

The Role of Artificial Intelligence in the Metaverse and Virtual Reality in Learning Artificial intelligence is spearheading the evolution of the educational metaverse towards enhanced and personalized learning experiences. It enables the tailoring of learning materials and the pace of progress for each student independently, based on the evaluation of their performance and learning patterns, thus rendering it more suitable and effective for all types of learners. Furthermore, AI facilitates the development of intelligent virtual mentors who offer individual guidance and necessary assistance to students at appropriate times, and it amplifies the realism of interactive environments within the metaverse, thereby increasing the level of immersion and engagement with educational content. Additionally, AI supports automated assessment tasks and immediate feedback, allowing students to more fully recognize their weaknesses and strengths, and it analyzes learning information to uncover insightful patterns that drive teachers to further refine instructional strategies and design curricula. Its role extends beyond this, encompassing the dynamic generation and modification of learning materials, providing access for students with disabilities to learning areas, and improving interaction between students and learning materials through natural language processing techniques.