


# Chapter 9


## AI in Education: Early Detection of Mental Health Challenges for Inclusive and Supportive Learning

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### ABSTRACT

*As schools confront an escalating mental health crisis among students, artificial intelligence (AI) emerges as both a solution and a complex ethical challenge. The ability of AI to analyze vast amounts of data through natural language processing, sentiment analysis, and behavioral pattern recognition provides a proactive approach to identifying early signs of emotional distress. By monitoring shifts in academic engagement, social interactions, and behavioral trends, AI moves beyond*

DOI: 10.4018/979-8-3373-0573-8.ch009

*traditional, reactive mental health interventions, enabling earlier and more targeted support. However, while AI-driven detection is compelling, its implications raise urgent questions about its role in education and student well-being. Beyond technical feasibility, the long-term psychological, academic, and social impact of AI-driven mental health detection remains unexplored. While AI nurtures more inclusive and supportive learning environments, it becomes a tool of surveillance, reinforcing biases, or enabling dependency on automated decision-making.*

## **INTRODUCTION**

### **The Growing Importance of Mental Health in Education**

Mental health challenges are recognized as critical issues in educational settings due to their profound impact on students' academic success, social integration, and long-term development. According to the World Health Organization (WHO), approximately one in seven adolescents aged 10 to 19 globally, around 14%, experience mental health conditions. Depression is one of the leading causes of illness and disability among this age group, while suicide ranks as the fourth leading cause of death in individuals aged 15 to 19 years. These statistics highlight the gravity of adolescent mental health challenges and the urgent need for timely interventions to prevent long-term consequences. Furthermore, disruptive behavior and dissocial disorders, such as conduct disorder, affect approximately 40 million people, including children and adolescents, emphasizing the widespread nature of mental health challenges in younger populations (WHO, 2019).

The COVID-19 pandemic has further exacerbated mental health issues among young people, with global disruptions to school routines and social networks contributing to increased anxiety, depression, and emotional distress. A meta-analysis of studies during the pandemic found that 29% of children and adolescents experienced depression, while 26% exhibited symptoms of anxiety, linked to isolation, remote learning challenges, and heightened uncertainty about the future (Ma et al., 2021).

Even before the pandemic, studies in diverse contexts revealed the prevalence and adverse impacts of mental health disorders on educational outcomes. In Ghana, for example, 7.25% of primary school children were diagnosed with mental health conditions such as depression and anxiety, with these challenges strongly correlating with lower academic performance. On average, children with mental health challenges scored 10.5 points lower on academic assessments than their peers, highlighting the direct connection between mental health and educational achievement (Kusi-Mensah et al., 2019). Similarly, in Malawi, 7.3% of children exhibited signs of psychopathology, including conduct disorders and ADHD, with these challenges

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