%95%8F%E9%A1%8C%E3%81%8C%E3%81%82%E3%82%8B%E3%80%82> (2020/08/26)

[7]Disaster Victims Factor of Stress

<<https://www.env.go.jp/chemi/rhm/h30kisoshiryo/attach/h30kiso-slide03-08.pdf>>(2021/03/22)

Graph

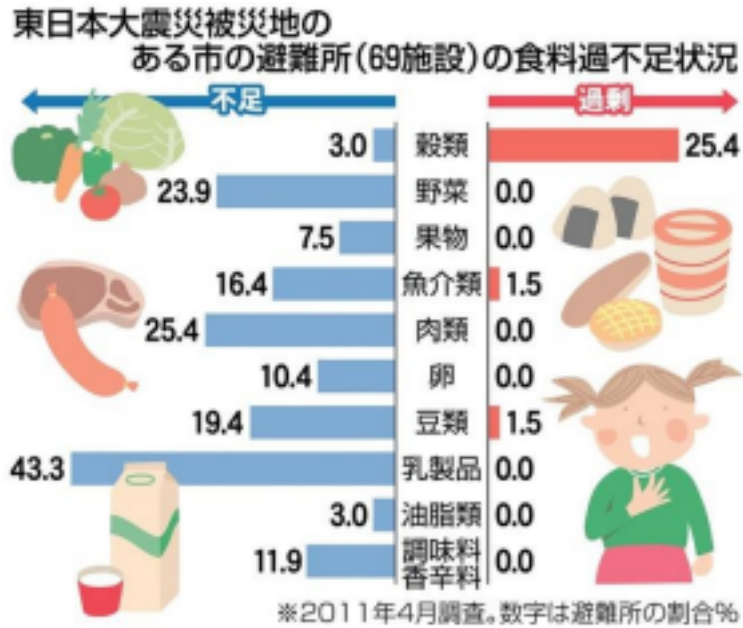
①White Paper on Disaster Management 2004

Natural Disaster Risk Index for World's Major Cities



②The West Japan News Paper

The food's excess or deficiency in the emergency center when the Great East Japan earthquake



The Relationship Between City Structure and Car Dependence

~Estimating the Impact of Compact Plus Network by Using Indicators~

5427 Lisa Tanaka

Abstract

As the birth rate declines and the population ages and global warming progresses, there is a need to build cities which the elderly can live in on foot and do not depend on cars. In Japan, a city whose functions are gathered at the center of the city is called a “compact city”. The Japanese government is promoting “compact plus network”, one kind of compact city structure. It is composed of cores where various kinds of facilities are gathered and these cores are connected with public transportations. This research was aimed at revealing the relationship between compact plus network and car dependence. First, I counted the number of facilities around cores and decided it as a “compact plus network index”. Second, I made an index which shows how much the city depends on cars. When these two values were expressed in a scatter plot, it was found that the higher the city's compact plus network degree was, the less it depended on cars. Therefore “compact plus network” can be a measure to build walkable cities.

1 Introduction

Compact plus network is done in order to make the city center lively and reduce the cost of infrastructure by gathering city functions around cores.

It is known that there is a strong relationship between the environment and city structure. The Ministry of Land, Infrastructure, Transport and Tourism (2011) claims that Maebashi city emits four times as much carbon dioxide as Kochi city does because the population density of Maebashi city is lower than that of Kochi city although Maebashi city has as high population and large areas as Kochi city.

There are some previous studies on the relationship between environment and city structure. Taniguchi(2008) classified cities by city structure and considered the relationship between them and amounts of CO2 emissions. Takeda(2011) developed a “compact city index” , which is created by combining different factors such as the shape of cities and accessibility to public transportations. All of them regard cities as one cohesive region. However this research differs in that this research focused on cores set by each city in the city master plan (Figure1).

There are three steps to research the relationship.

The first step is to make an index which represents how many facilities there are around cores. The more facilities there are near the core, the more convenient the core can be. This study developed “ Compact + network index” which means the average number of facilities within 500 meter of each core. In this index, facilities include supermarkets, convenience stores, hospitals, nursing homes, libraries, and museums. High density population is one of the conditions for compact plus network because we do not need to put facilities together if there are few facilities. Therefore, target areas of this study were "Densely Inhabited Districts"(DID) of each city. Census of 2010 defined DID as areas whose population density is 4000 or more per square kilometer and adjoining areas have a population of 5000 or more.

In the city master plan, classification of cores differs depending on the local government. On the other hand, most city master plans had at least two types of cores which were usually called central cores and sub cores. This study focused on these two kinds of cores.

The second step is to make an index which shows how much a city depends on cars. This study regarded the percentage of cars in representative means of transportations as a car dependence index. Representative means of transportation is looked into by person trip survey and it is a main transportation used to reach one destination. The priority is following: train> bus>car>bike>foot.

The third step is to decide target cities. Population density of some extent is necessary for compact plus network. Ozawa(2014) examined the relationship between the ratio of population per core and the ratio of convenient cores. In his research, Ozawa made a list of cities which met the following conditions:(1)Cities with a population of 190000 or more (2)a

population density of 4000 or less per square kilometer (considering DID requirements)(2010 Census). This study chose 26 cities from 87 cities in Ozawa's list, considering the application of the compact plus network index and car dependence index and geological locations in Japan. However, cities which do not meet following three conditions are out of target.

(1) Cores are set by the city master plan.

There are some cities which don't declare that their goals are making a compact city and do not set cores in their city master plan.

(2) The location of cores can be identified.

The location of cores of some local governments is not clear. Compact plus network index can not be used when the location is not obvious because it needs to draw a circle around cores.

(3) There is the latest data of representative means of transportation.

Representative means of transportations are examined when person trip survey is conducted in each region. However, in some cities the survey is conducted less frequently. Cities whose representative means of transportation after 2005 were not available were excluded.

The final target cities are Sendai city, Ichihara city, Takasaki city, Toyama city, Takatsuki city, Himeji city, and Kurashiki city (Table1).

2 Discussion and implications

Each city's characteristic found by the application of two indexes is followed.

Sendai city has 3 cores, which is relatively few, but not only convenience stores and supermarkets but also hospitals, nursing homes, and other facilities related to medical care and education are concentrated in each core. The number of average facilities within 500m from cores per core (Compact plus Network Degree:CND) is 32.6(Table 2). Ichihara city has

5 cores. Even though Takasaki city has the largest number of cores, CND is 9.0, which is the lowest of 7 cities, because there are some cores which facilities are not concentrated around. Toyama city has a large number of libraries and museums, and has many facilities related to cultural education. Takatsuki city has a few but highly convenient cores like Sendai city and its CND is 34.7, which is the highest of 7 cities. Himeji city has several different extent of convenient cores. Facilities are concentrated in all bases in Kurashiki city.

Next, CND and the degree of dependence on cars are shown by a scatter plot (FIG 2). The correlation coefficient was -0.92, which means a strong negative correlation. It is already known that the higher the population density is, the lower residents use cars. The result of this study indicated the relationship between compact plus network and car dependence. Although there is no telling how high CND affects the dependence on cars, there is a possibility for compact plus network to be an effective measurement to improve dependence on cars.

Takatsuki city and Sendai city have a few cores. Cities with cores where facilities are not concentrated such as Takasaki city and Toyama city should reset their cores.

3 Conclusion

Cities which do not depend on cars have many facilities around cores. Local governments should gather facilities around their cores and build more ecological cities.

At first, this study looked for cities to research based on Ozawa (2014) and decided 27 cities as target cities. However, the final target cities became only 7 cities. It is mainly because locations of cores of some cities are not clear. Most cities are setting cores on their city master plan. If local governments make the location of cores clear, they can compare their city with another city by using indexes and make better plans to improve the city's convenience of life and sustainability. Therefore, it is also necessary for the local government to design determinate cores.

4 References

M. Taniguchi, R. Mastunaka, M. Hirano (2008) Time-Series Analysis of the Relationship

between Urban Layout and CO2 Emission by Automobile, Journal of the City Planning Institute of Japan, 43-3,121-126

H. Takeda, M. Shibata, T. Arima (2011). City Ranking and Evaluation Using COmpact City Indexes -Comparison analysis of 39 densely inhabited districts-, Journal of Architecture and Planning, 76-661, 601-607

H.Ozawa(2014). A Study on the Idea and the Actual Situation of "Networked Compact City" in Urban Planning Master Plan, Master Thesis, Graduated school of Engineering, University of Tokyo

Ministry of Land, Infrastructure, Transport and Tourism (2011). Low Carbon city Planning Digest Version

<https://www.mlit.go.jp/common/000133426.pdf> Retrieved 2021.09.27

Statistics Bureau of Japan, What is a Densely Inhabited District ?

<https://www.stat.go.jp/data/chiri/1-1.html> Retrieved 2021.09.27

Gunma Prefecture, Person trip survey preliminary report, 2015

<http://www.kendoseibi.pref.gunma.jp/section/toshikeikaku/gunma-pt/result-p.html>

Retrieved 2021.03.21

Takasaki City, Takasaki City Urban Planning Master Plan, 2011

<https://www.city.takasaki.gunma.jp/docs/2014011000179/> Retrieved 2020.12.14

Takatsuki City, Takatsuki Transportation Strategy, 2016

<http://www.city.takatsuki.osaka.jp/shisei/profilekeikaku/keikaku/1461835246579.html> Retrieved 2021.03.21

Takatsuki City, Takatsuki Urban Planning Master Plan, 2011

<https://warp.da.ndl.go.jp/info:ndljp/pid/9983597/www.city.takatsuki.osaka.jp/kakuka/toshi/toshiduk/gyomuannai/toshikeikaku/toshimasu/masterplan.html>

Retrieved 2021.09.25

Himeji City, Amended Himeji Transportation Strategy, 2020.

<https://www.city.himeji.lg.jp/shisei/cmsfiles/contents/0000012/12343/siry01.pdf> Retrieved 2021.09.25

Himeji City, Himeji Urban Planning Master Plan, 2015

<https://www.city.himeji.lg.jp/shisei/cmsfiles/contents/0000003/3542/2015616163215.pdf>

Retrieved 2021.09.25

Ichihara City, Ichihara Urban Planning Master Plan, 2018

<https://prdurbanosichapp1.blob.core.windows.net/common-article/60237108ece4651c88c17eea/toshimasu.pdf> Retrieved 2021.09.25

Ichihara City, Ichihara Regional Public Transportation Network Plan Digest Version, 2019

<https://prdurbanosichapp1.blob.core.windows.net/common-article/60237fe3ece4651c88c192c3/gaiyouban.pdf> Retrieved 2021.09.25

Toyama City, Toyama Urban Planning Master Plan, 2019

<https://www.city.toyama.toyama.jp/data/open/cnt/3/2780/1/1-1.pdf?20190530111856>

Retrieved 2021.09.25

Toyama City, Toyama Public Transportation revitalization Plan, 007

<https://www.city.toyama.toyama.jp/katsuryokutoshisouzoubu/kotsuseisakuka/kotsukeikakuho/kuoku.html>

Retrieved 2021.03.21

Kurashiki City, Kurashiki Urban Planning Master Plan, 2009

https://warp.da.ndl.go.jp/info:ndljp/pid/8829836/www.city.kurashiki.okayama.jp/secure/25002/masu4_123.pdf Retrieved 2021.09.25

Kurashiki City, Kurashiki Regional Public Transportation Network Plan, 2018

<https://www.city.kurashiki.okayama.jp/secure/107017/moukeikaku-zennpen20180116.pdf>
Retrieved 2021.09.25

Sendai City, Sendai Urban Planning Master Plan, 2021

<https://www.city.sendai.jp/toshi-kekakuchose/kurashi/machi/kaihatsu/toshikekaku/aramashi/master2021.html> Retrieved 2021.09.25

Sendai City, Actual Condition of Transportation in Sendai

<https://www.city.sendai.jp/kotsu-kekaku/suishinkyogikai/documents/siryou6.pdf> Retrieved 2021.09.25

5 Bibliography

M.Taniguchi (1999) Analysis on Relationship between Urban Characters and Car Usage Based on Personal Trip Data, Journal of the City Planning Institute of Japan, 34,967-972

Y.Kizawa, K Takami (2008) Walkable Communities and Walking Accessibility -Case Study of the Early-developed Area in Tama New Town-, Infrastructure Planning Review, 25-2, 395-402

Cabinet Office, Opinion Poll of "Aruite-kuraseru Machizukuri", Surveyed July 2015

<https://survey.gov-online.go.jp/h21/h21-aruite/index.html> Retrieved 2021.09.27

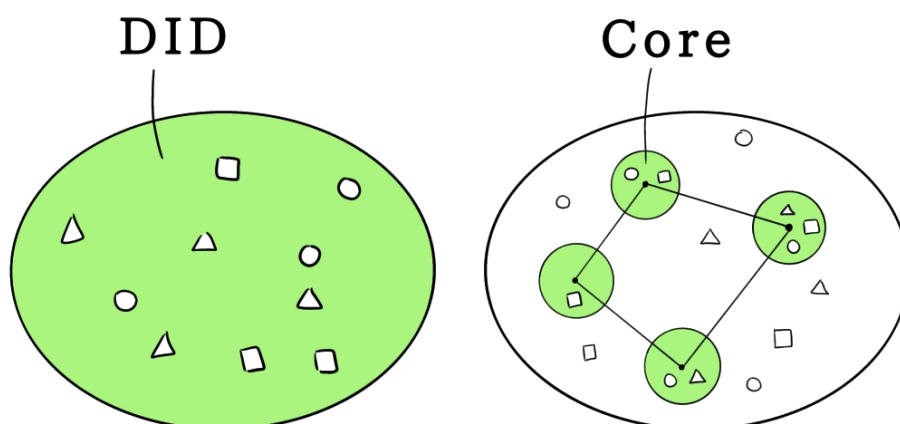


Figure1 Differences between compact city index and compact plus networkindex

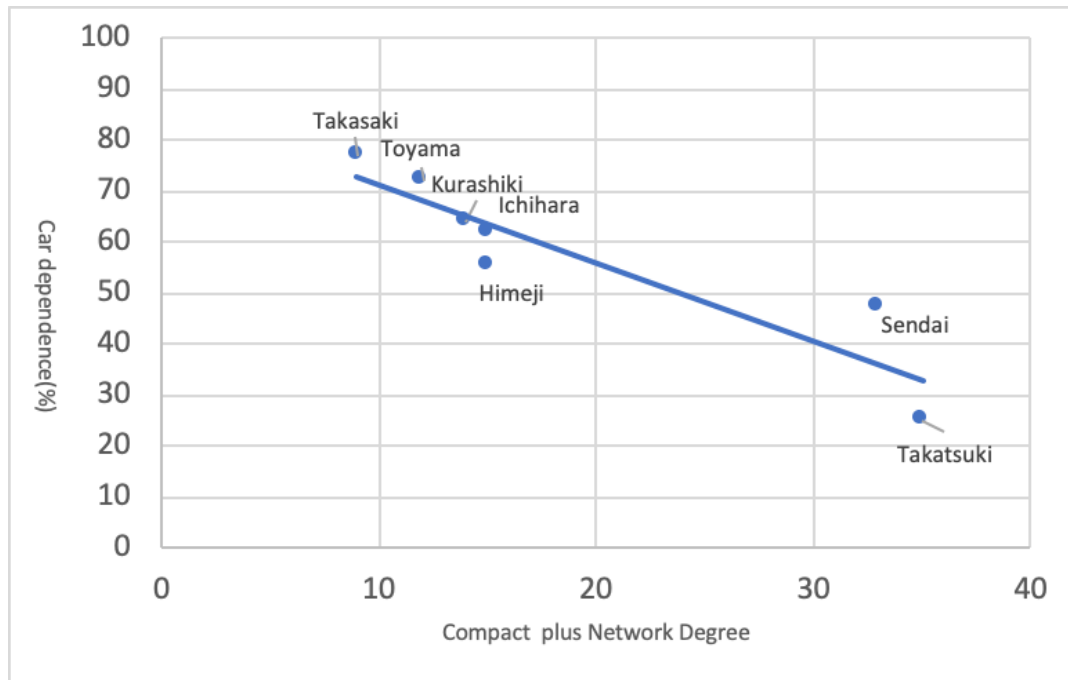


Figure 2 Scatter plot of each city's compact plus network degree and vehicle dependence

Table 1 Reason of selection of the target city

City name	Reasons for exclusion
Asahikawa	There is no data only in Sapporo City.
Sapporo	The data is old as year of 2002.
Sendai	○
Akita	The location of the core cannot be specified due to unspecific name of core.
Niigata	The location of the core cannot be specified due to unspecific name of core.
Joetsu	They conducted an original questionnaire, and no data on representative means of transportation.
Hachioji	The scope of the central location is wide and the location of the core cannot be determined.
Ichihara	○
Takasaki	○
Toyama	○
Kyoto	It has no established core and aims at its own urban form.
Nara	The location of the core cannot be specified due to lack of core name.
Ibaraki	The location of the core cannot be specified due to unspecific name of core.
Takatsuki	○
Takarazuka	The scope of the central location is wide and the location of the core cannot be determined.
Kishiwada	Year of data is unknown.
Kakogawa	The location of the core cannot be specified due to unspecific name of core.
Himeji	○
Okayama	The location of the base cannot be specified because the base name is a region name.
Kurashiki	○
Takamatsu	The scope of the location is wide and the location of the core cannot be determined.
Higashihiroshima	The location of the core cannot be determined.
Kitakyushu	The location of the core cannot be determined.
Sasebo	There is no data on representative means of transportation.
Oita	There is no data on representative means of transportation.
Miyazaki	The data on representative means of transportation is old as year of 2001.

○ mark was entered in the target city.

Table 2 Number of facility, compact plus network degree and degree of dependence on cars

		Convenience store	Super	Hospital	Elderly facility	Library	Art museum	Museum	Total number of facilities	Number of core	Compact plus Network Degree	Degree of dependence on cars*
Sendai	Sendai	21	14	13	1	1	1	0	98	3	32.6	47
	Izumi-Chuo	7	3	10	3	1	0	0				
	Nagamachi	7	3	9	3	1	0	0				
Ichihara	Goi	6	2	18	0	1	0	0	72	5	14.8	62
	city hall	3	1	2	1	0	0	1				
	Yawata-juku	4	4	4	0	0	0	0				
	Chiharadai	2	1	2	1	0	0	0				
	Neegasaki	6	2	10	1	0	0	0				
Takasaki	Takasaki	11	8	8	1	0	2	0	62	7	9.0	77
	Kitatakasaki	2	2	3	0	0	0	0				
	Takasaki Tonyamachi	2	1	3	0	0	0	0				
	Gumma Hachiman	0	1	1	1	0	0	0				
	Kuragano Station	0	2	2	0	0	0	0				
	Yamana Station	0	2	0	0	0	0	0				
	Ino Station	2	3	3	2	0	0	0				
Toyama	Toyama	10	3	8	1	1	0	2	59	5	11.8	72
	Higashiiwase	0	1	4	1	1	0	0				
	Toyama University	5	2	2	0	1	2	0				
	Fujikoshi	1	1	6	1	1	0	0				
	Minami-Toyama	1	1	2	1	0	0	0				
Takatsuki	Takatsuki	13	21	18	0	1	0	1	99	3	34.7	25
	Tomita	8	5	16	0	1	0	0				
	Kanmaki	3	3	8	1	0	0	0				
Himeji	Himeji	9	18	26	1	0	0	0	136	9	15.1	55
	Nozato	2	2	9	0	1	1	0				
	arrival	2	1	1	0	1	0	0				
	Shirahama no miya	1	4	2	2	1	0	0				
	Shikamaro	4	2	9	1	1	0	0				
	Hirohata	5	4	6	1	1	0	0				
	Amiboshi Sanyo	2	2	7	0	0	0	0				
	Aboshi	2	0	1	0	0	0	0				
spare part	1	0	1	1	0	0	0					
Kurashiki	Kurashiki	6	5	9	1	0	0	0	99	7	14.1	64
	Chaya-machi	2	3	8	1	0	1	1				
	Mizushima	5	2	4	1	1	0	0				
	Tamashima	6	3	6	1	0	0	0				
	Funaho	0	1	2	1	1	0	0				
	Shō	4	3	5	1	0	0	0				
	Kojima	4	6	4	0	1	0	0				

*Base on these data. The degree of dependence on automobiles in the Maebashi/Takasaki urban area and the Ryomo urban area was surveyed by Person Department of Land Development, Gunma Prefecture

5th Kinki Area Person Trip Survey, 2008 Tokyo Metropolitan Area Person Trip Survey

The 3rd Person Trip Survey of Toyama Takaoka Metropolitan Area

2012: A traffic survey was conducted in Okayama City, Kurashiki City and Soja City.

the 5th Sendai Metropolitan Area Person Trip Survey

A Cup of Water Can Prevent High Blood Pressure

~Improve Lifestyle For Young People~

5428 Ichika Nagai

Abstract

High blood pressure is one of lifestyle-related diseases. According WHO(2013), the number of patients who have high blood pressure is increasing around the world. Now, there are 1 billion patients, and from now on, more and more people will have high blood pressure. This disease has a really high risk of dangerous complications. So, we must stop this phenomenon.

Because high blood pressure is one of life-related diseases, I decided to propose a way to prevent high blood pressure. Then, my research question is "what is the easiest way to prevent high blood pressure?" And, my research's goal is that everyone who has a risk of high blood pressure in the future, can live healthy.

Collecting information, I found that the causes of the disease are salty food, and shortage of water. The amount of water is about 500~1,000ml/day, the same as one or two cups of water. For these reasons, I proposed that we should drink a cup of water when we have a meal.

1 Introduction

My purpose is to reduce the number of high blood pressure by caring for the danger of lifestyle-related diseases and doing a way that everyone who is at risk to have high blood pressure can do to prevent it.

I researched in these ways.

- I got some pieces of information about mechanisms of high blood pressure
- I revealed the reason to have high blood pressure.
- Think what habits should be improved
- Think the way to prevent high blood pressure
- Judge the way whether everyone who has risk of the disease can do
- Think the way to spread my research

2 Discussion and implications

Almost high blood pressure patients always eat salty food. By doing so, their blood's salt concentration becomes high. But we can reduce the salinity by drinking water because many components, which are included in water such as calcium, magnesium, etc... help to reduce salt in our blood vessels.

However, we are short about 500~1,000ml of water a day, and the amount of water is the same as one or two cups of water. So I thought if we got enough water everyday, we can reduce the risk of getting high blood pressure.

3 Conclusion

First, high blood pressure is one of daylife-related diseases. By taking salty food, smoking, for lack of exercise, the pressure of people's vessels becomes high. According to the World Health Organization(2013), the number of patients is increasing, and now, there are 1 billion patients in this world. According to Japanese High Blood Pressure Society(2019), there are 43 million patients of Japan. It means that one third of population of Japan have high blood pressure. Then, WHO said that, from now on, the number of the patients will increase.

According to Yamashita clinic(2017), high blood pressure is not so harmful, but it has risk to get dangerous brain diseases such as subarachnoid hemorrhage, and cerebral infarction. Unfortunately patients will die. In 2017, 9,700 people were died by the brain diseases which were caused by high blood pressure. We must stop this dangerous situation.

Then, I focused on "High blood pressure is one of lifestyle-related diseases", and I decided to suggest a way for young people to prevent it so that everyone is fine. And my research question is "what is the easiest way to prevent high blood pressure?" Now there are medicines which can relieve the symptoms, but the side effects are so big that we can't spend everyday life. It's too bad to spend our life comfortably.

When I searched for the cause of high blood pressure, and the tendency of younger people's lifestyle, I found that they continue to eat salty food. Also, they are shortage of water. In fact, we need around 1,500 to 2,000 ml per day, but we are not enough about 500 to 1,000 ml per day. The amount of water is as same as one or two cups of water. By eating salty food, our vein got a lot of mineral, so we should take water to dilute it. So I suggest that we get enough water to dilute salt.

According to the Akita Medical Society(2009)'s paper,MCM water can give a good effect to improve high blood pressure.The water,MCM water,is sea water which includes a lot of minerals.The main material is Calcium,Magnesium,and Karium.In the paper, they experimented how MCM water gives a good effect to mice which have high blood pressure.By reading this paper,I found that we can prevent high blood pressure really easy by taking minerals. Also,water is a common drink around this world,so water can save all people,who are at risk of getting high blood pressure.

But I found a problem. There are two types of water.One is a soft water, and the other is a hard water. In fact,hard water has more minerals than soft water.I thought everyone should drink hard water,but there are some people who can't drink it.If those people drink it,they might have stomach ache.Considering this things,I want to suggest a good way for these people.If we contain hard water to meat dishes,we can make delicious meal.The water makes meat soft.By doing so, those people can drink it withouth stomach ache.

To sum up,to reduce the number of patients with high blood pressure's patient, I want to suggest to people to drink one more cup of water when we have a meal.

4 References

Pick up a paper about health "7 basic point for healthy meal"

<https://www.jogin.jp/articles/view/750>

Yamashita clinic "Medical treatment for high blood pressure in Okayama city"

<https://ycl.jp/internal/page-110/>

WHO "The number of high blood pressure patient is rapid increasing"

<http://www.seikatsusyukanbyo.com/statistics/2013/003575.php>

Medical volunteer JCVN "The mechanism and factor of increasing blood press"

<https://www.jcvn.jp/column/ht/%E3%80%90%E9%AB%98%E8%A1%80%E5%9C%A7%E3%81%AE%E5%8E%9F%E5%9B%A0%E3%81%A8%E5%AF%BE%E7%AD%96%E3%80%91/>

Finance corporation of japan production"Many people has health oriented"

<https://www.jacom.or.jp/yasai/news/2019/03/190308-37548.php>

The number of life related diseases patient is increasing

<http://mhlab.jp/calendar/kenkou-seikatsu/2013/08/011066.php>

Japanese prevent community for life related diseases

<http://www.seikatsusyukanbyo.com/statistics/disease/hypertension/>

Trim labo”information media of water and health”

<https://www.nihon-trim.co.jp/media/28833/>

Possibility of writing utensils

~To Study Efficiently and to Provide children with them~

5429 Aika Yamazaki

Abstract

To begin with, I researched what kind of pen the students in famous countries use. Then I think both ballpoint pens and mechanical pencils have merits for studying. I researched it on three points, writing pressure, color, and variation of design. On the point of memorization, high writing pressure, and black letters have merits. While, about variation of design, there is no clear difference. The conclusion of the first theme is that. We should use mechanical pencils when we study Humanities subjects. We should use ballpoint pens when we study Scientific subjects.

Second, from the fact that there are countries which don't have enough writing tools for children to study, while there are lots of unused pens in Japan, I considered the efficient way to deliver the pens to the developing countries. I temporarily concluded that cooperating with companies which want to advertise and make products with advertisements, exchanging them for unused pens at familiar stores. Finally, donating them to World Gift.

1 Introduction

I have two research questions. Which pen should we use when we are studying, a mechanical pencil or a ballpoint pen, and How can we deliver unused pens in Japan to developing countries easily and efficiently? I really like writing tools and want to research more. And I think there are lots of unused writing things in Japan. On the other hand, there are countries whose children cannot study because of a shortage of writing tools, so I decided to ask these questions. I researched about them on the Internet.

2 Discussion and implications

I researched what kind of pen the students in famous countries use. As far as I could

research, I found that students in the U.S, France , and China use ballpoint pens on a daily basis. In addition, there is no country whose students use mechanical pencils on a daily basis except Japan. Then I think both ballpoint pens and mechanical pencils have merits for studying.

I researched this question in three aspects. First, the point of writing pressure, mechanical pencils have a merit because mechanical pencils' friction is higher than that of ballpoint pens. High writing pressure means people use their fingers well, and it leads to activation of the frontal lobe, which is a part of the brain that relates memorization. Second, the point of color, also, neither of them don't have a clear merit. According to the experiment Yokohama City University did, black is the best color for memorization of four colors, red, black, blue and green. Third, the point of the number of design patterns, there is no clear difference.

My second research question is: How can we deliver unused pens in Japan to developing countries easily and efficiently?

First, there is already an activity which helps people who want to deliver something to developing countries. The name is World Gift. I researched it and found its merits and demerits. Merits are that we don't need money to donate our own things, and don't need to carry them to designated places. One of its demerits is that it is troublesome to do the procedure. To participate in the activity, we have to send a message to the group, wait for the response, prepare the donation, wait for the delivery company at home and provide the things. Also, the low name recognition is a problem.

Finally, I considered challenge's points of my research. About the first research question, it is a bother to change pens each time. About the second research question, it is not easy to realize the suggestion because it needs a lot of money.

3 Conclusion

We should use mechanical pencils when we study Humanities subjects because mechanical pencils have high friction. For example, Japanese history, World history, Classics, which requires a lot of memorization.

While, we should use ballpoint pens when we study Scientific subjects, which requires quick writing because ballpoint pens have low friction. For example, mathematics, physics, chemistry and so on.

My second research question hasn't been completed yet. Then, I write my temporary suggestion. First, cooperating with companies which want to advertise, and making a stationary with advertising. Second, exchanging the stationary with advertising and donations at a familiar store. However, I must consider the concrete store where we can exchange them. Now, I think that bookstores are ideal. Finally, providing the collected unused pens to the world gift. By doing so, we can gather unused pens efficiently. In addition, if it becomes commonplace to take unused pens to a store, the low name of world gift is no longer a problem.

4 References

- 「Why elementary school students are prohibited from using mechanical pencils」
〈<https://teachers-job.com/shape/>〉 (20200710)
- 「French children do not use “pencils” when studying」
〈<https://toyokeizai.net/articles/-/178596>〉 (20200710)
- 「The amount of study of American college students are amazing! Differences from Japanese university students.」
〈<http://intelivia.jp/e0403098992/>〉 (20200820)
- 「Impact on memory and change in forgetting rate due to different character types」
〈http://ruggero.sci.yokohama-cu.ac.jp/data/Ito_Degree.pdf〉 (20200928)
- 「Writing pressure and academic ability are proportional!」
〈<https://www.navi-school.com/school/wakayama/wakayamahigashi/2017/11/post-279.html>〉
(20200928)
- 「What is training the frontal lobe? How to train the frontal lobe and its effects」
〈<https://www.toyoda-clinic.info/flont/>〉 (20200928)
- 「What is weak or strong writing pressure? Be careful about the writing pressure of children」
〈<https://homeschooling.biz/>〉 (20201113)
- 「International Society Support Promotion Association World Gift」
〈<https://world-gift.com/kihu/bunbougou-1.html>〉 (20210814)
- 「TV commercial.jp」 〈https://tv-cm.jp/list_kanto.html〉 (20210814)
- 「Newspaper advertising navigation」 〈<https://www.shinbun-navi.com/>〉 (20210814)

The Promotion of Transplant's Indication of Intention in Japan

~To Spread Transplant Medical Care to More People~

5430 Azuki Yamada

Abstract

I came to know that there are a lot of people who are not able to receive transplant medical care in Japan. Then, I made a suggestion for the purpose of more people receiving this medical care. I learned that there are many reasons for the shortage of donors, and especially researched about transplant's indication of intention. To become donors, we need to indicate our intentions on transplant. However, as a matter of fact, only 12.7 % of people indicated their intentions. (2018) I think that the greatest reason for this low percentage is that they have no opportunities to do that, so I proposed the system that makes transplant's indication obligatory.

1 Introduction

I have known that the shortage of donors in Japan is a serious problem and there are many people who are not able to receive transplant's medical care. Some of them have no choice but to get this care to survive. In spite of such circumstances, many have to wait long years to receive this care on account of lack of donors. I want to make a proposal which enables us to spread transplant by increasing the number of people who show their intentions. I guess that in reality, more people may think that they want to donate their organs.

To reveal the issues of transplant, I researched the former system of transplant in Japan. I need the information of figures which show the people's opinions. So, I collected fundamental information from the organ transplant network. Also I wanted to know about foreign countries' systems, so I collected such information, too. Then I compared Japan with that information.

2 Discussion and implications

To begin with, I want to tell you my suggestion. I found that making the transplant's indication of intention obligatory is the most effective way to increase donors.

Next, I want to talk about the current status of transplants in Japan. According to the organ transplant network, there are 48 donors per one million people in Spain. However there are only 0.77 donors per one million people in Japan. This number is overwhelmingly fewer than other countries. Though the number of donors of each organ is different, people who need transplant must wait one year at least, and if it is long, they must wait more than ten years. Organ transplant network said the reason of donors in Japan are so few is because of the strict criteria. Then though the law was amended, the number of donors in Japan is far fewer than other countries. I considered the reasons why these circumstances don't change. One is people's negative attitude towards organ donation. Second is Japanese values on death. And the last is few people indicate their intention of transplant. It is difficult to change people's values or thoughts, so I tried to solve the last factor.

According to the survey in 2017 by organ transplant, only 12.7% of people indicated their intention. However, on the other hand, 87.4% of people answered that they want to respect their intentions if their family left their wills that they want to donate. From this data, I guessed that if more people show their intentions on transplant, it will become easier for more people to decide if their family should become a donor or not. Also, the survey said that about 42% of people answered that they want to donate their organs. This figure means if more people show their intentions, donors will increase. In my opinion, the reason why people do not indicate their intentions is that they have no chance to do that. In Japan, indications of people who are over 15 years old are valid. So I want to propose the system that all people have to indicate their intentions when they become 15. This system gives people have a chance to think about this organ transplant's problems. I researched foreign countries' systems, too. However, because the main system is very different, it seems to

impossible to apply such advanced systems to Japan directly. Yet, I thought foreign countries the system is very maintained. So I think Japan should improve the fundamental transplant system, too.

3 Conclusion

My assignment is that intention indication cannot be a sure method to increase donors. I found recent technology enables us to make artificial human tissues. If that technology can be used, this will become a great settlement to save patients. I want to research more about it.

4 References

- Organ Transplant Network
<https://www.jotnw.or.jp/explanation/07/06/> (2020 7/20)
- Policy issues necessary to increase organ donation
https://www.jstage.jst.go.jp/article/jst/50/1/50_001/_pdf (2020 10/19)
- jot Organ Transplant Network
<https://www.jotnw.or.jp/explanation/01/04/> (2020 3/18)
- Ministry of Health, Labor and Welfare Transplantation Medical Measures Promotion Office 2013
<https://www.mhlw.go.jp/file/05-Shingikai-10601000-Daijinkanboukouseikagakuka-Kouseikagakuka/0000034547.pdf> (2020 3/18)
- TED “How to 3D print human tissue“ 2019 (2021 6/28)
<https://www.ted.com/talks?sort=relevance&q=Transplant>
- 2021 Digital Kidney and Liver Transplant Financial Bootcamp 2010 (2021 9/30)
<https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1600-6143.2009.03008.x>

The opportunity of Listening to the Radio

~To Increase the Listening Rate~

5431 Mio Yamane

Abstract

The number of people who listen to the radio is decreasing. That is because the advertisement income which radio stations get is decreasing. The advertisement income is proportional to the number of the radio listeners. Actually, some radio stations closed in Japan and around the world because of the lack of income. I want to make it clear whether the radios have needs or not. And I want to think about how to increase the rate of the listeners. I found the three surveys. First, the survey searched about the tendency of listening to the radio. Second, the survey searched about the modern circumstances of radio. Third, the survey searched about why people began listening to the radio. Through this research, I think that the radios have needs. And I suggest that the radio stations should invite some famous artists and ask them to advertise on the radio.

1 Introduction

According to the graph of advertising income which was searched by Ministry of Internal Affairs and Communications, the advertising income of radio was 225 billion yen in 1997. However, in 2019, it was 126 billion yen. It decreased by 99 billion yen in 22 years. The more people listen to the radio, the higher the advertising income becomes. And the

advertising income occupies the large part of the radio income. So, this situation is hard for the radio. According to the website whose name is SankeiBiz says that some radio stations such as RadioNeo and FM PORT closed because of the lack of income. Also, according to the website whose name is Trends in radio broadcasting in other countries says that some of the radio stations in foreign countries also closed.

The purpose of this research is to confirm the necessity of the radio and how to activate the radio. I have two research questions. One of my research questions is whether the radio has needs or not. The other is considering the future of the radio. I want to research these questions because I want to increase the number of the radio listeners in order to protect the radio stations from closing. I researched the necessity of the radio from the data which tells us about the experiment of radio.

2 Discussion and implications

According to the survey which was searched by NHK media research department, I found three points about the radio. NHK media research department asked 996 people who have never listened to the radio for at least three days.

First, if people had the chance to listen to the radio, they would listen to the radio. About 93 percent of the subjects listened to the radio more than for three days. (graph1)

Second, the more people listen to the radio, the more people enjoy listening to the radio. The rate of people who answered that "radio is interesting" increased day by day. (graph2)

Third, young people who listen to the radio are less than the older people. However, surprisingly, young people enjoy listening to the radio. The rate of teenagers who answered that "I enjoyed listening to the radio" was the highest in the whole generation.

In short, people listen to the radio if they have the chance to listen to it. Also, because of the pandemic of the coronavirus, the number of young radio listeners who are from 18 years old to 24 years old is increasing.(graph4) And most of the people use the application whose name is “radiko”. From these facts, I concluded that radio has needs for research question one.

People listen to the radio if they have the opportunity of listening to the radio. I thought that if I can make the opportunity of listening to the radio and advertise the radio, the number

of radio listeners will increase and we can protect radio stations from closing.

And I searched about the reason why people began to listen to the radio. Mainly, the reason was that people are interested in a famous person who is in the radio program such as comedians and artists.

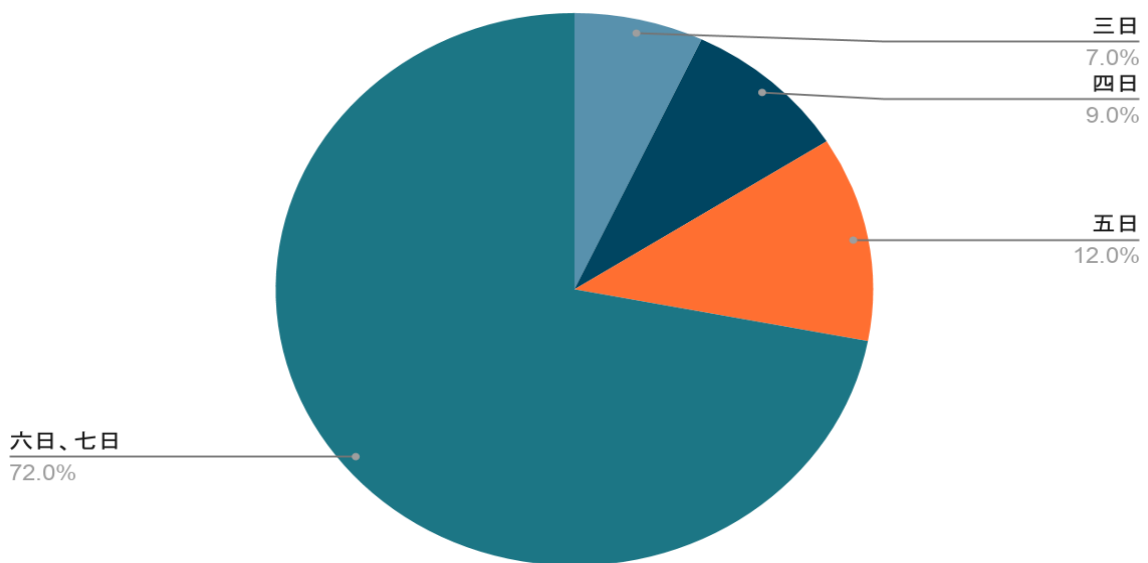
3 Conclusion

I concluded that radio has needs for research question one. This is because People listen to the radio if they have the opportunity of listening to the radio. And the number of young radio listeners who are from 18 years old to 24 years old is increasing.

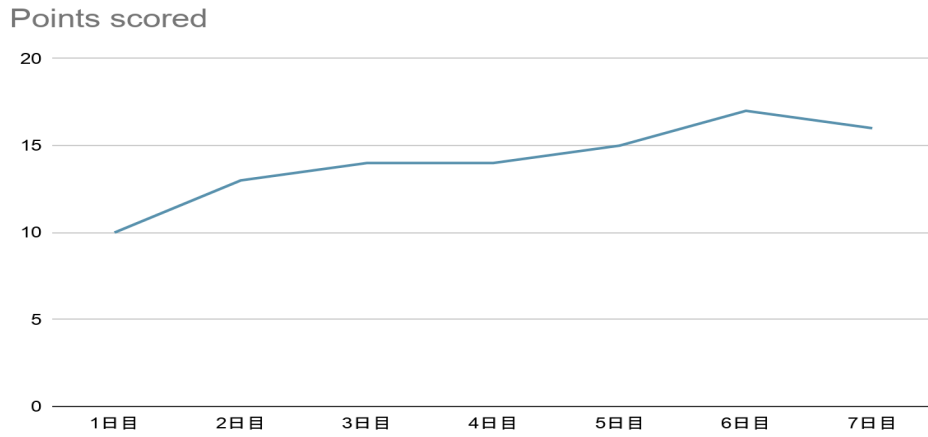
I think that there are three opportunities to listen to the radio. The first one is interest. The second one is knowing the existence of the radio. The third one is the method of listening to the radio. We can make the first opportunity by asking famous people to appear on the radio program because famous people have influence on citizens. But this has already been done. The second opportunity can be made by asking famous people to advertise the radio on TV, homepages, and so on. The third opportunity can be made by spreading the application called “radiko”. I think if the application is installed on the website as the service, anyone can listen to

the radio and we can spread “radiko”. In conclusion, I suggest that famous people advertise the radio and “radiko” is installed on the website.

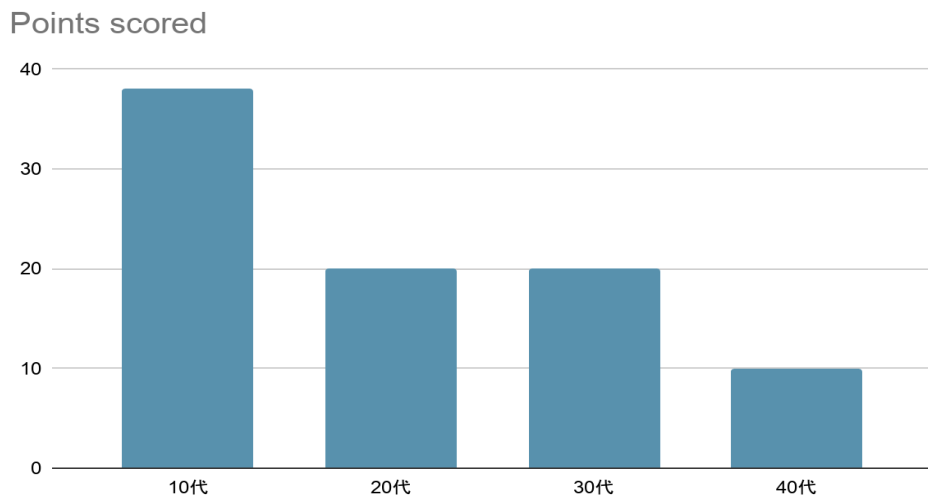
Points scored



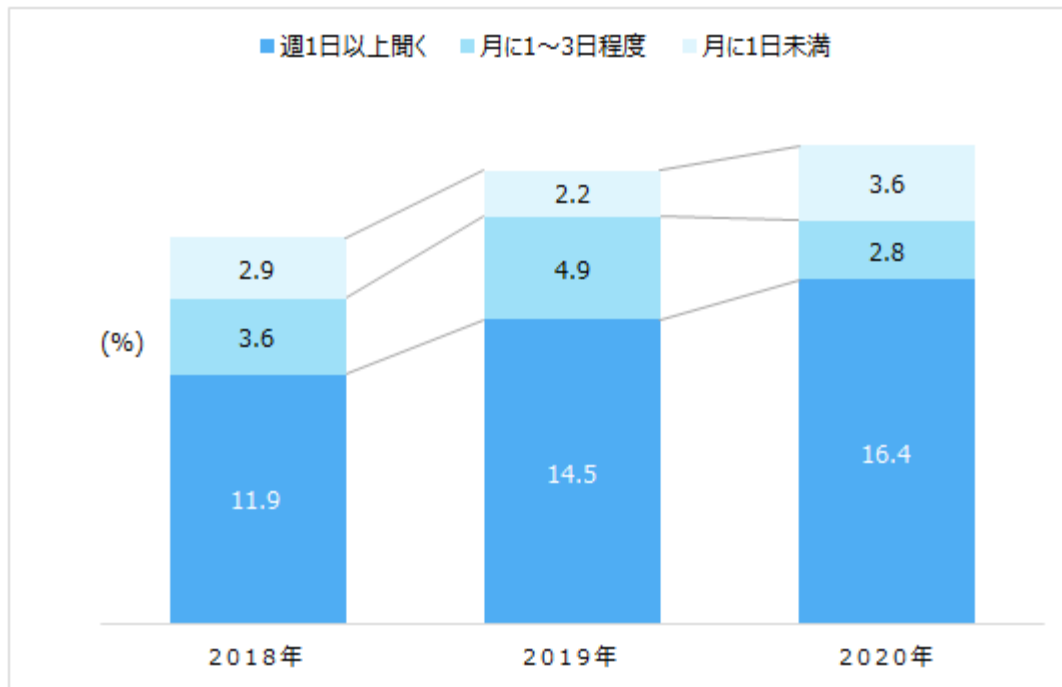
graph1 (I made this graph based on the data from NHK media research department)



graph2(I made this graph based on the data from NHK media research department)



graph3 (I made this graph based on the data from NHK media research department)



graph4 (VR digest)

4 References

- Ministry of Internal Affairs and Communications, the advertising income of radio
<<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h27/html/nc121240.html>>
- Significance and Challenges points of Radio
<https://www.soumu.go.jp/main_content/000610221.pdf>
- Trends in Radio Broadcasting in Other Countries
<https://www.soumu.go.jp/main_content/000632536.pdf>
- NHK media research department
<https://www.nhk.or.jp/bunken/research/domestic/pdf/20151201_7.pdf>
- RADIOCENTRE
<<https://www.radiocentre.org/our-research/radio-the-emotional-multiplier/>>
- VR digest
<<https://www.videor.co.jp/digestplus/media/2021/03/42027.html>>

Reduction of CO2 Emissions

~Effects of Increased Use of Public Transportation~

5432 Yuna Yuhara

Abstract

As technology has advanced, our lives have become more convenient. However, useful technology has caused various environmental problems. Among them, global warming has been progressing rapidly and is one of the social issues that attracts people the most. I decided to do some research on it because it is expected to cause serious damage to people in the near future, with temperatures rising by up to 4.8 degrees Celsius in 2100 compared to today. The main cause of this is greenhouse gases; CO₂ is a typical example. Therefore, I have studied reducing CO₂ emissions by using public transportation instead of using cars. I compared traveling by car with using public transportation. It was found that the more we use public transportation, the less traveling it emits CO₂. However, the costs and time sometimes increased. In conclusion, I suggest using cars to get part of the way in some cases.

1 Introduction

One of the current global problems is the progress of global warming because it will make our world worse. According to Weather News, the temperature will rise by 4.8 degrees Celsius by 2100 and many big natural disasters will occur in the worst scenario. Also, crops currently grown in Japan may no longer be able to grow. In order to avoid such a future, we must start doing what we can now. Therefore, I thought that one of the best things we can do in our daily lives to reduce CO₂ emissions, one of the greenhouse gases that cause global warming, would be to increase the use of public transportation instead of using cars. The use of public transportation is recommended to prevent global warming. For example, Robert J. Shapiro, Kevin A. Hassett, and Frank S. Arnold (2002) state that increased use of public

transportation can effectively reduce emissions of harmful substances to the air. However, like in Gunma Prefecture, where I live, public transportation is poor and cars are widespread.

Therefore, I set the research question "How much of a change in CO₂ emissions and convenience will come from using public transportation instead of cars?" and carried on the research.

I compared the CO₂ emissions, time required, and fare when we use public transportation with those when we travel by cars. I supposed that the time required and the costs are the minimum. The conditions are that the prefectural office is the point of departure, waiting time is as short as possible, and the arrival time is by noon on Saturday. Since Gunma Prefecture has less public transportation than Tokyo, I decided to focus on Gunma because the research results can be applied to a wider range of people. In addition, I decided not to include hybrid and electric cars because they are not practical for people who use regular cars, and the effects are obvious. When I consider the case of using public transportation, I referred to the website of the destination for the route and fare, and the "Gunma Transit Concierge" application, and used Google Maps for the distance traveled by bus and Eki Tan for the distance traveled by train.

2 Discussion and implications

According to the Ministry of the Environment, CO₂ emissions by transportation in the passenger sector were 133 for cars, 96 for airplanes, 54 for buses, and 18 for trains (g-CO₂/person km) in 2018. Thus, it was found that CO₂ emissions can be significantly reduced by using public transportation. Although public transportation emits more CO₂ per vehicle, it is able to carry more people, which is the reason for those figures. It was also found that the amount of CO₂ emitted by cars in 2018 was 96.97 million tons which accounted for about 8.5% of Japan's total, and nearly half of the transportation sector. This leads us to believe that reducing the use of cars will have a certain effect.

Next, I examined the actual CO₂ emissions, time required, and fare from the Gunma prefectural government building to the sightseeing spots. First of all, for the trip to Kusatsu Onsen, the time and fare required to get there by public transportation increased significantly compared to those required by car, but the CO₂ emissions were reduced by about 80%. In

addition, if we drove to Shin-Maebashi Station and then took the train and the bus, the fare increased even more, but the time required was the same as when we use only a car, and we could maintain the effect of reducing CO2 emissions. Second, the time required to reach Ishidan-gai in Ikaho Onsen Hot Spring by only public transportation was 1.5 times longer than by car, but the fare was almost the same, and CO2 emissions were reduced by about 70%. In addition, if we drove to Shin-Maebashi Station and then took the train or bus, the fare increased slightly, but the time was reduced compared to the train or bus only, and the CO2 emissions were reduced by about 60% compared to using the car only. Finally, for the trip to the Tomioka Silk Mill, both the time required and the fare increase significantly when we use only public transportation compared to when we use only cars, but the CO2 emissions were reduced by more than 80%. If we drove to Takasaki Station and then took the train and bus, the fare increased slightly, but the time required was less than when traveling by the train or bus alone, and CO2 emissions were about half less than with the car alone.

On the other hand, when the CO2 emissions, time, and cost from the prefectural government to the national stadium were examined, it was found that the CO2 emissions could be significantly reduced by about 84%, and the time and cost were almost the same or cheaper.

From the above, it is clear that using public transportation reduces CO2 emissions and is effective to slow the pace of global warming. However, when the destination is close, using public transportation is inconvenient, but by using the car to get to the station on the way, it is possible to increase the convenience. Therefore, if the destination is far away, I suggest using public transportation, and if the destination is close, I suggest "Park & Ride". This idea is to drive to the station and then take public transportation. This will reduce CO2 emissions and increase convenience by allowing people to go to the station around the time of the transportation system and sometimes we can receive discounts on parking fees, so we can reduce costs.

Also, considering the convenience, I think that the bus stops need to be more convenient. There are a lot of old bus stops all over the country, and I think that replacing them with new ones will make the use of buses more comfortable. To cover the cost, France has the following system. A company that wants to advertise on a bus stop asks an advertising

agency to do so, and the agency repairs the bus stop and installs the advertisement. The new bus stop will increase the number of bus passengers, and the advertisement at the bus stop will help advertise the product more widely. This system has started to be introduced in Japan in recent years, and I believe that spreading this system will increase the number of bus users throughout the country.

3 Conclusion

In conclusion, when the destination is close, CO2 emissions are reduced when using public transportation, but convenience is a problem, so I suggest park and ride. However, when the destination is far away, the reduction of CO2 emissions is very large, and convenience is almost the same or cheaper, so I propose that you use public transportation for all the route. Also, to increase the bus passengers, bus stops should be replaced with newer ones.

What needs to be done in future research is to make it easier to find out which train or bus to take so that people can easily check the details. For example, Maebashi City has introduced Mae MaaS. It provides people route searches for railroads, buses, and shared bicycles as an easy-to-understand information guide so that they can move around using various types of transportation, which is a characteristic of Maebashi City. I think more people will use public transportation if such a system is widespread, because both citizens and non-citizens can use various modes of transportation easily.

In addition, trains are on time, and if they are late, we can know it by watching electric bulletin boards so we need not rush to see when they are coming. On the other hand, it is common for buses to be delayed by a few minutes, so it is difficult to know when the bus will arrive or where it is, especially in rural areas. Therefore, my second assignment is to introduce bus stops that can be used comfortably even in hot weather or unstable weather conditions, and to introduce a system that displays the location of the bus at the bus stop.

4 References

R.Shapiro, K. Hassett & F. Arnold.(2002).Conserving Energy and Preserving the Environment: The Role of Public Transportation. Retrieved from

https://biblioteca.cejamericas.org/bitstream/handle/2015/1589/Conserving_Energy_Preserving_Environment_Public_Transportation.pdf?sequence=1&isAllowed=y (2021/10/28)

ウェザーニューズ.(2017).地球温暖化で何が起こる？西暦2100年シミュレーション.Retrieved from <https://weathernews.jp/soramagazine/201704/01/> (2021/8/10)

駅探.(n.d.). ekitan. Retrieved from <https://ekitan.com/> (2021/10/2)

草津温泉観光協会.(n.d.).草津温泉ポータルサイト.Retrieved from <https://www.kusatsu-onsen.ne.jp/> (2021/1/13)

GOGO Labs,Inc.(n.d.). gogo.gs. Retrieved from <https://gogo.gs/> (2021/1/13)

国土交通省.(2021).環境：運輸部門における二酸化炭素排出量. Retrieved from https://www.mlit.go.jp/sogoseisaku/environment/sosei_environment_tk_000007.html#:~:text=%EF%BC%91%EF%BC%8E%E9%81%8B%E8%BC%B8%E9%83%A8%E9%96%80%E3%81%AB%E3%81%8A%E3%81%91%E3%82%8B%E4%BA%8C%E9%85%B8%E5%8C%96%E7%82%AD%E7%B4%A0%E6%8E%92%E5%87%BA%E9%87%8F&text=%E8%87%AA%E5%8B%95%E8%BB%8A%E5%85%A8%E4%BD%93%E3%81%A7%E3%81%AF%E9%81%8B%E8%BC%B8%E9%83%A8%E9%96%80.%E3%82%92%E6%8E%92%E5%87%BA%E3%81%97%E3%81%A6%E3%81%84%E3%81%BE%E3%81%99%E3%80%82 (2021/11/8)

東京都環境局.(2020).交通機関の種類とCO2排出量. Retrieved from <https://www.kankyo.metro.tokyo.lg.jp/vehicle/management/tokyo/transportation.html> (2021/11/7)

MCDcaux. Retrieved from <https://www.mcdecaux.co.jp/> (2022/01/30)

The Best Sleep Style for Japanese

~the Sleep Environment and the Siesta System~

5433 Wakana Yoko

Abstract

I want to suggest the best sleep style for Japanese life with this research.

Generally speaking, Japanese tend to sleep the shortest in the world and sleep debt is viewed as an issue. Then, the purpose of my research is making our lives more comfortable by reducing sleep debt. I will explain how to arrange the environment in the bedroom and Siesta system during the daytime. Especially, I want many people to know about siesta. It is an official nap in Japan.

The first idea is the environment in which to sleep at night. I think we should shift our focus on light, outside temperature and stimulation. The former two are effective in the quality of sleep. In short, it affects non-rem and rem sleep rhythm. And the latter is the possibility to study during sleep. A study showed our brains can memorize something during sleep by sounds or smell. Unfortunately, it isn't practical yet, but it is said people will be able to memorize while sleeping someday.

The above things are my opinion. In these ways, I tried improving the quality of sleep.

1 Introduction

My research question is “What relevance does it have between sleep at night and performance in the daytime?” It occurred to me because my friends and I have dozed off in the classes at school. This often happens even if we have had enough sleep. So I thought the quality has effects on the activity in the daytime more than the amount. According to

OECD, Japan is the worst in terms of the amount of sleep time and working hours.

Furthermore, the amount is getting less and less than before. This circumstances creates the sleep debt. Now, even young children have it. The sleep debt has effects on people's health and performance quality.

The former studies are fulfilling. So, I was able to get enough information to form my opinion. Then, I will explain my way of research. It's very simple because I could not do my own experiences. I collected some information from the Internet and the thesis of some professors. After that, I considered datas and came to a conclusion.

2 Discussion and implications

I will tell you about my research in the following sections.

- I. About work of the brain during sleeping
- II. About connections between sleep and performance
- III. The first conclusion , the best sleep habitat
- IV. The second conclusion, the Japanese Siesta

I. About work of the brain during sleep

While people sleep and their bodies have rest, their brains keep working to prepare for the following day. The brain system has been said complex for a long time, and it hasn't been clarified yet. According to Kazuhisa Kouda, a professor of the Keiyou Gijyuku University, however, in the field of found parts, the system of cleaning memory is the most important. In short, if we didn't sleep enough to straighten our memory up, our memory would decline more and more. In addition, the quality of sleep relates to it. So, sufficient sleep is essential for me to perform the best in the daytime.

II. About connections between sleep and performance

We have many things which we should do and want to do everyday. I think it is not easy for us to do these things perfectly in our daily lives. However, I want to know the way to do

as many tasks as possible. This needs efficiency and concentration. These factors are also involved with sleep. Humans tend to feel sleepiness at around 2:00 p.m. However, at that time, people have to do various activities such as working, studying, driving and so on. Needless to say, sleepiness can easily cause some accidents. Or efficiency may decrease.

III. The first conclusion, the best sleep habitat

There are some important things for a good quality of sleep. They are light, breakfast, and body temperature. According to Bed Style Magazine, the vague light is the best. Under the bright light, melatonin, which is a substance of the brain related to the sleep system, is not borned from the neuron of the brain. In addition, pitch black conditions make people scared instinctively. So people can sleep well in the vague light. According to Otsuka Seiyaku, the sunlight and control of body temperature are necessary. The sunlight has been effective to reset the body time system. And when people start to sleep, core body temperature must be decreased to sleep deeper. For that, before preparing to sleep, people should raise their body temperature by light exercise or taking a bath. Because of this, since the disparity of body temperature becomes large, people can easily start to sleep.

IV. The second conclusion, the Japanese siesta

Siesta is a part of Western Europe culture, a long lunchtime. During this time, West Europeans do many things such as spending time with their families, doing hobbies, taking a nap and so on. Then I think it is good for Japanese people to take the siesta part in daily life to take a nap or rest. Actually, the companies and schools having the systems are very small and the system is unfamous. However, these companies and schools were able to get great results.

One example is Fukuoka prefecture Meizen High School. Since the school started to take a nap in school at around 12:00 p.m., the rate of passing the college entrance exam is getting higher and higher. Also the club activities are getting more and more cheerful. From the data, I think the siesta system has many melits.

As mentioned above, I want to suggest these two styles. The night sleep should be made more comfortable by caring light, breakfast and body temperature. During the limited time to sleep, we must take high quality sleep with a good environment. The daytime nap, siesta function better for our performances. In addition, I expect that they can reduce accidents and mistakes in society. So I came to the conclusion that Japanese should have these changes.

4 References

- ・ 「記憶・学習のメカニズムを分子レベルで明らかに」
https://kompas.hosp.keio.ac.jp/sp/contents/medical_info/science/201404.html
- ・ The cumulative cost of additional wakefulness: dose-response effects on neurobehavioral functions and sleep physiology from chronic sleep restriction and total sleep deprivation
<https://pubmed.ncbi.nlm.nih.gov/12683469/>
- ・ 快眠に導く生活のススメー大塚製薬
<https://www.otsuka.co.jp/suimin/goodsleep.html>
- ・ あなたは真っ暗派？豆電球派？良い睡眠がとれるのはどっち？－Bed Style Magazine
<https://www.bedstyle.jp/media/make/10369>
- ・ 東大合格者を突如2倍にした高校の取り組み－livedoor news
<https://news.livedoor.com/article/detail/14133884/>
- ・ 眠りのメカニズム－厚生労働省
<https://www.e-healthnet.mhlw.go.jp/information/heart/k-01-002.html>
- ・ 実験で明かす睡眠と記憶－K. A. パラー（ノースウェスタン大学） D. ウディエット（仏国立保健医学研究機構）
https://www.nikkei-science.com/201906_036.html

The Verification about the Possibility of Bioplastics

~For The Sustainable Societies~

5434 Asuka Yokohama

Abstract

I have seen marine life being injured by accidental ingestion of plastic debris on the Internet. They hurt their organs or died by choking. The sad experience led me to study the field of plastics. While researching on the Internet, I knew the existence of “bioplastics” and I was interested in it. It seems that bioplastics are made from biomass materials and they are biodegradable in the environment unlike most plastics we use nowadays which are made from petroleum. I felt that bioplastics can contribute to the world's environment because of their characteristics. Then I started this research to verify whether bioplastics can be a key to sustainable societies or not. In conclusion, bioplastics can not be a key to sustainable societies yet because of some reasons. It is impossible now, however, finally I speculated that it would be helpful in the future.

1 Introduction

The Background and the Purpose of the Research

I have seen a lot of scenes where marine life ingest plastic debris flowing in the ocean by studying, viewing the Internet, and watching TV. I had been interested in plastics since then and I decided to study it. The problem of plastic is one of the most serious ones in the world so I also thought the theme is suitable for FEWC learning, which needs a global point of view. On the Internet, I found there is a kind of plastic called bioplastics. It seems that bioplastics have lots of benefits for the environment. I associate bioplastics with the plastic waste problem and tried to solve it. The purpose of this research is to verify whether bioplastics can be a key to sustainable societies or not.

My Research Question is “Can Bioplastics be a Key to Sustainable Societies?” I set such a question because the world is trying to realize sustainable societies. I would like to know whether bioplastics can contribute to them. I moved forward with my research based on the Research Question above. Eventually I conclude my research by deciding whether I can say yes to this research question .

Next, about methods. I did my research with three processes.

Process1: I use the Internet to research the following points.

- The influence of plastic waste to marine environment
- The merits and limitations of bioplastics

Process2: The phrase “a key to sustainable societies or not” in my research question is not clear so I will make a detailed definition and requirements.

Process3: Based on the information, I apply bioplastics to the definition and judge whether bioplastics can be a key to sustainable societies or not.

From the result of them, I am going to conclude this research.

2 Discussion and implications

Process1

To begin with, about the influence of plastic waste in the ocean. According to General Incorporated Association JEAN, fishes become unable to move due to fishing nets or rope flowing the ocean. Another instance is marine life, such as whales, turtles, and sea birds. Many species of them are ingesting a part of plastic accidentally. As a result, they hurt their organs or die by choking. Also, microplastic is a famous problem of plastics. More living things are doing accidental ingestion of microplastic than that of fragments of plastic. These are the major examples of influences by plastics. In addition, the Ministry of the Environment said that in 2050, the weight of plastic garbage will exceed the weight of fish.

Second, about bioplastics. Bioplastics are categorized into two types: biomass plastics and biodegradable plastics. Biomass plastics are made from biomass materials, as the name

suggests, and I knew that biodegradable plastics can be degraded in the environment.

Whether a kind of plastic has the characteristics or not depends on itself (referring to chart 1). As they are made from biomass materials, petroleum which is the material of original plastics will be saved and the emission of carbon dioxide will be reduced. If biodegradable plastic is degraded, garbage returns to nature. It looks that bioplastics have lots of merits.

However, there are blind spots below.

- It will not be completely biomass materials if the plastic is called “biomass plastic.”
- Not all the biodegradable plastic is degraded anywhere.

It can be said that we are able to call plastic biomass plastic even if it is not completely made from biomass materials so it may also contain petroleum. Also about biodegradable plastics, they are ordinarily degraded under hot and humid environments such as composts because it is necessary for plastics to be helped by microbes. However, in the sea or on the road of asphalt or concrete, microbes can not work enough (referring to chart 2). Then just a few kinds of biodegradable plastics are able to be degraded but others are not. As a result, they will remain in the environment as non degradable plastics.

Furthermore, bioplastics are not spread yet because of some reasons such as production cost. Plastic is used about 11 million tonnes per year in Japan but the use of bioplastics is only 40 thousand tonnes, or 0.4%, according to the Ministry of the Environment.

Process2

According to TOYO INK 1050+(2014), “Sustainable Society is ““A society which the environment of the earth and nature are conserved, and which the development is done to meet the modern demand without losing things that future generation needs.”” ” Based on this information, I defined “a key to sustainable” as below.

- ①The environment is conserved.
- ②Resources are protected for the future.
- ③The modern demand is met.

I applied these definitions to bioplastics in the next process.

Process3

Following the previous processes, I answered bioplastics “can not” be a key to sustainable societies. There are about three reasons.

Firstly, about the definition of ①. I did not think that bioplastics meet this requirement. This is because even if all the plastics are replaced with bioplastics, the plastic debris in the sea keeps floating. In addition, not all plastics are degraded in the environment, so if we do not dispose of them properly, plastic debris will not decrease but increase, eventually.

Secondly, about ②. In my opinion, this will also not be achieved by adopting bioplastics. This is the case that producing bioplastic needs less petroleum, one of the limited resources. However, plastics are used so widely now that most people can not live with them. Actually, the amount of plastics that were produced in 2020 was about 367million metric tons. Even if all the plastics were replaced with bioplastics, it will be necessary to use much petroleum in total. That is why I did not approve the potential of definition② in bioplastics.

Finally, about ③. Being different from two ones above, I admitted that bioplastics have the ability to meet the definition③. The reason comes from their compatibility. As the name shows, people can produce the same products as conventional plastics from bioplastics. What is more, one of them which is used limestone can become like paper, which plastics are not able to become. Thus, if all the plastics are to be replaced with bioplastics, there will not be any problems about products.

For these reasons, I considered that bioplastics have only one component of three definitions.

3 Conclusion

In conclusion, I anticipated that bioplastics can not be a key to sustainable societies because bioplastics do not apply to more than half of the requirements I made. However, I thought that they may be the key in the future if they are encouraged to use much more than now.

Finally I give several tasks to my research. This time, about the task of my whole research,

it was not good to define “a key to sustainable societies” referring to little information and deciding subjectively a bit. On the other hand, about the content or problem, there are the tasks of how to save the cost of bioplastics and how to collect and remove marine debris released in the sea until now.

From now on, I would like to think about algal bioplastic as my suggestion of research. This is because I got the information that one of the bioplastics made from algae absorbs more carbon dioxide in the process from a thesis in English.

Charts

chart 1 (Japan BioPlastics Association)↓

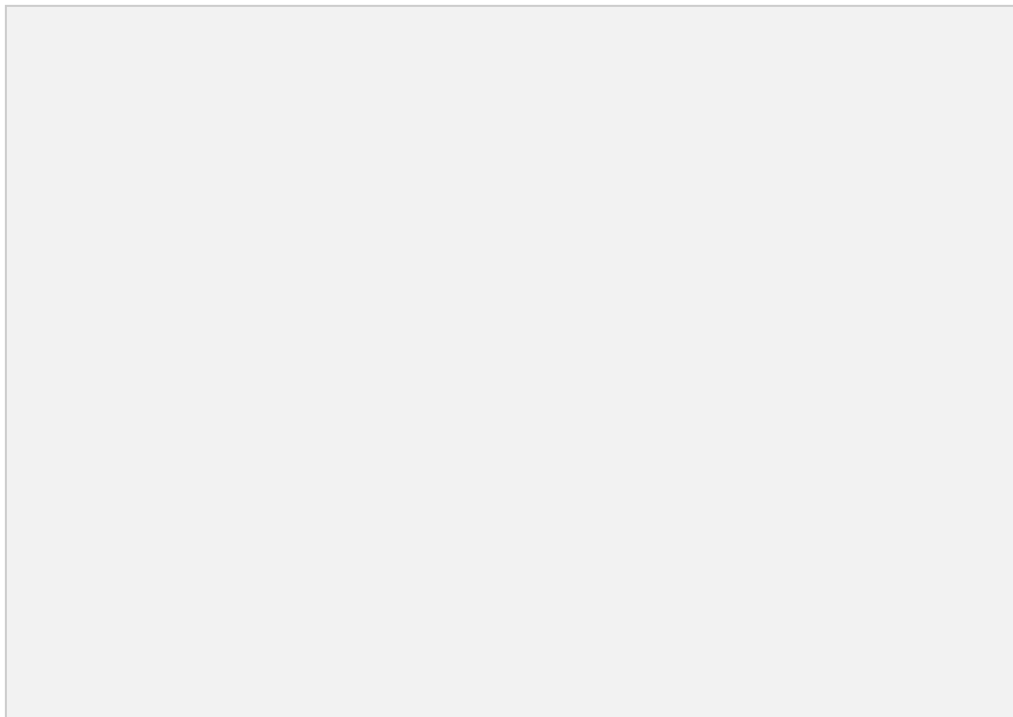
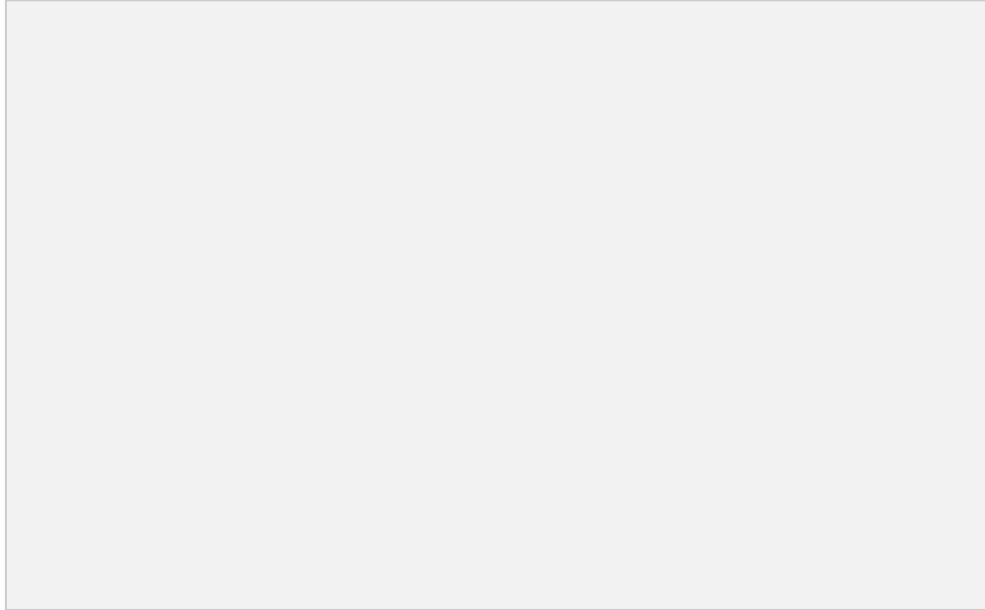


chart 2 (Mitsubishi Research Institute) ↓



4 References

The date by the URL is my browsing date.

一般社団法人 JEAN(公開年不明). 環境への悪影響 | 海ごみの問題点.

<http://www.jean.jp/m-litter/matter02.html> 2021年8月23日

環境省(2018). 環境・循環型社会・生物多様性白書 第1節 プラスチックを取り巻く国内外の状況と国際動向.

<https://www.env.go.jp/policy/hakusyo/r01/html/hj19010301.html> 2021/8/23

環境省(2018). バイオプラスチック概況.

<http://www.env.go.jp/council/03recycle/y0312-02/y031202-5r.pdf> 2021/8/24

日本バイオプラスチック協会(公開年不明).

<http://www.jbpaweb.net/> 2021/8/23

三菱総合研究所(2019). 生分解性プラスチックの課題と将来展望.

<https://www.mri.co.jp/knowledge/column/20190408.html> 2021/8/23

TOYO INK 1050+(2014). 持続可能な社会とは.

<https://www.toyoink1050plus.com/sustainability/about/> 2021/8/24

Estimation of carbon dioxide (CO₂) reduction by utilization of algal biomass bioplastic in Malaysia using carbon emission pinch analysis (CEPA)

<https://www.tandfonline.com/doi/full/10.1080/21655979.2020.1718471> 2021/8/23

日本財団(2021.10.05)「Plastics Management Indexで日本が2位、ドイツがトップに」
2022/1/23

<https://www.nippon-foundation.or.jp/who/news/pr/2021/20211005-63065.html>

中嶋亮太「海洋プラスチック汚染『プラなし』博士、ごみを語る」岩波書店 2019年9月20日発行 2021/9/7

