Abstract

Purpose: As the non-face-to-face situation triggered by COVID-19 continues for a long time, the desire to experience a sense of reality and realism even through an online virtual environment is increasing, and the metaverse is emerging as an alternative in the field of education. Therefore, the purpose of this study is to examine the meaning of metaverse, which has become a hot topic in recent years, from an educational point of view and to suggest the possibility of its application in English education.

Method: The social and cultural paradigm of the 4th industrial revolution has brought many changes to the education field and is now expanding into a new area with the metaverse. In this study, what kinds of studies and use cases are related to the recent metaverse in Korea, and what are the types and characteristics of the metaverse that are mainly used. In addition, I would like to examine the characteristics that appear in the application process of educational activities using the metaverse reported in this study, how these characteristics can be grafted into English and teaching and learning activities, and what advantages there can be.

Results: As a result of analyzing this from the educational aspect, positive factors of metaverse such as an increase in the educational presence and class participation, alleviation of anxiety, immersive learning, and interest and motivation were selected, focusing on the implications for use in English education. It showed potential for use as a tool. As such, it is judged that the metaverse can play an important role at the center of the future English education that is rapidly changing due to the non-face-to-face situation and the 4th industrial revolution technology.

Conclusion: The metaverse can overcome the sense of physical distance, and if the existing metaverse platform is used to the maximum to configure a space suitable for the purpose of learning and provide content, a qualitative teaching and learning space can be provided. In the future, based on this study, we expect various types of empirical research to examine the effectiveness by selecting a metaverse platform suitable for the purpose and target of English class and designing an actual class space.

[Keywords] Non-Face-to-Face, Fourth Industrial Revolution, Metaverse, Virtual World, English Education

1. Introduction

The non-face-to-face situation triggered by the COVID-19 pandemic situation formed a sense of social distance and promoted the reduction of offline activities and the expansion of online activities. This change brought a great transition to a non-face-to-face educational environment, and a streaming-based real-time video conferencing platform was mainly used in school classes [1][2]. These platforms interact in real-time and are effective in alleviating the sense of isolation that can occur in distance learning and promoting social interaction[3]. However, the real-time video conferencing method also has several limitations. In a real-time class, interaction and
cooperation with instructors and fellow students cannot be performed smoothly [1]. In a videoconferencing situation, when two or more people are talking at the same time, it is difficult to easily determine where the person speaking is. In addition, insufficient interaction may have a negative impact on online learning activities [4][5]. In addition, as limitations for interaction and cooperation, failure to control the speed of lecture progress, absence of teacher-student communication, delayed feedback, passive attitudes such as learners’ silence, and poor concentration of attention have been reported [1][6]. And in real-time video conferencing platforms, it is difficult to form a three-dimensional sense of space, so the sense of immersion is lacking [7]. In addition, real-time videoconferencing requires the use of a camera to reveal personally identifiable information in order to properly use it, and the issue of information security cannot be ignored [8].

As an alternative method to overcome the limitations of such a real-time video conferencing platform, interest in the metaverse is increasing. Metaverse, which means a space that transcends reality, is a platform that can freely manipulate avatars in a virtual space implemented in three dimensions [9][10]. In schools, offline activities such as projects were made possible on the metaverse, and there is also a way to directly travel and introduce the world travel metaverse. In addition, there was a case in which students directly participated in creating a safety map VR map that could identify and prevent actual risk factors in advance. As such, attempts are being made to actively introduce the metaverse to the education field, and the metaverse has become an irresistible trend in the education world as a whole.

As such, the metaverse is judged to be a sufficient alternative in the university education environment, which suffers from crises such as a drop in learners’ learning ability and dropout in the non-face-to-face situation triggered by the corona virus [11]. Therefore, in this study, we focused on the educational use of metaverse and looked at recent cases, considering that the metaverse could play an important role in the center of the future education that is rapidly changing due to the non-face-to-face situation and the 4th industrial revolution technology. In this regard, I would like to introduce the characteristics of this metaverse in terms of educational use, and suggest how it can be used in English education based on the analysis of these characteristics, and its possibilities and methods.

2. Research Method

At a point in time when the metaverse’s educational use is expanding according to the changes in the 4th industrial revolution, it is necessary to understand the research trend on the educational use of the metaverse and discuss how the metaverse can be used in English education. Therefore, in this study, what kinds of studies and use cases are related to the recent metaverse in Korea, and what are the types and characteristics of the metaverse that are mainly used. In addition, we would like to examine the characteristics that appear in the application process of educational activities using the metaverse reported in this study, how these characteristics can be grafted into English and teaching and learning activities, and what advantages there can be.

This study was conducted in three major stages. First, studies and cases that have used metaverse for educational purposes over the past five years were selected as research subjects. Next, the advantages of metaverse utilization were analyzed in terms of cognitive, affective, and behavioral domains for the papers and cases selected for research. Finally, based on the data analysis results, educational implications for using the metaverse in education were derived. However, this study has limitations in that it analyzed and discussed only general educational use cases or publicly disclosed data other than English education.
3. Literature Review

3.1. Definition and characteristics of metaverse

The term ‘metaverse’ was coined by Neal Stephenson in 1992, in “Snowcrash”, where real-world events are mixed with events that take place in a mass-visited communal virtual world, in which individuals can interact in a three-dimensional landscape by creating avatars[10][12]. Each avatar is visible to all other users, and avatars interact with each other in this communal virtual space through software-specified rules. The metaverse is often called the playground of the ‘MZ generation’. MZ generation is a collective term for the millennial generation born in the early 1980s to the early 2000s and the ‘Z Generation’ born in the mid-1990s to early 2000s. All freshmen from the university fall under the MZ generation[13]. MZ generation is familiar with the digital environment, seeks a unique experience differentiated from others, and is sensitive to the latest trends.

In general, the virtual world type ‘metaverse’ has the following features[14]. First, the sense of alienation between the virtual world and the real world is minimized through connectedness. Second, the characteristics that form a new self in the metaverse make one's appearance more attractive through the avatar and try to be active in the metaverse. Third, the metaverse has the characteristics of a virtual world with enhanced relationships and sociality. However, the relationship in the metaverse has duality, and the reinforcement of sociality acts as a positive or negative factor to the satisfaction of using the metaverse. Fourth, transparency exists because most of the information and activities about oneself are recorded and shared within the metaverse.

3.2. Metaverse platforms for educational use

As interest in the metaverse is rapidly increasing, the metaverse is being used in various fields. In addition to being used in various socio-economic fields such as concerts, election campaigns, new employee training, and virtual real estate, universities are also attempting to create various activity spaces using the metaverse platforms to prevent students from leaving the center and strengthen their sense of belonging and learning[9]. From now on, among various metaverse platforms, we would like to look at the platforms used for education and their examples.

3.2.1. Roblox

Roblox is an online game-based 3D virtual platform created by Roblox Corporation in the United States in 2006. It is a platform where users create their own games through Lua coding in the studio and other users play games. Roblox has been developed in motivation, collaborative learning, role playing, problem solving, STEAM(Science, Technology, Engineering, Arts, Mathematics), etc[15]. It has great educational utility. Students and teachers are free to create whatever they want with their creativity and imagination, regardless of time, and they can role-play, explore historical sites, and experiment with rocket physics.

3.2.2. Ifland

Ifland, launched by SK Telecom, is a 3D social communication platform that provides various avatars and virtual themed spaces, and enables voice communication by sharing content[15]. You can communicate freely by sharing videos or documents with more people, such as at meetings and performances, and there is also a function to explain with voice based on the shared file. Like the ZOOM platform we are familiar with, the host can set up microphone control, etc., and up to 130 people can participate, manipulate presentation materials, and have conversations. Various maps such as conference halls, cafes, classrooms, and playgrounds can be set, and even a secret room can be opened, so only a specific group of people can gather and use it.
As an example, in September and October 2021, for the first time in high school, an admissions briefing session was held at Konyang High School affiliated with Chungnam Konyang University using the Ifland platform. In a situation where it is difficult to hold a face-to-face collective admissions briefing session, the MZ generation used the metaverse to hold an admissions briefing session for many people, including students, parents, and teachers. If there is a situation where it is difficult to hold an admissions briefing session, I wonder if the Metaverse platform can be used.

3.2.3. Gather town

Gather Town is an online platform that supports users to meet, communicate and collaborate in a virtual space where they can experience similar to reality. It is an online video conferencing platform similar to Zoom, and it is a method of video conferencing while moving in space. If you go near another user through video chat, you are automatically connected and you can have video or voice conversations. In other words, when the characters meet each other while moving around, video conference is activated, and when the characters move away from each other, the video conference is stopped. There is also a secret chat function, and up to 25 people can use it for free. In addition, various activities can be carried out by using functions such as document, video, game insertion, screen sharing, and whiteboard. For example, you can draw text or pictures on the whiteboard and use it to share it with everyone.

Above all, the fact that you can directly compose a map can be an advantage from the point of view of a teacher in that it can be carried out with meaning when designing educational activities. This is because students can follow the teacher’s guidance to find a place and obtain information through messages, documents, and videos there. With these advantages, the two-day online festival held on the Soongsil University campus built in Gather town was so popular that it recorded up to 300 concurrent users, and the club fair held at Yonsei University was also held at Yonsei University for information delivery and information delivery using metaverse rather than unilateral information delivery. We have created an environment where we can communicate together.

Table 1. Metaverse platform comparison.

<table>
<thead>
<tr>
<th>Division</th>
<th>Roblox</th>
<th>Ifland</th>
<th>Gather town</th>
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<tbody>
<tr>
<td>Communication</td>
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<td>Avatar + Chat + Voice</td>
<td>Avatar + Video + Chat + Voice</td>
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<tr>
<td>Number of simultaneous connections</td>
<td>130</td>
<td>130</td>
<td>250(free version)</td>
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<tr>
<td>Recommended use</td>
<td>Seminar, Event</td>
<td>Seminar, Event</td>
<td>Metaverse Office, Seminar, Event</td>
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<tr>
<td>Customizing</td>
<td>Character(Hair, Eyes, Skin color, etc.)</td>
<td>Character(Hair, Eyes, Skin color, etc.)</td>
<td>Maps, characters, clothes, etc.</td>
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Note: Park C. Metaverse and future education (2021).

3.3. Educational effects of metaverse

As the metaverse is actively used in the education field, various studies on the educational application of the metaverse are being conducted. Learning using the virtual world is effective in improving collaboration skills and skills based on active participation of learners. According to Nowlan NS, Hartwick P, and Arya A, collaborative learning environments through avatars in the virtual world are effective in acquiring higher-order skills because they increase learning participation through interaction with other learners, and learning through mistakes is possible. In addition, the study of Kuznetcova I and Glassman M found that learning in the virtual
world improves learners' critical reflection skills because they can freely share their thoughts with fellow learners in a democratic learning environment, away from the way learners passively receive knowledge[16]. In a study by Depp et al., collaborative simulation through a metaverse platform called VirBELA was used to develop cooperative capabilities[18]. In this study involving clinical research faculty, medical students, and interdisciplinary faculty, all participants rated the collaborative simulation in the virtual world as effective in developing communication and collaboration skills.

Based on these advantages, if the metaverse is used for learning, students can participate in learning activities while exploring the space created by the teacher in the virtual world through the avatar. Students can perceive spatial reality while moving through the space of the virtual world. Participatory activities using avatars in the virtual world enable three-dimensional perception according to spatial movement, helping learners to perceive that they are there spatially. Therefore, students can create their own avatars and move the space, thereby increasing the perception of presence in the learning space[9]. In addition, the metaverse can recognize the participation of other learners who are active in the same space, which is effective in forming a sense of social reality. By utilizing the metaverse, which has the characteristics of multi-user virtual environments (MUVE), learners can learn while forming social relationships with fellow learners or teachers[9]. In this way, learners in the virtual world experience a high sense of social presence through interaction with teachers and other learners, and can be more immersed in the learning environment of the virtual world[19]. In addition, since it is effective for learners to experience social interaction in a virtual space such as the metaverse is effective in improving learning motivation, it can be a learning method that can increase the learning effect in a non-face-to-face learning environment.

4. Advantages of using Metaverse from the Perspective of English Education

As a result of analyzing a number of previous studies related to the metaverse and its characteristics, inducing various interactions using computer avatars within the metaverse platform called 'three-dimensional virtual world' suggests new possibilities for language education [20][21]. As a result of analyzing the advantages of using metaverse in the cognitive, affective, and behavioral domains of the papers and cases selected for research, it can be summarized as follows: 1) improvement of presence and participation in education, 2) alleviation of language anxiety, 3) immersive learning, and 4) interest and motivation.

4.1. Learning presence and class participation

The functional characteristics of the metaverse are that it can strengthen the sense of spatial movement and social interaction using avatars. By utilizing the spatial movement function of the metaverse, it is possible to interact more three-dimensionally in the learning space and to perceive a sense of space. Therefore, if the metaverse platform is used for distance education, students can interact based on the visual and auditory elements provided by the avatar and share the three-dimensional experience with others, thereby enhancing the reality and participation of education[22]. Although some degree of interaction is possible in the existing video-type real-time lecture platform, it is difficult to expect a great sense of reality in education because there is no sense of spatial movement between participants[9]. However, the metaverse is attracting attention as an alternative to overcome the limitations of the existing distance education because it allows students to directly gather in one space and conduct class activities. Jung YS, Lim TY and Ryu JH revealed that in terms of social presence and learning presence, the metaverse provides a learning environment in which student interaction can occur smoothly, and thus has advantages in learning and interesting factors[5].
In particular, in the metaverse, learning is actively carried out in the process of continuous experience through certified tasks in real situations in the learner's own autonomous, proactive, and active learning process, and interaction with objects or other people in the process. This is emphasized [15]. Even students who were silent when conducting group activities in the existing real-time online class will be able to have active discussion classes in the metaverse class just like in a real classroom.

4.2. Alleviation of language anxiety

In the metaverse, social interaction using avatars is possible [10], so anxiety can be reduced compared to face-to-face communication in English. According to a study by Jeong JY and Jeong HS, who developed an English conversation learning program using virtual reality and compared it in immersive virtual reality and mobile device conditions, language anxiety was significantly reduced in both immersive virtual reality and mobile conditions [23]. In particular, language anxiety decreased significantly in the immersive virtual reality condition. It was also found that immersive virtual reality had a positive effect on improving conversational skills. As such, if language anxiety can be reduced using virtual reality and reduced language anxiety can lead to learning achievement, it is thought that metaverse can be used as a more effective learning tool.

In the study of Mo SK, some college students who participated in real-time online English classes expressed the limitations of non-face-to-face communication and the resulting burden, and it was judged that this burden hindered their willingness to communicate and induced passive participation [24]. However, she mentioned that it can improve learning immersion and satisfaction and promote self-efficacy when learners perceive the online learning environment as a free and open interaction space, just as they interact through virtual avatars, move and experience the virtual world freely [25][26]. Therefore, virtual reality such as metaverse, which gives users a sense of realism and immersion, seems to play a positive role in relaxing and reducing anxiety in a more comfortable and stable situation.

4.3. Immersive learning

One of the characteristics of virtual reality that is applied to education is immersion. In the metaverse, users can interact through an avatar, and the avatar can freely move in the metaverse space and feel a sense of presence and immersion through physical interaction [14].

Because metaverse overcomes spatial limitations and enables similar activities to be performed offline, English classes using Metaverse can provide a high level of immersion, unlike current non-face-to-face methods. Studies that applied immersive virtual reality to actual English learning situations are reporting positive results. In Korea, as a result of Lee GY using mobile devices and immersive virtual reality to study English vocabulary learning and attitudes for elementary school students, s/he found that learners using immersive virtual reality showed high levels of phoneme recognition and immersion in learning time [27]. Choi SH and Won JS, who conducted a study on English conversation learning situations, compared using a tablet PC and immersive virtual reality. As a result, it was reported that the immersion and learning motivation of learners using immersive virtual reality were higher [28].

Moreover, the important sense of security for students in learning arises from the recognition they receive in the classroom and friendships. Even students who struggled with lack of stability in the real classroom showed a sense of stability as they communicated through a virtual existence called 'avatar', and this environment can serve as an advantage when learning English. Yoon HJ says that students can work as a subordinate (sub-character; avatar) with a slightly different tendency in the virtual world of the metaverse, so a positive influence can be expected in the positive aspect of multi-persona [13]. 'Multi-persona' refers to the multiple selves of modern people that are separated according to circumstances, like changing a mask. In the real world, if you live as a ‘main character’, in the virtual world, you are working as a ‘secondary
character’ (sub-character) with a slightly different tendency. For example, it is not difficult to find cases where a student who was passive in face-to-face class became active online.

In addition, with regard to the effect of the virtual world, several previous studies have reported that using an immersive virtual world rather than learning using a mobile, PC, or model is helpful in improving learners' learning achievement or learning immersion[27][29]. Among English learning, speaking English is important for the realism of the situation in which you are talking with your interlocutor[23]. Therefore, if virtual reality such as metaverse is used, the sense of reality can be partially increased. Not only that, but using immersive virtual reality for learning can lead to better learning experiences and learning effects.

4.4. Interest and motivation

Interest is a major construct influencing learner motivation, academic achievement, and intention to continue learning in motivational research[5]. In particular, it has an important meaning in learning because situational interest can be developed in the interaction between the learner and the learning environment[30]. Situational interest is a concept distinct from individual interest, and the source of interest felt by learners is explained differently. Personal interest refers to a relatively persistent and stable disposition for a specific task and topic that an individual has, while situational interest is a temporary and immediate characteristic, and occurs specifically for a topic, such as a stimulus or an environment[31]. Among these two other sources of interest, situational interest is emphasized more important than personal interest. This is because, although it takes a long time for the development of personal interest, situational interest can arise immediately in the interaction between the student and the learning environment. Even if there is no personal interest, learning motivation can be enhanced through situational interest through external stimuli or environment. This is because, concerning situational interest, a person who is interested in a specific task or domain may have higher participation in learning[32].

It is reported that media, such as virtual reality, that provide rich information in an immersive way, enhance situational interest. A study by Lin HCS, Yu SJ, Sun JCY, and Jong MSY compared the case where college students were provided with information guidance on university libraries as immersive virtual reality devices and tablets, and reported that the virtual reality group had significantly higher situational interest[33]. A study by Parong J and Mayer RE compared the case of learning the biology class of the human body with virtual reality and the case of learning with normal slides[34]. However, it was reported that the post-test showed a low score. In addition, in a metaverse environment such as second life, an individual's sense of physical presence and social presence can be factors that positively affect situational interest and perceived achievement[35][36]. Collaboration with others can be promoted, and positive expectations for learning effects can be expected.

Kim SY suggested that the use of virtual reality and avatars for language education can increase the realism of communication situations by creating the effect that foreign language learners exist in a specific space, inducing the learners' communication motivation and interest, and enhancing the learning effect[37]. Many English learners are using VR-based English conversation learning environment for practical English speaking environment experience and learning activities by applying real-time interaction function by realizing realistic virtual space.

As such, in previous studies, it is reported that virtual reality or metaverse-based learning environment can enhance situational interest, and a sense of social presence in such a learning environment also has a positive effect on situational interest. In conclusion, situational interest and social presence can be considered together, and a comprehensive consideration is needed in virtual environments that can provide spatial immersion, such as virtual reality or metaverse.
5. Application of Metaverse in English Education

What the globalization era demands is the ability to communicate fluently in real situations. In order to improve the communication skills of English learners, it is necessary to create a practical and meaningful English learning environment by structuring the content and activities of the curriculum around communication. Therefore, if the metaverse, which has the characteristics of multi-user virtual environments, is used, learners can learn while forming social relationships with fellow learners or teachers, rather than learning alone [9]. Therefore, in the non-face-to-face learning situation caused by the COVID-19 pandemic, a learning space that meets the needs and levels of learners and meets the learning goals can be configured on the metaverse, so various activities such as discussion and conversation that can strengthen English communication skills. It is judged to be able to develop listening and speaking skills as well as reading and writing skills by integrating them into the class.

In addition, since it is effective to experience social interaction in a virtual space such as the metaverse is effective in improving learning interest and motivation, it can be a learning method that can increase the learning effect in non-face-to-face learning environment. Therefore, non-face-to-face English education using a metaverse such as VirBELA will enable immersive interaction that can supplement the limitations of existing distance education such as ZOOM. In this way, classes using the metaverse on-contact platform in the COVID-19 pandemic situation were effective for mutual communication that transcends time and space. was able to confirm that it was provided.

Therefore, the method of using metaverse in English education suggested in this study is as follows. First, it should be used as a tool to improve participation and achievement in class. There are avatars familiar to the MZ generation in the metaverse. In the case of online classes conducted only through video, it is not easy to induce active participation of students or to check achievement results. When combined with real-time online lectures to implement a virtual classroom, learner participation is increased and real-time interaction is possible. It can help to improve learning effect and sense of achievement if a space that meets the goal of the class is provided and the avatar is designed to allow attendance, class activities, and interaction to provide a sense of reality like listening to a class in a real classroom.

Second, it should be used as an interest and motivational tool. For the MZ generation, it is important to create a space where they want to experience fun and solidarity in the metaverse and continue to participate. It is necessary to design according to the characteristics of the class by adding elements of play and empathy familiar to the MZ generation, such as room escape games and quizzes, and connecting it with the class experience. For example, when performing English role-play activities, if the instructor configures the spatial composition according to the conversational situation (e.g., San Francisco International Airport) and allows learners to practice with each other, not only motivation but also a sense of immersion can be provided. In addition, fun elements such as games in the metaverse can help reduce tension and form a sense of solidarity, so it is also necessary to actively utilize and deploy play-type learning elements that can motivate in the metaverse.

In addition to this, there are clearly things to consider when using the metaverse in English education. It is true that the metaverse platform is interesting, but it was confirmed that a specific operation strategy suitable for the new system was required. Because this is a new approach, more preparation is needed to make effective use of these programs. Regarding the experience of using the Metaverse platform, there were many negative responses about the stability of the access environment. When using an Internet-based platform such as Metaverse, unexpected connection problems may occur. In particular, as in the study of Lim TH et al., Internet access problems may occur when simultaneously accessing at school [9]. In addition, in
order to apply the metaverse platform, sufficient prior practice is required so that both instructors and learners can use it proficiently. This is because, if the instructor does not know the functions of the metaverse platform, it is difficult to proceed smoothly, and if the learner is not familiar with how to use it, it is difficult to actively participate in the class. Therefore, in order to use the functions of Metaverse to increase the effectiveness of English learning, both instructors and learners need prior training to learn how to use them.

6. Conclusion and Suggestion

Due to the COVID-19 pandemic, many schools have reduced or suspended face-to-face classes and expanded non-face-to-face distance education according to social distancing steps[38][39]. Despite the difficulties and confusion in the rapidly changing educational infrastructure and the fluctuating graph of confirmed cases, university members did not stop their efforts to closely diagnose and analyze the new educational environment and conditions, problems and results, etc[40]. Distance education is rapidly being established in the field of university education. After going through trial and error for the transition to wise non-face-to-face society, many learning materials and educational contents are now being produced with remote technology, and there is a lot of interest in the overall program and platform to realize more in-depth learning and dense interactive online classes[41].

In addition, the education of the future should be prepared with the idea of a new Edutech that not only emphasizes new technologies but can technically supplement the advantages of education of the past[22]. Educational activities in the virtual world that transcend the limits of time and space are expected to become more active in order to cope with difficult situations such as the pandemic era as science and technology advance[11]. As part of these efforts, the need for distance education using the Metaverse platform emerged as a way to overcome the shortcomings of recent distance education. Although metaverse is not used much yet, it is thought that English education using metaverse will be provided in the future for the following reasons.

First, it is because of the increase in class participation and the immersion according to the sense of the reality of education. In the educational field, there are cases where the limit is encountered since the education is conducted in a limited space. However, on Metaverse, it is possible to learn English like a native language through various spaces and interfaces, and furthermore, online language training is possible. Therefore, the advantage of English education using Metaverse is that it can sufficiently increase achievement through leading learning on PCs and laptops. For example, it is not simply teaching through text and video, but even in a virtual world, you can visit a real place to see, listen, and learn.

Second, it is because of the decrease in anxiety that can occur when learning English. In the space of the virtual world, I feel confident that I can do anything. In the case of real-time online English classes, there may be limitations in non-face-to-face communication and consequent pressure, which may hinder learners' willingness to communicate and induce passive participation. However, if learners perceive the online learning environment as a space where free and open interaction can occur, as in the metaverse, where they interact through virtual avatars and freely move and experience the virtual world, it seems to play a positive role in relaxing and reducing anxiety in more comfortable and stable situations. Therefore, if language anxiety can be reduced by using metaverse and the reduced language anxiety can lead to learning achievement, it is judged that metaverse can be used as a more effective English learning tool.

Third, it is because of motivation through interest and fun. It is interesting that each person can choose the avatar they want rather than having a uniform class on the same desk and chair and wearing the same school uniform. In addition, since they participate in the activity while
adjusting their avatar as if playing a game, they can engage in educational activities with an active attitude. As a result, the level of immersion in the activity is inevitably increased. Therefore, learners can acquire language skills such as listening, speaking, and reading about English learning topics by experiencing situations that can occur in real life with the character (person) selected by the learner on the metaverse. I think that such character selection and free movement of space will increase the effect of interaction between learners, thereby inducing learning motivation and enhancing the effectiveness of learning.

Metaverse is slowly approaching us, and has been introduced into university education and is being actively utilized. Although it is currently considered as an alternative that has a useful purpose as a tool that provides a sense of reality in a non-face-to-face situation, the metaverse, once expanded, is expected to continue to be used even after the non-face-to-face situation ends. Now, the effectiveness will only differ depending on which platform is used to provide a creative and efficient environment in the right place and for what purpose, by who first, in what way, and for what purpose. Therefore, it is necessary to actively consider and try on how to use the metaverse for the MZ generation to create a space to have an effect suitable for English education. In addition, this study has limitations in that it is an exploratory study. In the future, based on this study, various types of empirical research are needed to examine the effectiveness of selecting a metaverse platform suitable for the purpose and target of English class and designing an actual class space.

7. References

7.1. Journal articles

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7.2. Thesis degree
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7.3. Additional references

8. Appendix
8.1. Authors contribution

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