brain and develops muscle memory. VR can train anything, from farming skills to firefighting, in the same way that a flight simulator trains pilots for emergency landings. Spatial training, such as using the hands and body for tasks that are too dangerous, expensive, inconvenient, or simply impossible to practice in real life, is one skill that plays to the strengths of the metaverse [7]. In a safe and controlled environment, scenarios for normal and abnormal operations, emergency response, challenging work environments, critical procedures, and high-consequence events can all be practiced until they become second nature. It's a catch-all term that refers to the entire digital and virtual world [8]. It's the convergence of physical, augmented, and virtual reality in a shared online space. Metaverse's core branches are Healthcare, Entertainment, Military, Real estate, Manufacturing, and Education. Within a metaverse, each user has their perspective on the virtual world, with the underlying environment presenting a consistent state to all users [9, 10]. Metaverse Virtual Reality (VR) and Augmented Reality (AR) are invading healthcare, medicine, and innovative technologies based on AR and VR is emerging to improve education and training as well as processes and procedures [11]. VR is a technology that substitutes one's vision of the physical world with a digitally produced scene using software and headgear devices [12]. AR is a technology that combines the digital and physical worlds. It uses computer vision techniques such as object recognition, plane detection, facial recognition, and movement tracking to recognize real-world surfaces and objects [13]. The term "mixed reality" refers to a combination of augmented and virtual reality. Using VR, AR, and MR technology doctors make their dream smart digital operation theatre healthcare, where everyone can watch live patient operation which looks like real operations [14]. Unlike games, the virtual environment of a metaverse is not fixed and can be modeled and altered by some or all the users who inhabit it. Each user's avatar can be enabled to portray the personality of the owner. This allows long-term changes to the environment to be retained in perpetuity. It also allows users to form relationships by proxy, with each avatar being used to convey a user's in-world persona [15]. The metaverse, a 3D digital environment that combines the real and virtual worlds, has been hailed as a significant trend in future education [16]. The Metaverse has gained the industry's attention and much research has been going on in the area. Researchers are motivated and technology is speeding in various R&D groups. Researchers are trying to integrate existing technologies from all application areas into the metaverse to build up a complete virtual world full of immersive experiences very similar to real life [17]. Sadrone proposed a user perspective of the medical education learning process in the metaverse. According to him, human avatars and connected devices can be used in a pre-defined environment virtual environment to perform a specific learning activity [18]. Bokyung explained the potential of education in the metaverse following the four types of the metaverse roadmap (Virtual Reality, Augmented Reality, lifelogging, and the minor world) [19]. They suggested some applications of a metaverse in education highlighting an example of an AR T-shirt that could assist students to examine the human body and a spinal surgery platform already develop in a hospital in Seoul (South Korea) that enhance student capacity undergoing the learning process. Muhammet DAMAR revealed the features of the metaverse in the medical field through a systematic review [20]. Such a study could help to enhance understanding of the integration of novel techniques in the metaverse thus enhancing the understanding process. Mozumder et al. [21] proposed a framework integrating smart healthcare facilities in the metaverse. This framework can be implemented and serve as an educational tool for those desiring to gain knowledge in the medical field. The possibility to carry out the virtual task in the metaverse and access some distance learning using avatars make the teaching/learning process more real using human avatars and will serve as a strong pillar for education in general. Sun Huh [22] recently studied the arrival of the metaverse in medical training in Korea by comparing its effect to the current computer-based testing system for the Korean Medical Licensing Examination. Amina et al. suggested in their study [23] a hybrid Structural Equation Modeling and Machine Learning model for the prediction of user's desire in using metaverse for medical education. Education in the metaverse offers many advantages and drawbacks. [24] presents some of these advantages and drawbacks through a literature review. This study is a guideline for those interested in education using the metaverse thus important to education. Effective education with a practical demonstration can be achieved in the metaverse by using a combination of metaverse-enabling technologies.

Contributions: This paper aims to conduct a systematic literature review of the metaverse in education and the framework for this. The contributions of this article are as follows.

- We introduce a technological overview of the Metaverse for education, which reflects the interlinkages between the Metaverse and education.
- We discuss applications for metaverse education that will contribute to the development of the Metaverse.
- We provide an approach to state-of-the-art metaverse education.
- We highlight some key challenges and future directions based on our in-depth review, as well as some recommendations for the Metaverse in future education.

Roadmap: In Section II, we briefly introduce the key origin of the Metaverse. Then, we discuss the Metaverse techniques in Section III and put together the explanation, features, and framework of the metaverse in education in Section IV. Furthermore, in Section V, we provide potential uses of the metaverse in education in the future of the Metaverse in education. After that, we mention some challenges of the metaverse in education in Section VI and we conclude this paper with discussions and potential future research in Section VII.

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