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RESEARCH ARTICLE

# Immersive learning based on an attempt at global cultural exchange

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**Abstract:** The development of information networks has given people the freedom of choice and the ability to mutate and adapt on their own. Today's upper elementary school students to college students (born in the late mid-1990s to early 2010s) are the first digital native generation, known as "Generation Z" (shortly known as Gen Z). A review of immersion education shows lack of case study approach, and therefore, in this paper, through specific global collaborative programs of culture exchange between India and Japan, new forms of immersive education are proposed for Generation Z. Through collaborative programs of yoga and anime among the children as well as college students, immersion education mode is developed. Personalized learning, learning based on proficiency and experiential learning are some important steps for the immersive education for Generation Z. This is considered as a new form of education in a multi-verse society. This experience can go beyond the two cases present here and can be effective for early childhood education.

**Keywords:** Generation Z, immersion education, multiverse society, culture exchange, personalized learning

## 1 Introduction

The development of information networks has given people the freedom of choice and the ability to mutate and adapt the acquired information on their own. Increasing use of VUCA (Volatility, Uncertainty, Complexity, Ambiguity), or the opportunity for individuals to participate in decision making [1] has strengthen this thinking. First used in 1985 during Cold War, this concept has subsequently taken root in emerging ideas of strategic leadership, in a wide range of organizations related to the field of education. In today's world, learning methods to enhance non-cognitive and creative abilities are being considered.

Today's students starting from upper elementary school students to college students (born in the period from the late mid-1990s to early 2010s) are the first digital native generation, known as "Generation Z" (shortly known as Gen Z). This is the first social generation, which has grown up with the access to internet and portable digital technology. Although they are called as "digital native", but not necessary they are "digitally literate" [2]. According to a survey in APAC [3], about one-third of all Gen Z users spend more than six hours a day on their smartphones, far more than Millennials (22%) and Gen X (10%). They do not need to be taught by adults to gather information on the Internet and do trial and error, and cross-country communication through games and the use of social networking sites has become a daily routine.

Of course, there are character traits of Generation Z differ from country to country. For example, Generation Z in Japan tends to want to be in harmony with their surroundings rather than being unique compared to other countries. In China, there is a strong tendency to promote one's own identity through brand power, and in Australia, there is an increase in the number of Generation Z who are committed to environmental responsibility and sustainability [3]. However, the common denominator in each country is that they are the generation that will survive in an age where exponential advances in technology are rapidly changing the way we live and interact with society, and they are highly socially conscious with a strong sense of crisis about the future.

Rather than passively postponing tasks because they are "students" or "studying first," they tend to engage in activities that can be done instantaneously, such as sending out messages that change the world or starting socially meaningful business [4]. Murphy and Cook (2020) [5] argued that mixed reality simulations are effective in helping children acquire SEL (Social and Emotional Learning), which enhances positive outcomes across social and emotional skills,

attitudes towards self and others, positive social behavior, conduct problems, emotional distress, and academic performance. They also argued that innovative active learning technologies need to be integrated into instruction at all ages and stages.

According to a survey by the language education platform Duolingo (2021) [6], more than 90% of junior and senior high school students in Japan use their smartphones to study, and 70% say they help them get studies done. Duolingo has chosen to introduce three ways to study for exams: free study apps, educational YouTube, and study plaques. The number of educational Youtubers is on the rise every year, with more than 300 channels opened, and more and more students are using them as a substitute for cram schools. Rahmatika et al. (2021) [7] has shown that Covid-19 caused a transformation in the educational aspect, and teachers have difficulty implementing online learning. They concluded from a qualitative evaluation that YouTube is the most effective tool in the online learning process.

In an era of high information asymmetry, it has been considered effective to enter the field through study abroad or apprenticeship, but with the advancement of information technology and globalization, there are more and more situations to learn new fields and cultures based on our current lives. In doing so, we need a learning environment that allows them to be creative about the future in line with their view of reality, without imposing the success and happiness models and ideal learning guidelines of the older generation.

In this paper, we will examine what kind of learning opportunities should be available to both ideas and skills through workshops that practice cross-cultural collaboration through online experimentation of anime and yoga. Through this, we will discuss how to bring supporters and learners from different cultural backgrounds together.

## 2 Why immersive education is needed

Education is a strange bird. We all know that it could be better, but at the same time it is the best ever in the history of mankind. During the past two centuries, the world has undergone a great expansion in learning. Our literacy rate has skyrocketed from 12% to 88% globally, and primary, secondary, and higher education have all seen dramatic growth (in schools and students), nearly setting records every year.

Our educational curriculum has also evolved, embracing our continually growing understanding of the world. The recent boom in the Internet has brought self-education to the masses in new and exciting ways, with websites such as Khan Academy, TED, Wikipedia, and YouTube being the largest free knowledge hubs on the planet. Imperfections aside, we owe much of who we are to this flawed system, and the growth in its reach is staggering.

Modern learning is still very archaic. We arbitrarily group students according to age and have them go to a physical building five times a week to listen to an adult for about six hours. We hope that all parties are qualified to keep the students' interest and move through static situations as expected.

It works to some extent, but it is not comfortable for everyone. Teachers have a lot on their minds; from planning lessons and assignments to teaching, grading, and the expectation of individual attention to hundreds of students. On the student side, the fear of failure is constantly looming as students are graded from A to F at the end of each semester, forcing them to adhere to a strict schedule and live under the rules of fear rather than curiosity.

Today's education system is static, generalized, and less focused on personal self-development than it probably should be. To make matters worse, students often do not understand why they are learning what they are learning. Therefore, certain classes feel arbitrary and pointless in the face of personal ambitions (and there are some immediate neurological consequences to discuss). Having said that, what can be done to solve these problems and take education to a new height? What can we do to make education more exciting, full of fun and practical? We think it comes down to three simple ideas (that are by no means new) that can eventually be fully explored through the smart use of technology: 1) Personalized learning, 2) Learning based on proficiency, and 3) Active learning.

Tedick et al. (2011) [8], in their work on immersion education have emphasized biculturalism, as well as multi-lingualism and multiculturalism. Detailed discussion has been made on the student's interest and perception on these issues and how it can be effective for immersive education. De Courcy (2002) [9] in the analysis have pointed out progress of two groups of learners in late immersion programmes. It adds to the literature on such programmes by its emphasis on the processes of learning in such programmes. Another aim of the book is to extend knowledge of learning processes in character-based languages. Immersive education has been found specifically important for the early childhood education. Evidence of the benefits for children and their families of attending a high quality immersion preschool points to the need to

review the recognition and resources accorded to this sector by parents, primary years educators and educational planners [10]. Immersion education can also be considered as an effective tool for two-way education. Two-way immersion (TWI) is an instructional approach that integrates native English speakers and native speakers of another language (usually Spanish) and provides instruction to both groups of students in both languages. While the model has been in existence in the United States for almost more than 50 years, the most dramatic growth has been seen over the past several years [11]. The above brief literature review suggests different aspects of immersion education, starting from cultural context, student perspectives, both way immersion education, and importance of immersion education for early childhood development. Therefore, in this paper, we focus on specific case syudy and makes detailed analysis of data from the cases. In the following sections, we describe the examples of cross learning between two different cultures and countries, aiming at immersive learning.

# 3 Research methods

In this paper, we used a case-based approach as the key methodology, which can engage students in discussion of specific scenarios that resemble or typically are real-world examples. This method is learner-centered with intense interaction between participants as they build their knowledge and work as individual or together as a group to examine the case. The instructor's role is that of a facilitator while the students collaboratively analyze and address problems and resolve questions that have no single right answer. In order to broaden the public discussion of the findings of those involved in international exchange and community learning, we chose to first conduct the case study to share our perceptions.

To enhance immersion learning, it is important to know, deepen and enhance cultural values. For effective immersion education, KIDA (knowledge interest desire and action) model if found to be effective, where a gradual stage of cultural immersion helps the students to deepen their knowledge and understanding, which is linked to enhanced action. In this paper, we addressed the cultural issues through animation as Japan to India and yoga as India to Japan. We believe that animation illustration, where the common sense of learning is changing with the advent of the Internet, and Indian yoga, where pop culture tends to be denied by the theory that one should go for meditation (mental unification), are good case studies to overcome the old common sense.

# 4 Workshops

## 4.1 Learning and cultural exchange through animation and illustration

In the Meiji era (1868-1912), foreigners who were interested in the Japanese people, who stood out on the world stage, read books such as "The Book of Tea," "Bushido" and "Representative Japanese," and deepened their understanding of Japan by experiencing the traditional beauty of the tea ceremony and martial arts, which have been rooted in the Japanese culture. According to a VIPO survey of foreigner's attitudes towards Japan (2018) [12], 75% of Europeans and 56.6% of Asians cite "anime, manga, and games" as the reason for their interest in Japan, far surpassing "music," which comes in second. In 2019, the popularity of the Japanese anime, manga, and game market is growing in India as well, with young Indians taking part in prominent activities and Makoto Shinkai's "The Weather Child" being screened in 30 cities across India.

We have been leading Japan-India cultural exchange for more than 20 years, and we believe that in order to build a good bilateral relationship in the medium and long term, it is important to know how to seize opportunities for exchange that will stretch the interests of other countries. This is because the object of admiration nurtured by the mental structure of other countries is the best content for sharing the need for deep cultural understanding. Therefore, we will observe and observe how people in other countries try to incorporate these pop cultures into their lives, with the aim of building a substantial relationship with the world in the future Japan.

Keio University's India Japan Laboratory held a series of India Japan exchange events on January 16, 23 and 30, 2022, under the auspices of the Indian Embassy in Tokyo, to offer Indian youth the field of creating anime and games. On 16th, an eminent animation specialist was invited, and the 23rd, a team from a major Japanese anime production was invited to give lecture on how to create illustrations using advanced teamwork in the real world. The lectures followed the following flow, as shown in Table 1.

**Table 1** Timetable of major interaction sessions on animation with Indian students

| 1. Japanese Pop Culture | 2. Team play illustration creation |
|---|---|
| 1-1. Introduction of Animation specialist (18:40) | 2-1. Introduction of Anime company and illustrators on stage (22:26) |
| 1-2. Culture and Characteristics of Japanese Animation (29:45) | 2-2. about the works of illustrators (41:01) |
| 1-3. Business Opportunities Derived from Animation (9:11) | 2-3. Supervision and advice for illustrations drawn by participants (36:18) |
| 1-4. Animation Production Flow (35:51) | 2-4. For those who wish to be illustrator (16:24) |
| 1-5. Questions and Answers (1:03:38) | 2-5. Questions and Answers (1:06:24) |

The lecture was delivered from Japan to India via the online conference system ZOOM, and the participants in India interacted in real time via chat. A total of 200 people, mostly students, participated in the lecture, and 385 comments were left on the chat. Compared to the question-and-answer sessions conducted for the speakers during the lectures, the real-time perceptions of the participants were collected. The following groups of comments were particularly prevalent in the chat (Table 2).

**Table 2** Key comments in chat during the lectures

| No. | Comment type | Examples of specific comments | Total |
|---|---|---|---|
| 1. | Thank you for the lecture. | "I'm so grateful to our wonderful guests for being so friendly and cheerful"<br>"This was a very wonderful event"<br>"This was a very wonderful session....and I am so eager to attend the upcoming session..." | 109 |
| 2. | Comments and questions about the lecture | "How much time does it take to draw each of the illustrations in average"<br>"The dragon is looking great"<br>"It's a great session."<br>"The step by step of shadows and light was so soothing"<br>"The dragon is looking cool and strong"<br>"Wow, so good"<br>"He looks like the robot from the wall"<br>"it's a great session."<br>"The step by step of shadows and light was so helpful!" | 174 |
| 3 | Sharing of self-initiatives and preferences | "I am currently writing an anime story of my own",<br>"One of my fav movies: Your Name"<br>"Naoto will air tonight and sub will come tomorrow morning" | 35 |
| 4 | Questions and opinions derived from the lecture | "How to get admission in Japan art school after junior high school"<br>"What would be some of the animation"<br>"What would be some of the animation techniques one can expect in the future?"<br>"which software do we use?" | 48 |
| 5 | Advice for other students | "Please focus on class guys"<br>"Instead of disturbing everyone else" | 70 |
| 6 | A statement asking for connections among participants on social networking sites | "Pls help me get to 100 subs"<br>"well can you support me on YouTube" | 48 |
| 7 | Others | "Namaste"<br>"Does anyone like BTS?" | 84 |

Mapping the number of comments from category 1 to 6 were analyzed according to the content of the lecture, which is shown in Figure 1 as follows. For the analysis below, there were total comments of 84 on 16th, and 301 on 23rd. Table 3 shows the number in each category of comments in both days of the anime event. The detailed analysis is summarized in the following sections.

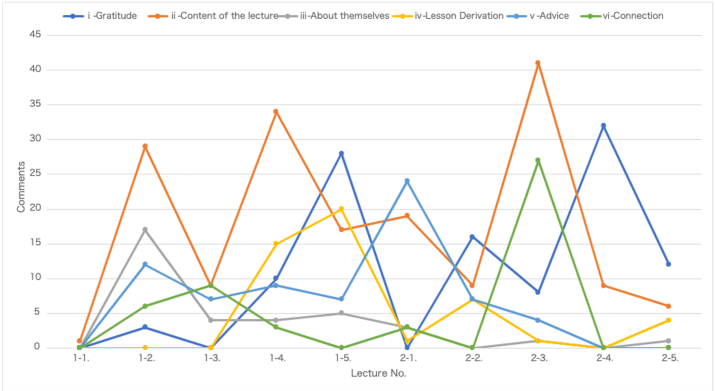


**Figure 1** Analysis of comments in two Anime events

**Table 3** The numbers of comments in several categories in both Anime events

| | 1-1. | 1-2. | 1-3. | 1-4. | 1-5. | 2-1. | 2-2. | 2-3. | 2-4. | 2-5. |
|---|---|---|---|---|---|---|---|---|---|---|
| i-Gratitude | 0 | 3 | 0 | 10 | 28 | 0 | 16 | 8 | 32 | 12 |
| ii-Content of the lecture | 1 | 29 | 9 | 34 | 17 | 19 | 9 | 41 | 9 | 6 |
| iii-About themselves | 0 | 17 | 4 | 4 | 5 | 3 | 0 | 1 | 0 | 1 |
| iv-Lesson Derivation | 0 | 0 | 0 | 15 | 20 | 1 | 7 | 1 | 0 | 4 |
| v-Advice | 0 | 12 | 7 | 9 | 7 | 24 | 7 | 4 | 0 | 0 |
| vi-Connection | 0 | 6 | 9 | 3 | 0 | 3 | 0 | 27 | 0 | 0 |
| Total | 1 | 70 | 31 | 81 | 84 | 96 | 45 | 91 | 41 | 28 |

### 4.1.1 Lecture on Japanese pop culture

In the section on the culture and characteristics of Japanese animation, the students often expressed their own opinions that were reminiscent of the lecture content. Since each of them already had their own knowledge, it was clear that the lecture functioned as a place to exchange information. Section 1-4. (The Flow of Animation Production), and 1-5 (In the question and answer session), the majority of the discussions were about how each individual could find a way to make the most of their work, and the number of situations where participants could share their opinions increased. This was due to the fact that there were not many opportunities to share their passion for pop culture in India. This event had a great impact on students in India, where there is a clear hierarchy with doctors and engineers at the top, who do not have enough opportunities to learn about Japanese animation production techniques. During the chat, the topic of the lack of money being spent on the animation market in India came up frequently. The representative of Anime India (a website that provides information on anime, manga, and movies), also mentioned that the cost of producing 2D and 3D animation in India is much lower than the cost of producing animation in Japan.

### 4.1.2 Lecture on illustration creation through team play

There were a lot of active interaction, with 301 comments for 110 participants. The way the participants interacted with each section was completely different, and this characteristic is also evident in the graph. The fact that the comments and questions about the lecture and the requests for connections among the participants on SNS are linked to each other suggests that the lecture increased the participants' interest in pop culture. In particular, there were a lot of comments expressing their excitement during the supervision and advice on the illustrations drawn by the participants, indicating that they were in a high state of excitement.

For those who wish to be illustrators, most of the participants listened attentively, and once the explanation was over, words of appreciation were uttered in overlapping ways, which may have created a feeling of respect. Communication among the participants helped to personalize the content of the lecture to the Indian context, but there were also frequent instances of strong words urging other participants to concentrate on the lecture as the conversation continued. In particular, in the introduction of 2-1 Japanese animation company and the illustrators on stage, even the slightest request for connection or mention of a topic unrelated to the lecture was met with more than a few comments.

In some cases, sharing the reality of people with the same background can lead to increased concentration, but this is not always the case when people become immersed in their own individual worlds. In today's world, where people's interests are becoming increasingly diverse and deep, it is important to consider the extent to which it is appropriate to create a learning environment that is connected to other learners.

## 4.2 Immersive experience with Indian Yoga

A certified NPO (non-profit organization) in Kobe, has been exploring ways to create an environment where each person can do what they want to do by meeting a variety of people and providing opportunities to be accepted by others as an individual. This aims to develop a purpose in life and a desire to do something. The NPO believes that it is important for children who are not good at studying to have a place where they can feel that studying is necessary for them. Therefore, at their Kitano base (located in the Kitano area of Kobe City), where multinational residents live, the NPO explored opportunities to build a diverse immersive environment through concrete actions like practicing non-verbal communication while planting paddy with foreign tourists and explored opportunities for building diverse immersive environments.

On January 11, 2022, a Creative Yoga P-ZONE was held in Kobe with a total of ten kindergarten students from of 1st to 3rd grade at a childcare facility for school children

operated by the NPO. P-ZONE is a program that reinterprets yoga poses with modern images and provides these images as a storyline with music and images. The program aims to bring about a comfortable and stable mind, which is the purpose of yoga, by making everyone understand intuitively where they should stretch, as well as making them experience a place where their original non-logical thoughts are affirmed. The program was created under the supervision of the director and instructor of the professional Yoga teachers, accredited by the Yoga Organization of Japan.

**Figure 2** Left: A scene from the demonstration experiment; Right: Projected dynamic image (dynamic rainmaking)

Figure 2 shows the photo of the program conducted in the kindergarten, as well as the image of Yoga which is easy and attractive to the children to correlate with the points which they know and are interested in. The program is termed as: "Let's Celebrate." The theme of the program was having fun together, and consisted of (1) opening, (2) breathing exercises, (3) five yoga poses, (4) meditation, (5) reflection, and (6) ending. For the space, we considered the capacity based on the size of the yoga mats and asked the participants to be seated at a moderate distance from each other in an environment where they could see the video equally from anywhere. Table 4 shows the details of the program. The key purpose was to have the combination of entertainment as well as effect of yoga together, so that the kids can enjoy different poses and can recall them by connecting something which so closer to their ideas and/or surrounding. The following is a discussion of the series of efforts.

**Table 4** Details of the yoga pose and image names

| No. | Yoga Pose Name | Alternative image name |
|---|---|---|
| 1 | Crescent Moon Pose | Dynamic Rainmaking |
| 2 | Poses that stretch the sides of the body | Serving food |
| 3 | Gate Pose | Handle of a cup |
| 4 | Seashell Pose | Snoring and mirror mochi |
| 5 | Lion's Pose | Figure of a cat |

In the introduction, the theme of "Let's celebrate" was presented, and by creating a sense of excitement that something "fun" was about to begin, the children in the room were able to actively gather in front of the large screen. A staff member with early childhood education skills took on the role of a facilitator called "Cast" and conducted the intervention from a close perspective with the participants. This was an important point in that it allowed us to quickly "build a relationship of trust," which is important when a third party conducts an intervention.

In the practice, the names of the poses and alternative images were given, and then the yoga poses were presented in a short story overlaid with images or videos. By using alternative pose names that are culturally familiar to the children and images or videos that are easy to recognize visually, we aimed to evoke images in the children's minds rather than difficult instructions or samples. In this way, by guiding the children to appeal to their individual imaginations, they seemed to be able to achieve poses that were beautiful to them while not straining their own physical abilities. As a result of the active movements and the "fun" based empathy that was created for the children, it was observed that all the children concentrated on the poses without leaving the session for about 15 minutes.

This scheme can be implemented regardless of differences in yoga skills or physical strength. In addition, we were able to demonstrate the possibility of having a co-creative space that is more immersive and sympathetic beyond space by selecting illustrations and considering programs that are finely tuned to individual interests and preferences. It is hoped that the participation of multinational and diverse families and local residents, as well as the understanding and sharing of the results, will lead to the creation of a new culture.

As mentioned above, by creating a space where participants can naturally immerse themselves, we were able to bring about the self-awareness that yoga originally sought in the early

grades of elementary school children, which was the biggest learning in this case. This is a hint for creating teaching materials for online education that requires independent learning. In addition, for training such as yoga, which is considered to be effective only when continued, it is necessary to provide an environment where children can gain experience spontaneously, while setting goals and managing the process in such a way that parents and teachers, from the perspective of a third party, will want to understand and support the child's growth. It is essential for the operation of learning spaces in immersive spaces to consider and introduce a management system that provides parents and teachers with indicators for measuring effectiveness.

# 5 PULIYA-Network: Immersive education that connects individuals to society

As reference materials and tools have become more plentiful, it has become easier to learn techniques. On the other hand, finding the best compromise by mashing up what everyone else think is good has become easy to criticize as "tracing" or "cloning". Creativity is a mental activity to find a consistent expression from atmosphere to emotional effect, and it can be "learned" by improving originality step by step. Here, we urge the importance of "co-creation" as the base of education.

Japanese government Ministry of Education Sports Culture Science and Technology (MEXT) has started an aggressive GIGA (Global and Innovation Gateway for All) school program to digitalize education among the country's nearly 13 million primary and secondary school students and in its almost 35,000 schools with 4.4 billion USD investment from 2018 onward. The target is to implement is fully by 2024 March [13]. However, the COVID-19 impacts have urged to bring forward the digitization drive more quickly than originally planned. The plan is to provide 1 device to 1 student and ensure digital connectivity and skills.

However, we should conduct digitalization in accordance with the Generation Z. Those who are currently promoting digitization have gone ahead with the old concept. In a top-down system, parent or teacher want the kids or students in the field to have digital tools. However, what education should do is to be able to intervene from the mid- to long-term, unlike YouTube and the like, and allow for the gap between the educators and parents who should be watching over the children and the gap in perception that the children themselves have. Through doing this, it is possible to bring the immersion education in the mainstream education system. Then, something like InJAN Puliya emerges automatically.

With regard to fundamental technologies that will contribute to the creation of future industries, social transformation, and the solution of various problems, the "Study Group on the Promotion of Fundamental Technologies" was organized by Japanese Cabinet Office. The key purpose is to discuss specific technological fields and promotion measures, and to reflect them in the 5th Science and Technology Basic Plan [14]. This led to the development of the concept Society 5.0, which is a new society following the hunting society (Society 1.0), the farming society (Society 2.0), the industrial society (Society 3.0), and the information society (Society 4.0). Society 5.0 promotes the basic technology of the Cyber-Physical System (CPS), which integrates cyber and physical technologies and maximizes the use of data from both sides.

However, if the platform is not flexible enough to manage schedules and achievement levels according to individual interests and levels of understanding, it is difficult to call it next-generation education if it only teaches techniques after introducing cutting-edge technologies. Therefore, we established the PULIYA network as a link between India and Japan. PULIYA is a Hindi term, which means small village bridge. These bridges are the key lifeline and connectivity of the villages to the outside world. With the similar concept, we developed PULIYA in the Society 5.0, which brings together the physical and cyber society, which runs on Web 3.0. We will build a framework that can be actively shared and used outside the university and used to promote commercial activities and support the development of children's non-cognitive abilities and the process of achieving through wisdom.

WEB 3.0 is a distributed Internet managed by AI (Artificial Intelligence). The structure of recording the learning process in the network itself allows for the sustainable co-creation of learners and providers, as well as the estimation of creativity. The PULIYA-Network will form a DAO (Distributed Autonomous Organization) in which rights are automatically assigned by setting in advance the values to be contributed to the commercial activities and business operations of schools, extramural groups, and organizations, and sharing the achievement plan with everyone. For learners, it will be available as a coaching system in which the object and means of learning are picked up according to their interests, and for providers, it will be available as Logistics 5.0 in which changes to management resources generated by the

provision of tools are predicted. This will achieve centerless school design through co-creation based on composability.

Currently, we are conducting a demonstration experiment in Onagawa Town using a mockup of the PULIYA-Network, in which participants in the immersive education program and administrators (parents and teachers) can grasp the current situation from their respective perspectives. In this case study, we conducted a corrective evaluation as observers, but we will conduct a quantitative evaluation of people's behavior change through system operation. We will then demonstrate the necessity of immersive education.

# 6 Discussion

Based on the values of the digital native generation, which is exposed to a lot of information and repeatedly makes choices, we discussed what kind of learning environment is required, and presented the possibility of a learning scheme based on the PULIYA-Network through industry-government-academia collaboration. Currently, there is a disjointed discussion about system implementation and subjects to be learned in the field of education. We will explore the operation of systems to enhance decision-making in the field by conducting a single line of research as a case study of immersive education that leads to system development. Innovativeness in the approach lies in the fact that the data generated through the experiment can be used for system development, as well as future expansion of immersive education in other fields beyond yoga and anime. This experiential learning is the first time experiment where students from two diverse cultural background came together to learn each other's culture through immersive learning methods. The existence of the PULIYA-Network, which creates an Immersive learning environment that answers the needs of the times and the students, while having a framework that is in line with school operations, allows us to approach the numerous problems facing the current school system.

## 6.1 Learning support for students who do not attend school

In school-age children, who continue to grow up in a limited society, the mental and psychological impact of their surroundings is immeasurable. According to a survey of truant students conducted by the Ministry of Education, Culture, Sports, Science and Technology [15], the reasons why students first began to find it difficult to go to school varied widely, including "problems with teachers" (30% of elementary school students and 28% of junior high school students), "physical problems" (27% of elementary school students and 33% of junior high school students), "disruption of daily rhythm" (26% of elementary school students and 26% of junior high school students), and "problems with friends" (25% of elementary school students and 26% of junior high school students). (26% in elementary school and 26% in junior high school), and "friends" (25% in elementary school and 26% in junior high school). As for "reasons that make it difficult to go to school other than the initial reason," the highest percentage of students who answered "Yes" to this question was "I don't understand my studies" (31% in elementary school and 42% in junior high school).

The PULIYA-Network rethinks the problems occurring in schools as social problems, and by bringing the resources of groups and organizations outside of the university step by step into the educational field, it is able to change the very nature of the new connections by attending to individual concerns. In addition to providing a stable learning environment that brings connections to society regardless of location, we will rebuild the process of working in a new circle.

## 6.2 Application to the Courses of Study

In the new Courses of Study to be implemented sequentially from FY2020, programming education will become compulsory in all elementary schools [16]. In the implementation of the new curriculum guidelines, the following three issues were cited as the top priorities for both elementary and junior high schools: "insufficient number of teachers," "insufficient time for teachers to receive training," and "insufficient school budget" (excluding equipment). In particular, teachers are becoming busier and more burdened due to the increase in the number of class hours - due to the increase in the number of class hours, there is not enough time for meetings, division of school duties, research on teaching materials, training, etc., and the burden is unevenly distributed among science and mathematics teachers. In school education, where subjects such as English, dance, and programming are required to be changed or increased in response to changing times, the PULIYA- Network's attempt to increase class content while reducing the workload in the field has the potential to make a significant contribution.

Furthermore, maintaining the level of teaching while reducing the burden on teachers will help to reduce educational disparities stemming from the learning environment.

### 6.3 Towards immersive learning for Gen Z

The seamless connection between school and society for children, with individual optimization of what to do for the same subject rather than by academic ability, is nothing short of fostering a new social structure. In order to build an environment where Generation Z can learn and co-create in society, the key is to create a system where industry, government, and academia can release their respective resources as usage rights and sublicense the rights as learning environments and learning materials.

Personalized learning can refer to a variety of programs, learning experiences, pedagogical approaches, and strategies that address the distinct learning preferences, interests, aspirations, weaknesses, or cultural backgrounds of individual students. This results in an educational experience that better suits you as an individual and allows you to get the most out of each class. This approach makes intuitive sense, and each year the pool of scientific evidence supporting these ideas grows. According to a new report commissioned by the Bill & Melinda Gates Foundation, students in schools that use personalized learning strategies made greater academic progress [17]. In addition, a myriad of neuroscience studies show how personalized experiences can positively impact the way the brain receives information, providing some relevant ideas about how learning works at the synaptic level.

Similarly, learning based on proficiency is based on a very simple idea. When dealing with a cumulative subject (like mathematics, where previous knowledge is essential to understand what comes next), students need to advance in the subject only after they have mastered all the concepts that came before. Grading is not a reliable indicator of how things are being handled today. There is a distinct difference between actually understanding the subject matter and simply learning how to pass a series of tests (memorizing formulas, copying other students' work, etc.). This tends to be done by a surprisingly large number of students. Thus, the students should be properly immersed in the subject through immersive learning.

Finally, experiential learning is another important step. It is the process of learning through experience, or "learning through reflection on doing". Scientific research and classrooms have clearly shown that it is one of the most effective forms of retaining information in a meaningful way. Experiential learning engages most of the senses, builds social-emotional skills, creates a context for memorization, and expands critical thinking. It is definitely more relevant to the actual application of what is being studied.

Immersive learning for anime and yoga, as mentioned in the paper can be considered as a combination of practical as well as experiential learning, which has a higher potential to expand not only in the two topics covered here but can be applicable wider in other topics as well. As mentioned previously, immersion education is linked to: 1) Personalized learning, 2) Learning based on proficiency, and 3) Active learning. Thus, the methods and approaches used in the paper can be applicable to broader immersive education perspectives. Thus, in case of both anime and yoga examples provided in this paper, students have proper experiential learning, and through internet and other social media this approach can bring suitable immersive learning and can facilitate co-learning between two or more different cultures and countries.

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