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Changes in Teacher Evaluation Standards in the Era of Artificial Intelligence: Emerging Trends and Future Directions

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Abstract. Artificial intelligence (AI) and generative AI have developed rapidly in recent years, and now many schools have begun to explore their applications in education. As AI tools are gradually incorporated into teaching and learning activities for design, assessment, feedback and personalisation, the concept of a professional teacher is also evolving. Most of the existing teacher evaluation systems have been developed in educational settings where teachers are the main sources of knowledge and classroom instruction is the focus of evaluation. However, recent developments suggest that such frameworks may no longer be fully in line with the demands of teaching in AI-assisted learning environments. Collect recent research published from 2021 to 2026 around the world on how teachers' evaluation standards are changing in the face of AI-driven changes in education, in conjunction with foreign policy papers and new-era competency systems. Based on thematic reviews of empirical studies, policy reports and conceptual discussions, the five main trends have been identified: a change from digital literacy to AI literacy; the appearance of human-AI collaborative teaching; an increase in the demand for ethical responsibility; a transition from outcome-oriented to process-oriented evaluation; and an expansion in focus on students' AI literacy. Based on the above results, a multi-dimensional system of teacher appraisal has been proposed. The paper proposes that the future evaluation system will move beyond the traditional metrics of teaching effectiveness to consider teachers' abilities in critically using AI technology and making ethical, data-driven choices for students in the era of AI.

Keywords: teacher evaluation, artificial intelligence, AI competence, teacher professionalism, educational assessment

1. Introduction

Artificial intelligence has gradually moved from the margins of educational technology to the centre of current discussions on teaching and learning [1, 2]. Educational technology has been employed to support classroom teaching for a long time, but now generative AI has added new functions that were not available before. Systems that can generate text, images, feedback, lesson plans and instructional materials are now capable of performing tasks previously carried out by humans.

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Therefore, schools and universities have been forced to address new problems in curriculum design, assessment practices, academic integrity and the future direction of teaching.

With the appearance of generative AI tools such as ChatGPT, people have been talking about changes to school curricula, evaluation and problems of academic dishonesty [3]. In a relatively short time, teachers have started to try out AI-assisted lesson planning, automated feedback generation, differentiated instruction and personalised learning support. At the same time, there were problems of algorithmic bias, fake news, data privacy, lack of transparency, and excessive dependence on machine-generated content. The above opportunities and challenges point to a more general problem: as the form of teaching changes, so too should the criteria for assessing teachers.

Teachers' old evaluation systems focused on teaching ability, classroom management, professional behaviour and student outcomes [4, 5]. The well-known models of Danielson's Framework for Teaching and the JCSEE Personnel Evaluation Standards originated in educational systems that placed more emphasis on "good teaching" as the objective of effective knowledge transmission and classroom management. Although the above features are necessary, they were not designed for environments in which intelligent technologies actively participate in learning.

Recently, scholars have proposed that teachers' professional qualities in the era of artificial intelligence now need to encompass more areas [6]. Teachers are to teach the content of the subject effectively, understand AI systems, critically evaluate AI-generated output, protect student data, address ethical issues, interpret learning analytics, and help students develop AI literacy. The rising demands suggest that the old evaluation system can no longer cover all aspects of teachers' work.

Given this, the current study will explore changes in the standards for evaluating teachers in the era of artificial intelligence. Based on recent research and policy changes, this paper investigates the new features of teacher ability and explores their applications in the future evaluation system.

2. Methodology

This paper will systematically review related literature. Search in the above databases for relevant papers using the following keywords: Web of Science, Scopus, ERIC, Google Scholar and CNKI. The search keywords include combinations such as "teacher evaluation", "teacher competency", "teacher professionalism", "artificial intelligence", "generative AI", "AI literacy", "AI competence" and "AI ethics".

The collected papers were published from January 2021 to March 2026. Include peer-reviewed journal articles, conference papers, policy reports and competency frameworks in the selection. Research that addresses teacher appraisal, teacher quality, teacher professionalism or educational assessment in the context of AI education has been selected. Only publications focusing on the technical aspects of AI development and lacking educational applications were excluded.

Filter the titles, abstracts and full texts to obtain the sixteen primary sources for in-depth study. A thematic synthesis method was used to find out what was repeatedly mentioned and how it changed. Several interconnected themes emerged: AI literacy, ethical responsibility, human-AI collaboration, data literacy, AI-supported assessment, and students' AI literacy. The above are the themes for the discussion below.

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3. Emerging changes in teacher evaluation standards

3.1. Beyond digital competence: the rise of AI competence

One of the more recent changes in research is that digital literacy and artificial intelligence literacy are now seen as separate concepts. Research in educational technology has explored how teachers can better use digital tools over the past ten years. Competence generally referred to the ability to use a learning management system, incorporate multimedia resources and support online learning.

The advent of AI has added another layer. AI systems can create content, make predictions, adjust their responses and engage in teaching activities; they are not the same as traditional digital technology. Therefore, the demands on teachers' abilities have extended beyond technical skills.

Currently, scholars have been studying multiple dimensions of AI literacy to some extent. Knowledge of AI concepts, the ability to integrate AI tools in teaching and learning, critical evaluation of AI-generated results, and an awareness of the social and ethical implications of AI use [7]. Teachers are expected to know how to use AI tools, and when or why to use them.

The new policies at home and abroad are also different. UNESCO's AI Competency Framework for Teachers is an all-encompassing effort to outline the professional expectations for teachers in the era of artificial intelligence [2]. Rather than considering AI as an extension of digital literacy, the framework puts forward a number of qualities for responsible use of AI, pedagogical innovation, ethical awareness and human-centred education.

Experiments have shown the above results. New instruments have been developed, such as the Teacher Artificial Intelligence Competence Self-Efficacy Scale and measures of teachers' acceptance of AI, to explore how to apply and evaluate AI-specific abilities [8]. Therefore, the new form of AI capability in educators has begun to attract considerable attention from all sides.

3.2. From instructional delivery to human–AI collaboration

The second large-scale change is in the form of teaching. The old educational model had teachers as the main source of knowledge and authority in the class. AI-enhanced environments are more complicated in terms of the connections among teachers, learners and intelligent systems.

Recently, some scholars have referred to this new type of arrangement as human-AI collaborative teaching. AI can be employed to help prepare teaching materials, generate content, design tests, collect student performance data, etc. Although teachers are still at the core of educational decision-making, their duties now also include organising and supervising AI-assisted processes [9].

However, AI will not replace teachers either. It will no longer need to perform the previous tasks for teachers. Good Teaching now requires the ability to work with AI systems while retaining pedagogical judgment and educational values. Teachers need to verify whether the AI-generated materials are accurate, correct any errors in the results, and use technology for educational purposes.

Research on classroom implementation provides supporting data for this change in role. Research on the collaboration between teachers and artificial intelligence has proposed various teaching models that use AI as a partner for lesson planning, assessment and differentiation [9]. Other studies have also found that, with due consideration, teachers and generative AI systems can be used together to improve the quality of feedback and motivate students' learning [10].

Based on the above, the new evaluation system will need to consider how teachers work together with AI technology in the future, not just their individual knowledge and abilities. The Capacity for Organisation of productive cooperation among people and intelligent systems may be regarded as a type of professional quality in the future.

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3.3. Ethical responsibility as a core dimension of teacher professionalism

Recently, one of the main changes has been an increased emphasis on ethics in teacher evaluation. Good morals have always been required attributes of good teachers, but now that artificial intelligence is developing, new ethical problems have arisen in the old system.

Concerns have been raised about privacy, surveillance, algorithmic bias, transparency, accountability and academic integrity in educational discussions of artificial intelligence. Teachers are generally the first to know about these problems because they are responsible for selecting technology, managing student data and directing how students use AI.

Recently, competency frameworks have consistently included the demand for ethical awareness at the foundation of professional teachers [6]. Teachers need to know the shortcomings of AI, be aware of possible bias in the system, determine whether it is fair, and then decide how to use it. Therefore, the ethical qualities of all professionals are now considered to be necessary attributes.

The addition of AI ethics as an independent component of the TAICS system shows that it has developed [6]. Assess teachers' sense of confidence in managing the privacy protection and responsible use, fairness, transparency and ethics of the system. The above efforts show that there is now a general movement to make ethics more measurable in professional practice.

Ethics also include the values this study hope to spread. It includes an examination of the educational implications of AI application. Teachers need to balance the demands of efficiency and equity, personalisation and privacy, innovation and potential risks. An evaluation system that fails to recognise these complexities will not cover the current teaching situation.

3.4. Rethinking assessment: from outcomes to learning processes

Generative AI is now widely used, and as a result, educational evaluation has also been altered. Traditionally, the performance indicators for teachers have often focused on easily quantifiable student results, such as test scores, graduation rates and so on.

However, these indicators may be less reliable as sole measures of educational quality in AI-assisted learning environments. When students are able to use advanced AI tools for essay writing, problem-solving and explanation generation, outcome-based assessment alone cannot fully reflect their learning.

Therefore, scholars have gradually paid more attention to the learning process rather than just the learning results [10]. Rather than just having students provide the correct answer, teachers are now also being asked to think about how the students used the information, applied reasoning and problem-solving skills, and self-regulated their own learning.

This will change the system for evaluating teachers. Good teachers may not be known by the immediate results of their students' learning, but rather by their ability to create a positive learning environment, stimulate students' enthusiasm for self-exploration and promote their autonomous learning in the era of artificial intelligence.

With the increasing demand for process-oriented assessment, many educators have begun to explore how to foster students' abilities in critical thinking, creativity and adaptation in learning [11]. Given the rapid changes in technology, the demand for transferable skills such as critical thinking, adaptability, creativity and ethical awareness is gradually exceeding that for factual knowledge recall. Evaluation systems that recognise these priorities will be able to show the teaching quality more truthfully.

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3.5. Students' AI literacy as an emerging evaluation dimension

Another problem is the correlation between teachers' capabilities and students' readiness for life in an AI era. Recently, more and more scholars have put forward the idea that teachers should lead the way in cultivating students' AI literacy.

AI literacy is also not about technology. Learn how AI systems work, be aware of their deficiencies, be selective consumers of AI-generated content, and make reasonable selections for use in daily life involving AI [7]. Ethical Awareness and Social Responsibility are also required conditions.

Several studies have pointed out that the development of students' AI literacy cannot proceed smoothly without teachers who are sufficiently proficient in AI themselves [12]. Teachers typically introduce the ideas of artificial intelligence, organise deep-seated discussions among students, correct misunderstandings, and help students learn about the ethics of AI.

Therefore, the scope of support for students' development in this area is beginning to be considered in teacher evaluation systems. Index may be about students learning to think critically about AI-generated works, being aware of the social impact of AI, practicing responsible use of AI, and developing effective cooperation between humans and AI.

Adding students' AI literacy to the teacher evaluation system is now a relatively new development [13]. It expands the scope of assessment beyond teachers' own abilities to include their contributions in cultivating future citizens for life in an increasingly AI-driven society.

4. Toward a multidimensional framework for teacher evaluation

The literature reviewed in this study suggests an all-encompassing reconception of teacher effectiveness. The old ones, such as teaching ability and professional growth, are still required but are no longer adequate on their own.

Instead, the new frameworks propose an all-encompassing concept of teacher professionalism that includes teaching ability and technology, morality and analysis. The five interconnected characteristics have appeared in recent policy documents and research studies [6].

First, the foundation of good teaching and learning will continue to be addressed. Continue to create meaningful learning opportunities, motivate students, and help them all-round development.

The second is AI ability. Teachers increasingly need to know about AI technology, think critically, and integrate AI in teaching effectively.

Third, the new system will also be morally upright. In recent years, people have been demanding privacy protection, fairness, transparency and accountability from authorities; now they are no longer optional additions to the requirements.

Fourth, data-driven decision-making is becoming increasingly common. With the accumulation of learning data in educational environments, teachers will be able to analyse this evidence and use data analysis to improve teaching.

Finally, the promotion of students' AI literacy is in line with the overall goal of education: to prepare students for life in an era of artificial intelligence.

Together, the above factors indicate that the scope of teacher assessment is moving away from traditional classroom performance indicators [2]. The future system will need to be more adaptable, ethically conscious and able to handle various problems in the relationship between technology and learning.

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5. Conclusion

Artificial intelligence in education is changing how teachers teach and what teachers need to be able to do. Based on the above data, teacher evaluation standards have been changing in an incremental manner recently. Evaluation is no longer limited to how well teachers teach and how students learn; now, it also covers teachers' abilities in using AI for critical thinking and cooperation with intelligent systems, ethical judgment and educational data application, and fostering students' AI literacy.

The above changes have promoted the development of education. Teachers are no longer seen as transmitters of knowledge but more as creators of learning environments, guardians of the ethics in the application of technology, and organisers of people-AI interaction. As AI is increasingly used in education, the system of assessment will also need to change.

Although the particular forms of the future frameworks will differ in various places, a general tendency of change is already showing. The central problem is no longer whether teachers can teach well; it is now how to guide students' learning responsibly and thoughtfully in an era of artificial intelligence in education.

The following are some deficiencies. First, this paper is a summary of previous studies and therefore does not present new empirical data. In the future, the above proposed attributes can be verified through a large-scale quantitative and qualitative study.

Secondly, AI technology is advancing at a high speed. The necessary attributes of people today may change as the application scope of education expands. The System of evaluation should be flexible and less rigid.

Third, most of the literature reviewed is in English or Chinese. More research will be conducted in the future to explore the different AI teacher evaluations around the world.

The application of AI-based evaluation systems will be studied in the future. Learning analytics and intelligent assessment tools have been spread out, and now people are beginning to wonder about their reliability, fairness, transparency and accountability. How these technologies can support, rather than harm, the process of professional assessment is also a problem to be solved.

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