and a metaverse education system we can understand with our approaches figure. We approach a metaverse education system with **Fig. 8**.

The development of the metaverse appears to be directly related to the maturity of technologies; in other words, the implementation of the metaverse in education heavily depends on modern technology. As a result, a variety of supportive technologies can be used in education to build the metaverse's educational framework, which provides important support for the elements both in the actual world and the metaverse.

With the collaboration of digital technologies metaverse makes its education system like physical education, some issues more beneficial from physical education system. By the wearable device (VR, glasses, etc) learner joins the metaverse as an avatar, and after that learner will learn from his guide avatar (teacher, trainer, or individual instructor). The learner will learn from learning resources, and they will give their learned (what they learn) guidance. Finally, the guidance avatar will monitor all the learner activities on the metaverse. Computing technology such as edge computing, cloud computing, distributed computing, and others that we mention in the metaverse technique section, can support learners in storing, using, and synchronizing learning data more correctly, effectively, and flexibly. The development and operation of the metaverse requires high-speed networks like 5G or 6G and strong wireless connectivity. The metaverse can maintain fluency, stability, and low latency for data transfer, scene display, instant feedback, and user connection with the help of high-speed networks. Incorporating analytical tools in the metaverse can aid in measuring, tracking, gathering, and analyzing learner-learning data. Metaverse makes a virtual platform with its features and technologies which makes easier metaverse education system for learners and guidance. 3D technologies such as 3D modeling or 3D reconstruction create the shape and appearance of real objects and will make metaverse education a reality. Learners can find content for their study in the metaverse platform more than in the physical world. In metaverse education, world learners can communicate with each other's within a short time to discuss their ideas, and with that, they can increase their innovative productivity.

V. THE POTENTIAL FOR EDUCATION IN THE METAVERSE

The Metaverse is an online virtual environment that allows for immersive learning in higher education and is accessible from any location at any time [47]. It works with real-time networking and collaboration. The metaverse allows users to choose their digital avatars. It offers a virtual environment that is simple to access from anywhere. Hence saving money on transportation and logistics. A notable economic burden it takes off from institutions is setting up costly labs, equipment, and auditoriums. A professor can concurrently address live and virtual audiences to the metaverse. This can become a transactional intellectual property that can be made available in various formats in the metaverse. With the aid of artificial intelligence, metaverse academics can be repackaged and served to diverse audiences according to their needs.

In the Metaverse, school buildings with all the facilities can be developed to be more prosperous, and more attractive of course, which will be comfortable and enjoyable for the learners. Metaverse has the benefit of making digital communication more approachable by providing new aspects. Applications in education can enhance education quality with limitless experience. Teachers can back up their classes on the cloud and students can access them easily in their necessary time.

A. Challenges of the metaverse in Education

The metaverse transforms the education system physically to metaverse education, in a way that still metaverse has some challenges. With Fig. 9, we explain some challenges for the metaverse education system.

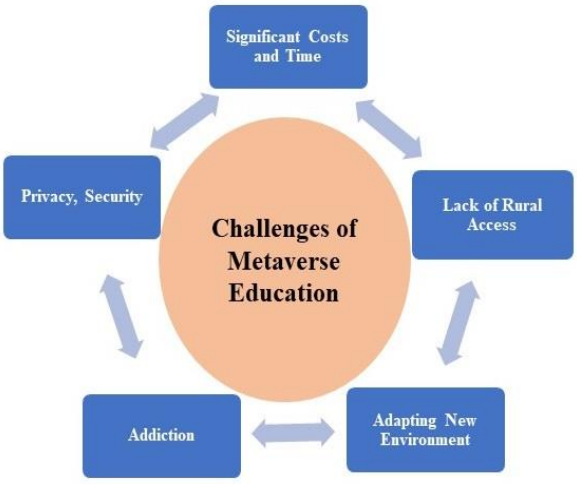

Fig. 9. The Metaverse educational challenges

Significant Costs and Time

In maximum usable cases, the metaverse provides a low-cost learning system, on the other hand, building the many types of laboratories in metaverse education is highly cost able. Many institutions can't afford it.

Lack of Rural Access

To build metaverse tech giants using updated technology and for using it users need high-speed networks like- 5G or 6G. In Africa and Asia, many countries do not have internet availability in their rural areas, and due to the lack of rural access millions of learners can't use metaverse education.

Adapting New Environment

As we maintain many rural areas, millions of users don't easily take new technologies instead of their regular usable things, they are feeling comfortable with their old technological environment.

Addiction

There are two sides to every coin. On the one hand, users find it simpler to engage in immersive engagement with higher quality, which can eventually lead to "cyber-syndrome," which refers to the physical, social, and mental issues that affect people because of excessive interaction with the internet. The XR experience, on the other hand, exposes learners to a variety of visual and aural stimuli that can make their brains work harder.

ISBN 979-11-88428-10-6