

Perceptions Of Teaching-Learning Force About Metaverse For Education: A Qualitative Study

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ABSTRACT

The post-pandemic world, emphasizing digital learning, has highlighted the importance of technological advancements in the classroom. It also showed that many online learning resources available to teachers and students are ineffective or too prone to error to be used consistently with students. The metaverse is a virtual 3D extension of the internet and an efficient online learning environment that encourages an in-depth understanding. It gives its users a lot of freedom in terms of real-time interaction. The metaverse is transforming education by promoting communication and supporting immersive learning. The metaverse is also projected to dramatically boost e-learning by making virtual learning environments more lifelike and learning more engaging and experiential. This study was designed to explore the perception of the teaching-learning force about metaverse as the future of education. Semi-structured interviews were conducted with public secondary and higher secondary school students and their teachers, M.Phil/Ph.D. scholars, and the faculty members of the departments of education at public sector universities through a purposeful sampling technique. The data analysis revealed that only the public secondary/ higher secondary school students were familiar with metaverse and its use for education. They believed that instruction would be beneficial if students should be taught in virtual classrooms. It is recommended that metaverse may be introduced at all the levels of the teaching-learning platforms, including schools, higher secondary schools, and education departments of universities. There is a need to fill the gap between the perception level of the teaching-learning force because it is expected that the use of the metaverse in education will reshape the entire scenario.

Key Words: Teaching-Learning Force, Metaverse, Education

Introduction

The metaverse is a virtual 3D extension of the internet (Cui, et al., 2022; Locurcio, 2022) and an efficient online learning environment (Khansulivong, et al., 2022, January) that encourages an in-depth understanding (Wang, et

al., 2022). It gives its users a lot of freedom in terms of real-time interaction (Zhao, et al., 2022; Wang, et al., 2022). The metaverse is transforming education (Han, 2022) by promoting communication and supporting immersive learning. The metaverse is also

projected to dramatically boost e-learning (Dahan, et al., 2022)) by making virtual learning environments more lifelike and learning more engaging and experiential (Ifdil, et al., 2022).

Metaverse has been emerged as a new technology (Hwang & Chien, 2022). Modern science and technology aim to change real space into virtual space called a metaverse. People will spend most of their time there, relocating their homes, businesses, personal belongings, and information. They will connect themselves to the centralized online system of technologically advanced but culturally contentious. Metaverse is the idea of a new virtual universe that would be more meaningful and almost similar to the real world. Everyone would be allowed to get an education from the world resources without moving there physically (Damar, 2021). Metaverse technology will improve education's depth, breadth, and speed and change the teacher-student relationship. Metaverse education breaks the border between teachers and pupils (Yue, 2022).

Yue (2022) indicated that in recent years, there has been an increase in awareness of the metaverse. Tycoons from all over the world are investing in metaverse because it offers a lot of ways to make money, and China is in the lead (Qin, 2022, March). Education and the metaverse are analogous. Students can be taught in the shared virtual space of the metaverse. Many people believe that the creation and implementation of the metaverse are hoaxes. A lack of knowledge, trust in current technology, and awareness of educational applications all work against the widespread adoption of the metaverse soon. The metaverse information, tech levels, and development speed can boost confidence.

Virtual reality and physical reality blend in the metaverse, a constant and everlasting multiuser environment. Technology such as virtual reality (VR) and augmented reality (AR) allow for



multimodal interactions with digital items and virtual persons (AR). Metaverse is an integrated, social, networked virtual world in permanent multiuser platforms. It facilitates real-time and dynamic interactions between digital artifacts and human users. Virtual worlds were linked together in the first iteration, and avatars could teleport between them. Recent metaverse iterations are characterized by social, immersive VR platforms compatible with massively multiplayer online video games, open game worlds, and augmented collaborative reality spaces (Mystakidis, 2022).

Initially, AR and VR have shown promising results in laboratory simulations (for the things like safety training and surgical practice) and STEM education. The metaverse's ability to record 360-degree panoramic images and volumetric spherical video enables immersive journalism to educate the masses on unfamiliar circumstances and happenings in remote locales. Metaverse-powered remote education can break 2D platform limits. On online 3D virtual campuses where students are co-owners of virtual places and co-creators of liquid, personalized curricula, meta-education can provide rich, blended direct and indirect learning opportunities. (Chan et al., 2021; Mystakidis et al., 2021; De la Peña et al., 2010).

Mixed reality (MR) can bridge social media connectivity with virtual reality (VR) and augmented reality (AR) affordances. If they interact creatively, it might alter several industries, including online education. Metaverse-powered online distance education can create new types of meta-education that merge learning spaces. Online learning in the metaverse will advance social connection and informal learning. Being in a classroom won't be a privilege. Virtual involvement will be effective with telepresence, avatar body language, and facial expression realism. Social mixed reality in the metaverse can generate deeper and longer-lasting knowledge. It can democratize education

by allowing global participation on equal footing, unconstrained by geography (Mystakidis, 2021).

Metaverse has the following characteristics.

- a. Metaverse is Boundless**  There are no barriers between real and digital, and the metaverse is endless
- b. Metaverse is Decentralized**  No single entity has control over the metaverse. All users have individual agency.
- c. Metaverse is Persistent**

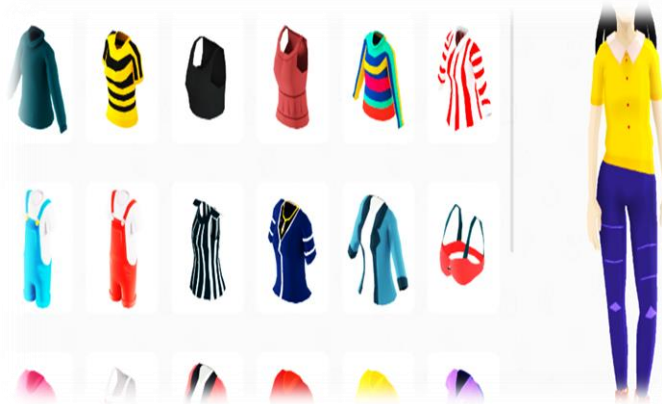
Hou (2021) shared his experience of entering the metaverse world. He indicated that he had to make an avatar before entering the metaverse. The panel let him change my hair, eye, dress, and accessories. His avatar had a terrible outfit, so he changed it.

After selecting the desired outfit, he started exploring the virtual world he wanted. He moved from different worlds. He made friends, played games, and visited clubs. He cited that he wanted to revisit the other worlds. This experience could also be blended with the teaching-learning world because it is where visitors may learn the desired education in a virtual world like the real world and learn by doing the way of John Dewey.

Metaverse in learning looks favorable (Schlemmer, 2014). Virtual reality can elevate the visual component of teaching, allowing students to 'live' a specific experience for more rigorous and high-quality knowledge acquisition than traditional classroom training (Fernandez, 2017). The metaverse can improve learning and teaching. Imagine a spacecraft astronomy lesson. Virtual learning environments may eliminate linguistic barriers. People from different nations could study in one virtual place without social or linguistic problems. The metaverse school and virtual learning space will allow people from remote parts of the world to acquire a quality education in ideal conditions for absorbing new knowledge and experience. Microsoft's Mesh platform enables users to interact with 3D

The metaverse is always active and can't be reset or unplugged

- d. Metaverse is the Economic system**
Digital currencies help power fully functioning virtual economies
- e. Metaverse is Immersive**
Users can achieve a realistic sensory experience with extended reality (XR) tools
- f. Metaverse is Social experiences**
The metaverse creates strong social links with other users and AI virtual beings, creating events meant to be shared.



avatars. They can utilize Microsoft HoloLens in an immersive classroom or video conference to observe avatars.

The metaverse is expected to reshape the entire education system; however, we are yet not ready for it. The current study was initiated to seek teachers' perceptions about the use of metaverse that may portray the future of education. Hwang and Chien (2022) reported that the metaverse is a promising technology. Metaverse education is rarely discussed. Most of the persons related to education may not know about the metaverse or its applications. Therefore, it was thought to investigate people's perceptions about metaverse in education.

The study’s objective was to explore the perceptions of the research scholars enrolled in the education departments of public sector universities about metaverse about the future of education. Following research question were formulated to achieve the objectives of the study.

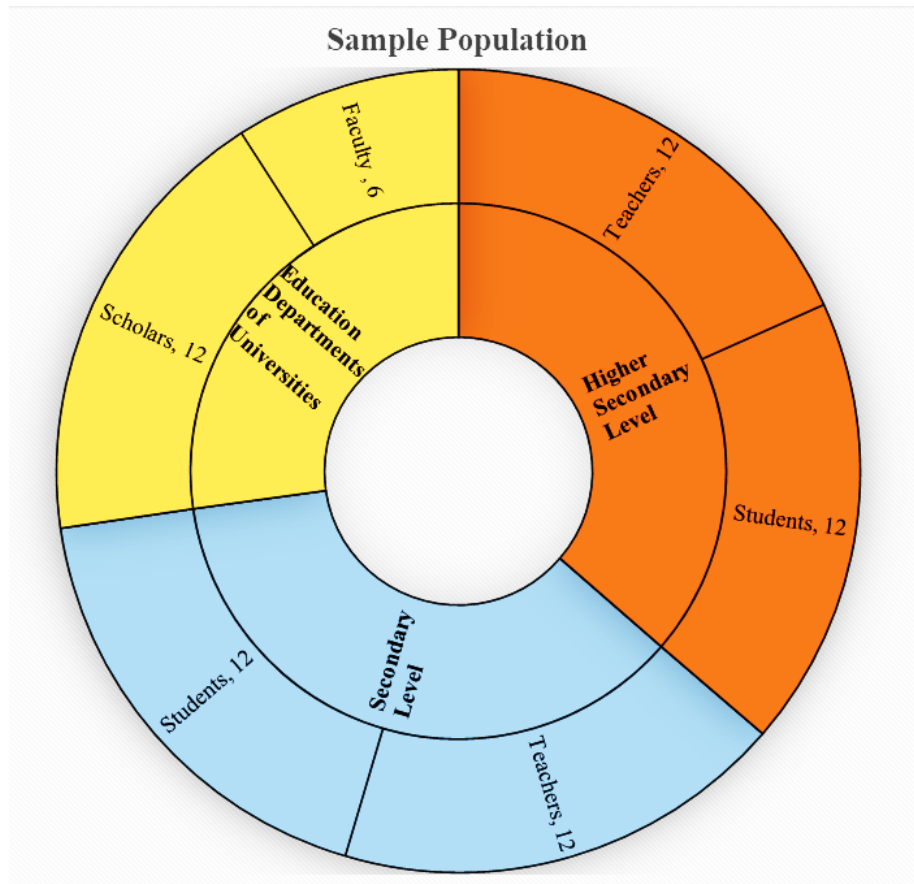
a. What are the perceptions of the teaching-learning force about metaverse?

b. What are the perceptions of the teaching-learning force about the use of metaverse in education?

c. What are the perceptions of the teaching-learning force about the possibility that metaverse may replace traditional teaching?

Study Design, Sampling, and Data Collection

The study was a qualitative descriptive study carried out in Punjab, Pakistan, at public sector secondary/ higher secondary level, departments of education at universities. The participants were selected through a purposeful sampling technique (Flick, 2022; Gill, 2020) to ensure the representativeness of the population. One public institute against each category of secondary, higher secondary, and education departments of universities was chosen to select the sample from every administrative unit of South, Central, and Upper Punjab of Pakistan.



Secondary Level	Students	Four from each institute (4 x3 = 12 students)
	Teachers	Four from each institute (4 x3 = 12 teachers)
Higher Secondary Level	Students	Four from each institute (4 x3 = 12 students)
	Teachers	Four from each institute (4 x3 = 12 teachers)
Education Departments of Universities	Scholars	Four from each university (4 x3 = 12 M.Phil./Ph.D. scholars)
	Faculty	Four from each university (2 x3 = 6 faculty members)

Semi-structured interviews were conducted with the participants of the sample. A guide was also created to keep the conversation on track and scheduled. Interviews were conducted in person and by telephone to maintain the conversational nature of much of the study.

Data Analysis

All the transcribed interviews were analyzed through content analysis and grouped into themes according to their likenesses. These themes helped to derive meaning from it. The interviews' data analysis showed that most of the study's

population take metaverse as a dream. Their views were not much different. The majority of the interviewees were unaware of the term metaverse, the use of metaverse in education, and the possibility that metaverse may replace traditional teaching. Interestingly, the school students were better at their knowledge. Perceptions of secondary school students and higher secondary students differed entirely from the teachers of secondary and higher secondary schools, faculty members of education departments of universities, M.Phil, and Ph.D. scholars.

What is metaverse?	
Secondary School Students	The majority of the school students were familiar with the metaverse.
Secondary School Teachers	Almost every school teacher was unaware of the metaverse.
Higher Secondary Students	The majority of the Higher secondary students were familiar with the metaverse.
Higher Secondary Teachers	Almost every Higher secondary teacher was unaware of the metaverse.
M.Phil. scholars	Maximum M.Phil. scholars were unaware of the metaverse.
Ph.D. scholars	More than half of the Ph.D. scholars were unaware of the metaverse.
Faculty of Education Department	Almost every Faculty member of the Education Department was unaware of the metaverse.
What is the use of metaverse in education?	
Secondary School Students	Most Higher Secondary students believed that the metaverse might be used effectively in education.
Secondary School Teachers	All the Higher Secondary teachers were unsure about using metaverse in education.
Higher Secondary Students	Most school students believed that the metaverse might be used effectively in education.
Higher Secondary Teachers	All the school teachers were unsure about the use of metaverse in education.
M.Phil. scholars	Maximum M.Phil. scholars were unsure about the use of metaverse in education.
Ph.D. scholars	A few Ph.D. scholars believed that metaverse might be used in education.
Faculty of Education Department	Almost every faculty member of the education department was unsure about the use of metaverse in education.
What is the possibility that metaverse may replace traditional teaching?	

Secondary School Students	Most of the school students believed that metaverse might replace traditional teaching. Future teaching will be beneficial if students are taught in virtual classrooms.
Secondary School Teachers	None of the school teachers agreed with the stance that metaverse might replace traditional teaching.
Higher Secondary Students	Most of the higher secondary students believed that metaverse might replace traditional teaching. Future teaching will be beneficial if students are taught in virtual classrooms.
Higher Secondary Teachers	None of the higher secondary teachers agreed with the stance that metaverse might replace traditional teaching.
M.Phil. scholars	None of the M.Phil. scholars agreed with the stance that metaverse might replace traditional teaching.
Ph.D. scholars	None of the Ph.D. scholars agreed with the stance that metaverse might replace traditional teaching.
Faculty of Education Department	Almost every faculty member of the education department disagreed that metaverse might replace traditional teaching.

Conclusion

The data analysis revealed that only the secondary and higher secondary school students were familiar with metaverse. However, secondary school teachers, higher secondary school teachers, faculty members of the education departments of universities, M.Phil scholars, and Ph.D. scholars were unaware of the metaverse. Similarly, secondary and higher secondary school students believed that the metaverse might be used effectively in education. But, secondary school teachers, higher secondary school teachers, faculty members of the education departments of universities, M.Phil scholars, and Ph.D. scholars were unsure about the use of metaverse in education. It was further concluded that most secondary and higher secondary school students believed that metaverse might replace traditional teaching. They believed that instruction would be beneficial if students should be taught in virtual classrooms. On the other hand, secondary school teachers, higher secondary school teachers, faculty members of the education departments of universities, M.Phil scholars, and Ph.D. scholars

disagreed that metaverse might replace traditional teaching.

Recommendations

In the field of education, the metaverse provides multiple answers. Students from conventional colleges and universities who defy their institutions' restrictions to attend teaching classes at the best institutions are examples of how society can learn with the help of the metaverse whenever, wherever, and close to the highest learning resources. Through metaverse technology, people will have easier access to learning materials, allowing them to virtually benefit from the world's largest libraries. Many subjects, such as cyber-security and genetics, can now be taught more intuitively and understandably thanks to the metaverse, which enables people to immerse themselves in the universe's galaxies, thereby confronting the essence of knowledge. Future reality will be fully integrated with metaverse technology. Currently, major high-tech companies are working to develop metaverse technology. The public needs

to know about this new technology to prepare them for the advent of the metaverse.

It is recommended that metaverse be introduced at all levels of teaching-learning platforms, including schools, higher secondary schools, and university education departments. There is a need to bridge the perception gap between secondary/higher secondary students and M.Phil/Ph.D scholars, teachers, and faculty members of university education departments because it is expected that the use of the metaverse in education would impact the teaching-learning process. The gap between teachers and students will be bridged, and the number of avenues for learners to obtain an education will increase. Virtual teaching-learning platforms may give all students the same chances to get the best education possible, no matter how much they know, how much money they have, or their social status. It will also be easier, faster, and more convenient to learn. However, it is possible if awareness is raised in remote and third-world countries.

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