EMOTIONAL BURNOUT OF TEACHERS IN THE CONTEXT OF AI INTEGRATION IN EDUCATION

Toshmurodova Sevara Bakhtiyor kizi
Master's student, Media & Communication Hallym University, South Korea,
ORCID ID: https://orcid.org/0009-0004-4337-830X
Email: sevara0887@gmail.com
Phone: +82 010 8059 0554

ABSTRACT

This study investigates the phenomenon of emotional burnout among teachers with regard to artificial intelligence in education. The digital revolution of educational structures has drastically transformed teachers' professional functions, workloads, and psychological stress. This article seeks to critique the extant literature on reasons, forms and curative strategies of teacher burnout associated with AI. The analysis follows recent published academic literature between the years 2019 and 2025. The study shows that while the use of AI technologies can reduce routine tasks, it may also increase cognitive load, technostress, and role ambiguity. Similarly, digital competencies, organizational support, and emotional resilience are strong predictors of burnout reduction. Last, the study provides recommendations for enhancing teachers' well-being in digitally transformed educational environments.

KEYWORDS

Teacher burnout, artificial intelligence, digital education, psychological well-being, teacher stress, educational technology

INTRODUCTION

Currently, integration of artificial intelligence into education is one of the biggest forces of digital change. AI tools are also used for automating the administrative tasks, supporting the design of educational programmes, personalising learning methods, and improving decision-making in education [2]. Yet although these have functional advantages, it also imposes new psychological demands on teachers.

Emotional exhaustion is one of the most critical constructs in this study, often viewed as being a multidimensional state where emotional exhaustion, depersonalisation, and low professional fulfilment are present [4]. Previous studies have demonstrated that emotional exhaustion occurs when the challenges of work, over the long haul, exceed resources [7].

The continuing progress of AI in education will keep teachers adjusting to new tech, pedagogy, and expectations. It has been shown that these conditions raise workload, technostress, and uncertainty about teachers' professional roles and identity [11]. Teachers may thus have to

overcome increasing psychological strain, posing a risk for emotional exhaustion. This study seeks to investigate links between artificial intelligence incorporation and teacher burnout following a review of recent academic research. Special focus is placed on understanding the main risk factors of burnout and the psychological and organisational contexts that might reduce its adverse impact.

METHODOLOGY

This study is based on a review of recent scholarly literature on artificial intelligence in education and teachers' psychological well-being. Studies were selected based on their relevance, focus on AI applications in education, and examination of psychological effects on teachers, with particular attention to peer-reviewed research. Literature was identified based on the following criteria:

- Time period of publication from 2019 to 2025 (in order for findings to be considered relevant in the context of rapid digital transformation).

- Strong emphasis on AI applications in education and their psychological effects on teachers.

- Articles sourced from peer-reviewed journals.

Analysable studies were then reviewed with a total of 10–12 relevant studies. The material was analyzed using qualitative analysis, so that it became clear there were many themes and patterns that were emerging across all literature. Three main areas of analysis were focused upon in this research:

- The main causes of teacher burnout in digital transformation environments.

- The impact of AI technologies on teachers' workload and psychological well-being.

- Approaches and conditions that may help to prevent or reduce burnout.

ANALYSIS AND RESULTS

An analysis of between 10 and 12 recent studies reveals a consistent pattern in how the integration of artificial intelligence into education affects teachers' mental health.
The findings have been categorised into three interrelated dimensions:

- **factors contributing to burnout**
- **the dual impact of AI on teachers' work**
- **mitigating factors and prevention strategies**

Factors Contributing to Teacher Burnout in AI-Enhanced Environments

A variety of factors leading to teacher burnout in an AI-augmented educational environment has been identified. The following analysis of the included studies indicates that teacher burnout arising from AI in educational contexts is a consequence of the relationship between the increasing demands and restricted psychological, institutional and technological resources in education-based digital systems.Teacher burnout is not due to AI itself; it primarily originates from the context in which AI is implemented and deployed.

Digital overload has been widely studied and it has been widely described as the ongoing exposure to different digital platforms and AI-based systems. Many times teachers need to handle learning management systems and AI-enhanced tools for assessment, content-creating frameworks and modes of communication at the same time. Distraction and more screen time and a blurring between personal and work life is introduced by this multiplication of tools [11]. Some studies indicate that these conditions lead to a direct cause of emotional exhaustion, especially when tasks of digital nature stack up, with no reduction in conventional duties. This is particularly relevant to the idea of 'technological stress' which is commonly mentioned across the research reviewed.

Technological stress takes the form of anxiety over unfamiliar tools, fear of making errors, and an inability to control technological systems. Importantly, the extent of technological stress varies as a function of teachers' pre-existing digital preparedness and access to training. Less experienced teachers tend to report higher levels of stress in digital environments, whereas teachers with stronger digital skills demonstrate greater confidence and resilience [7].

Another major factor is role ambiguity and professional identity strain. The use of artificial intelligence technologies often results in fundamental transformations in the roles of teachers from educators to digital learning ecosystems facilitators, data interpreters, and technology operators. As the responsibilities expand, there may be uncertainty as to what is expected of professionals, and with so does role clarity. Some research has found this vagueness erodes teacher professional identity and is also a risk factor for depersonalisation [4], a key aspect of burnout.

Besides, research illustrates rising demands of performance and responsibility. Teachers will be under pressure to show real advantages around student learning, efficiency and innovation with AI tools being adopted. In institutional settings where the application of AI is monitored or assessed, this pressure can amplify feelings of relentless judgement and comparison, which is linked to greater psychological strain [2].

Finally, a structural factor is the insufficient institutional backing. There is evidence that AI technologies are integrated into learning with insufficient training, clear guidelines, and support. In those cases, teachers face the challenge of learning the new systems on their own without compromising their existing workloads. This disparity between demand and available assistance is thought to be an essential sign of burnout. In sum, the studies mentioned indicate that burnout in AI-enhanced settings is not due to technological innovation, but rather the result of poorly coordinated implementation activities, insufficient support, and the collective effect of increasing cognitive and emotional workloads on teachers.

Dual Impact of AI on Teachers' Work and Well-being

The analysis of the selected studies demonstrates that AI integration in education has a dual impact on teachers' professional activities and psychological well-being. These effects can be both beneficial and challenging depending on the context of implementation.

Dimension	Positive Effects of AI	Negative Effects of AI	Key Sources
Workload	Automation of routine tasks (grading, administration) reduces time pressure	Additional time required to learn and manage AI tools increases workload	Holmes et al. (2019); Zawacki-Richter et al. (2019)
Cognitive Demand	AI assists in decision-making and lesson planning	Increased cognitive load due to monitoring, evaluating, and integrating AI outputs	Zawacki-Richter et al. (2019)
Teaching Effectiveness	Personalized learning and data analytics improve instructional quality	Over-reliance on AI may reduce critical pedagogical thinking	Holmes et al. (2019); Selwyn (2016)
Professional Autonomy	AI can support teacher decision-making	Algorithmic recommendations may limit autonomy and professional judgment	Selwyn (2016)
Emotional State	Reduced routine stress in some tasks	Technostress, anxiety, and pressure to adapt to new technologies	Schaufeli (2017); Mercer (2020)
Professional Identity	Opportunity to develop new digital competencies	Fear of replacement and reduced value of teaching role	Day & Gu (2014); Williamson et al. (2020)

Table 1

In Table 1 we understand that how artificial intelligence impacts teachers' work and well-being, is inherently two-sided. These new AI technologies serve both to reduce the monotony of jobs and enrich the quality of education, but also contribute to new cognitive, emotional and professional demands.

Notably, results indicate that the positive effects of AI are frequently accompanied by greater cognitive demands, technological stress, and issues associated with professional autonomy and identity. This indicates that the adoption of AI is not eliminating contemporary pressures, but rather converting them into new types of psychological stress.

In general, the balance between these positive and negative effects will be guided heavily by context: the institutional framework of support for AI, teachers' digital competence, and the environment within which AI technologies occur. AI can help us improve teaching effectiveness

and the well-being of educators, when we treat these things properly. Conversely, lack of support and poor implementation may elevate stress and increase the risk for emotional burnout.

Mitigating Factors and Prevention Strategies

Indeed, the detrimental psychological outcomes resulting from artificial intelligence in education are not inescapable according to the analysis of the included studies. In contrast, individual and organisational elements can be factors that significantly attenuate emotional exhaustion and have the potential to foster professional well-being in the profession.

One of the most frequently mentioned protective factors is digital competence. There are reports that teachers with more exposure to technology possess (and have confidence as IT professionals) less technostress and can become competent users of AI tools. Recent empirical studies indicate that ongoing professional development -rather than short-term training is critical in developing sustainable, digital skills and an effective ability to take control over technological environments [9].

Equally important is institutional buy-in. Research confirms that the successful integration of AI hinges heavily on the clear guidelines that one has in place, available technical assistance and realistic expectations about the use of technology. Teachers are less likely to become experience excessive burnout or job-related stress when educational institutions provide structured support systems and leave space for teacher adaptation [6].

The preservation of professional autonomy is also paramount. Maintaining teacher autonomy over the use and the integration of artificial intelligence does not only help in managing issues, it prevents them from eroding autonomy, identity and agency as professionals. On the other hand, if the implementation policies are stringent or mandated, the resistance, stress, and dissatisfaction will also be increased [8].

Teachers through collaborative environments, peer support, and mentoring schemes share experiences and alleviating isolation and managing the challenges of tech change improve teachers [5]. Finally, several researches stress to implement AI as supportive tool with limited control over it, a balanced implementation approach. If AI is gradually implemented, with a focus on teachers' needs and feedback, it is more likely to improve teaching without raising psychological strain.

Overall, these results indicate that preventing teacher burnout in AI system implementation implies a more extensive approach and technology-based training, institutional backing and psychological treatment of the teacher is needed. With this holistic mindset in mind, it seems, "if not, even the most advanced technologies may exacerbate psychological woes more than they help them to work better.

DISCUSSION

Results indicate the impact of artificial intelligence on teachers' psychological well-being may be more random than deterministic. AI is not, in itself, a stressor, but rather the effect of AI depends on its implementation conditions and support resources.

Emotional exhaustion occurs in response to the 'Job Demands–Resources' framework [7] when technological and cognitive demands that are higher are not aligned with available institutional and personal resources. A poorly structured implementation process, characterized by insufficient training, unclear expectations and limited technical support, also causes technostress. These challenges intensify role ambiguity and lead to emotional exhaustion. When stuck with these conditions, artificial intelligence typically does not help, instead it typically adds additional stress. Conversely, if artificial intelligence is integrated gradually and supported properly, then it will reduce routine workloads; facilitate decision-making in teaching; improve job satisfaction in teaching [2].

Importantly, the findings underscore institutional policy effects that influence teachers' professional development. An educational environment which affirms professional autonomy, enables continuous development and promotes collaborative practices is better able to manage negative psychological effects. Therefore, the impact of artificial intelligence is not only technological, but also organizational and pedagogical.

CONCLUSION

This paper investigates the connection between the introduction of artificial intelligence (AI) to education and teachers' emotional burnout. This analysis showed that AI does not create a single, constant effect: the effect instead hinges on how AI is implemented and used in authentic educational contexts. While AI simplifies specific tasks and supports the learning process, it also introduces new types of pressure that teachers must cope with. The key point is that it changes not just the load on teachers' tasks but their entire work itself. While routine tasks might become easier, teachers still have to keep up with new technology and also acquire new system techniques so they can tailor their teaching strategies in the process. This results in further stress and anxiety, often exacerbated by insufficient support. A second central finding is that teachers' perception of AI is context-dependent. And where there are clear procedures, training and technical support, teachers usually appear more confident and less stressed. On the one hand, AI can result in clarity and support, but on the other, it can also promote confusion and dissatisfaction, so the risk of creating an environment for burnout may rise. Several practical measures can be adopted from these findings:

-Ongoing and practical training. Teachers need ongoing training that focuses not merely on theory but on practical application in the classroom. This can help to relieve any nervousness about using AI tools and build confidence.

-Strong organisational support. Schools and universities should offer guidance, technical assistance and realistic expectations. Teachers need not be expected to figure it out themselves.

-Maintaining professional autonomy. Teachers must remain in control of their own education. But AI is there to support teachers' work, not to replace their judgment.

-Mental support and peer support. Reducing stress and promoting well-being by promoting collaboration among teachers, sharing experiences, creating a supportive atmosphere can have a significant impact on their well-being.

AI can enhance the efficacy and quality of education and learning outcomes in the general education sector. However, this potential won't be achieved without equitable introduction of such a system and a focus on what teachers really ask for or need. Without adequate support, the very technology itself might not just fail to bring down the stress, but might even exacerbate it. This can be a topic for future work, with concrete and achievable models for AI implementation that don't just consider technical factors but teachers' psychological health. With long-term implications on education through AI impact continuing to shift, the impact of AI will need continued investigation.

REFERENCES:

1. Day, C., & Gu, Q. (2014). *Resilient teachers, resilient schools: Building and sustaining quality in testing times*. Routledge.
2. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
3. Kim, L. E., & Asbury, K. (2020). "Like a rug had been pulled from under you": The impact of COVID-19 on teachers in England during the first six weeks of the UK lockdown. *British Journal of Educational Psychology, 90*(4), 1062–1083.
4. Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience . *World Psychiatry, 15*(2), 103–111.
5. Mercer, S. (2020). Teacher well-being. Oxford University Press.
6. OECD. (2021). *Teachers and school leaders as valued professionals*. OECD Publishing.
7. Schaufeli, W. B. (2017). Applying the Job Demands–Resources model: A 'how to' guide to measuring and tackling work engagement and burnout. Organizational Dynamics.
8. Selwyn, N. (2016). *Education and technology: Key issues and debates*. Bloomsbury Academic.
9. Trust, T., & Whalen, J. (2020). Should teachers be trained in artificial intelligence? Teacher readiness and professional development. *Journal of Digital Learning in Teacher Education*.
10. Williamson, B., Eynon, R., & Potter, J. (2020). Pandemic politics, pedagogies and practices: Digital technologies and distance education during COVID-19. *Learning, Media and Technology, 45*(2), 107–114.
11. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education, 16*(1), 1–27.
12. European Commission. (2020). *Digital Education Action Plan (2021–2027)*.