

## **Protect and Keep the Future Prospects of Mathematics**

### 1. Motivation behind Research Paper

Mathematics is lamenting. Have you ever found the truth through the tool called "mathematics"? Speaking from an individual's opinion, the majority of people would say "no" on that point. Then why not? I will try to unravel and explain this question using two subjective assertions and the contemporary background of the problem. One is simply from the point of view that I like mathematics. From this point of view, the focus is not on "mathematics as education" but on "touching the essence of mathematics". It was around the upper grades of elementary school that I became interested in this act itself. Because when I was in the lower grades, it was the only subject in which I could get a high score in the school test, so I would study mathematics. Gradually, as the grade progressed, a feeling of enjoyment towards mathematics began to emerge, which later changed to like. When I entered junior high school, my inquisitiveness became stronger, and I began to investigate the essence of mathematics and the origin and history of mathematics. The second reason is that there are many voices saying "mathematics is not necessary!". Furthermore, the number of people continues to increase year by year. I have a question here, I know you don't like it, but does that mean that you don't need it? The second reason is that I wanted to pursue it. It can be said that the theme of this research project was mainly based on the second reason

## 2. Introduction

I would like to elaborate on the "like" I mentioned earlier in this essay. I like the essence of mathematics, but of course, there are people who hate mathematics on the earth and I can understand their feelings because when I was in elementary school, I didn't receive good grades. I thought studying maths was easy then. For instance, the four arithmetic operations and area calculations. In short, there was a time when I hated myself, and I can fully understand the feelings of those who dislike maths. It's not that I'm good at it just because I happened to "like" it, but rather I'm not good at it. So, why do I like it? It's because I like the essence. I think you needn't understand all of it, but I would like you to keep it in the back of your mind because it will be important in explaining later.

Well, the background of the problem is why the voices such as "mathematics is not necessary" that I mentioned earlier do not stand up. Here, I would like to introduce one paper as a previous study. The first is "Mathematics Learning and Mathematics Culture of the General Public" (Watanabe and Aoki, 2021). Here, the author states the necessity of mathematics as education and culture. I was very impressed with the translation of what Alex Bellos praised and said. He said, "In conclusion, mathematics is just like a chameleon that can be a tool for growth in terms of education and a tool for preservation in terms of culture." The chameleon here suggests that it can change freely according to one's needs. However, it can be said that it is only in the "modern age" and the future potential is not considered. This is because in the future, with the advancement of Information Technology (IT), if we lose the need for mathematical information to appear in tables, the need to learn, and even the need to think, will disappear. Here, I had to ask myself one question.

That is, "Does mathematics itself have a future?" Here, I set up a hypothesis that there is a problem with thinking from a narrow perspective, and based on that, I decided to unravel this question. The research method is research papers, articles, etc., and the implementation of a simple questionnaire. In addition, I decided to introduce learning from study tours. The data collected for this study will include an essay titled, "Mathematics Learning and Mathematics Culture in General Citizens."

### 3. Results and Analysis

In the first place, I will mention the results of the questionnaires. This time, in the survey, a total of 126 people, including friends who graduated from the same age and seniors, and junior high school teachers, were surveyed, and I asked two main questions. First of all, "Is there a need for mathematics and why do you think so?" On the other hand, "Can you imagine the historical background of mathematics?" The results of the questions are as follows. , Most teenagers answered the first question, by saying "I don't think so. The reason is that there are many things in society that do not need the use of mathematics.", on the contrary, most of my seniors answered, "yes, because the ability to read and understand information is being emphasised year by year." Both responses were endorsed by more than half of the respondents in each age group.

At least we can say here that the same age group is thinking about a possible future, while the other is thinking about a realistic future, although experience may also be a factor. At this point, it is still difficult to judge the future of mathematics.

Well, as for the results of the second question, both sides said, "I cannot think of this question. On the other hand, does history have anything to do with potential?" and more than half of the results were the result of question-answering. This was a near-confirmation that there was no future for the project.

Let me mention why I asked this question here. Although at first glance it may seem unrelated, the paper "Historical Changes in the Concept of Validity and Psychometric Perspectives " (Murayama, 2012) summarise the idea: "Validity is important in psychology because it has a history that can be used as a background to connect it to the future. It has a role to play." This was a question to test a small hypothesis: "If the historical background is deeply related to the future, then if you are aware of it, then the future can also exist. Based on these two results, I have concluded that in order for mathematics to have a future and be preserved in the future, it is necessary for people to be aware of its historical background. What is needed to make people aware of the historical background? I came across an article entitled "Historical Awareness and the Broadcasting Tribunal. It was titled "Historical Awareness and Broadcasting Trials [Introduction]--The Series on the Debut of JAPAN " (Kurahashi, 2013), which mainly discussed "how to appeal to the necessity of existence through broadcasting" with a focus on "trials". The results showed that although the initial effect is weak, it can be transmitted to future generations through word-of-mouth and a single large response, creating a future potential. This is not the case in the field of mathematics, which, unlike the court case, tends to be viewed only in terms of mathematics as an educational concept, and therefore the concept of broadcasting is not realistic at all. However, since the students are involved in the basic arithmetic in compulsory education from an early age, we concluded that it

may be effective if the students' awareness of this subject differs. Now I wonder if it is possible to make people aware of the big issues that I assumed as a conclusion earlier within a small framework such as compulsory education, and to connect them to "the future". It is difficult to say that this is a solid plan, and even if it is right to omit history because of the importance of process, it is not a good idea to summarise it concisely. The reason for this is that "information," as a major factor in making the current reality possible, is deeply related to mathematics. I came up with this idea when I actually learned about Kumamoto Castle during a study tour. At the time, I thought that the reason Kumamoto Castle still exists in its current form is due to the existence of technology. Then, by looking at it from a broader perspective, we could convey its historical background, which would indirectly lead to expectations of its future potential. This hypothesis led me to the final conclusion that by providing many examples, it is possible to create a sense of familiarity, if not interest, and to temporarily direct people's attention toward the subject. For example, in the seemingly unrelated SDGs "2 Zero hunger". The reason why I mentioned this example, which happens to be information, is that this year the genre of "information" has become a required outline in mathematics education. The information is a range of approximate and expected values, so-called probabilistic and correlation coefficients.

This shows that mathematics has a promising future in the informational context. This is undoubtedly due to the fact that the ideals of modernity in the historical background are changing as the demand for information increases in the modern age, and this presents various possibilities for mathematics.

This suggests various possibilities for mathematics, and as these results suggest, it is likely that mathematics from various perspectives will be linked to historical ideas, and that the demand for mathematics will increase in the form of education and contact with us. The future potential of mathematics is not high at this point in time, but the prospects for the future raise expectations for the future.

#### 4. Conclusion and Future Problems

Although it will be as stated earlier, I believe that we have recognized that, fundamentally, the recognition of the historical background of mathematics can lead to the acquisition of opportunities to enhance future potential by increasing the demand for the product. If there is one more thing I would like to mention here, I would like to ask you not to view mathematics in terms of likes and dislikes. This is because the concept of "likes and dislikes" is based on the subjective judgement of one's own ego about right and wrong. For example, in my opinion, a person who likes games will respond to concerns about game addiction with a very selfish, cold-hearted, and self-centred viewpoint. "I'll be fine, because it's me." They still have many of these insists of it.

I'm getting a little off-topic here, in other words, I would like you to look at the concept of "mathematics" from a bird's eye view, not from the perspective of justice according to your own subjective viewpoint, but from the perspective of the future, and from the perspective of society at large. In other words, many people might think that "Mathematics is just one subject that people need to study". I want you to look at it as a tool that contains hope for the future. There is a big difference between seeing it as one subject or one possibility which can cause a big gap. I hope that more and

more people will be able to seriously consider mathematics with an eye to the future. Through these small changes, mathematics will be handed down to future generations and will have more and more potential, and will not be dismissed as "unnecessary." If this does not resonate with you, please consider the aspect of ignoring the process when something important to you is lost, and perhaps you will be able to see something. These small changes will ensure that mathematics will be passed onto future generations, that it will have a future, and that it will not be dismissed as "unnecessary. If this does not resonate with you, perhaps you will be able to see something that will if you consider the aspect of the process that was ignored when something important to you was lost.

#### 5. Reflection

How has this research changed my life? I learned the importance of future possibilities through this research, and I decided to consider the future possibilities of not only mathematics, but also other things I have been interested in, by focusing on their origins and origins. This is because, by doing so, there may be a big change within oneself as in this case. Even from these favourite matter is if you look closely with a bird's eye view, it may not hard to see that everything is connected.

#### 6. Work Cited

Kouhei Kurahasi "Historical Perceptions and the Broadcasting Tribunal [Introduction]--Series on the Debut of JAPAN." from Kinki university 47-58, 2013-03-01

Nobu Watanabe and Takasi Aoki, "Mathematics Learning and Mathematics Culture in the General Public." 2021 Vol. 35, No. 7 p. 11-14

Wataru Murayama "Historical Changes in the Concept of Validity and Psychometric Perspectives." 2012, vol. 51, p. 118-130