

98. Translating and interpreting in the Metaverse: potential opportunities and challenges

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Abstract

The concept of the Metaverse has started to be studied by scholars from different disciplines after the evolution of the idea of building a virtual 3D universe reflecting the real world in digital platforms. Since the impacts of such a digital universe will be enormous, it is beneficial to understand the main motives for developing such a system, the basic features of the Metaverse, its operational steps, and its possible impacts on different disciplines. When the literature is analyzed to find resources about the Metaverse, it has been seen that there are only a limited number of studies in the literature since the Metaverse is a relatively new concept in the sense that we know it today. The relationship between the Metaverse and the profession of translation and interpreting is one of the latest issues; therefore, only a few studies have been found in the literature associating somehow the Metaverse with translation, and the scope of these studies is quite limited. Therefore, the present study is innovative research elaborating on the potential advantages and disadvantages of the Metaverse in the field of translation and interpreting by referring to the studies in the literature. After a detailed analysis of the data and comprehensive interpretation of possible impacts of the Metaverse on the profession, it has been concluded that the Metaverse offers many advantages for translators, interpreters, and educators. It is also noted that such a digital environment fully integrated into people's lives may result in social, mental, and physical problems.

Keywords: Metaverse, translation and interpreting, artificial intelligence, avatar, advantages and disadvantages

Metaverse'te yazılı ve sözlü çeviri: olası imkanlar ve sorunlar

Öz

Gerçek dünyayı dijital platformlarda yansıtan sanal bir 3 boyutlu evren inşa etme fikrinin ortaya çıkmasının ardından Metaverse kavramı farklı disiplinler üzerine çalışan akademisyenler tarafından incelenmeye başlanmıştır. Böyle bir dijital evrenin boyutları ve etkileri çok büyük olacağından, bahsi geçen sanal evrenin geliştirilmesindeki temel amaçları, Metaverse'in başlıca özelliklerini, işleyiş adımlarını ve sistemin gerçek dünyadaki farklı disiplinler ve uygulama alanları üzerindeki olası etkilerini anlamakta fayda vardır. Bahsi geçen bakış açısını dikkate alarak Metaverse'e ilişkin kaynakları tespit etmek amacıyla literatür incelendiğinde, Metaverse'in bugün bildiğimiz anlamda nispeten yeni bir kavram olması nedeniyle literatürde sınırlı sayıda çalışmanın mevcut olduğu görülmüştür. Metaverse ile mütercim tercümanlık mesleđi arasındaki ilişki ise ele alınan en yeni konulardan biridir; dolayısıyla literatürde Metaverse'ü bir şekilde çeviriyle ilişkilendiren sadece birkaç çalışmaya rastlanmıştır ve bu çalışmaların kapsamı da oldukça sınırlıdır. Dolayısıyla mevcut

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çalışma, literatürde yapılan araştırmalara atıfta bulunarak Metaverse'ün mütercim tercümanlık alanındaki potansiyel avantaj ve dezavantajlarını detaylandıran yenilikçi bir araştırmadır. Verilerin detaylı bir şekilde analiz edilmesinin ve Metaverse'ün mütercim tercümanlık mesleği üzerindeki olası etkilerinin kapsamlı bir şekilde yorumlanmasının ardından, Metaverse'in yazılı çevirmenler, sözlü çevirmenler ve eğitimciler için birçok avantaj sunduğu ve mesleki gelişime katkıda bulunduğu sonucuna varılmıştır. Öte yandan, insanların hayatına tamamen entegre olan böylesi bir dijital ortamın sosyal, zihinsel ve fiziksel sorunlara yol açabileceği de belirtilmiştir.

Anahtar kelimeler: Metaverse, mütercim tercümanlık, yapay zeka, avatar, avantaj ve dezavantajlar

1. Introduction

The Metaverse is one of the newest technological terms -in the sense that we are using today- which refers to a simulation of the real world in the virtual space through the combination of various gadgets, data, platforms, software, and hardware. Although the anticipated global Metaverse has not been developed yet, the term itself has drawn the attention of numerous scholars all over the world as of 2021 when Mark Zuckerberg changed the name of his company from Facebook to Meta to develop a global and multifunctional Metaverse (Rodriguez, 2021). Other reasons for this interest in the Metaverse are the effective integration of different 3D virtual platforms and the questions arising from the prominent use of technological tools in almost all stages of daily life. Smartphones, artificial intelligence, electronic tools for data collection and storage, high-quality computers, portable electronic devices with different functions, and many other technological gadgets, hardware, or software have assumed a central position in societies, and this centrality leads to the transformations and alterations in the definition and interpretation of the social, professional and operational norms that we have been referring to for centuries. Such impacts of technology have urged all actors in society to reconsider and reevaluate these norms by focusing on the possible advantages and disadvantages of newly developed technologies. The Metaverse, on the other hand, has significantly broadened this perspective because it offers a complex and multifaceted combination of enormous databases, multilayered virtual spaces, different forms of avatars, reconfiguration of the physical world in the virtual environment, multifunctional artificial intelligence, and many other numerical and data-based tools and software. Since the Metaverse is not about the development of a single technological gadget or software but instead the creation of a whole universe in the digital platform, it has become a must to investigate the social, professional, ethical, and sanitary implications of this new technology expected to be developed for the foreseeable future.

The functionality, operability, and acceptability of the Metaverse have constituted the main theme of numerous studies in the literature analyzing this global and digital platform from different perspectives (Ball, 2022; Duran et al., 2022; Fan & Chen, 2023; Kalaivani & Devaki, 2022, 2022; Novak, 2022; Önay Dogan & Gül Ünlü, 2019; Popova, 2023; Ullah et al., 2022; Yoo & Chun, 2021; Zhang et al., 2022). This list is not exhaustive although the variety and comprehensiveness of these studies are limited to specific points of view due to the novelty of the Metaverse concept. When these studies have been analyzed in terms of their contents, it is seen that they have focused on the design and functions of the digital universe and that they have interpreted the concept of the global Metaverse from the perspective of computational properties, social implications, education, and economic aspects. The descriptions, explanations, and predictions about the function and characteristics of the Metaverse in these studies have revealed that this virtual universe will have significant impacts on the professions and professional qualities, educational methods and training, economic concepts, assets and transactions, social and

political issues, and interactions among people. For this reason, it is crucial to analyze the Metaverse within the scope of different research fields so that we can be prepared for the possible consequences, advantages, and disadvantages of this virtual system once it is entirely developed.

As illustrated in the academic studies on the Metaverse, this new platform is to be designed as a virtual representation of the physical world which includes similar social, political, economic, and professional aspects of the real world. For this reason, it is evident that verbal and written communication will play a crucial role in the Metaverse since the system can only be effective with the participation of the societies. The importance of communication and language in the Metaverse has already been underlined by numerous system developers one of whom is Mark Zuckerberg. The CEO of Meta has stated that the company is in the process of building a translation tool that can translate every language in the world including dialects (Roettgers, 2022). This initiative has underlined the significance of communication problems in the Metaverse community consisting of people from different societies and cultural and educational backgrounds. Such language-based issues urge us to think about the future of translators, interpreters, and linguists since machine-assisted translation tools based on artificial intelligence have yielded better results in the translation process when compared to their previous performances. Although all these developments seem to cause a decrease in the demand for human translators and interpreters, recent studies have shown that human translators and interpreters continue to be employed due to the multifunctional use of languages including the utilization of dialects, implications, connotations, irony, hidden messages, metaphors, and many other types of expressions (Fan & Chen, 2023; González Vallejo, 2023; Nwakanma et al., 2022; P. Smith, 2022; S. Wang & Zhu, 2023). On the other hand, it is also quite important to get ready for the transformation of the profession of translation and interpreting in line with the extensive use of computer-assisted translation tools (CAT Tools), machine-assisted translation tools (MAT Tools), computer-assisted interpretation tools (CAI Tools), and machine-assisted interpretation tools (MAI Tools) in the era of the Metaverse. When the literature has been analyzed from this perspective, it has been seen that only a few studies are focusing on the possible impacts of the Metaverse on the translation process. These limited studies have generally elaborated on the profession of translation from a single perspective, and they have mostly analyzed the quality of machine translations that are expected to be used in the Metaverse. Only one study is directly related to the future of the translation profession in the Metaverse Era (S. Wang & Zhu, 2023). The article investigates “the possible impacts of digital technologies on the translation practice in the Metaverse” (S. Wang & Zhu, 2023, p. 1); therefore, the researchers have analyzed the practical aspects of the translation profession. The field of interpreting and education and training of translators and interpreters have not been included in the study. Accordingly, it is observed that no study in the literature has illustrated the relationship between the Metaverse and translation and interpreting, education, and practice. To fill this gap in the literature, the present study aims to demonstrate the potential opportunities and challenges of the Metaverse for the profession of translation and interpreting and the education of translators/interpreters. For this purpose, the following section will give detailed and technical information about the Metaverse so that the importance of translation and interpreting services in this digital platform can be fully grasped. After the analysis of the Metaverse through the detailed literature review, the potential advantages and disadvantages of the Metaverse for the profession will be analyzed in line with the data presented in numerous scientific studies on the characteristics of the Metaverse to be built in a near future.

2. Metaverse as a virtual universe

The Metaverse is a recent issue that the computational sciences and many other fields are significantly interested in due to its potential and economic advantages; however, the term itself is not newly developed in the 21st century. The term “Metaverse” was first used by Neal Stephenson in his science-fiction novel entitled *Snow Crash* published in 1992, and it represents a digital universe in a dystopic world (Stephenson, 2008). This fact illustrates that the idea behind a virtual platform including all stages of real life has emerged even before the invention of smartphones, artificial intelligence, and similar technologies. Accordingly, it can be stated that the idea of the invention is nourished before the emergence of necessary technologies, which gives us room to be prepared for the possible outcomes of the relevant novelty.

Although the term was used in the 1990s, it is obvious that the dimensions and characteristics of the Metaverse have been crucially changed compared to the digital world depicted in the novel with the analysis of the existing technologies in the period. Cryptocurrencies, 3D video games, virtual reality, artificial intelligence, mixed reality, augmented reality, and new gadgets have started to pave the way for the establishment of the global Metaverse, which excludes the term from the category of science fiction and transforms it into a technical and academic issue to be studied and depicted (Zagalo et al., 2012). For this reason, numerous academicians from different disciplines have defined the Metaverse according to the data and information that they have gathered. Dionisio et al. defined the term as “a fully immersive three-dimensional digital environment in contrast to the more inclusive concept of cyberspace that reflects the totality of shared online space across all dimensions of representation” (Dionisio et al., 2013, p. 7). Cunningham focused on the components of the digital universe by referring to the roots of the term, and he defined it as “a compound word of meta and universe, meaning beyond, a temporal-spatial aspect where the real world and the virtual world are mixed” (Cunningham, 2014). Owens et al., on the other hand, explained this concept as “an immersive three-dimensional virtual world in which people interact with each other and their environment, using real-world metaphors but without physical limitations” (Owens et al., 2011). There are numerous definitions of the term; however, the definitions given above can be considered as a summary of all definitions. As seen in these remarks, the Metaverse is the combination of digital 3D simulations of the real world having specific digital characteristics, equipped with various gadgets, protected via software, and enabling people to exist in it together. The interest in creating such a digital universe has significantly increased after the success of 3D digital games such as “Pokémon Go, Second Life, Fortnite, Minecraft, and Roblox” (Clemens, 2022).

The main mindset behind the Metaverse is the creation of a connected digital network just like the World Wide Web, and the basic difference between these two platforms is the use of 3D technology, augmented reality, cryptocurrency, and digital simulations (Clemens, 2022). Although the Metaverse is based on the specific technologies that are being used today such as augmented reality and virtual reality, it also differs from them due to its multifaceted and multifunctional properties. It is not just about the creation of physical reactions in the digital world; in fact, it focuses on the “social” reality rather than the virtual one. Moreover, the Metaverse is not limited to 3D technologies; other technological platforms are planned to be actively used in this virtual universe. It offers a virtual environment where every person in the world can take action, interact with other people, and establish a digital network according to his/her preferences and qualifications (Park & Kim, 2022). Park and Kim have illustrated the taxonomy of the Metaverse in a figure to demonstrate its operating system. This figure is given below:

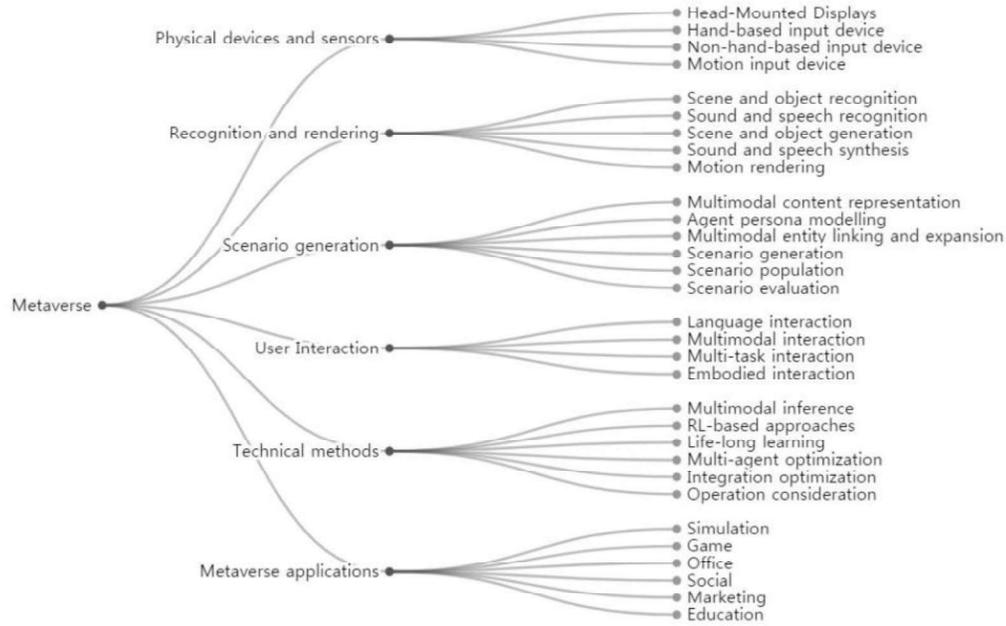


Figure 1. Taxonomy of the Metaverse (Park & Kim, 2022).

As seen in the figure given above, the Metaverse is the combination of different technologies, and it includes all parameters of the real world by creating alternative digital versions for each phenomenon. When the applications and interfaces that will be used in the construction of the Metaverse are taken into consideration, it is seen that the reality of the physical world is also questionable in this era when people use the Internet for shopping, entertainment, education, professional development, communication, and transactions (Sipper, 2022). There is another significant point that should be emphasized here: the misleading perception about the exact simulation of the physical world in the digital environment. The similarities between the real world and the Metaverse will be prominent but limited anyway since there are no borders or physical laws in the digital world, which will give the Metaverse enormous flexibility and increased operability. Besides, the Metaverse does not represent a single universe, it consists of personal metaverses designed for each person in the world and a common platform that connects all these metaverses. These personalized metaverses can be considered the home pages of people in the global Metaverse designed according to their preferences, and they include numerous activities, opportunities, and personal information that can only be seen and activated by the account holder himself/herself (Terry & Keeney, 2022). This function of the Metaverse urges us to think about the security and privacy of personal data recorded in the system and it leads to suspicions whether the powerful companies of technology will hold ownership of the system and will control everything that happens in this digital world. These possibilities can be overcome through a decentralized policy determined to operate the system in which each person is responsible for his/her own metaverse and s/he is the only one that can control and reach the data entered into the system.

To overcome such digital problems in the Metaverse, Rijmenam has determined six main principles: “interoperability, decentralization, persistency, spatiality, community-driven, and self-sovereignty” (Rijmenam, 2022). Interoperability represents the capacity of carrying out multiple transactions and operations on multiple platforms and obtaining financial gains from these activities. At that point, the protection of digital assets gains great importance so that the Metaverse can guarantee a safe and sound

digital environment where the financial resources of each user are effectively protected against cyber threats. Therefore, the Metaverse is planned to use blockchain systems to ensure the safety of digital resources. Blockchain is defined as “a distributed ledger, or database, shared across a public or private computing network in which every piece of information is mathematically encrypted and added as a new “block” to the chain of historical records” (Ma & Huang, 2022). With the use of the blockchain system, the Metaverse becomes a reliable universe in which people can have the freedom to make investments and transactions (Yang et al., 2022).

The second principle is decentralization which means that the control of the system is not under the authority of leading companies of technology or a group of people. Instead, every person in the world will have the authority to design his/her own metaverse, and this digital universe will ensure the privacy of the users. Whereas persistency will guarantee the continuity of the digital experiences whether it has 3D functions or not, spatiality enables users to experience a sustainable digital platform where they can use their five senses and which has similarities with the physical world. In this way, the perception of reality in people will not be damaged, and the operations can be carried out in a continuous manner. One of the key components of the Metaverse is the community because this virtual world will be meaningless if it cannot be used by groups of people. Therefore, the system is predicted to meet the demands of all communities by creating a common platform to act in it. The last principle, which is self-sovereignty, is characterized by decentralization since the system is designed to have open sources which are not under the control of technology experts. In case these six principles can be fully and openly integrated into the global Metaverse, then this new world will be a preferable place to act for people.

As explained above, the Metaverse welcomes the communities so that it can offer all advantages and opportunities for which it has been designed. For this reason, human interaction and production are crucial for the very existence and continuity of the Metaverse. In the process of this interaction and production, there is a significant point to be considered: property rights. As seen in the 3D games or software that are used separately today, the Metaverse includes non-fungible tokens (NFT) to protect the property rights of its users. Non-fungible token (NFT) is defined as “a digital file, image, artwork, etc. that is referred to as a “token” and has its ownership tracked and recorded through the use of blockchain technology” (Scheiding, 2022). With the use of NFTs, users will enjoy the digital production process knowing that their rights are recorded and protected in the system. Since NFTs and blockchain technology are effectively utilized in digital games today, their potential and capabilities have already been observed and approved.

After explaining the technical features of the Metaverse, it would be beneficial to give information about the presence, form, and movement of people in the virtual world. The users benefit from the system by designing their own avatars that represent them on digital platforms. Avatars are also known as the 3D digital twins of the users that assume the social role in the Metaverse on their behalf (Moretti & Schlemmer, 2012). Users are not obliged to create avatars representing their physical features as identically as possible. They may design their avatars in any form that they want. The key point here is not the resemblance between the user and his/her avatar, it is the identity that the avatar represents. With the opportunity of free design, users feel more flexible and comfortable since the concerns about their physical appearances are completely eliminated. With all the characteristics explained above, the Metaverse is the digital version of the real world with no limitations in which the avatars are socially present and available on behalf of their users wishing to educate or get educated, work, make transactions, play games, visit 3D touristic locations, benefit from healthcare services, and connect to any person in the world. In this enormous universe exclusive of all physical limitations of the real world

and consisting of people from different nationalities, what is the role of translators and interpreters? Which alterations are expected to be seen in translation and interpreting practices? How will be the education and training of future translators and interpreters integrated into the virtual universe and what kind of changes are supposed to be seen from the educational perspective? The following section of the study strives to answer these questions by referring to the studies carried out on the impacts of the Metaverse on different disciplines and fields in the literature.

3. Translation and Interpreting in the Metaverse from an applied and educational perspective

Language is one of the key components of the Metaverse since the social functions of the system can only be accomplished on condition that effective communication is established among users from different nationalities. For this reason, the issue of translation, interpreting, and digital tools for translation/interpretation should be addressed effectively so that all actors in the process can get prepared for new technological developments. Today, the translational quality of machine-assisted translation tools such as Google Translate or DeepL has significantly increased thanks to the use of artificial intelligence for ensuring context-based translations rather than word-based transfers. Machine-assisted Interpreting Tools (MAI Tools) and Computer-assisted Interpreting Tools, on the other hand, are not still completely acknowledged and integrated into real-time interpreting practices because of numerous limitations such as time-based problems, misunderstandings due to different dialects, distractions in the process of interpreting, and so on. Although these tools do not provide yielding results today, many laypeople use different interpreting tools to establish basic communication in a foreign language. Even these technological developments have led to the emergence of different concerns and questions in the sector of translation and interpreting about the future of the profession. When the Metaverse is evaluated from this perspective, it is evident that new questions and problems are on the way because the system is based on the interconnectedness among people all over the world. Therefore, it is crucial to understand the advantages and disadvantages of this new virtual world to restructure the practical and educational dimensions of the profession in a way that human resources can be efficiently canalized in the Metaverse.

When the literature is analyzed in terms of the impacts of the Metaverse on translation and interpreting practices, it is seen that only a few studies have focused on the relationship between the Metaverse and translation. Syafrony and Kusuma have elaborated on the possibility of developing a machine translation and interpreting system that includes all languages and dialects used in the world (Syafrony & Kusuma, 2022). By taking into consideration the remarks of Mark Zuckerberg about the universal translation tool to be integrated into the Metaverse, they have investigated the capacity of an artificial intelligence-based universal translation system in terms of providing translation services all around the world in all languages and dialects. Their research has illustrated that it is nearly impossible to develop a system translating all language and dialect pairs in different contexts and with different connotations (Syafrony & Kusuma, 2022, p. 94). This initiative becomes much more challenging when the interpreting services are in question because of the oral nature of the profession. Therefore, they have concluded that machine translation and interpreting tools would assist translators and interpreters in the virtual universe; however, it would not be possible to completely rely on these tools due to their limited capabilities in terms of contexts, implications, irony, hidden messages, and so on (Syafrony & Kusuma, 2022). Ullah et al. have studied the capacity of neural machine translation tools in translating from Urdu to English in the Metaverse and they have found that such tools distort the structure and syntax of the sentences, which is the main cause of translation errors (Ullah et al., 2022). These findings

demonstrate that machine translation tools do not still provide the best results in translation although they are deeply supported by artificial intelligence. Nwakanma et al. and Vallejo have compared machine-assisted translation tools (Google Translate, DeepL, etc.) in terms of their capabilities and qualifications, and they have reported that there are significant limitations in these tools such as “the number of languages encoded into the system, limited capacity to analyze linguistic structures, loss of context or message, interpretation, the categorization of genres for more effective treatment of the text, the homogenization of terminology or the different jargons”, etc. (González Vallejo, 2023; Nwakanma et al., 2022). Wang and Zhu have conducted the most comprehensive study in the literature on the possible impacts of technological developments on translation practices and education; however, since the article has been written in Chinese, the data illustrated in the study cannot be read and interpreted (S. Wang & Zhu, 2023). Although this article provides a detailed perspective on the future of the profession of translation – as understood from the English abstract-, it does not elaborate on the future of interpreting and does not include any reference to the education and career planning of interpreters. There are also several articles in online webpages elaborating on the dimensions of translation in the Metaverse, and in all these articles, the researchers have remarked that human translation will always be needed even though the performance of machine-assisted translation tools have been significantly ameliorated with the integration of artificial intelligence (Demetrio, 2023; S. Smith, 2022; Tirosh, 2022).

As seen in the above-mentioned articles and after a detailed analysis of the literature for reaching all sources focusing on the Metaverse and translation and interpreting, it has been found that there is no study elaborating on the future of the profession of translation and interpreting in the virtual universe by focusing on the potential advantages and disadvantages. Besides, almost all studies on translation and the Metaverse focus on machine-assisted tools, and they do not take the positions of human translators and interpreters into consideration. Due to these reasons, the following sub-sections focus on the potential advantages (opportunities) and disadvantages (challenges) of the Metaverse for the profession of translation and interpreting.

3.1. Opportunities to be offered in the Metaverse for Translators, Interpreters, and Educators

The Metaverse may offer numerous advantages and opportunities for translators, interpreters, and educators working in the field of translation and interpreting. These advantages are explained in the paragraphs below:

The Metaverse is designed to use MAT tools integrated into the system. When the efficiency level of these tools is taken into account, it is seen that they demonstrate relatively successful performance in certain text types, especially in technical texts. Therefore, the job description is expected to change from translator to editor who corrects the mistakes of the machine-assisted tools by using his/her linguistic competencies. Benefitting from CAT and MAT tools in the Metaverse, translators can enhance their translation capacities since they will only use their advanced linguistic skills to correct the machine translations according to the context, the message of the author, the implications in the text, and the norms of the target society. Apart from the use of CAT and MAT tools, translators can also enjoy the personalized digital environment provided by the Metaverse and in which all the data, translations, terminology lists, contexts, and many other resources are stored for the use of the owner. In this personalized environment, the translation product of each translator is protected through a blockchain system, and non-fungible tokens (NFT) are assigned to the translations saved in the personalized

metaverse. In this way, possible fraud or plagiarism is prevented (Scheiding, 2022). In addition to the personal data storage and reuse systems, the Metaverse also encourages interactions and communications among people. Accordingly, the interaction platforms enable the translators to check their translations by consulting native speakers of the target language, which offers a positive outcome in translation practices similar to the one determined by Zhang et al. in education (Zhang et al., 2022).

Another advantage of the Metaverse for translators is the significant decrease in the number of translation offices in the real world because translation offices and companies are to be transferred to the virtual world. With the use of 3D offices, cryptocurrencies, personal avatars whose identities are confirmed via security systems, and numerous ways to reach qualified translators and interpreters, translation offices and companies will work and cooperate with other stakeholders in the process within the realm of the Metaverse. This transfer from the physical environment to the digital one provides numerous advantages for company managers and owners since they will not be obliged to provide any physical and material sources such as computers, internet systems, a place to work, items of furniture, etc. Besides, they will not pay rent for physical locations; instead, they may make payments to work in the Metaverse. These opportunities are expected to create significant impacts on the expenses of the companies. In addition, the interactive platforms enable employers and employees to be available and ready to participate in any event by using their avatars, which will give the actors of the sector a place to perform effectively and freely without being exposed to the physical limitations of the real world.

The advantages of the Metaverse for the profession of translations are not limited to the points explained above. Fair and equal opportunity of employment is one of the most important advantages of the Metaverse. Physical borders in the real world (such as the translator's not being able to leave the city or country where s/he lives or frequent change of locations due to professional occasions) significantly affect the quality of translation and interpreting services although the use of the Internet has become a solution to this problem to some extent. Although today's online sources have already started to eliminate the physical barriers in the employment process, it is still observed that large companies desire to communicate with the candidate translator in person and to employ him/her in their physical headquarters or offices. The global use of the Metaverse may terminate this problem by providing digital locations, headquarters, and tools to work actively in the virtual platform. Through these global advantages, it will become easier for translators and interpreters to prove their skills in the field and get a position in highly-qualified international companies. Discrimination is another critical barrier to fair employment. Races, genders, political views, religion, lifestyle, and many other issues result in the impossibility of ensuring a transparent employment system. Although these parameters continue to influence the course of events in the Metaverse, a significant step can be taken to solve this problem or reduce the impact factor of it by using avatars in the digital world. In her study, Patriann Smith has underlined "the role of racism in language-related challenges in the United States" (P. Smith, 2022), and she has remarked:

"The ability to make meaning beyond language can potentially eliminate how such racialized individuals initially position themselves based on power and race relationships steeped in language mastery, language approximations guided by Eurocentric norms, and thus perceived privileging of any one language. This ability to choose how they reveal their identities through language does not erase their race in a global metaverse. Rather, it allows them to choose when and how they introduce their race while also transforming how racialization was previously used in power relations that often positioned them as superior in relation to other Black peers and peers of color, and superior in relation to white peers" (P. Smith, 2022, p. 114).

As understood from this quotation, the avatars to be used in the Metaverse can eliminate discrimination among people since they can design their avatars in any form that they desire. In this way, a smooth professional process can be conducted regardless of ideologies, appearances, or lifestyles.

Content and context are two highly significant parameters in the process of translation and interpreting since they are the main reasons for demanding and educating human translators and interpreters despite the intensive and rapid technological developments. The translation process begins with understanding the source content and knowing the context. Therefore, it is crucial for translators and interpreters to have information about these two parameters so that they can effectively transfer the meaning and message in the source text to the target audience. In certain cases, on the other hand, translators and interpreters may not have the chance to understand field-specific names or terms defining observable objects such as medical microorganisms, organs, technological gadgets, different planets or galaxies, specific locations in the world, etc. In such conditions, errors may occur due to a limited understanding of the content or not grasping the context. Although such problems are observed in the physical world, the Metaverse can overcome these problems by providing virtual 3D illustrations of all the objects unknown to the translator or interpreter. “Owing to the modeling and rendering technologies, the resources can be visualized in the metaverse, especially for the invisible or abstract concepts, items, or events in the physical world” (Zhang et al., 2022); in this way, translators and interpreters have access to the technical information that they seek in the form of 3D illustrations, which makes their jobs quite easier. This technique can also be used in the process of translating or interpreting a text about a historical event, a natural disaster, or a space exploration by visualizing the event in 3D. This opportunity paves the way for translators and interpreters to have excessive information about the content just in seconds.

The digital tools for interpreting practices (CAI Tools or MAI Tools) have limited capacity today since the act of interpreting requires the use of verbal skills at the moment of original speech or just after it and interpreters generally do not have time to use such tools while they are striving to convey the message most correctly and coherently. Accordingly, interpreting plays a significant role in the Metaverse because of the limited capacity of MAI tools. In line with this reality, it may be stated that interpreters have a crucial role in establishing international communication between system users. In return, the Metaverse offers a pleasant and accessible working environment for interpreters and their employers, which is not easily found in the real world. In this virtual universe, there is no need for a booth of simultaneous interpreting and technical equipment used in the process because the act of interpreting is performed in the virtual environment in which all necessary connections, tools, and 3D illustrations are provided. Apart from these, the use of avatars will reduce the anxiety of the act of interpreting since studies have revealed that students and employees feel more confident when they are represented by a virtual image compared to the actual performance in the real world (Yoo & Chun, 2021). Besides, employers will enjoy the opportunity to eliminate the expenses of traveling and accommodation of the interpreters. The problem of finding well-qualified interpreters in smaller cities or provinces is solved since it will be possible to get in touch with a selected interpreter from anywhere in the world. Moreover, interpreters will also have the chance to work for global companies, which is not an easy position to get in the real world due to locational limitations. To sum up, the Metaverse reduces the costs of interpreting whereas it enhances the availability and professionalism of interpreters.

The Metaverse provides optimal conditions for community interpreting practices, as well. Community interpreting is defined as “the act of interpreting in public service institutions and differs from other types of interpreting in a number of aspects (e.g., mode of delivery, interaction situation, level of

formality/orality present, level of interpreter involvement, status and roles of the participants, level of professionalization, and power asymmetries” (Pöllabauer, 2012). This type of interpreting plays a significant role in social settings since it aims to establish communication between foreigners and local authorities of a country. Contrary to this important mission, numerous problems are generally experienced at the moment of need for community interpreting in public institutions such as hospitals, police stations, or courts because community interpreters do not work in those institutions in permanent status and they are called to the scene in case of emergency. Therefore, officials in those institutions try to find temporary solutions such as finding a bilingual person to translate content that s/he is not familiar with at all or using machine-assisted translation tools to understand the foreigner. These solutions lead to serious communication problems in critical or even life-threatening situations. The Metaverse has the potential to overcome these problems by eliminating time and location-related barriers. In this virtual world, officials in public institutions can easily reach community interpreters in case of emergency, and with the help of 3D technology and avatars, they can simulate the current situation in the relevant institution (such as simulating the medical condition of a patient and showing available medical tools to be used so that interpreter can feel as if s/he were with them in the hospital) (G. Wang et al., 2022). Besides, interpreters can use their personalized metaverse to reach relevant jargon, technical terms, and specific expressions easily. Such advantages of the Metaverse will significantly enhance the quality of interpretation; as a result, the risks of misunderstandings and the problems related to this lack of communication (such as misdiagnosis or unnecessary use of medical sources to diagnose and treat the patient) can be eliminated. In this way, the quality of interpretation will positively influence the performances of officials in public institutions.

The benefits of the Metaverse are not limited to the practices of translation and interpreting. It also contributes to the development of educational programs designed for translators and interpreters. The educational programs offered in the Metaverse are different from the ones applied through online education during the Covid-19 pandemic. The Metaverse simulates the physical classrooms and laboratories in the digital environment, which enables the students to get applied training just like they have done in their classrooms in the real world. Augmented reality and mixed reality help students understand the relevant topics by directly observing phenomena or making applied exercises through different gadgets (Dahan et al., 2022). When these opportunities are evaluated from the perspective of translation and interpreting, it can be stated that students can simulate a task of interpreting that they will have to deal with in their professional lives. Especially at the universities where necessary equipment for consecutive and simultaneous interpreting (booths, speakers, headphones, laboratories, etc.) is not available, the students will have the opportunity to make practices without spending huge amounts of money for establishing a laboratory of simultaneous interpreting. Moreover, students can interact with qualified professionals in the field whom they cannot communicate with in the real world (Karabulut, 2023). Since training requires the active participation of students, the outcomes of such practices will be better than other methods of online training (Akkaya & Şengül, 2022). The use of avatars in digital classrooms will reduce the anxiety of the students; hence, the Metaverse yields a better learning environment for students of translation and interpreting. Last but not least, students will have the opportunity to communicate with native speakers on all digital platforms in the Metaverse such as stores, public institutions, games, cafes, etc. In this way, they will have the opportunity to develop their speaking skills and enrich their vocabulary.

3.2. Challenges for Translators, Interpreters, and Educators in the Metaverse

Although it is evident that the Metaverse will provide lots of advantages for translators, interpreters, and educators, numerous challenges can also be observed in the realm of the Metaverse. The potential challenges are explained in the paragraphs below:

Although blockchain technology helps to protect personal data, digital resources, files, documents, and digital assets, it is well-known that digital platforms can be exposed to cyber-attacks which result in serious problems for the account holder. Blockchain is currently in use in the platforms using cryptocurrencies; however, people still suffer from the consequences of fraud and corruption in the digital world. No matter how perfectly a user has secured his/her account in the Metaverse, the users of the “Dark Web” may find a way to hack the account. In such conditions, apart from the digital assets that translators and interpreters have gained in the Metaverse, their files, documents, terminology lists, and similar resources have been stolen or destroyed by hackers, which means the loss of all efforts and struggles of a translator/interpreter. Besides, the privacy of the users may be violated, which may result in serious outcomes. In the study carried out by Scheiding, it has been reported that the users of digital platforms have serious concerns about data security “with the implementation of the metaverse using block-chain and other potentially destructive technologies” (Scheiding, 2022). For this reason, it is advisable to store all files and documents in separate gadgets and software and to guarantee the safety and security of digital assets by using different software and hardware.

Another problem that might be encountered in the Metaverse is access to technology in the real world. The world is an unequal place in which the means and opportunities of each person vary. Just as we have seen in the days of the Covid-19 pandemic, some people cannot have access to the Internet or have the necessary gadgets to use for educational and professional purposes. When the entire world is transferred into the digital platform and all organizations, works, transactions, and training are conducted in the virtual universe, the ones who cannot have the means to actively participate in the digital world will be in a disadvantaged position. This issue may increase the inequalities among people and may result in a process in which rich people and large companies take control of the Metaverse and use it for their own good. Such power of wealthy groups is already evident and prominent in the real world, but in a universe that is controlled by human beings, this authority may increase the potential of threats. In this case, not every translator or interpreter can have equal sources; therefore, the ones in better condition in terms of financial opportunities will have more chances to find good positions in global companies.

The Metaverse urges translators and interpreters to use CAT tools and MAT tools in the translation and interpretation process, and as stated in subsection 3.1., these tools help translators and interpreters increase the quality of their products and finish the tasks in a shorter time. However, persistent use of these tools may result in overdependence of translators and interpreters on machine translation, which will have negative impacts on their linguistic skills due to the long-term passiveness in translation and interpreting. Moreover, the use of these tools may cause ethical problems because their operational system is based on the acquisition of information via artificial intelligence from the sources available on the Internet. Therefore, in case translators and interpreters do not control the content and make necessary changes and corrections, plagiarism may be seen in the target text, which is a serious issue to be dealt with cautiously.

The final disadvantage to be mentioned in this study is the most evident and well-experienced challenge for everyone in the world: health issues and social problems arising from the extensive use of digital tools. The Metaverse is planned to be a global platform in which all kinds of activities can be performed. Although this characteristic of the system seems to be exciting and is expected to facilitate the lives of people, the risks of addiction and anti-socialization cause great concerns in the world. Even today, social media enslaves people by offering joy and entertainment in a way that people lose track of time. The Metaverse will influence our lives more profoundly since it will be used not only for entertainment but also for education, professional purposes, shopping, communication, and so on. Such comprehensiveness of the Metaverse may lead to serious social problems in individuals by causing them to be introverted, ignore their physical environment, health, and social relations, and lose their perception of reality by totally being consumed in the digital universe. Sonvilla-Weiss has addressed this problem in his book, and he has mentioned an experiment made for determining the borders of self-perception in the brain. In this experiment, scientists placed rubber hands on the shirts of the subjects, hid their hands in a place where the subjects could not see them, and instructed them to concentrate on these fake hands. The scientists manipulated the perception of the brain through the use of the five senses; after a while, the subjects started to feel the rubber hands as their original organs and they felt every motion applied to the fake hands although no stimulant was given to the real hands (Sonvilla-Weiss, 2008). This experiment demonstrates that it is possible to deceive the brain about the realities of the physical world, and it illustrates the extent of the threats posed by the Metaverse. Accordingly, translators and interpreters using the Metaverse for professional purposes as well as entertainment are at risk of serious mental and physical problems arising from excessive use of digital tools.

4. Conclusion

The concept of the Metaverse illustrates the future of humanity since we are becoming dependent on technology each passing day. Although it is not certain that such a virtual universe can be fully developed as foreseen by researchers and entrepreneurs, it should be acknowledged that 3D virtual reality-based programs are already in use and that it is quite possible to integrate this technology into all parts of our lives. This possibility urges us to be ready for the potential outcomes of the use of such a virtual universe enriched with 3D technology, virtual reality, augmented reality, avatars, NFTs, and blockchain. For this very reason, the present study has evaluated the potential positive and negative impacts of the Metaverse on the profession of translation and interpreting by referring to the recent studies carried out by scholars from different research fields. By gathering detailed information about the features, operating systems, software, and programs of the Metaverse from these studies, the above-mentioned positive and negative impacts have been discussed in detail to provide a resource for translators and interpreters to get prepared for the technological developments to be seen in the future. In light of the presumptions made in the literature about the Metaverse, it has been observed that the Metaverse can be quite beneficial to translators and interpreters by providing a virtual environment to work and study, reducing the costs of translation offices and companies, ensuring fair and equal employment, eliminating discrimination, training on interpreting without a need for laboratories and equipment, offering a chance to make practices more efficiently through simulations, and eliminating the anxiety in translators, interpreters, and students.

On the other hand, it has also been found that there might be negative impacts of the Metaverse on translators and interpreters due to the digital and technical features of the system. Data security is a significant problem to be taken into account despite numerous precautions taken for guaranteeing the privacy of the users. Inequality of access to technological sources and devices may deteriorate the gap

between the rich and poor by strengthening the power of the financially advantageous groups. Moreover, the excessive use of CAT and MAT tools may result in the deterioration of the linguistic skills of translators and interpreters and it may pave the way for plagiarizing. Lastly, the use of digital platforms for all kinds of activities in our lives will obviously lead to social, mental, and physical problems in the users due to their addiction to technology.

To overcome these challenges, it can be recommended that the developers of the Metaverse pay extra attention to the protection of the data in the system by creating multi-layered protection systems that are based on strict rules. The accessibility of technology is a significant question to be handled; at that point, governments and NGOs may take the initiative to provide necessary technological tools and gadgets so that all people have access to the Metaverse. In terms of the excessive use of CAT and MAT Tools, specific restrictions may be imposed upon the translators and interpreters in a way that they do not become overdependent on the system. Especially for highly confidential documents, the use of online tools should be prohibited to guarantee data security. In this way, translators and interpreters will trust their own capabilities and linguistic capacities while translating or interpreting in the Metaverse. To eliminate the last challenge indicating the physical and psychological damages caused by the technology, specific restrictions should be made in the use of the Metaverse. These restrictions may include the limitation of the active time in the Metaverse and the measurement of the vitals of the users for whom the system will be automatically turned off once they are in need of physical exercises. Psychological problems can be overcome through the employment of qualified psychologists and psychiatrists in the system and the limitation of use for people with psychological problems.

Through all these arguments, the present article has aimed to be a significant resource to be referred to by translators and interpreters getting information about the dimensions of the virtual universe and the future of their profession because no study focusing on the potential advantages and disadvantages of the Metaverse in the field of translation and interpreting has been found in the detailed literature review. Since the resources on the Metaverse have been published recently and the Metaverse has not been developed yet, the advantages and disadvantages mentioned in this study are based on the well-grounded presumptions supported by the findings of other studies on the subject. The potential opportunities and challenges of the Metaverse should be reevaluated in terms of the profession of translation and interpreting once the system is developed and started to be used.

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