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Alanında Uluslararası Araştırmalar IV

Eğitim Bilimleri

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EĞİTİM
yayınevi

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ÖNSÖZ

Eğitim Bilimleri Alanında Uluslararası Araştırmalar IV isimli bu eser, Türkçe veya İngilizce dillerinden birinde yazılmış 6 bölümden oluşmaktadır. Toplamda 7 araştırmacının titizlikle yürütüp yazıya döktükleri çalışmalar, *davranış kalıplarının eğitim uygulamalarına yansıması, öğretmenlik mesleği bağlamında sabır, Web 2.0 araçlarının müzik öğretiminde kullanılması, yabancı dil öğretim uygulamalarında Metaverse'in kullanımı, özel yetenekli öğrencilerin yaratıcı yazmaya yönelik metaforik algıları* ve yine *özel yetenekli öğrencilerin koronavirüse yönelik metaforik algıları* konularını kapsar. Bu kitapta yer alan çalışmalar nitel araştırma yöntemleri kullanılarak yürütülmüştür. Araştırma bulguları bağlamında yapılan öneriler, öğretim ve değerlendirme uygulamalarını çeşitlendirme ve etkinliğinin artırma imkânı sunmaları bakımından önemlidir.

Kitabın ilk bölümünde *DAVRANIŞ KALIPLARI ve EĞİTİME YANSIMALARI* başlığı ile Ahmet AKKAYA ve Nihat ÇALIŞKAN, davranışların kategorize edilmesinde kullanılan sistematik yapılar olan davranış kalıplarının özelliklerini göz önüne bulundurarak bunların eğitime yansımalarını ve işlevlerini tartışmışlardır. Eğitimin davranışlar üzerine yoğunlaşması sebebiyle davranış kalıpları, öğretmen ve öğrenci iletişim ve etkileşimde, bireylerin etki alanını genişletmede, zihinsel-duygusal-fiziksel alışkanlıkları düzenlemede ve insanın algılarını şekillendirmede etkindir. Bu bağlamda, yazarlar eğitim-öğretim süreçlerinin genelinde öncelikle davranış kalıplarının bilinmesi, analiz edilmesi, davranış kalıplarına uygun eğitim tasarımının yapılması ve eğitim-öğretim süreçlerinin paydaşların davranış kalıpları da göz önünde bulundurularak yönetilmesi gerektiğini belirterek uygulama önerileri sunmuşlardır. Yazarlar ayrıca davranış kalıplarına uygun tasarlanan, yönetilen ve değerlendirilen

uygulamaların eğitim-öğretimde verim ve kaliteyi arttırabileceğini vurgulamışlardır.

İkinci bölümde *ÖĞRETMENLİK MESLEĞİ ve SABIR* başlıklı çalışmalarında Erdal MERİÇ ve Mustafa ERDEM eğitim disiplini bağlamında sabır kavramını tartışmışlardır. Çalışmanın ilk bölümünde sabrın tanımını, önemini, doğasını ve gelişimini detaylı şekilde sunan yazarlar, sabrı başkalarıyla yoğun iletişim gerektiren birçok meslekte olduğu gibi öğretmenlik mesleğinde de önemli olduğunu ve öğretmenlerin sahip olması gereken önemli kişisel özelliklerden biri olarak belirtmişlerdir. Öğretmenlik mesleğini icra ederken öğretmenler; öğrencileri, meslektaşları, okul yöneticileri, okuldaki diğer çalışanlar ve öğrenci velileriyle ilişkilerinde zaman zaman beklenmeyen ve istenmeyen durumlarla karşılaşılabilir. Yazarlar bu durumu göz önünde bulundurarak alan yazın taramasına dayalı öğretmenlerde sabrın geliştirilmesine yönelik çeşitli önerilerde bulunmuşlardır.

Üçüncü bölümde *MÜZİK ÖĞRETİMİNDE WEB 2.0 ARAÇLARININ KULLANIMI* başlıklı çalışmasında Burcu AVCI AKBEL, müzik öğretiminde eğitim teknolojisi araçları kullanımının geleneksel sınıf içi öğrenme ortamlarına alternatif öğrenme ortamları oluşturabileceğini belirterek, Web 2.0 araçlarının müzik öğretimini etkili, verimli ve nitelikli hâle getireceğini vurgulamaktadır. Bu bölümde yazar, dinleme, izleme, ölçme-değerlendirme alanlarında hem öğretmenlere hem de öğrencilere yarar sağlayabilecek Web 2.0 araçlarını (SoundCloud, Screencast-O-Matic ve Formative) tanıtmıştır. Ayrıca, her bir Web 2.0 aracı için öğretim uygulamaları da örneklerle sunmuştur.

Kitabın dördüncü bölümünde *METAVERSE in THE CONTEXT of FOREIGN LANGUAGE EDUCATION* başlığı ile Ferdiye ÇOBANOĞULLARI, kullanıcıların çevrimiçi oyun,

sosyal medya, sanal gerçeklik (VR) ve artırılmış gerçeklik (AR) unsurlarını birleştirerek etkileşime girebildiği üç boyutlu bir sanal dünya olan Metaverse'in eğitim ve özellikle yabancı dil öğretimindeki yeri tartışmaktadır. Yazar, yabancı dil öğretiminde Metaverse'in öğrencilere duyuşsal ve bilişsel fırsatlar sunduğunu ve bunların öğrencilerin öğrenmeye olan ilgisini ve katılımını arttırabileceğini, avatarlar aracılığıyla kendilerini ifade edebileceklerinden iletişim veya hata yapma korkusundan arınmış bir dil eğitimi deneyimlemelerine yardımcı olacağını, etkileşimli bir ortamda hedef dil becerileri ve problem çözme ve/veya eleştirel düşünme becerilerini gelişeceğini vurgulamıştır. Yazar, aynı zamanda bu uygulamaları öğrenme deneyimini zenginleştiren tamamlayıcı araçlar olarak görülmesi gerektiğini belirterek, tüm eğitimcilerin Metaverse'i etkili bir şekilde kullanmak için gerekli teknik donanıma veya bilgiye sahip olamayabileceği ve gizlilik veya veri güvenliği gibi bazı etik ihlallerin yaşanabileceği hatırlatılmıştır.

Beşinci bölümde *ÖZEL YETENEKLİ ÖĞRENCİLERİN YARATICI YAZMAYA YÖNELİK METAFORİK ALGILARI* başlıklı çalışmasında Yıldız YENEN AVCI, öğrencilerin herhangi bir konuda ve metin türünde duygu, düşünce, hayal ve isteklerini özgür ve özgün bir biçimde ortaya koyduğu bir yöntem olan yaratıcı yazma kavramını olgubilim deseni ile incelemiştir. Bu bağlamda, 3.,4.,.5., 6. ve 7. sınıfta okuyan 91 özel yetenekli katılımcının, yaratıcı yazmaya yönelik metaforik algıları içerik analizi yöntemi ile çözümlenerek incelenmiştir. Öğrenciler, yaratıcı yazmayla ilgili tablo, sanat, şiir yazmak, şarkı söylemek, masal, rüya, özgürlük, icraat ve hayal kurmak gibi metaforlar üretmiştir. Öğrencilerin ürettiği metaforların sadece 3'ünün (icraat, akıl yorma ve boş odada oturmak) olumsuz olduğu görülmüştür. Yaratıcı yazmaya dair metaforların çağrıştırdığı kavramlar ise yaratıcı yazmanın tanımına uygun şekilde özgürlük, duygu ve düşünce aktarımı,

özgünlük, ilham ve hayal gücü'nü içermektedir.

Kitabın son bölümünde *ÖZEL YETENEKLİ ÖĞRENCİLERİN KORONAVİRÜSE YÖNELİK METAFORİK ALGILARI* başlıklı çalışmasında Yıldız YENEN AVCI, 2019 tarihinde hayatımıza giren ve sadece yetişkinlerin değil çocukların yaşamını da etkileyen koronavirüse dair özel yetenekli çocukların metaforik algılarını incelemiştir. Olgubilim deseni ile yürütülen bu çalışmada, bilim ve sanat merkezlerine devam eden 81 özel yetenekli öğrenciden veri toplanmıştır. Yazar, verileri içerik analizi ile çözümleyerek, koronavirüse ilişkin 54 farklı metafor olabileceğini ve bunlardan top, boya, bomba, zehir, grip, mikrop ve hapis(hane) in en çok tekrarlayan metaforlar olduğu belirtmiştir. Öğrenciler tarafından üretilen metaforlar 19 kategori altında sıralanmış ve bu kategorilerden 16'sının olumsuz ve 3'ünün ise olumlu nitelikte olduğu belirtilmiştir.

Eğitim bilimleri alanında değinilen kavramların ve/veya kuramların uygulamaya yansıtılarak, eğitimde kalite ve verimin artması istenilen bir durumdur. Fakat bu, her zaman kolay veya kısa vadede ulaşılabilir olmayabilir. Uygulamaların iyileşmesi ya da çıktıların istendik yönde değişmesi zaman alabilir. Bu noktada önemli olan, güncel araştırma bulguları ışığında öğrenci ve öğretmen özellikleri, sosyokültürel ve ekonomik değişkenler gibi bağlamdaki etkenleri de göz önünde bulundurarak çalışmalarda istikrarlı gayret göstermektir. Bu eserin araştırmacılara, öğretmen ve/veya öğretmen adaylarına ve meraklılarına faydalı olmasını diler, eserin ortaya çıkmasında emeği geçenlere teşekkür ederiz.

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METAVERSE in THE CONTEXT of FOREIGN LANGUAGE EDUCATION

Ferdiye ÇOBANOĞULLARI[1]

INTRODUCTION

With the relentless progress of technological developments and the efforts of major tech companies, the concept of the Metaverse has begun to gain prominence in recent times. The Metaverse can be generally defined as a digital environment where individuals can interact through their avatars (Suh & Ahn, 2022). In a broader sense, the Metaverse can be described as a cyber social plane that offers a new reality, a realm of meaning, and opportunities for collaboration by utilizing various advanced technologies simultaneously and integrally, providing infrastructure and interaction opportunities for cultural, intellectual, and economic production (Kuş, 2021).

The Metaverse is a three-dimensional virtual world where users can interact virtually, combining elements of online gaming, social media, virtual reality (VR) and augmented reality (AR). It is a constantly active ecosystem that transcends geographical boundaries. This massive virtual universe can provide services that would not be possible in the real world.

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It offers many opportunities for playing games, socializing, entertaining, learning, working, and offering various business opportunities (Takyar, 2023).

The concept of the Metaverse first appeared in the 1992 science fiction novel "Snow Crash" by Neal Stephenson. The first traces of the Metaverse began to emerge about ten years ago with platforms like Roblox. The Metaverse aims to create a virtual world that is an extension of the real world, promising more than just interaction for users. This next-generation internet technology is based on technologies such as Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR), Internet of Things (IoT), Artificial Intelligence (AI), 5G, and Blockchain. Although the Metaverse is not fully developed yet, many companies worldwide are making significant investments in its development. The Metaverse has the potential to create a completely interconnected virtual world and offer hyper-realistic digital experiences. The presence of the technologically savvy Generation Z (Gen Z) and the latest technological advances are accelerating the transition to the Metaverse. The key factors behind this rising technological trend can be summarized as follows (Gupta & Sarvepalli, 2022; Innovius Research, 2023):

- Widespread consumer adoption of AR/VR headsets,
- The transition to hybrid working arrangements due to the pandemic,
- High-speed networks (5G),
- Advancements in AI, IoT, and cloud infrastructure,
- Customer preferences shifting towards digital asset investments and virtual experiences,
- The development of Web 3.0.
- Brain Computer Interfaces
- Blockchain

Metaverse technologies have a long history, dating back centuries to early sensory illusions and more recently, advancements in computing during the late 20th century. XR (Extended Reality) and 3D technologies have played a significant role in various fields over the years. However, during their initial development, these technologies were expensive, bulky, and primarily used for specific industries. Today, with the availability of high-resolution mobile screens, precise motion sensing devices, and powerful mobile processors, XR is becoming more accessible and widespread in our everyday lives, including our homes, offices, and classrooms. XR is becoming an integral part of our lives, transforming how we work, socialize, engage in leisure activities, and learn (Pimentel et al., 2022).

The Metaverse concept, which has attracted attention with billions of dollars in investments from large companies such as Facebook, Microsoft, Roblox, and Epic, is considered the next stage in the advancement of the internet (Kaçmaz, 2022). The Metaverse is an innovative technology with the ability to interact with various sectors through the concept of twin cities. Integrations that involve creating a complete copy of the real world in the virtual environment and tracking people through their avatars are of great interest (Pamucar et al., 2023). The development of the Metaverse is dependent on factors such as infrastructure, standards, privacy, and security. Technological advancements such as 5G, Cloud, Hardware, and the Internet of Things are contributing to the rapid shaping of the necessary technical infrastructure to support various usage scenarios of the Metaverse. However, it is not yet possible to say that certain standards, privacy, and security protocols have fully developed. In Metaverse platforms, users can interact with each other using spatial computing and interact in areas connected to digital objects. Spatial computing is a term that describes interactions

in virtual, augmented, and mixed reality. Current platforms are still in the development stage, and many companies are trying to find the necessary building blocks to take advantage of the great potential of the Metaverse. For example, companies such as Roblox, Decentraland, and Sandbox are offering their own platforms to create different applications. These platforms will be designed to be compatible with each other to allow users to create and transfer digital assets and transactions between different virtual worlds. In addition, platforms such as AWS, Azure, Unity, Apple are also in the process of creating the necessary toolsets and services to reach this goal (Gupta & Sarvepalli, 2022).

The first industries to enter the Metaverse were primarily gaming and game technology platforms. In addition to these, sectors such as music, film, fashion, sports, art, automotive, and tourism were among the early adopters of Metaverse technology. Areas such as transportation, defense, and medicine are also expected to turn to Metaverse technology soon. When it comes to the field of education, it can be said that this field is also one of the first to become acquainted with Metaverse technology (Newzoo Trend Report, 2021).

Although the Metaverse technology is becoming increasingly important in the field of education day by day, studies focusing on the Metaverse technology in the context of education and especially foreign language education in Turkey are still limited. The studies conducted in Turkey generally concentrate on topics such as virtual reality and augmented reality (Göçen, 2022). Therefore, this study aims to examine the potential use of Metaverse technology in the field of education, particularly in the context of foreign language education, and to guide readers who wish to understand the role of Metaverse technology in education and explore its potential. The research questions guiding this study are:

1. How is Metaverse technology currently being used in the field of foreign language education?
2. What potential does Metaverse technology hold for enhancing foreign language education?
3. What are the challenges and considerations in implementing Metaverse technology in foreign language education?

Without a doubt, the Metaverse will be among the most important technologies of the future. Therefore, gaining knowledge about this technology, which has the potential to redefine education and fundamentally change the foundations of education, is essential for keeping up with changes. In the future, it is believed that Metaverse technology will provide everyone with the opportunity to create their own spaces and share their games with the world by participating in a global community created by users. For example, as the popularity of gaming platforms like Roblox increases, the use of virtual reality and other technologies is expected to become more widespread. These developments offer significant potential in terms of their use in education and the development of quality products (Hirsh-Pasek et al., 2022).

METAVERSE

Metaverse in Education

Since the 1970s, with the advancement of computer technologies, particularly in the United States, the global dissemination of information has gained momentum and experienced a significant surge with the spread of the internet in the 1990s. In this process, the boundaries in education have begun to disappear, and educational technologies have become a decisive factor. With the Covid-19 pandemic, the importance of online education has increased further, and online education has reached record levels in this field. In the near future, the

online education sector is expected to reach a market value of 350 billion dollars. At the same time, global climate issues also make distance education an important element, indicating that hybrid education models will gain even more importance. Considering this, it can be said that concepts like virtual schools and Metaverse have secured an important place among the priorities of the educational world. There is intense debate about how the Metaverse will affect and transform education (Kaçmaz, 2022).

During the COVID-19 pandemic, there was a trend towards using the metaverse in education to overcome the limitations of 2D e-learning. This trend was also influenced by Mark Zuckerberg's announcement of renaming and repositioning the Metaverse project as Meta. As a result of these factors, the use of the metaverse in education increased rapidly in 2022. While the number of academic papers exploring the use of the metaverse in education significantly increased in 2022, the integration of the metaverse in education was initially introduced in 2008. The trend shifted from relying on a single platform or software to embracing a more diverse combination of software and devices. Initially, the integration focused on the virtual reality platform Second Life, where researchers in various educational fields studied students' willingness to use the platform using the Technology Acceptance Model (TAM). However, over time, different types of metaverses were introduced in education, involving not only students but also pre-service and in-service teachers. These metaverses expanded beyond virtual reality and incorporated augmented reality to form mixed reality or utilized various types of metaverse platforms (Chua & Yu, 2023).

The value and importance of augmented reality applications in educational processes, as mentioned earlier, are increasing. This technology can create a more effective learning

environment by providing students with tangible examples. Therefore, augmented reality and virtual reality applications play an enriching role in education. However, to successfully use this technology in schools, it is crucial to provide content that fits curriculum requirements and introduce this technology to teachers. Educators should encourage new educational structures that contain subjects that students will be interested in and essential information. These structures should be based on subjects of interest to students and styles valued by society, unlike traditional approaches. At this point, the evolving Metaverse applications offer significant opportunities to education leaders. The Metaverse can provide an independent learning environment from time and place, where students can maximize their interest and participation. Teachers should provide content that meets curriculum requirements and introduce this technology to students to successfully use augmented reality technology. With this technology, students can participate in the learning process with tangible examples and acquire information more effectively. In conclusion, augmented reality applications can make educational processes more effective and attract students' attention. However, to fully utilize the potential of this technology, reshaping curriculums according to this technology and teachers' ability to use this technology effectively is important (Akkaya & Şengül, 2022; Boz, 2019; Göçen, 2022).

When used correctly, the Metaverse provides an environment where digital technologies can be integrated into education in the best way. Games and activities in the Metaverse allow students to learn and explore interactively. These areas offer new experiences to students both physically and mentally. Whether Metaverse activities are engaging depends on the hands of those developing the applications. Applications that distract students or direct them to irrelevant tasks should be

avoided. The Metaverse can provide a meaningful learning experience for students when it is connected to the real or imaginary world. Students can switch to different environments on the metaverse, have experiences they cannot explore in the real world. For example, they can solve real problems, attend virtual fairs, and connect their learning to real life. In this way, the Metaverse enhances students' creativity. In the virtual environment, students can paint with top-level teachers and artists, get involved with music, and create their own stories. During this process, teachers can guide students to use the Metaverse correctly and support their exploration and learning processes. The Metaverse can enable teachers to choose lesson plans that arouse interest and encourage interaction in their students, help children cope with emotional difficulties, and relate what they learned to their real lives. In this process, the Metaverse should be seen not as a tool that replaces teachers but as a tool that helps teachers support their students with new and interactive learning methods (Hirsh-Pasek et al., 2022).

In the future, it is foreseen that the Metaverse will greatly expand the use of virtual reality and augmented reality, and the education sector will quickly start to benefit from the opportunities offered by this area (Kaçmaz, 2022). The Metaverse is undergoing a transformation and renewal process in terms of software, platforms, devices, and types of Metaverse. Therefore, as specified in the Technology Acceptance Model (TAM), perceived ease of use and benefit play a critical role in the decision of teachers and students to accept or reject different types of the Metaverse. In the field of education, the ease of use of the Metaverse and the extent to which it enhances learning are vitally important in deciding whether users will utilize this technology. In future studies, it is suggested to examine the use of Metaverse in a wider range of education sectors and include the design of Metaverse platforms and devices in these studies.

This will provide information on how Metaverse can be better designed and implemented in different educational settings, offering teachers and students the opportunity to use Metaverse more easily in education (Chua & Ju, 2023).

Innovative methods need to be developed for instructional design or learning strategies for Metaverse platforms. The traditional concept map for the real world can be transformed from 2D to 3D to represent objects in a dynamic and more realistic manner, which includes technologies for eye/body movement and voice recognition. This would facilitate learners to establish a deeper connection with the virtual world and gain a stronger understanding of the topics. Complex notions, operations, and procedures can be better visualized and comprehended. Real-world application case studies and on-the-job scenarios can be provided as exercises. Moreover, social relationships, interactions, or communications that incorporate participants' expressions, body language, touch, and scent should be key considerations in the design of the Metaverse. If virtual environments serve as a catalyst for interactions among actual individuals, whether in a real or virtual setting, rather than a replacement for interaction, it would be feasible to maintain social interactions (Mitra, 2023).

Metaverse in Foreign Language Education

Based on the previous information about Metaverse, it can be posited that the Metaverse's ability to offer students near-real and diverse life experiences, coupled with the potential to provide unique educational experiences through avatars, could significantly enhance foreign language education. Considering these unique attributes, it seems reasonable to propose that foreign language education might be one of the fields where the Metaverse's educational potential could be most effectively realized.

The Metaverse, which is based on social interaction between individuals, has the potential to provide language learning opportunities that require a communicative and interactive context. First, through the Metaverse, a platform where students can gain awareness about the target language and culture by internalizing the dynamics of new social groups, students can increase the amount of comprehensible input and negotiate meanings in the target language. Second, Metaverse environments in foreign language learning can enhance students' problem-solving and critical thinking skills. In this way, the Metaverse can offer opportunities to discover and construct a new language. Third, the Metaverse can be used as a platform for open and active discussion opportunities in the target language within the scope of social interactions; students can independently and collaboratively increase their desire and motivation level to learn a new language. From this perspective, Metaverse environments can provide a free space for language learners without isolation and authority, with a collaborative effort and a student-centered approach, according to students' needs, expectations, and decisions (Aydın, 2023).

Language education in the Metaverse can also provide students with the opportunity to experience different situations through game and scenario-based learning. As a result, they develop their skills in solving various problems by thinking in the target language. Furthermore, they can improve collaborative learning by communicating with native speakers or other students. The Metaverse allows students to express themselves more comfortably through their virtual counterparts and can offer language education free from communication or error-making anxiety (Akkaya & Şengül, 2022).

Currently, there is a lack of extensive learning programs and a centralized platform for easily searching educational content based on specific learning goals, subject areas, or

age groups. Furthermore, only a small number of educators possess the necessary skills and resources to develop their own XR (Extended Reality) learning materials, let alone teach learners how to create their own (Pimentel et al., 2022). But the Immerse is a recognized Metaverse foreign language education platform in this context. Taking on a pioneering role in the field of language learning, the Immerse seeks to help people become fluent in a new language. Unlike traditional phone apps or pre-recorded VR simulations, the Immerse platform invites users into a virtual world, providing an opportunity to practice the language. Immerse members can benefit from a multitude of opportunities such as live lessons, speaking practice with peers, and community activities. Through collaborations with educational brands and studies conducted with research universities, the Immerse has become one of the leading platforms for learning in virtual reality (Immerse, 2022a).



Figure 1: Spanish Course with Immerse (Immerse, 2022b)

In a study conducted with 50 high school students, AlSaleem (2023) reported that more than 70% of the students expressed a desire to learn a new language through the Metaverse and more than half believed that the Metaverse would offer a fun way to learn. The students also thought that the Metaverse was beneficial in increasing knowledge, making the content more engaging, and encouraging class participation. Furthermore, it was stated that the Metaverse increased students' curiosity, enhanced the learning process, and could be used as a supportive tool in distance education. Conversely, there were students who felt that the Metaverse platform negatively affected their learning experiences. According to them, the Metaverse made it difficult for them to maintain focus and could distract them.

Despite the negative views, it would not be wrong to say that the advantages of the Metaverse are more prominent. According to Sarı (2022), the advantages of using XR environments in foreign language teaching through the Metaverse can be listed as follows:

- It provides learners access to environments where they can actively speak in the target language and improve their language skills.
- It helps language learners overcome language learning anxiety.
- It enables language learners to integrate with new technologies.
- Through avatars, it reduces shyness and increases the level of active social presence.

According to Wang et al. (2023) the Metaverse offers a unique language learning environment that facilitates cross-cultural communication without being limited by time and space. Within the Metaverse, virtual simulation classrooms provide tailored scenarios for oral language training, allowing

students to practice and imitate standardized foreign language pronunciation and authentic phrases. This immersive and intuitive approach helps students develop their oral foreign language skills by exposing them to how native speakers pronounce and intonate words and sentences. The interactive nature of the Metaverse fosters college students' intrinsic motivation to actively engage in oral activities. With a wealth of "real" interactive dialogue training, students can significantly improve the accuracy and fluency of their pronunciation. By breaking geographical barriers, the Metaverse enables students to directly communicate and connect with foreign friends in a virtual space, opening up new opportunities for cross-cultural interactions. Metaverse technology also enables realistic interpretation scenarios, offering students practical training in various fields using VR, AI, and other technologies. The metaverse class integrates environmental variables, accents, and equipment adjustments to create an immersive interpretation experience. It enhances students' ability to react effectively in real-life situations and allows for data analysis and feedback. Teachers assess students' proficiency and provide targeted instruction. The Metaverse creates an immersive 3D listening experience that enhances the communication context for listening courses. It goes beyond traditional methods by providing three-dimensional real situations using photos, texts, audio, and images. By stimulating students' senses, it increases their classroom engagement. The 3D environment fills the gap in communication context by simulating real-life conversation settings, incorporating factors like accent, body language, and emotions. This approach expands the scope of listening lessons, allowing students to observe and listen in authentic conversational settings. As a result, they can develop practical listening skills and improve their ability to observe and understand spoken foreign language (Wang et al., 2023).

METHOD

Research Design

This study will employ a literature review method to evaluate the current use of Metaverse technology in the context of foreign language education. A literature review analyzes scientific publications on a specific topic, providing a comprehensive perspective. This method was chosen to understand the potential of Metaverse technology in education.

Data Collection Procedures

A systematic search has been conducted to collect relevant resources from the literature. Document analysis is a systematic procedure for reviewing or evaluating documents, both printed and electronic. It involves skimming (superficial examination), reading (thorough examination), and interpretation (Bowen, 2009). The document analysis was conducted to collect relevant resources from the literature. Key words and terms were defined to include concepts such as "Metaverse", "foreign language education", "virtual reality", "augmented reality", "language learning", and the like. These keywords were used in different databases and search engines to identify potential sources in the literature.

Data Sources

In this study, various scientific resources such as academic articles, conference papers, reports, and book chapters related to the use of Metaverse technology in the field of education and foreign language education were utilized. The inclusion criteria for these sources were their relevance to the topic, accessibility, and reliability. These sources were identified and selected through scientific databases, academic publishers, and relevant conferences. A total of 20 studies were reviewed to provide a comprehensive understanding of the current use and potential of Metaverse technology in foreign language education.

Data Analysis

The collected literature sources were reviewed using the thematic analysis method. Data were synthesized and analyzed, taking into account similarities, differences, and common themes. The thematic codes included "Metaverse Applications", "Learning Outcomes", "Pedagogical Approaches", and "Future Perspectives". These codes were further divided into categories such as "Virtual Reality in Language Learning", "Augmented Reality in Language Learning", "Language Skill Improvement", "Teaching Strategies", and "Potential Future Developments". In particular, under the "Metaverse Applications" code, one of the categories was "Virtual Reality in Language Learning". A coded text matching this category could be "The study utilized virtual reality to create immersive language learning experiences.". Similarly, under the "Learning Outcomes" code, a category was "Language Skill Improvement". A matching coded text could be "The use of Metaverse technology led to significant improvements in language skills". These codes, categories, and themes provided a structured way to analyze and interpret the data.

FINDINGS

This study, which aims to investigate the use of the Metaverse in education, particularly in foreign language education, has yielded various findings through document analysis and literature review. These findings have been categorized into two main themes. These are affective and cognitive benefits.

Affective Benefits

The theme of affective benefits focuses on the contributions of the Metaverse to foreign language education, emphasizing the importance of interactive and communicative environments in enhancing language skills.

Language Learning through Social Interaction

The Metaverse offers students the opportunity to actively communicate in the target language. Platforms within the Metaverse enable students to interact with different social groups, thereby increasing their awareness of the target language and culture. This can enhance students' access to comprehensible input and foster language skill development through negotiated meanings (Aydın, 2023).

Student-Centered Approach

The Metaverse supports a student-centered approach, providing a free learning space where students' needs, expectations, and decisions are taken into account. Students can freely express themselves through avatars and experience a language learning environment free from communication anxiety or fear of making errors (Akkaya & Şengül, 2022).

Education in Virtual Environments

Metaverse applications, such as the Immerse platform, offer language education within virtual environments. These applications provide students with various scenario and game-based learning opportunities, enabling them to practice language skills in different contexts and interact with native speakers or other language learners (Akkaya & Şengül, 2022).

Cognitive Benefits

The cognitive benefits theme explores the contributions of the Metaverse to cognitive development in language learning, emphasizing the enhancement of problem-solving and critical thinking skills.

Problem-Solving and Critical Thinking Skills

The Metaverse offers opportunities for students to develop problem-solving and critical thinking skills. Interactive learning experiences within virtual environments allow

students to practice and overcome challenges in various scenarios, contributing to cognitive skill development (Aydın, 2022; Göçen, 2022; Mitra, 2023).

Exploration and Construction of Language

Metaverse experiences provide students with the opportunity to explore and construct a new language. Through interactive and immersive language experiences, students gain a better understanding of language usage and structures, facilitating deeper comprehension and language skill development (Sarı, 2022; Suh & Ahn, 2022).

CONCLUSIONS

The potential of the Metaverse in language education is substantial and can greatly enhance students' language skills The interactive and engaging nature of the Metaverse provides a dynamic language learning experience that encourages active participation and practice. However, it is crucial to address the technical and ethical challenges associated with its implementation. (Akkaya & Şengül, 2022; Aydın, 2023; Chua & Yu, 2023; Göçen, 2022).

Regarding technical limitations, it is important to consider that not all educators may possess the necessary technical equipment and knowledge to effectively utilize the Metaverse in their teaching practices. Providing training and support to teachers' incorporating Metaverse technologies can help overcome these barriers. Additionally, ensuring equitable access to the Metaverse across schools and educational institutions is vital, as not every institution may have the resources or infrastructure to implement this technology (Chua & Yu, 2023; Göçen, 2022). Collaborative efforts between policymakers, educational institutions, and technology providers are necessary to address these issues and promote widespread adoption of the Metaverse in education.

Ethical considerations must also be taken into account when utilizing the Metaverse in language education. Privacy and data security are paramount, as student information and interactions may be recorded within the virtual environment. Implementing robust security measures and adhering to strict data protection regulations are essential to safeguard students' privacy and ensure responsible use of the technology.

Furthermore, while the Metaverse offers exciting possibilities for language learning, it should not replace traditional teaching methods entirely. It should be viewed as a complementary tool that enriches the learning experience. Integrating the Metaverse into a well-rounded curriculum that combines various instructional approaches can lead to more comprehensive language development.

To fully harness the potential of the Metaverse in education, further research and development studies are necessary. Continued exploration of effective pedagogical strategies, evaluation of learning outcomes, and identification of best practices will contribute to optimizing the use of the Metaverse for language education Collaboration between educators, researchers, and technology developers is crucial to advancing the field and ensuring that the benefits of the Metaverse are harnessed effectively. While challenges exist, the Metaverse holds immense promise for language education. By addressing technical and ethical concerns, providing support to educators, and conducting thorough research, we can unlock the full potential of the Metaverse as a powerful tool for enhancing language learning and preparing students for the interconnected world of the future.

Implications for Instructional Design and Future Prospects

To fully harness the potential of Metaverse platforms, innovative methods for instructional design and learning strategies are necessary. Transforming traditional 2D concept maps into dynamic 3D representations that incorporate eye/body movement and voice recognition technologies can facilitate deeper connections with the virtual world and better understanding of topics. Complex notions and procedures can be more effectively visualized and comprehended. Case studies and scenarios from real-world applications can be integrated into exercises. Furthermore, the design of the Metaverse should prioritize social interactions, incorporating participants' expressions, body language, touch, and scent, thereby enriching the learning experience (Mitra, 2023).

The study anticipates that the Metaverse will significantly expand the use of virtual reality and augmented reality, offering new opportunities for the education sector to benefit from this realm (Kaçmaz, 2022). As the Metaverse continues to evolve in terms of software, platforms, devices, and types, the Technology Acceptance Model (TAM) suggests that perceived ease of use and benefits will play a critical role in teachers' and students' decisions to adopt different Metaverse technologies. Understanding the ease of use and the extent to which the Metaverse enhances learning will be vital in shaping its adoption in education. Future studies should explore the use of the Metaverse in various educational settings and consider the design of Metaverse platforms and devices to provide insights for more effective implementation in education (Chua & Ju, 2023).

Limitations of the Study

In this study, existing literature and sources have been utilized to provide a general evaluation. Therefore, there may be a lack of information based on detailed analyses relying on case examples, statistics, or concrete data. Technological advancements continue rapidly; therefore, new developments related to Metaverse technology can occur every day. This study is based on existing knowledge at a specific point in time and may not fully reflect future developments. Being aware of these limitations will allow readers to take them into consideration when interpreting the findings and recommendations of the study. More comprehensive research and future studies could be beneficial to examine the role of Metaverse technology in education in more detail and overcome other limitations. Another limitation of this study is that it includes only studies from the years 2021-2023.

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