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Anticipatory Competence in Teacher AI Literacy Frameworks

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Abstract

Teachers' AI literacy is critical to informed decisions about the use of AI in education and for preparing students to engage with AI's growing role in society. A growing body of scholarship has sought to define this literacy through competency frameworks that articulate the knowledge, skills and dispositions teachers need for their professional practice. Yet rapid changes in AI technologies and their role in society can render established understandings and practices insufficient, even among teachers with considerable experience of using AI. We use anticipatory AI literacy to describe teachers' capacity to recognise and interpret change, explore possible futures and use these insights to guide decisions about AI in education. We conducted a scoping review to examine the extent to which teacher AI literacy frameworks articulate these competencies. The review identified 13 frameworks represented by 15 publications. We analysed the frameworks using 11 codes informed by Miller's work on futures literacy and broader anticipation studies. Evaluating AI-supported pedagogical actions was explicitly specified in 10 frameworks and experimentation or revision in seven. Identifying emerging changes and examining assumptions were explicitly specified in only one framework. Exploration of alternative futures, flexible preparedness and the development of students' capacity to explore or shape futures were weakly specified. The analysis suggests that existing frameworks articulate judgement and adjustment within current practice more clearly than anticipatory engagement with change. The findings provide a basis for developing a framework for anticipatory AI literacy.

Keywords: AI Literacy; AI In Education; Educational Change; Futures Literacy; Professional Development