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## Leveraging AI-Driven Adaptive Learning Systems to Address Mental Health Challenges in Education

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Disorders like anxiety depression, and ADHD can be serious obstacles to excelling academically on all levels traditional educational practices are often not designed to meet the needs of these students, leading to symptom worsening and higher rates of disengagement or dropout. While tech can play a powerful role in these challenges, few solutions on technopsychology were built to support mental health. In this study we investigate the potential of AI-driven adaptive learning systems to respond to cognitive and emotional needs held by students with mental health challenges, offering personalized support that can enhance both academic outcomes and welfare.

**Methods:** A mixed-method research was conducted by using qualitative and quantitative data. They analyzed whether learning systems with AI, personalized for students interacted better via student outcome metrics and engagement data generated from the interaction of such personalization designed to match individual needs among other evidence obtained through mental health counselor interviews. Based on cognitive load theory and principles from educational psychology, this research aims to bring a customized learning approach that will decrease some of the stress along with higher engagement.

**Results:** The results suggested that students using AI-powered adaptive solutions also experienced greater engagement and lower anxiety. This was extremely convenient in helping students to handle cognitive loads better as lesson content and pacing had been efficiently adjusted according to real time feedback. Nevertheless, most students who experienced such severe emotional difficulties did not even report any features to improve the support in their time of need.

**Conclusion & Implications:** There is hope that AI-driven adaptive learning systems might help such students as we embrace personalized learning interventions. At the same time, it is necessary to integrate effective emotional support systems. In the future, there is room to develop trauma-informed emotionally intelligent AI systems that can support real time cognitive and emotional learning processes that may lead more equitable and supportive educational settings.

### Biography

Dr. Abida Rasool is a researcher at Beijing Normal University, who specializes in the field of mental health and education technology. Her research highlights the use of AI-driven adaptive learning systems for cognitive and emotional support in student populations that have mental health challenges such as anxiety, depression or ADHD. Through that work, she gamifies personalized learning experiences to decrease anxiety and increase flow for her clients. In addition to several publications in top-tier journals, Dr. Abida Rasool integrates evidence-based practices and principles into the development of trauma-informed and emotionally responsive classrooms.

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