Abstract

Purpose: The purpose of this study is to develop an English learning program using metaverse that can create a variety of educational environments in a virtual space in the post-COVID era. This study was conducted with culture and art as the content subject, and it was designed so that students could experience various types of metaverse technology and mixed reality to increase their participation in learning and the learning effect. It also introduces effective online learning tools that can be used in metaverse-based English learning programs.

Method: Students improve their English skills by examining museums with Google Earth and Art&Culture and exploring exhibits and materials related to Korean cultural assets there, exploring Korean cultural assets and art galleries using VR and AR, and collecting related cultural and artistic materials. In addition, through the process of creating and presenting materials based on the metaverse, interaction was promoted, so that the understanding of each country's culture and arts and English ability could be improved together.

Results: The English learning program presented in this study consists of various tasks such as experiencing culture and art contents through AR and VR, collecting cultural and art-related materials, and producing presentation materials. Roughly speaking, in the introduction part, learning objectives and key expressions are introduced using the functions of the metaverse platform ZEP and the online learning tool 'edpuzzle', and motivation is induced through videos. In the development stage, AR and VR-based apps such as ZEP, Google Earth, Art & Culture, etc. are used to visit museums in Korea or British and American countries, research related culture and art, and collect data. Then, by specifying the topic for each group, use ZEP, Google Earth, etc. to produce materials that can be presented. After that, practical presentations using ZEP and feedback (instructors and colleagues) are provided. In the final organizing stage, there may be quiz solving using QuizN and sharing opinions about the class through online learning tools such as Jamboard and Padlet.

Conclusion: In this program, ZEP, a metaverse platform capable of interactive communication such as various avatars, virtual theme spaces, images, and PDFs, was used to enable task execution and practical interaction. In addition, by using various online learning tools in a new environment and context, students will be able to develop self-directed learning skills, problem-solving skills, and digital literacy skills. Through this metaverse-based English learning program, learners will be able to experience various forms of cultural arts and realistic content, and furthermore, they will be able to participate in convergence cultural thinking expansion and future-oriented classes.

Keywords: Metaverse, ZEP, Online Learning Tool, Culture and Art, English Learning

1. Introduction

After the advent of the COVID-19 virus, as social distancing to prevent the spread of infectious diseases became commonplace, non-face-to-face classes became the new normal in education\cite{1}. The threat of an invisible virus has become a catalyst for changing the notion of a space where education takes place, and a stimulus for the transition to a digital society. As a result,
many educational contents and class materials are now being implemented with remote technology, and various online programs and platforms to create a bi-directional classroom environment are attracting attention as a new educational medium.

Among them, Metaverse has recently been attracting attention. Metaverse is a compound word of Meta, meaning virtual and transcendence, and Universe, meaning the real world[2][3]. Although there are many online platforms where students can receive education without meeting in person, Metaverse has a big difference, unlike existing programs, in that students access the 'same space' together through an avatar. Various methods of communication(text, voice, emoticons, photos, videos, etc.) and virtual experiences through metaverse's avatar create an educational environment that is different from the real world[4]. The educational environment using the metaverse has the characteristics of experiencing a variety of experiences, communication, and expanded reality, which helps participants to learn by increasing their immersion and sense of presence[5][6]. Therefore, in this new educational environment, there is a need for an education method using the metaverse that enables learners to actively engage in activities and achieve educational effects.

We are well aware that we can no longer go back to the world before the COVID-19 virus outbreak. In the future, the use of distance education tools such as metaverse will increase in the face of non-face-to-face cultural demands and changes in the perception of meeting and space. However, the current educational method using metaverse in schools is only at the beginning stage, and studies using metaverse in language learning centered on foreign languages such as English in particular are insufficient. Therefore, in this study, using ZEP, a metaverse platform that can be used without special burdens such as the use of specific tools, technical support, and cost, we intend to explore an English-based teaching method that focuses on culture and art. Therefore, this study proposes a variety of online learning tools and convergence English teaching methods that can be directly applied to the current university English learning, while improving students' English ability and promoting understanding of culture and arts.

2. Theoretical Background

2.1. Definition and classification of metaverse

Metaverse refers to a world realized in an online virtual space that enables social, economic, and cultural activities and interactions similar to reality[7]. In the metaverse, communication and interaction are possible without time and space constraints, and various forms of collaboration and sharing of life are possible[8].

According to Kim Sang-gyun(2021), the Acceleration Studies Foundation(ASF), an American technology research foundation, classifies metaverse technology into four categories as follows[9].

First, augmented reality(AR) is a technology that synthesizes images, documents, videos, etc. implemented in a virtual space in real time in real time. By projecting and providing necessary information on virtual educational materials, it provides students with a sense of reality and at the same time has a positive effect to increase the sense of immersion[10][11]. In addition, many studies have revealed that providing education using augmented reality can help in cognitive aspects such as academic achievement[11]. It can increase the sense of realism and immersion for learners[12][13]. By actively utilizing these augmented reality contents, students can not only understand more in-depth contents with AR contents that are difficult to understand with only 2D explanations of paper books, but also have their own hands rather than having to go to a specific place to experience any educational contents[14]. You will be able to experience the content regardless of time and place.

Second, lifelogging refers to the online recording, storage, and sharing of daily information and experiences of people or things[14]. For example, it records and shares an individual's daily
life through SNS such as Facebook and Instagram, or provides classes, assignments, and feedback using a learning management system (LMS). It is highly likely to be used as an educational tool in that it provides students with a creative two-way communication framework and can share appropriate feedback and reactions from teachers and colleagues on SNS.

Third, the mirror world refers to the realization of the shape and structure of the real world in the virtual world as it is reflected in a mirror. It is thanks to this technology that I can check the information I want while viewing the map in real time on a navigation system that provides traffic information, ride-sharing mobility, or a food delivery service app[14]. Since the real world can be described as it is, but an expanded space containing digital information can be provided, if the learning field can be implemented in a virtual space along with the information necessary for education, its utility as an educational tool will be limitless. In addition, when using various platforms (Cospaces, Mincraft, etc.) that can directly create virtual spaces, students can creatively build virtual spaces that are the same as reality, that is, mirror worlds, and link appropriate educational content within them[14].

Fourth, the virtual world means that activities similar to reality can be performed through an avatar in a newly constructed virtual environment that is different from reality with 3D technology[14]. The digital space of 3D already exists next to us in various forms (game, video, application, etc.), but the metaverse world has a big difference that people can access the virtual space through avatars and communicate in real time. Therefore, using the metaverse platform for remote education can help students interact based on the elements of vision and hearing provided by avatars and share three-dimensional experiences with others, thereby increasing the sense of reality and participation in education[15]. Jeong et al. (2021) revealed that metaverse has advantages in learning and interesting factors by providing a learning environment in which interactions between students can occur smoothly in terms of social reality and learning reality[6]. In addition, Yoon Heon-Jun (2021) said that students can act as secondary characters (sub-characters; avatars) with a slightly different tendency in the virtual world of metaverse, so they can expect a positive impact in terms of the definition of multi-persona[16].

As seen above, the metaverse has various characteristics, and it is possible to implement an educational environment that can promote a new type of English learning in this virtual space. In particular, students can perform tasks for language learning and directly participate in communication through an avatar created according to their personality in the virtual world, and this educational environment provides students with a sense of presence and opportunities for active learning. Practical interaction between learners through various metaverse technologies has the advantage of improving learners’ English skills. Therefore, in this study, we design an English learning method centered on the metaverse and present a learning method that allows students to experience a new level of diverse educational environment.

2.2. English learning and culture and art education using metaverse

In the face of the development of digital technology and the post-COVID era, many cultural and artistic contents around the world are digitized and preserved, and various forms of digital exhibitions and visitor experiences are being made[4]. Cultural contents are applied to various metaverse platforms to expand user access and participation[17], and there is much discussion about educational use of culture and art that strengthens metaverse characteristics such as augmented reality and virtual reality[18][19].

Culture exists in various forms, and objective cultural awareness and content knowledge about culture itself in English learning are very important parts that can lead to expansion of language learners’ achievements and values[20]. Lado (1964), a structuralist linguist, believed that language is inextricably related to socio-cultural context, so understanding the target culture in which the language is used is essential for understanding and learning the target language[21]. Stern (1992) asserts the close relationship between language and culture, and believes that language education and cultural education should be conducted at the same time[22]. Accordingly, as the need for cultural understanding in English education has been highlighted,
cultural guidance for understanding the target culture as well as linguistic guidance for English is considered important. The understanding of the culture of native speakers of English as their mother tongue, that is, the English-American culture, is beginning to become important in English education.

Furthermore, from the 1990s, as communication between native speakers and non-native speakers as well as between non-native speakers increased and English was used as an international language, the concept of target culture began to change in communication-oriented English education[4]. McKay(2000) argued that considering the active use of English as an international language, he should guide both his own culture, English-speaking culture, and the culture of the world beyond guiding the culture of English-speaking countries[23]. In other words, from the perspective of viewing Anglo-American culture as a target culture in language(English) education, the scope is gradually expanding to global culture, and through this, education is moving toward developing the ability to understand other cultures and understand our culture. The advanced digital technology of the present era enables practical experiences of these cultural and artistic elements through realistic content such as VR and AR, and furthermore, creates a new learning environment in various forms for effective teaching and learning[4].

Chatting using avatars in the dimension virtual reality space was found to help English learners improve their interest[24], and task performance through VR apps played a positive role in English learners’ participation in classes[25]. Godwin-Jones(2021) said that future education will emphasize games and collaboration, and English learning using VR and AR that can implement specific situations will play an important role[26]. This direction of language education is because English learning is not only important for surface language acquisition but also socio-cultural learning, and research on this will be more active because technology use such as metaverse can create various learning environments.

In addition, the metaverse enables conversation practice and actual conversation to support realistic learning as well as images, videos, and voices, thereby increasing the immersion of learning participants in the metaverse's virtual space and increasing their interest in class. In Metaverse, various types of collaboration such as pair activities and group presentations are possible, so an educational approach that reflects these characteristics in English learning is required. Therefore, this English learning program using metaverse’s technical approach and various online learning tools can be a new English educational method to increase learners' interest and class participation. In this study, students can experience various cultures and arts while exploring cultural arts supported by augmented and virtual reality in real or virtual reality, and to improve their English skills while performing specific tasks on the metaverse. This metaverse-based English learning will help learners to recognize various cultures from an objective standpoint and expand convergence cultural thinking. In addition, it will be very helpful to experience and understand the metaverse, a futuristic class model, by understanding various cultural and artistic contents in English and writing and presenting travelogues through the metaverse.

3. Composition and Practice of English Education using Metaverse

3.1. Metaverse utilization and teaching goals

In this study, we intend to design a program for improving English proficiency using ZEP, a metaverse platform. Through this English learning program, learners can experience Korean culture and art newly composed of digital technology while exploring various types of metaverse technology supported by ZEP and Korean cultural heritage based on augmented and virtual reality, and learn specific Korean cultural contents. You can develop the ability to introduce yourself to the world. At the same time, college students can improve their practical English skills while experiencing the metaverse and promote new discoveries about Korean cultural contents.
Metaverse platforms that are mainly used in Korea include ifland, ZEPETO, and Gather.town. In the first half of this year, 'Zep', a metaverse platform developed jointly by 'Naver Z', which is servicing Zeppetto, and 'Supercat', which made the Kingdom of the Wind: Kite, was officially launched. It is similar to the Gather.town platform, which has been evaluated as the most useful and practical metaverse, but it has a great advantage in that it can be used for free regardless of the size and number of people, including graphic quality and stability. In addition, Gather.town, developed in the United States, is in English, so it is difficult to understand intuitively even if you read the guide, while ZEP provides a Korean version of the guidebook homepage and notion page, so it is easy to find information related to the production. In particular, ZEP has an 'asset store' that is not found in Gather.town, which is a space where you can download objects and backgrounds necessary for creating metaverse maps(<Figure 1>). The asset store is divided into objects and maps. If you want to decorate a virtual classroom space, select the desired school map from the map, and use it by downloading and installing furniture such as a desk or chair from the object tab. Comparing the commonalities and differences between Gather.town and Zep, it can be summarized as follows <Table 1>.

Figure 1. Zep's 'asset store.'

![Zep's 'asset store.'](image)

Table 1. Comparison of metaverse platform 'gather.town' and 'ZEP.'

<table>
<thead>
<tr>
<th>Item</th>
<th>Gather.town</th>
<th>ZEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>Avatar, video, chat, voice</td>
<td>Avatar, video, chat, voice</td>
</tr>
<tr>
<td>Simultaneous connection</td>
<td>500 people</td>
<td>50,000 people</td>
</tr>
<tr>
<td>Device support</td>
<td>PC, mobile</td>
<td>PC, mobile</td>
</tr>
<tr>
<td>Program installation</td>
<td>✗ (Browser based)</td>
<td>✗ (Browser based)</td>
</tr>
<tr>
<td>Custom</td>
<td>Can be self-made</td>
<td>Can be self-made</td>
</tr>
<tr>
<td>Cost</td>
<td>(When more than 25 people connect) $2 per person</td>
<td>free</td>
</tr>
</tbody>
</table>
In this metaverse-based English class, using ZEP’s virtual space(school, exhibition hall, etc.) as the main platform, various functions within the metaverse and online tools for education(edpuzzle, quizN, etc.) are utilized. In the metaverse platform ZEP selected in this study, all participants can watch the same video at the same time by inserting a YouTube video using the link embed function. In Gather Town, even if a YouTube video link was inserted, the entire number of people could not watch it at the same time, and the connection to specific links other than YouTube was limited, so the content that could be inserted was limited. On the other hand, ZEP uses a link embed function to connect an external link to an object so that participants can go directly to the corresponding content.

3.2. Content and composition

The goal of this metaverse-based English class is to strengthen students’ participation and interest in classes by utilizing authentic materials written in English based on metaverse, and to improve learners’ integrated English skills through comprehensive presentation using metaverse. In other words, it is to improve the English vocabulary, grammar, reading, writing and speaking skills related to the introduction of cultural arts and cultural properties. In addition, augmented reality can be used to increase immersion and enhance practical experience, as well as promote interest in and knowledge expansion of cultural assets of various countries. The details of the metaverse-based English learning program developed in this study are as follows.

3.2.1. Introduction stage

In the first introduction stage, the learner knows the topic and grasps the main point of the task. arouse interest in Through the screen sharing function provided by ZEP, it is also possible to introduce and learn words and expressions related to culture and art while sharing data. You can go one step further and use edpuzzle, one of the online learning tools. Edpuzzle is a site that creates learning activities by watching YouTube videos or videos created by teachers. As shown in <Figure 2>, teachers can check students’ understanding by uploading videos and adding quizzes or explanations wherever they want. When students play the video and proceed to class, the video stops at the point designated by the teacher, and a sudden quiz or additional explanation is provided. By linking with Google Classroom, students can also check their class progress.

Figure 2. Edpuzzle.

3.2.2. Development stage

In the second stage of deployment, there are two ways to utilize the metaverse. First, it is a method of planting and arranging objects(TV, poster, computer, etc.) with photographic mater-
rials that learners can enter and perform inquiry activities in the space set by the teacher. Learners can collect appropriate information by looking around each material through an avatar. At this time, they can learn words and expressions on their own by inserting materials such as reading fingerprints for culture and art, audio files and scripts of various contents into the object. For example, by using reading fingerprints and related video files about Changdeokgung Palace, one of Korea's cultural heritages, they can learn the unique words and concepts that are dealt with when introducing Korean culture, and expand the scope of understanding and interest in Korean culture.

Useful online learning tools that can be used at this stage include Google’s Art & Culture or Google Earth. Through Art & Culture, learners can receive various services such as museum exploration, cultural properties explanation, and street view tour, and through this augmented reality technology, learners can enjoy museum exhibitions as if they were actually in the museum(<Figure 3>). In this way, by using augmented reality educational contents, it is possible to explore not only Korean cultural assets, but also cultural assets of British and American cultural countries. Furthermore, it is possible to grasp the information and experiences collected through augmented reality, characteristics of cultural properties, etc., and to take pictures or save scenes realized in augmented reality during the tour.

Figure 3. Google earth ‘museum explorer’.

Next, after data collection and planning for an English presentation, specific materials for a metaverse-based presentation are produced. For each item, research and presentation of cultural and artistic materials related to Changdeokgung, along with site visits, impressions, photos, videos, and records. Based on the information collected at this time, students are instructed to prepare for the presentation by using key expressions. Students make storyboards to materialize the content, but write and practice in English. In this way, the task is given to perform even or group activities, and the task is moved to another virtual space(group activity room) in ZEP to perform the task, and then gathered again in the initial virtual space to share the degree of task performance(<Figure 4>).
A teacher can designate a private discussion area by placing as many different tiles as the number of groups as shown in Figure 5 and selecting 'Private Space' in the tile effect. By arranging the six straight tiles in the lower right corner in Figure 6, the teacher can go back and forth between groups and supervise each group activity. The content of the whiteboard for each group is shared, and the instructor gives primary feedback on the content of the whiteboard. Students make a PPT reflecting this feedback to create a PDF or collect photos or records to make a video. Students practice their English presentation using the group activity room prepared by the teacher and prepare for the final presentation.
After the group activity is over, they return to the classroom map and provide an opportunity to give an actual English presentation to share and express the materials they have created with other students. In this case, the teacher can use the spotlight function, which is one of the metaverse functions. In ZEP, if the teacher put a tile effect on the stage to be presented or at a specific location, the spotlight function will be activated so that all students can hear when a student at that location speaks. Students who are satisfied with other students' presentations can respond through various reactions, allowing them to participate by reacting in various ways (chat, emoticons, voice, etc.) provided by ZEP. Expressing students' moods and behaviors in various ways through avatars is a way to strengthen free communication, friendship, and interaction, and to induce more active participation in classes by lowering affective filters such as learner anxiety and fear[4].

3.2.3. Consolidation stage

And lastly, when the teacher want to check how much vocabulary and expressions the students have learned in the consolidation stage, it is good to use a site called QuizN, which is one of the online learning tools. QuizN allows anyone with a PC or smartphone to create quizzes, interact with them, and participate in quiz games, making them feel immersive and competitive in the classroom, which can be boring.

![Figure 7. QuizN.](image)

In addition, the teacher can use the mini-games provided by ZEP. In the metaverse 'ZEP', there are various mini-games such as pooping, choking quiz, and zombie game. Room escape games are also possible, but the teacher can open and run his/her own map through the tile effect function of ZEP. In terms of learning, Escape Room and OX Quiz are appropriate. The room escape game is a game that escapes a room by solving quizzes one by one, and because the game element of escaping the room is included, students can participate in the quiz with interest. OX Quiz is a simple game in which questions are shared in real time and then moves to the answers they thought of, and it can increase the concentration of participants through class-related questions. In particular, the OX quiz in ZEP is more convenient because it automatically moves the participant who selects the wrong answer after the set time limit, unlike Gather Town, where the wrong answerer had to move manually.

And as a way to share students' feelings or opinions about the class, it is possible to use Google's Jamboard or padlet. As shown in <Figure 8>, place an object on one side of the blackboard and add a website through the embed function. In the case of Jamboard, the students can write with a pencil or post-it note, and the padlet is similar.
Figure 8. Object placement with Jamboard function in the classroom.

The following <Table 2> summarizes the above class steps and activities.

Table 2. Class steps and activity contents.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Metaverse function</th>
<th>Online learning tools(website)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Introduce the topic</td>
<td>- Link photos, videos and websites to objects</td>
<td>- Edpuzzle</td>
</tr>
<tr>
<td>- Presentation of learning goals and contents</td>
<td>- Utilize whiteboard or screen sharing function</td>
<td></td>
</tr>
<tr>
<td>- Introduce tasks and key expressions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Motivation and quiz through video</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Collecting and analyzing information</td>
<td>- Link photos, videos and websites to objects</td>
<td>- Art &amp; culture</td>
</tr>
<tr>
<td>- Reorganize necessary information and express creatively</td>
<td>- Group activity room (separate map)</td>
<td>- Google earth</td>
</tr>
<tr>
<td>- Practice giving presentations using key expressions</td>
<td>- White board</td>
<td></td>
</tr>
<tr>
<td>- Presentation using key expressions</td>
<td>- Present using spotlight</td>
<td>- Jamboard</td>
</tr>
<tr>
<td>Consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Evaluation through quiz</td>
<td>- OX Quiz</td>
<td>- QuizN</td>
</tr>
<tr>
<td>- Share your opinion</td>
<td></td>
<td>- Jamboard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Padlet</td>
</tr>
</tbody>
</table>

The metaverse-based English learning program developed in this study includes augmented reality and virtual reality, which are realistic content, to enhance the learner’s interest and immersion, can increase participation. ZEP, which is easy to operate and can use apps and decorate avatars for free, was used as the main platform for English learning so that it can be easily applied to the educational field. In addition, in the process of performing various tasks, English speaking, writing, reading and listening skills can be strengthened. In this virtual space, learners can perform various learning tasks, have conversations, and promote real interactions among learners, so that an active learning environment using foreign languages can be implemented directly in this virtual space.

Learners can improve their reading and listening skills in the process of exploring cultural properties, and they can increase their vocabulary and discourse skills. They can intensively improve their writing and speaking skills while experiencing various metaverse techniques in the process of making presentation materials and presenting. In other words, through this English teaching method, learners can improve their practical English ability to integrate language use with the superficial language learning of English, and experience mixed reality through AR and VR while performing cooperative tasks. Effective understanding of various arts and culture
can be promoted. This metaverse-based English learning program has the advantage of increasing learners’ interest and immersion in learning English by utilizing various cultural and artistic contents centered on ZEP, which is easy to access and use.

4. Conclusion

This study aimed to develop an effective English learning program using Metaverse, which has a lot of educational potential in recent times in the post-COVID era. This study aimed to develop a metaverse-based English learning program that can reduce the technical and cost burden in field application and is realistically accessible. It was intended to promote the improvement of integrated skills such as writing.

The English learning program presented in this study consists of various tasks such as experiencing culture and art contents through AR and VR, collecting cultural and art-related materials, and producing presentation materials. Roughly speaking, in the introduction part, learning objectives and key expressions are introduced by using the functions of the metaverse platform ZEP and the online learning tool ‘edpuzzle’, and motivation is induced through videos. In the development stage, AR and VR-based apps such as ZEP, Google Earth, Art & Culture, etc. are used to visit museums in Korea or British and American countries, research related culture and art, and collect data. Then, by specifying the topic for each group, use ZEP, Google Earth, etc. to produce materials that can be presented. After that, practical presentations using ZEP and feedback (instructors and peers) are provided. In the final organizing stage, the students can share opinions about the class through quiz solving using QuizN and online learning tools such as Jamboard and Padlet. By using the various online learning tools in a new environment and context, students will be able to develop self-directed learning skills, problem-solving skills, and digital literacy skills.

This metaverse-based culture and arts-centered English learning program uses a variety of online learning tools and realistic content to increase interest and interest in learning, and helps learners to view diverse cultures from an objective perspective and promote convergence cultural thinking. will be Performing specific tasks and cultural experiences using various metaverse technologies can become a future class model for English learning. In addition, this metaverse-based English teaching method will provide learners with a variety of communication methods through sub-characters and a creative educational environment suitable for the new era. It will be an opportunity for a new understanding. This will become a model of convergence education that can go beyond acquiring knowledge in only one field of English, and develop the competencies required by the future society through various cultural and artistic experiences.

5. References

5.1. Journal articles


### 5.2 Books


6. Appendix

6.1. Author’s contribution

<table>
<thead>
<tr>
<th>Initial name</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>DH</td>
</tr>
<tr>
<td>- Set of concepts ☑</td>
<td>- Design ☑</td>
</tr>
<tr>
<td>- Getting results ☑</td>
<td>- Analysis ☑</td>
</tr>
<tr>
<td>- Make a significant contribution to collection ☑</td>
<td>- Final approval of the paper ☑</td>
</tr>
<tr>
<td>- Corresponding ☑</td>
<td>- Play a decisive role in modification ☑</td>
</tr>
<tr>
<td>- Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑</td>
<td>- Participants in Drafting and Revising Papers ☑</td>
</tr>
<tr>
<td>- Someone who can explain all aspects of the paper ☑</td>
<td></td>
</tr>
</tbody>
</table>

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