EDCI 339: Online Learning Project

The Role of AI in Adaptive Learning

Role Of AI In Adaptive Learning

Inquiry Question:

How does personalized, AI-driven content

enhance teaching and learning in online education?

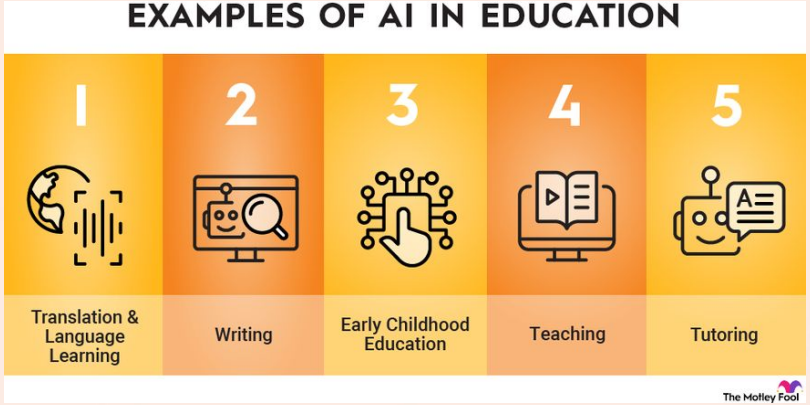
Why This Inquiry Matters:

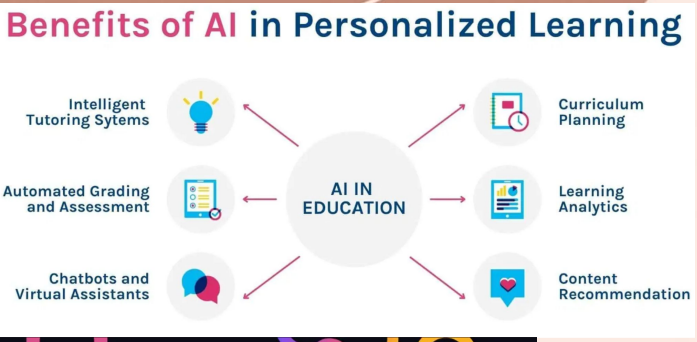
As online and distributed learning environments grow,

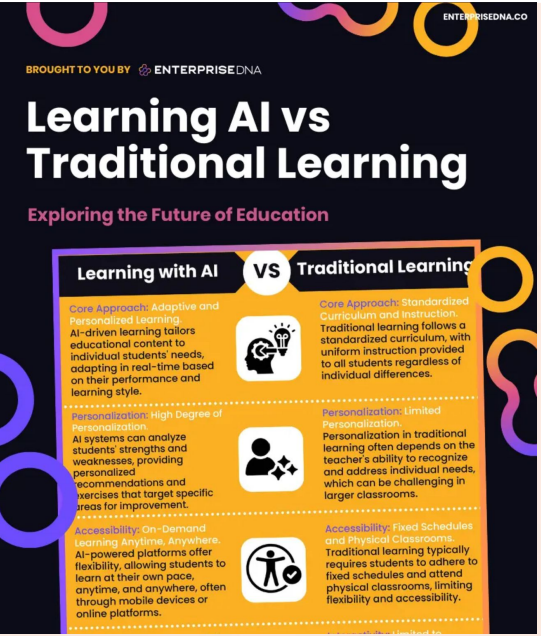
AI plays a transformative role in tailoring content,

supporting learner diversity, and personalizing instruction.

.





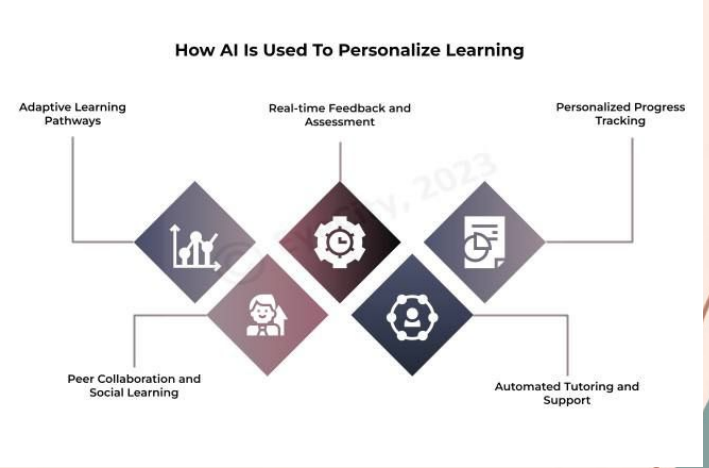


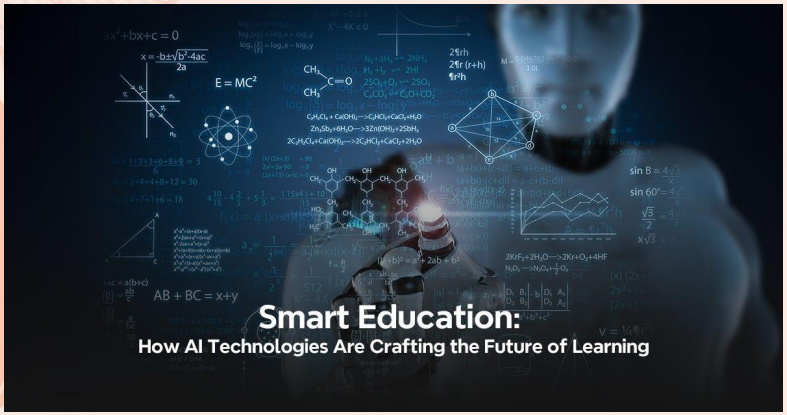
Relationship to Teaching & Learning

- **Tailored Learning Experiences:**
  AI customizes content based on student progress, pace, and preferences—ensuring challenge without overwhelm.
- **Real-Time Feedback & Assessment:**
  Instant feedback helps students reflect, revise, and stay on track—while also alerting instructors to learning gaps.
- **Enhanced Student Engagement:**
  Through gamified elements and multimedia content, AI keeps learners motivated and active.
- **Support for Educators:**
  AI reveals patterns in student performance, helping instructors redesign content, differentiate support, and intervene earlier

How AI Personalizes Learning

- **Analysis & Data Collection:**
  - All data is gathered by AI, such as engagement patterns, student behaviour etc.
- **Profiling:**
  - Learning profiles, preferences and knowledge can all be tailored for a real-time profile.
- **Content Adaptation:**
  - AI can recommended resources, revisits different concepts, and can personalize resources for more of a understanding.





The Future of AI Learning

- **Emotion in AI:**
  - In the future, there could be a possibility that boredom/frustration could be detected and adjusted for the learner.
- **AI Collaboration Tutors:**
  - Peer review and discussions could be held by Virtual AI tutors or peers
- **Trend in AI:**
  - The AI education market is expected to continuously grow and improve between the 2025-2034

References

https://www.precedenceresearch.com/ai-in-education-market#:~:text=The%20services%20segment%20is%20expected%20to%20grow%20at%20the%20fastest,organizations%20in%20the%20education%20sector

https://fastbots.ai/blog/ai-driven-user-behaviour-analysis-how-chatbots-can-predict-and-adapt#:~:text=AI%2Ddriven%20user%20behaviour%20analysis%20involves%20using%20technology%20to%20interpret,and%20enhancing%20decision%2Dmaking%20processes.

https://claned.com/the-role-of-ai-in-personalized-learning/

https://elearningindustry.com/opportunities-and-challenges-using-ai-in-personalized-online-education

https://blog.workday.com/en-us/ai-in-the-classroom-personalized-learning-and-the-future-of-education.html