UNIVERSITY OF HELSINKI

https://helda.helsinki.fi

From Competency to Agency: Teachers' Views of the Purposes of AI Education

Fagerlund, Janne; Mertala, Pekka; Lehtoranta, Jukka; Mattila, Emilia; Salo, Laura ...

2026-10
Wiley Blackwell
http://hdl.handle.net/10138/636127
Fagerlund, J, Mertala, P, Lehtoranta, J, Mattila, E, Salo, L & Korhonen, T 2026, 'From Competency to Agency: Teachers' Views of the Purposes of AI Education', Journal of Computer Assisted Learning, vol. 42, no. 5, e70302. https://doi.org/10.1002/jcal.70302

Downloaded from Helda, University of Helsinki institutional repository. https://helda.helsinki.fi
This is an electronic reprint of the original article.
This reprint may differ from the original in pagination and typographic detail.
Please cite the original version.

Check for updates

Journal of Computer Assisted Learning

WILEY

Journal of Computer Assisted Learning

ORIGINAL ARTICLE OPEN ACCESS

From Competency to Agency: Teachers' Views of the Purposes of AI Education

Janne Fagerlund[1] | Pekka Mertala[1] | Jukka Lehtoranta[2] | Emilia Mattila[3] | Laura Salo[3] | Tiina Korhonen[3]

[1]Department of Teacher Education, University of Jyväskylä, Jyväskylä, Finland | [2]Faculty of Science, Forestry and Technology, University of Eastern Finland, Kuopio, Finland | [3]Faculty of Educational Sciences, University of Helsinki, Helsinki, Finland

Correspondence: Janne Fagerlund (janne.fagerlund@jyu.fi)

Received: 5 September 2025 | **Revised:** 5 June 2026 | **Accepted:** 17 July 2026

Keywords: AI | artificial intelligence education | education | purpose | teachers

ABSTRACT

Background: As artificial intelligence (AI) becomes an increasingly prominent societal and educational phenomenon, teachers are required to determine not only how but also *why* students are educated about it in the classroom. Understanding teachers' thinking about the purposes of AI education is crucial, as they guide day-to-day choices about classroom uses of AI.

Objectives: This qualitative study investigates the purposes that teachers associate with AI education in primary and early childhood contexts and how AI has been taken up in teaching and learning.

Methods: Drawing on Gert Biesta's three-dimensional framework of well-rounded educational purpose, which emphasises students' holistic growth through the domains of qualification, socialisation, and subjectification, this study presents an abductive analysis of interview data from 13 Finnish teachers involved in national AI education development projects.

Results and Conclusions: The teachers' views reflected an exploratory phase of AI education, characterised by an emphasis on skill development (qualification); a focus that risks overlooking students' critical and personal engagement with these prominent technologies. It also triggers diverse interpretations and teaching practices, ranging from an instrumental approach, where education is guided by goals such as future employability, to an orientation that foregrounds emancipation and self-expression in the present. While the teachers acknowledged the importance of fostering AI agency (subjectification), their approaches lacked robust strategies to support it. This study foregrounds such gaps and conceptualises a potential synergy between the domains where students' self-determined, informed engagement with AI is placed at the centre of educational efforts in AI education.

1 | Introduction

This exploratory qualitative study adopts Gert Biesta's (2009, 2020) framework of three domains of educational purpose to examine primary and early childhood education (K-9) teachers' views about the goals of artificial intelligence (AI) education. The concept of educational purpose is crucial, as it refers to the underlying reasons for educational practices; the intents they aim to fulfil. Although such 'why' questions can be difficult to answer, they are important, as they fundamentally shape teachers' pedagogical decisions and classroom actions (Salomaa and Mertala 2019). Addressing such questions also becomes particularly difficult when teachers encounter new and complex phenomena like AI and its rapidly accelerating impacts on education (see Tedre et al. 2021). Unlike traditional subjects like reading, writing, and arithmetic, whose purposes are deeply embedded in teachers' thinking through their own schooling and teacher education, AI literacies have not been part of contemporary teachers' initial schooling or training (Sperling et al. 2024). Teachers are thus required to reflect what purposes they will pursue with AI-related themes, contents, and tools. The pedagogically sound integration of AI into education calls

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2026 The Author(s). *Journal of Computer Assisted Learning* published by John Wiley & Sons Ltd.

Executive Summary

- What is currently known about this topic?
  - Schools increasingly address AI, yet its educational purposes remain conceptually unclear.
  - Teachers' views shape how AI is interpreted and enacted in classrooms.
  - Teachers' thinking about AI's educational purposes is largely unexplored.
- What does this paper add?
  - Examines teachers' views of the purposes of AI education.
  - Uses a theory of holistic education to interpret these views.
  - Finds that skills are prioritised but interpreted in relation to broader aims.
  - Proposes informed AI agency to seek synergy between AI's educational purposes.
- Implications for practice or policy
  - AI education should not be reduced to technical skills alone.
  - Support teachers to connect students' AI skills with responsibility and agency.
  - Making educational purposes explicit supports curricular and classroom coherence.
  - Professional learning should address both the 'how' and 'why' of AI education.

for understanding the rationale behind the educational intentions at hand.

The major shift to integrate AI into classrooms has been underpinned by global policy initiatives; for instance, the OECD (2025) highlights the need to reconsider educational priorities, teaching methods, and even the core goals of education in response to AI's expanding capabilities. National AI education curricula, however, are rare (UNESCO 2022). This stands also for Finland, the empirical context of this study. Finland lacks explicit curricular mandates for AI education, and schooling continues to rely on the 2014 national core curriculum (EDUFI 2014) that provides a broad framework for educational content and where AI can be situated within the broad area of digital education. AI use is also governed by national and EU regulation, and pedagogical guidance is impacted by international frameworks such as DigComp (Cosgrove and Cachia 2025); UNESCO (2022; see also Fengchun and Holmes 2023), and the OECD (2025) that each contribute to the on-going debate on what constitutes meaningful AI education. As such, teachers' thinking about the purposes of (digital) education are influenced by broader narratives (Chiu et al. 2022; Dai et al. 2023; Hilt et al. 2018; Nivanaho et al. 2024), yet especially teachers in Finland retain substantial pedagogical autonomy in interpreting and enacting them as long as teaching aligns with curricular objectives (Chung 2023; Eteläpelto et al. 2013). This has been empirically visible in varying emphases in digital education (Fraillon 2024). Strong autonomy has been noted to foster a sense of control over teaching and allow teachers to shape local school policies (OECD 2020), presenting Finland as an intriguing context where teachers' views about educational purposes in AI may be shaped by a blend of external guidance and high personal autonomy.

Our approach to AI education aligns with research on computer-assisted learning, where technologies are both the object of study (i.e., teaching students about the principles, design, applications, and ethical considerations of AI and phenomena related to it), as well as a medium for supporting pedagogy (i.e., using AI-powered tools to support pedagogical processes). AI education can thus take multiple forms, ranging from learning of AI's substance to instrumental uses of AI tools by both teachers and students, for example for demonstration, inquiry, or content creation. Indeed, recent related advancements have led to several new pedagogical frontiers, including learning analytics (Ahmad et al. 2024), large language models (LLMs) for language learning (Kasneci et al. 2023) or text-to-image generative models in producing digital art (Vartiainen et al. 2023). Such developments have also begun emphasising the importance of ethical considerations (e.g., Sharples 2023) and critical thinking and agency through AI-related competencies or literacies (e.g., Long and Magerko 2020; Mertala et al. 2022; Mertala and Fagerlund 2024; Tedre et al. 2021; Valtonen et al. 2019). Teachers' views of AI education within this proliferation of new possibilities are thus likely to be as diverse as their broader thinking about educational issues generally (Snider and Roehl 2007).

However, behind such individual approaches lie broader educational aspirations, such as skill development or self-empowerment, which should ideally be given balanced weight (Biesta 2009). Applying a framework of such holistic education has proven fruitful for exploring the overarching question of purpose in digital contexts (e.g., Fagerlund et al. 2025; Schulte et al. 2025), yet not in the context of AI. This study contributes to theories on AI's well-rounded educational intentions by interpreting how the diverse reflections of teachers, who are beginning to incorporate AI education into their practice, collectively feature these intentions. Understanding their goal articulations renders the philosophical landscape that informs teachers' thinking about AI education into empirical knowledge: how well rounded AI education might be pursued in practice, while also suggesting how it can be difficult to grasp or enact. The study addresses the following research question: *How do teachers describe their views of the purposes of AI education and ways to implement them?*

2 | Theoretical Underpinnings

As teachers navigate the intricacies of AI in education, their thinking is shaped by diverse views, dispositions, beliefs, and practices. In recent years, there has been a marked increase in research focusing on these matters (see e.g., the reviews by Lee and Kwon 2024; Ng et al. 2024). However, like educational technology research in general (Hew et al. 2019), studies frequently lack a robust theoretical foundation.[1] In some cases, teachers' views regarding AI education are explored with no references to educational theories (e.g., Yau et al. 2023), while in other cases, the theories used approach education from a rather specific perspective. A case in point is the approach to depict teachers' dispositions towards AI by drawing on the TPACK framework (e.g., Ning et al. 2024): pedagogical knowledge is defined as teachers'

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

knowledge of the processes, practices, and methods of teaching and learning, as well as strategies for assessing students' understanding.

From the perspective of educational philosophy, such definitions are skill-focused, encompassing only a single facet of education that can undermine education's potential to support holistic human flourishing (Wheelahan et al. 2022). Illustratively, Herman Nohl (see Hämäläinen 2017) characterised pedagogy as the relationship between a mature adult educator and a student who is still growing into adulthood. The educator must navigate a delicate balance between the exertion of influence through deliberate educational intervention and, contrastingly, refrain from such interference, that is, acknowledge students' self-determination, to create an environment that provides space for students' self-education. This complexity is also reflected in empirical research on teachers' views about the purpose of their work. Rather than merely imparting skills and knowledge, teachers have argued that their primary responsibility is to educate the 'whole child', that is, to nurture their holistic well-being and development (Biesta and Miedema 2002). Consequently, there is a need for AI education research that more thoroughly acknowledges the intricacies of education and its manifold objectives.

Biesta's (2009, 2020) framework of well-rounded education offers a fitting heuristic for examining the broader 'why' in education, as it captures the complexity of educational intentions. The theory is not a recipe for technically excellent teaching but rather a philosophical tool that foregrounds well-rounded education that should be enacted with contextual judgement (e.g., sensitivity to students' needs). By emphasising that education is holistic, the framework helps address AI's multifaceted nature and its potentially diverse educational ends. Few prior studies (e.g., Fagerlund et al. 2025; Loftus and Madden 2020; Schulte et al. 2025) have used the framework explicitly in digital education contexts, while several others have dealt with its areas in different ways, as described below. The framework consists of three intertwined domains where education can make an impact: qualification, socialisation, and subjectification.

Qualification refers to a widely proliferated domain that focuses on the various competencies that individuals are taught to acquire; that is, equipping students with capabilities to 'do something' (Biesta 2009). It has been a central theme generally in digital education, where technologies like AI can operate as tools or targets in learning. As a tool, technology's role is often perceived to help students achieve various learning outcomes effectively or more comprehensively than previously (e.g., Alberola-Mulet et al. 2021; Ottenbreit-Leftwich et al. 2010), for example, with tools like generative models (see e.g., Kasneci et al. 2023; Vartiainen et al. 2023). When considering AI as a target for learning, educational aims may include learning about the relevant concepts or skills related to AI or its manifestations in the world (Fagerlund et al. 2025; Schulte et al. 2025). The latter can be understood as learning to 'bridge' AI with real-world applications that is, connecting the conceptual facets of technology to its real-life instances, which can also encompass critical thinking capabilities, such as the implications of bias AI-powered technologies (Vartiainen et al. 2024).

Socialisation refers to the process of becoming part of social groups or systems, whether they are cultural, political, or otherwise (Biesta 2009). It is not a question of imparting knowledge to students but rather guiding them in becoming members of society at large. In AI education, such ideas are reflected in emphases on 'learning to live with AI' (Chiu et al. 2022), which underscore the ubiquity of AI in modern life and the goal of helping students adapt to its presence. This can include becoming inducted to the norms and responsibilities regarding AI use, sometimes framed through AI ethics (Schulte et al. 2025), as well as guiding students to join particular social domains, such as the workforce where AI-related practices are demanded from professionals (illustrating also the interconnection of skills and social expectations regarding them; see also Chiu et al. 2022; Fagerlund et al. 2025). Yau et al. (2023) similarly remarked that 'AI has been infused into the scope of their future work', signalling the need for students, as 'future adults' (see Uprichard 2008), to become accustomed to the existing professional world as shaped by AI technologies.

Subjectification in Biesta's (2009, 2020) framework is the most central domain. It refers to the purpose of becoming the subject of one's own life: exploring one's own needs and desires and being empowered to respond to situations in self-determined ways, rather than conforming to external expectations. In terms of AI, this can be associated with students reflecting on themselves as subjects and agents amidst AI technologies. This might encompass stimulating their desire to apply AI in technological work for personally meaningful intentions (Loftus and Madden 2020) or make such judgements as controlling their personal data in AI-systems and engaging in self-directed critique towards them (Fagerlund et al. 2025; Kahila et al. 2024; Schulte et al. 2025; Vartiainen et al. 2024). In other words, subjectification, in contrast to students being imposed predetermined ways to approach and take a stance towards technology, underscores the relevance of empowering students to draw on their self-determination to navigate technological contexts in ways of their choosing (while taking responsibility for how their own AI-related actions can also have consequences; Loftus and Madden 2020).

This framework offers a powerful philosophical heuristic to reflect on holistic education, serving as a lens to interpret (rather than rigidly impose categories on) the collective landscape of educational aspirations that teachers articulate in relation to AI. Rather than assuming that teachers 'naturally' think in terms of the three domains, the framework highlights how their reflections may align with or overlook particular domains, drawing attention to what might remain implicit or underemphasised in teaching practice. Education and digital education especially are often justified in terms of skills (qualification), while socialisation and subjectification remain implicit or underdeveloped (Fagerlund et al. 2025; Schulte et al. 2025; Wheelahan et al. 2022). In a seminal article, Touretzky et al. (2019) already titled what every child should 'know' about AI. This is also reflected in international frameworks that emphasise mastering AI, while terms like responsibility and creativity are placed under the notion of skills (e.g., OECD 2025) or considered separate, bundled sub-areas (e.g., 'Safety, Wellbeing, and Responsible Use'; Cosgrove and Cachia 2025). However, in some frameworks, such as UNESCO's (Fengchun and Holmes 2023,

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

24–25), and in international research discussions, the notion of students' AI 'agency'—their capacity to respond deliberately and informatively to AI systems and their effects—is becoming central (Höper and Schulte 2024; Kahila et al. 2024; Vartiainen et al. 2024). This reflects Biesta's (2009) philosophy too, yet the intersection and cooperation of all the domains to achieve this in AI education remains ill defined.

3 | Methods

3.1 | Context and Participants

The teachers ($n = 13$) interviewed for this study were recruited through AI-themed development projects organised between 2022 and 2024 by the nationally operating Innokas Network,[2] which is a Finnish teachers' national school innovation network, coordinated by the University of Helsinki. The projects in question, titled 'Ready, set, go! AI for early childhood education' and 'AI now!' (focused on primary education), were funded by the Finnish National Agency for Education. The core aim of the projects was to support voluntary schoolteachers and early childhood educators in developing methods and materials to support children's AI-related capacities. The projects were grounded in a grassroots-level approach to pedagogical development, as the core curriculum did not include specific guidelines for AI education specifically. In essence, the projects sought to develop AI education by foregrounding teacher autonomy and collaborative development, rather than insisting on specific educational approaches (Korhonen et al. 2024).

The sample consisted of teachers with diverse characteristics (see Table 1) from six different regions across Finland.[3] The teachers were all those who participated in the development projects after giving their informed consent to participate and learning about the purpose of the study. Our scholarly aim, given the qualitative focus, was not to compare teachers' views or differentiate between background factors, but to account for diversity in the informants and bring their thinking together.

TABLE 1 | The participating teachers' characteristics.

Code	Grade level taught	Subject areas taught[a]	Teaching experience
T1[b]	3–6	Generalist	20–30 years
T2[c]	3–6	Generalist	30 years or more
T3[c]	7–9	Physics and mathematics	10–20 years
T4	7–9	Physics, chemistry, and mathematics	20–30 years
T5	3–9	Crafts	5 years or less
T6	7–9	Mathematics	10–20 years
T7[b]	2–7	Mathematics	5 years or less
T8[b]	3–9	Generalist	10–20 years
T9[b]	3–6	Generalist	10–20 years
T10	Preschool–5	Generalist	10–20 years
T11[b]	Preschool	Generalist	5 years or less
T12[b]	Preschool	Generalist	10–20 years
T13[b]	Preschool	Generalist	5 years or less

[a]In the Finnish comprehensive school system, teachers in preschool and grades 1–6 are commonly generalists (i.e., teach most subjects), while teachers in grades 7–9 are subject teachers.
[b]Expert teacher (e.g., teacher trainer, ICT tutor or similar).
[c]Expert teacher and a managerial role in the local school or municipality.

3.2 | Data Collection

The data was collected through interviews conducted approximately at the midpoint of the development projects (in late 2023). By this point, the teachers were largely novices in enacting AI education as they had participated in only few seminars and co-development meetings, which focused on the basic conceptual and practical underpinnings of AI as a societal and educational topic. These introductory sessions had included general introductions to AI (e.g., real-life examples of AI, such as LLMs and facial recognition), hands-on experimentation with various AI tools like machine learning (ML) apps (e.g., 'TeachableMachine', 'AI for Oceans') and text-to-image generation, and explanations of key concepts such as ML, data, and neural networks. Rather than 'top-down' training, the emphasis was on providing the teachers basic knowledge about AI and encouragement to stimulate curiosity to begin developing their own approaches to AI education. Few teachers stated that they had conducted few pilot lessons of their own design in their classrooms, such as experimented with image generation.

The interviews were conducted through online video calls by four trained interviewers using a semi-structured approach. A semi-structured approach in this case meant that, given the expected diversity in the teachers' circumstances, a set of predetermined questions was used, and flexibility was allowed for the interviewers to explore the topics in more detail by posing follow-up questions based on the responses (Adeoye-Olatunde and Olenik 2021, 1362). To facilitate a comprehensive gathering of information, an interview protocol (see Table A1) was designed based on literature-informed themes (DiCicco-Bloom and Crabtree 2006) to inquire about various scholarly aspects, including the purposes of AI education (question set 5) and additional topics. The questions were designed to be as open as possible to potentially provide different kinds of answers, aiming to 'maximise the chance of data surprises' (Timmermans and Tavory 2022, 4), which would evoke insights as versatilely as possible.

The interviews lasted between 32 and 66 min (avg. 48 min). The audio data was transcribed, and the participants' identification information (personal names, school names, geographical locations, etc.) was redacted from the transcripts, with names replaced by pseudonym codes. As we did not perform a rigid analysis of speech, the transcription focused on the content rather than detailed linguistic features. The language in the transcript was slightly harmonised to improve its readability, focusing on the spoken content to facilitate the analytical process.

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

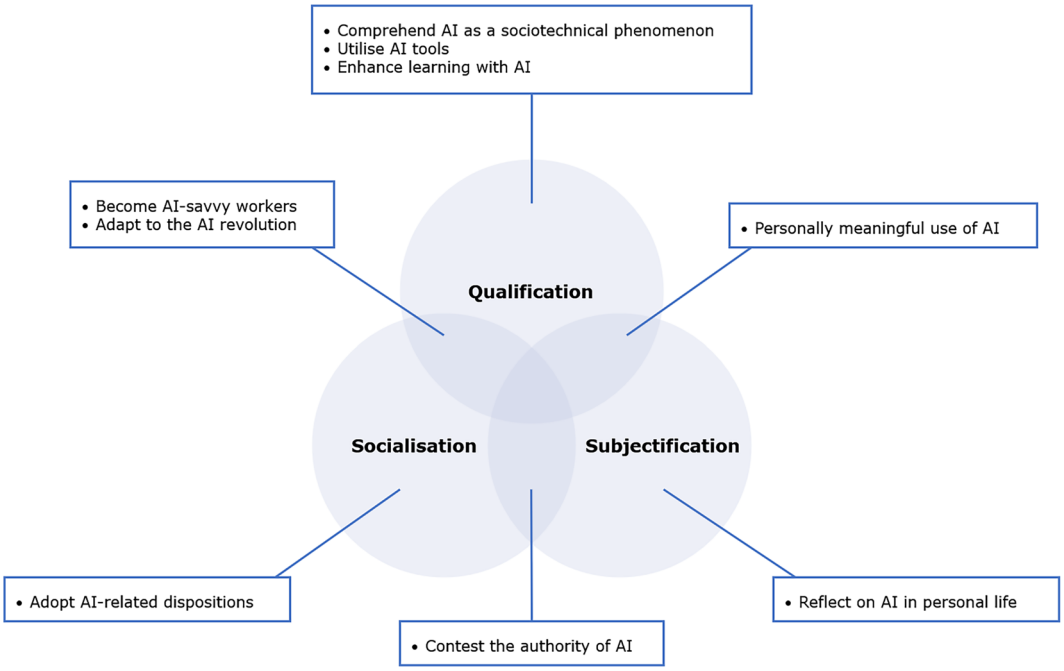

FIGURE 1 | Purposes of AI education according to the interviewed teachers as interpreted within Biesta's (2009) three domains of educational purpose.

3.3 | Data Analysis

Given its qualitative exploratory focus, this study follows an abductive research paradigm (Timmermans and Tavory 2022). This means that rather than testing theory, the aim is theory-building: existing conceptual frameworks serve as 'threads' to guide the analysis towards relevant directions but do not fix the analytical outcomes, as inductive insights can also steer the analysis in novel directions. To facilitate this, the transcripts were first read carefully to become familiar with the data. Although educational purposes and ways to implement them are separate phenomena, we noted that expressions regarding them were mixed in the speech, providing reason to examine them collectively as representations of the teachers' views of the goals of AI education.

The analysis followed a two-step approach that combined theory-driven and data-driven approaches. In step 1, the three domains of educational purpose (qualification, socialisation, and subjectification; Biesta 2009, 2020) and the dichotomy of AI as a target of and tool for learning (see section 1) provided theoretical scaffoldings along which the data was initially interpreted. In practice, the purpose domains were primarily used to categorise the teachers' responses to the interview questions, resulting in full and intact purpose statements that spanned a singular utterance or a larger speech segment (ranging in the transcript from 15 to 1173 words, avg. 330 words). To safeguard against interpretative subjectivity and enforce systematicity in the analysis, the placements were verified through open consensus building among authors 1 and 2 (Cornish et al. 2023). At this point, it also became clear that there was distinct fine-grained variety in expressions within the three purpose domains, showing also in expressions exhibiting features of two different domains, as also intended by the framework (Biesta 2009). This is neatly demonstrated by an example of a 'need' to adapt to existing competency demands (socialisation and qualification; see also Fagerlund et al. 2025), as mentioned by interviewee T3: 'Then, about these language models. It kind of goes the same way that you need to know how to use basic office software, text processing or spread sheet or presentation software.'

As made possible with abductive analysis, initial theory-driven placements can be subsequently processed based on variance in the observations from the data (Timmermans and Tavory 2022, 22). Thus, to elicit the thematic nuance within the expressions and make conceptual developments, inductive reasoning was subsequently performed in step 2 to form new themes (Reichertz 2013, 9–10). This included an iterative cycle of close reading of the research material in tandem with information from external sources (Boeije 2002) to find theoretical grounding for the findings. As a result, the expressions were thematised as new categories within one of the domains or in their intersection. For example, the previous excerpt was thematised as being a case of two themes at the intersection of two domains: 'utilising AI tools' (qualification; see also Chiu 2024; Fengchun and Holmes 2023; Vartiainen et al. 2023) and 'adapting to the AI revolution' (socialisation; see also Chiu et al. 2022; Fagerlund et al. 2025).

4 | Results

Figure 1 illustrates the thematic purposes that the teachers viewed central in AI education, as interpreted in relation to the three domains of educational purpose and their intersecting areas. The illustration follows Biesta's (2009, 49) recommendation that 'three functions of education can [...] best be represented in the form of a Venn-diagram, i.e., as three overlapping areas'. The subsequent sections delve deeper into these themes, exploring how teachers articulated specific educational intents

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

regarding them as well as expressed enacting or considering the enactment of related instruction in practice. For clarity, themes located in intersectional areas are discussed within the sections of singular domains, with their relevance to multiple domains explicitly noted in the text.

4.1 | AI Education as Qualification

The teachers articulated that a key purpose in AI education as qualification is to educate students to understand AI as a phenomenon (a target of learning), delineated most generally as a form of general knowledge comparable to any other subject taught in primary education. T4, for instance compared the ability 'to understand what it [AI] is' with 'knowing what kind of tracks a rabbit, a sparrow, or some other bird, or something similar in biology, leaves behind'. Such statements reflected imparting theoretical knowledge about AI to students in an explanatory manner, that is, aiming to help them to *comprehend AI as a sociotechnical phenomenon*, as AI encompasses both social and technical facets. This is neatly capsulized in the following excerpt from T10 who explicitly refers to combining teaching children about the basics of ML as a methodology underpinning AI and showing how ML is used in children's favourite apps:

> Well, I think maybe some basic concepts about machine learning and such, and probably comparing it to what they actually use, like YouTube and Netflix, and how those learn. And I think through that, they'll also understand why it's recommending this content to me, while it's recommending that one to someone else
>
> (T10).

Some teachers placed more emphasis on either the social or technical aspects, likely due to their teaching context (e.g., age group or subject taught). More technical perspectives included, for example, enacting instruction that focuses on the formation of a precise technological conception of AI, such as teaching 'what the difference is between machine learning and artificial intelligence compared to, for example, traditional rule-based programming' (T7). More social perspectives included such matters as the identification of the pervasive or covert manifestations of AI in contemporary society, such as 'that AI is in the background in any device whatsoever' (T2) or that 'where and how you are in contact with it without knowing' (T5), as well as learning to recognise 'what kinds of societal impacts this thing has' (T8). The overarching aspiration through all such aims was to foster factual comprehension of the ubiquitous and occasionally even deep-lying AI-related technologies and their practical effects in everyday digital contexts.

While the overarching idea of such comprehension was compelling to the teachers, they provided no accounts of how they had taught, or could imagine themselves teaching, it to students, likely, because issues like the ubiquity of AI are not necessarily straightforward to operationalize instructionally and given that the teachers did not necessarily yet have a profound personal understanding of AI. The teachers did, however, provide few examples (albeit generic) of how they had used a variety of traditional educational materials, such as publicly available videos and contemporary children's books, to make AI familiar to students one step at a time in an age-appropriate way. They explained using such materials as 'a basis for discussion' (T7) or having 'pondered it [AI] a bit' with students (T11), that is, used traditional learning resources to prompt shared deliberations of the basics of AI.

As a pragmatic (rather than merely theoretical) follow-up to understanding AI as a sociotechnical phenomenon, the teachers aimed to instruct students to *utilise AI tools*, as encapsulated among other goals by T6:'[...] what it [AI] can do, what can be done with it'. In other words, AI as a target of learning shifts its focus here from imparting passive knowledge to guiding its active application. The teachers referred to such concrete AI applications as image generation, LLMs (e.g., ChatGPT), and AI-powered gadgets in, for example, robotics kits. When discussing concrete teaching approaches with such tools, the teachers specified that the goal of AI tool usage is to include the recognition of the practical utility that can be derived from such tools as well as the acquisition of hands-on proficiency in their utilisation in itself. The approaches generally involved the idea of becoming familiar and experimenting with the tools '[...] by exploring different [AI] environments and experimenting with how things work there', as described by T1.

Moving from AI as a learning target to it as an instrumental learning tool, a purpose was to *enhance learning with AI*, that is, applying AI tools to enhance students' learning processes among different curricular areas. Rather than targeting future life in general, the pragmatic intention here was to be immediately useful pedagogically. This goal was expressed among others by T3 through an anecdote, 'if you have something, like text that you're producing or anything else, you can ask for tips. Or, for example, if you're preparing for your final examination, it could be something like that'. T8 also provided a generic example from science education: 'like, say, doing inquiry in environmental studies, and integrating into it that we're now doing this environmental study with AI assistance'. The same teacher provided additional elaboration on the prospects of LLMs for individualising learning, where students' achievement is not being hindered by teachers' capabilities:

> Well, of course, we hope to soon get permission for some kind of language models or chat assistants for lawful use. That is something that will definitely be utilised both in primary and secondary schools, specifically as a kind of support intelligence, like a writing companion or an information search buddy, for example. [...] I think, like with teaching programming, there is clearly an opportunity for students to make leaps that were not possible before, now that they have that personal tutor, so to speak, with them all the time. And the fact that the student's progress isn't limited by the teacher's expertise, so to speak
>
> (T8).

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

In summary of AI education as qualification, the aims were imparting AI-related content knowledge and AI use skills for students' current and future lives within and beyond the classroom, with both theoretical and pragmatic motives. With this broad collection of aims in mind, T8 also importantly pointed out how different educational purposes could have parallel impact: they expressed how AI-enhanced learning processes could be combined with 'different kinds of explanatory talk or more reflection' (T8), that is, simultaneously promoting students' comprehension of AI as a sociotechnical phenomenon. T3 similarly provided a concrete example from lessons on AI-powered text production: '[...] noticing that something isn't working or it is behaving a bit differently [...] Why does the AI make these kinds of decisions, and why is yours like this?' These examples alone demonstrate how the target and tool of learning approaches in AI could be combined, even ad hoc, rather than being taught independently.

4.2 | AI Education as Socialisation

When considering AI education as socialisation, the teachers referred to expectations regarding students' future roles in society and their lives regarding AI matters. This included socialising students to AI by directing them *adopt AI-related dispositions*. Here, the idea is to guide students to form certain predetermined (e.g., generally desirable) stances or opinions about AI. In particular, the teachers intended on cultivating favourable stances towards AI, which can be interpreted as gentle means of stimulating interest in acquiring AI-related qualifications, but also as deliberate efforts of instilling enthusiasm and fascination: 'getting excited about it [AI]' (T11) or ascribing a 'cool' (T12) character to it (as opposed to encouraging students to form their own relationships with it). T8 placed emphasis on the downright promotion of optimism regarding AI and known concerns about threats linked to it:

> I do think that the kind of doom rhetoric you often hear in relation to any topic is always about how the future seems threatened in some way, and how the current way of life seems somehow threatened. That is the way we adults, and we boomers, tend to approach things. In addition, of course, that is acceptable to us. However, for us, we can afford it, but the youth and children can't. I think they are the ones who happen to live in this time, and the future is their future. In addition, we can't really ruin that future with this kind of doomsday talk. I believe we need to take a proactive role, going forwards with hope and faith towards the future, preparing children for the world that's coming, and doing that well
>
> (T8).

Other aims of socialisation were even more strongly tied to the acquisition of qualifications. They included the goal of preparing students to *become AI-savvy workers*, 'because it is absolutely clear that leveraging these opportunities will, as a nation, determine our future', as stated by T1. Although this expression is somewhat imprecise, it conveys the idea that students are seen as newcomers who are expected to be involved in the emerging socioeconomical AI landscape. This goal blended qualification due to the dual role of skills and the expected scenario that AI will—in rough terms, regardless of students' choice—be incorporated into their future work (hence its' position in the intersect area in Figure 1). T5, for instance, framed students as 'future players who continue to develop it [AI] and bring it into the workforce'. Socialisation then meant directing students to conform to the demands of mastering AI to contribute to the society. T3 expressed this as the necessity of learning about LLMs in particular:

> [...] it kind of goes the same way, that you need to know how to use basic office applications. Word processing, spreadsheets, or presentation software. Similarly, AI has already been integrated into those to assist with planning, or your own language models, or checking language, or even transcribing speech, or whatever else you might be using in these or anywhere else
>
> (T3).

Another qualification-related social demand concerned steering students to *adapt to the AI revolution*, which was more about general coping through AI citizenship. This goal implied a more general acclimatisation to the inevitable presence of AI in the society; 'what this means as a digital or a societal revolution, what this perhaps brings to students in the future and to society' (T8). Indeed, it was also expressed as a marriage between promoting an understanding of AI (qualification) and an adaptation to requirements regarding them, as phrased among others by T6 as mandatory competency requirements expected of all:

> I do think it's a kind of civic skill, as there has been a lot of talk in recent years about programming and the idea that understanding programming and that way of thinking is a central skill, and that you learn to understand phenomena, events, and the technology around us
>
> (T6).

In other words, AI was seen to inevitably bring about societal changes in general, and acquiring skills is the fundamental way to meet these changing conditions—otherwise, qualifications may in fact be contextless.

When prompted to provide examples of concrete approaches in socialising students to AI, whether this concerned attitudes, future work, or everyday citizenship, the teachers provided mainly examples of AI-related competencies as delineated in the previous subsection. That is to say, the transcripts did not evince discrete 'methods' for distinctly facilitating socialisation, thereby consolidating the qualification domain (e.g., different ways of utilising AI tools) as a primary route for fostering them. Essentially, this altogether indicates that teachers regarded AI-related qualifications not only in themselves, but also as tools for socialisation: adapting to the external, changing technological conditions is why gaining qualifications is necessary and worthwhile.

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

4.3 | AI Education as Subjectification

In AI education as subjectification, the teachers emphasised the significance of *personally meaningful use of AI*. As in socialisation, the link to qualification was clear: AI skills were to be gained and used specifically in personally meaningful ways. For example, T8 underscored that the importance lies in providing access to AI tools for experiences with individually relevant applications:

> I think that just gaining the experience is enough. Perhaps there is no need to build a very complex learning module around it if there is no time. The experience itself is enough. [...] And then just enough of those wild experiments, so that the students develop a sense of ownership of the topic, and they can see how they might be able to utilise it in their own lives and studies
>
> (T8).

Other teachers expressed this in terms of facilitating students' realisation of 'how you can use it [AI] yourself somehow' (T7) or to 'see the opportunities and perhaps be able to better utilise them during their own lives' (T8). Although the teachers' speech was again not entirely straightforward, subjectification (rather than 'only' qualification) was foregrounded via an emphasis on encouraging students to make their own choices regarding AI rather than guiding them towards predetermined goals. The focus is therefore not on mastering AI in itself, but on finding personal meaning in such mastery: a pragmatic pursuit that empowers students to, for example, solve self-defined problems and shape their own digital conditions with AI. Instructional examples for this included creative learning activities like the creation of digital media and maker projects: 'They made a robot with three different waste bins. [...] And then they started to think, well, you cannot just sort waste by colour, because certain types of waste could be made from specific materials' (T9). The same concerned not only using AI problem-solving, but also in studying: the teachers also outlined the potential of AI as a tool to function as an assistant to learning, emphasising its capacity to provide, for example, accessibility features to facilitate personally meaningful or preferred learning processes. T9, for one, reflected on AI-based reading assistants, which offer similar educational personalisation to the question 'why does someone always get to use headphones with the iPad'.

Another manner AI education was conceived as subjectification sought to prompt students to *reflect on AI in personal life*. The focus of subjectification in this aim shifts from AI as a tool to it as a target of learning; towards 'assessing the risks and opportunities related to it in one's own life' (T4), that is, gearing towards forming a personal orientation with AI when being its user. Teachers specifically hoped to encourage students to critically contemplate such questions as whether 'it's a good idea to put your picture everywhere' (T2) or they 'want that [personal] data to go to China [or] the U.S.' (T5). This is self-determination: what one considers to be the best course of action, which is why it is placed fully under subjectification in Figure 1. The teachers did, however, also frame this kind of reflection occasionally through qualifications in the sense that competencies could support it: T10 referred to 'digital safety skills', with which they were likely familiar from the national core curriculum and other digital skills discourse, within which AI now also falls. The teachers referred concretely to various potential threats and risks that students may face in their lives, like hallucinations triggered by LLMs or the dissemination of AI-generated scam messages, which can require taking informed action. Particular emphasis was placed on the significance of personal data through understanding how ML-based tools like 'Snapchat likely intentionally encourages you to take a lot of pictures so that the streak feature stays active' and how personal data is being collected via 'selfies, or like with the BeReal app, it takes both a selfie and a picture of your surroundings' (T7).

Whilst such intentions may be regarded as stemming from adult concerns, that is, an external determination of what is morally right for students, which could be understood as socialising into so-called proper courses of action, this would be a misinterpretation: the teachers articulated this as specifically being about 'raising awareness around general data security and encouraging reflection on these issues' (T5). In other words, AI-related qualifications could equip students to make agentic choices in contexts where AI affects their actions; helping them grow into independent decision-makers (e.g., defining data privacy settings, refraining from using AI). From an educational perspective, qualification and subjectification here can thus be regarded as a critical and emancipatory scaffolding that, through the teachers' (rather generic) instructional examples of 'discussing' and 'contemplating' the manifestations of AI through educational materials like apps and personal digital footprints, encourages students to make their own, informed choices.

Lastly, the teachers introduced the notion of empowering students to *contest the authority of AI*. This is an intriguing intersection of subjectification and socialisation: an empowerment for self-directed change making related to AI-related issues in the collective sphere. This objective was most clearly associated with the potential of AI to assume control in various facets of society, including industrial sectors. Ethical contemplation among students as members of society in terms of AI-driven decision-making and the relationships between humans and technology was deemed imperative: 'How far are we willing to take it? How much power are we giving to computers and AI, so to speak, in terms of what they are allowed to decide and what not?' (T5). The teachers particularly emphasised that if students did not 'understand how these things work, it becomes much harder to interact with them. It becomes easy to just let the machines and others do their thing, and I just adapt to it' (T13). Although such aspirations continue to emphasise comprehension of the inner workings of AI, the primary emphasis in this goal is on encouraging students to establish a moral or an ethical stance between the authority of technology and the maintenance of personal agency in AI-rich contexts. However, it is noteworthy that the teachers did not provide concrete teaching examples to support this in practice.

In summary, subjectification appeared as self-determined orientation towards and reflection on AI, more or less through qualification; when one understands and knows how to use AI, one can make informed and agentic personal choices regarding it,

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

including being willing to make collective, ethical technological transformation in the future.

5 | Discussion

The teachers' views on the purposes of AI education were diverse, ranging from abstract to specific. Their accounts offer an empirically grounded interpretation of how the abstract philosophy of AI education might be instructionally conceived and put into practice, as well as what might be difficult in this regard.

Few points merit attention regarding the study's limitations. First, teachers from preschool to grade 9 were interviewed, meaning that the teachers' thinking likely varied depending on their professional circumstances.[4] Second, the subject teachers interviewed were STEM teachers who may have placed greater emphasis on some (e.g., problem solving related) perspectives than class teachers. Third, the teachers were recruited from the same development projects, suggesting the possibility of somewhat similar ways of thinking despite different backgrounds. Despite these characteristics, we believe that, through conceptual abstraction, the findings point towards diverse educational purposes and raise intriguing theoretical considerations. That said, we next highlight two key discussion points that also have implications for future research and practice: a persistent and problematic but ultimately not fully unfounded tendency to frame teaching with and about AI primarily in terms of competencies, and the emergent potentials of addressing subjectification as the central domain in holistic AI education, where all domains of purpose might operate in potentially meaningful synergy (Biesta 2009, 2020).

5.1 | Emphasis on AI Capacity Cultivation

Echoing earlier deliberations on educational priorities in general (Biesta 2009), the teachers consistently emphasised competencies as the most concrete and significant aspect of AI education. Throughout the interviews, qualification was the clearest and most concrete of the purposes, operating even under or as a pathway to socialisation and subjectification. It manifested mainly as intentions to teach students to understand the principles and manifestations of AI and harness it practically as a basis for meeting AI-related social expectations and forming personal relations with it. The same is visible also in Yau et al.'s (2023) study, where teachers motivated students by highlighting the prevalence and 'importance' of AI applications, encouraging interest in AI careers or deeper engagement in learning. This emphasis is particularly notable given that the open-ended interview questions[5] invited responses on what the teachers considered most important to teach overall.

Such skill-focused and occasionally instrumental emphases, whether explicit or implicit, have raised concerns about narrowing conceptions of 'quality education' (Burbules 2004). T1's brief comment that AI education 'determines our future' is a striking articulation of this discourse, echoing also Uprichard's (2008) critique of viewing students primarily as future adults rather than individuals whose current subjective existence also matters. That said, the notion of AI education as an 'economy instrument', a sentiment observed previously among Finnish teachers' digital education discourse (Nivanaho et al. 2024), was not particularly prominent in our findings. This may reflect the limitations of the interview context or suggest that teachers are somewhat detached from such rhetoric in the context of AI (see also Cheng et al. 2024; Dai et al. 2023). Despite this, the general emphasis on skills warrants careful consideration.

Although this study examined how teachers' thinking could be understood as holistic AI education (discussed in more detail below) rather than determine its origins, possible causes can be hypothesised for motivating more socio-culturally oriented research (focusing on, e.g., the impact of policy documents). Teachers' thinking is shaped by curricular, infrastructural, and cultural factors (Eteläpelto et al. 2013), such as the association of AI education with digital pedagogies, initiatives related to programming, STEAM, and similar paradigms (Chiu et al. 2022), and public discourse around global competencies and policy and teacher training frameworks like the 21st-century skills (Hilt et al. 2018). Indeed, the focus on qualifications in the teachers' views aligned with components in AI literacy frameworks (e.g., Fengchun and Holmes 2023; Touretzky et al. 2019) and topics frequently discussed in the AI education literature, including fostering students' understanding of AI as a concept (Mertala et al. 2022; Mertala and Fagerlund 2024), distinguishing rule-based programming (already present in Finnish curricula) from newer ML methods (Tedre et al. 2021), and linking conceptual and practical aspects of AI to real-world contexts (Höper and Schulte 2024). Such goals are rightly highlighted as AI-related qualifications and understandably emphasised by teachers who likely have limited AI content knowledge themselves (see also Lindner and Berges 2020; Sperling et al. 2024).

Yet, education philosophy raises a noteworthy follow-up question: skills and knowledge for what? This question is important also because several—but not all—purpose statements from the teachers were rhetorically framed as 'mere' capacity cultivation. One reason for this may be teachers' unclear expressions, which should not be held against them, however, as teachers' educational philosophies can be profound, elusive, and mutable (Snider and Roehl 2007), and articulating them may reveal only partial insights (e.g., classroom observations might offer richer insight). The teachers were also only just becoming familiar with AI education, while there is also the broader known challenge of 'planning teaching for subjectification' (Loftus and Madden 2020). Nonetheless, the 'skills fetish' (as critiqued by Wheelahan et al. 2022) can problematically render the more holistic educational intention of skill acquisition ambiguous. A case in point is AI use in creative, maker-oriented learning, wherein the intended goal could involve AI-related skills either for adapting into future work demands (see also Chiu et al. 2022; Yau et al. 2023) or promoting self-expression in the present experience. Another example is raising awareness of data as AI's raw material, for instance, to combat AI-generated misinformation, framed either as a civic competency 'requirement' (coping with demands) or as an emancipatory pursuit (making independent choices). Similarly, the overarching idea of fostering AI as 'general knowledge' or AI literacy as standalone goals carries rhetorical ambiguity, ostensibly echoing macro-level guidelines that define competency goals in broad, all-encompassing terms (Hilt et al. 2018).

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

This may appear as a mere semantical concern and that, in practice, multiple educational 'whys' can co-exist. However, educational intentions, even when they might appear similar, may eventually differ in the manner and direction of instruction (Salomaa and Mertala 2019). Different intentions are not also necessarily given equal weight as some purposes may be more emphatically present than others while others left secondary or even transmitted unconsciously, such as portraying AI as inherently fascinating or positive rather than specifically encouraging students to form their own views (hidden curriculum; see e.g., Mertala 2020). While this study cannot definitively determine the teachers' underlying rationales or their impacts, being aware of potential complexities in how the fundamental (and difficult) question of 'why' may be communicated and potentially conceptualised can support more intentional, purpose-driven educational efforts; how different kinds of aims may be consciously recognised, deliberately prioritised, or even acknowledged at all.

Yet, the present study highlights a new important aspect to this discussion. Qualification was not meaningless specifically when socialisation and subjectification gave it context: a reason for otherwise perhaps meaningless competencies, or a 'meta purpose' of the qualification purpose itself. In fact, this highlights another reason why skill-centric thinking may have prevailed. When holistic education is examined in a subject-specific context like AI, the subject matter functions as a disciplinary nexus that has specific cognitive and practical dimensions. This raises an interesting and, to our knowledge, undiscussed point about Biesta's framework: can students be socialised or empowered as subjects in relation to a particular curricular area without qualifications regarding it? If not, this suggests that qualifications serve as an integral foundation in this increasingly pervasive and impactful digital education topic, and socialisation and subjectification emerge as its purposeful applications. While this theoretical development is intriguing, the more exact connections of the domains especially in terms of educational practice can be further discussed, which leads us to the next subsection.

5.2 | Towards Well-Rounded AI Education Through Informed Agency

Biesta's framework can be used as a theoretically grounded lens for approaching the apparently multi-directional AI education as a potentially pedagogically sound and holistic endeavour within compulsory schooling. This highlights how theoretical insights into educational purpose can inform AI education, both pedagogically and in terms of educational AI tool development, seeking to foster not only competencies but also important socialising and subject-empowering aspects. Our findings suggest especially the need to create space for subjectification, which Biesta (2009, 2020) defines as central to education. In this study, subjectification primarily emerged in association with what could be read from existing literature as AI-related agency (see also Höper and Schulte 2024; Kahila et al. 2024; Vartiainen et al. 2024), a term that—at least in colloquial terms—can make sensible a pursuit of holistic AI education where all the three domains may be present in a balanced way. What makes AI particularly relevant for such conceptual development is that, as the teachers noted, it simultaneously operates as a societally significant tool for action (e.g., generative models), a sociotechnical system shaping everyday digital environments (e.g., recommendation algorithms), and a site of ethical and personal positioning (e.g., data use and automated decision-making), thereby meaningfully invoking all three domains of educational purpose.

To underpin this provisional conceptual development, Biesta (2020) suggests that, beyond the 'original' Venn illustration (see Figure 1), subjectification can be positioned at the centre of or even encompassing all educational purposes, thereby shaping the 'tone' of educational processes. In AI education, this could involve creating conditions that enable students to engage with AI self-directedly, such as empowering them to decide how (or whether) to use AI technologies, develop personal dispositions towards AI-generated content (e.g., artwork), and reflect on how AI systems (e.g., automated profiling) may influence their digital identities. The teachers were also motivated by such issues, particularly considering the centrality of data and ML in digital technologies and the educational demands this creates (see also Tedre et al. 2021). They expressed concern about the risks children face in leisure platforms like TikTok and Snapchat, where personal data is leveraged for behavioural engineering aligned with commercial interests (Valtonen et al. 2019; see also Dai et al. 2023). One important aspect of the dynamic between subjectification and the two other domains was, in fact, indirectly evident here in that such agency did not extend to the school context. While teachers recognised the potential of generative AI as a learning 'buddy' (Sharples 2023), they did not emphasise students' autonomy in deciding how such tools should be used in classrooms despite emerging concerns such as the risk of metacognitive laziness (Fan et al. 2025). This difference provokes interesting questions about how schools may contradictorily encourage self-determination in one way while simultaneously taking it away. Yet, subjectification ultimately foregrounds students' agency to determine what they want to do within the constraints of social reality: what is possible and meaningful to pursue. As previously noted, schools carry a dual responsibility to exercise educational authority by setting external goals while also supporting students' development towards autonomy (Hämäläinen 2017). In this light, AI subjectification might not only give students the option to sometimes decide for themselves, but also help guide them in recognising when and why sometimes guidance or external structures may be meaningful or necessary.[6]

We propose a conceptualisation of an ensemble of educational purposes, which foregrounds the relevance of supporting students in acquiring AI competencies and empowering them to make agentic choices, while being guided to navigate the social responsibilities and constraints that necessarily limit those actions. This idea of AI education, as reflected in teachers' accounts of engaging with AI tools and data-related concerns, can be interpreted as a conceptual step towards what scholars such as Kahila et al. (2024) have studied as informed AI agency (or, perhaps in Biesta's terms, world-centred education) where competencies may practically serve, as Yau et al. (2023) put it, as 'explanatory frameworks' that help students connect AI to their lived experiences. Höper and Schulte (2024) also illustrate this through a cyclic pedagogical model that guides students

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

from recognising AI in everyday life to forming personal perspectives on it through various 'areas of relevance'. This framing highlights a potentially productive interplay between all three educational domains: AI as a data-driven, often opaque group of technologies brings not only possibilities for use but also pressures to adapt to such prominent digital environments as ML-driven platform recommendation systems and concerns such as bias, surveillance, and automated decision-making that may shape personal identity. Informed agency, therefore, can help students grasp the AI world and options available to them in it; what they may choose to pursue when AI becomes intelligible (e.g., socialisation into domains like future AI-related work can align with subjectification when rooted in personal aspiration). None of the three domains may in this interpretation be expected to operate as ends in themselves, but function potentially in tandem in empowering students' self-directed, critical, and meaningful engagement with AI-rich environments. A generalised and provisional synthesis of these notions, expressed as heuristic educational questions, is presented in Figure 2.

This is a philosophical model and an interpretation that foregrounds one manner of conceptualising relationships between broad domains of educational purpose based on the teachers' views, not necessarily a directly operational framework as such, and its practical application should be adapted to the specific educational context. It can encourage envisioning AI education that involves, for example, combining hands-on experimentation with AI systems (e.g., training simple image classifiers and analysing their outputs; qualification) in order to discuss how such systems collect and use personal data to operate (socialisation) and, most essentially, provide space for students to take a personal stand, for instance by reflecting on their personal data traces when using such technologies (subjectification). That said, the model should not be understood as implying pedagogical uniformity across educational settings: practices such as inquiry or reflection take different meanings and forms across, for instance, grade levels (e.g., more play-based and socially mediated engagements in early childhood contexts and more explicit, societally oriented critique in higher grade levels, as reflected in teachers' descriptions).

6 | Conclusions

The teachers interviewed in this study contributed to an interpretation of a diverse set of purposes for AI education, offering exploratory insight into how key educational goals may be theorised and potentially enacted at the grassroots level. Their varied views suggest that the introduction of AI into society and education may give rise to different but jointly relevant educational philosophies. Reflecting on the purposes of (AI) education is, however, inherently complex, and individual responses should not be taken as definitive representations of teachers' thinking (Snider and Roehl 2007). Nevertheless, the study provided insight into educational priorities among teachers from diverse regional contexts and even leadership roles. While geographically limited to Finland, the findings are likely analytically comparable to other educational contexts despite variations in curricula and school cultures.

The study puts forward the idea that the three educational purposes could operate synergistically in pursuit of well-rounded AI education. Critical studies sometimes refer to the hegemony of skills, which is evidently not an unfounded assessment, but this paper suggests that qualifications may work together meaningfully with other educational aims, and that any single purpose may be difficult to teach or even fully conceptualise in isolation. This study therefore invites further consideration of AI education where the goal is genuine human flourishing through such balance, as provisionally conceptualised in Figure 2. Importantly, the model should not be viewed as a conclusive model, but rather as a heuristic device to inform future empirical and conceptual work. Rather than centring debates on so-called right skills (Wheelahan et al. 2022), it shifts attention towards how skills can be embodied with purpose by individuals who exercise them in particular contexts. This also serves to remind that organising well-rounded education in practice

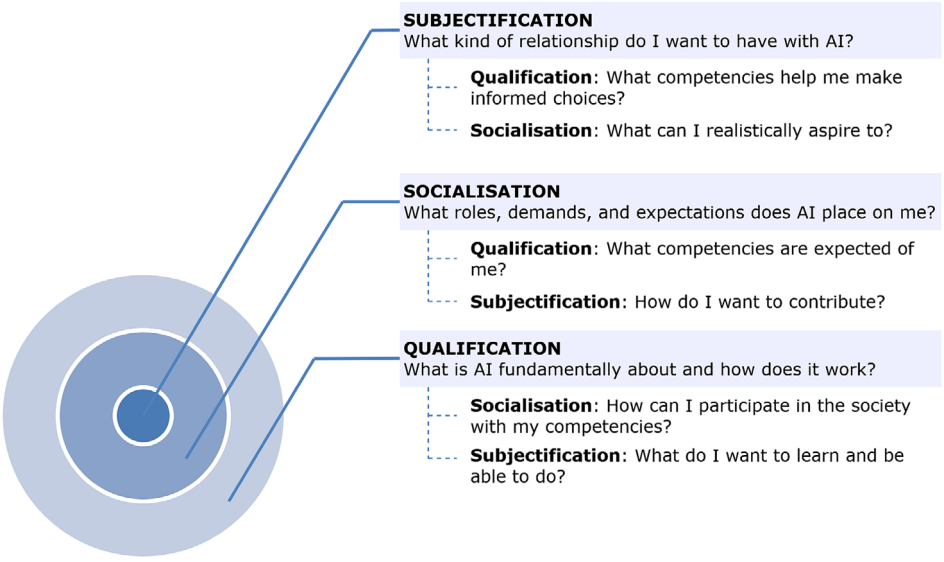

FIGURE 2 | A heuristic representation of informed AI agency in AI education centring on subjectification.

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

ultimately relies on teachers' professional judgement: discerning what matters most for a student's development in each context (Biesta 2015). For example, the meanings and pedagogical enactments of the constructs differ across age groups (e.g., reflection is more implicit and mediated in early childhood and more explicit and societally conscious in later schooling). We therefore caution against framing any specific type of AI education as a prescriptive endeavour or, in Burbules's (2004) terms, as a transcendent vision with fixed, universal endpoints.

Further research is needed to better understand variations in AI education's enactment across educational levels, student ages, and subject-specific disciplinary practices. There is also a need to further explore teachers' educational philosophies in digitalisation: what shapes and challenges them, how teachers might become more aware of diverse educational purposes, and how they could be supported in consciously and autonomously balancing meaningful and sometimes competing aims. Echoing prior research (e.g., Chiu 2024), these findings reinforce the importance of professional learning that complements technical knowledge like TPACK with sustained attention to the question of 'why'. Meanwhile, future research should critically examine the extent to which macro-level stakeholders recognise the diverse purposes AI education might serve or how AI technologies may even undermine some educational aims. For example, UNESCO has noted that generative AI may lead to the standardisation and conformity of responses, thereby weakening independent thought and self-directed inquiry (Fengchun and Holmes 2023, 37).

Author Contributions

Pekka Mertala: formal analysis, funding acquisition, methodology, writing – review and editing. **Jukka Lehtoranta:** investigation, project administration, writing – review and editing. **Laura Salo:** data curation, investigation, writing – review and editing. **Janne Fagerlund:** conceptualization, data curation, formal analysis, investigation, methodology, validation, visualization, writing – original draft. **Tiina Korhonen:** funding acquisition, project administration, supervision, writing – review and editing. **Emilia Mattila:** investigation, project administration, writing – review and editing.

Acknowledgements

We would like to express our sincere gratitude to Eeva Le Bihan for their invaluable assistance in the data collection process. Open access publishing facilitated by Jyvaskylan yliopisto, as part of the Wiley - FinELib agreement.

Funding

This research was supported by the Innokas network (http://www.innokas.fi/). The work of Janne Fagerlund and Pekka Mertala has additionally been supported by the Research Council of Finland, project no. 355523, 'Movement for Data Literacy' (MODALITY).

Consent

The participants interviewed for the present were informed about the purpose and requirements of the data collection and provided informed consent after receiving detailed information about the study. They voluntarily participated in the interviews and were informed of their right to withdraw at any time.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Endnotes

[1] Hew et al. (2019) found that 65% of the 503 educational technology articles in their corpus made no references to theory or described the theory in a vague manner, suggesting the use of highly descriptive approaches.

[2] https://www.innokas.fi/en/.

[3] The exact regions of each teacher are not disclosed due to possible identification risk.

[4] Even though in Finland the national core curriculum (EDUFI 2014) is relatively uniform across all grades, for example descriptions for transversal competences such as digital competence are rather consistent from early childhood education to 9th grade.

[5] The interview questions allowed for various responses, but a more systematic inquiry into each domain could have been conducted. In particular, the main interview question, 'What should students be taught about AI?', can be understood as focusing on instrumental instruction rather than holistic pedagogy (see also Biesta and Miedema 2002). We nonetheless still believe that the semi-structured interview format with the follow-up questions prompted versatile responses.

[6] The Finnish National Agency for Education (EDUFI 2025) AI guidelines state that 'if [educators] agree that AI will not be used, students should be informed in advance of the possible implications of not using it.'

References

Adeoye-Olatunde, O. A., and N. L. Olenik. 2021. "Research and Scholarly Methods: Semi-Structured Interviews." *Journal of the American College of Clinical Pharmacy* 4: 1358–1367. https://doi.org/10.1002/jac5.1441.

Ahmad, K., W. Iqbal, A. El-Hassan, J. Qadir, D. Benhaddou, and M. Ayyash. 2024. "Data-Driven Artificial Intelligence in Education: A Comprehensive Review." *IEEE Transactions on Learning Technologies* 17: 12–31. https://doi.org/10.1109/TLT.2023.3314610.

Alberola-Mulet, I., M. J. Iglesias-Martínez, and I. Lozano-Cabezas. 2021. "Teachers' Beliefs About the Role of Digital Educational Resources in Educational Practice: A Qualitative Study." *Education in Science* 11, no. 5: 239. https://doi.org/10.3390/educsci11050239.

Biesta, G. 2009. "Good Education in an Age of Measurement: On the Need to Reconnect With the Question of Purpose in Education." *Educational Assessment, Evaluation and Accountability* 21: 33–46. https://doi.org/10.1007/s11092-008-9064-9.

Biesta, G. 2015. "What Is Education for? On Good Education, Teacher Judgement, and Educational Professionalism." *European Journal of Education* 50, no. 1: 75–87. https://doi.org/10.1111/ejed.12109.

Biesta, G. 2020. "Risking Ourselves in Education: Qualification, Socialization, and Subjectification Revisited." *Educational Theory* 70, no. 1: 89–104. https://doi.org/10.1111/edth.12411.

Biesta, G., and S. Miedema. 2002. "Instruction or Pedagogy? The Need for a Transformative Conception of Education." *Teaching and Teacher Education* 18, no. 2: 173–181. https://doi.org/10.1016/S0742-051X(01)00062-2.

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Boeije, H. A. 2002. "Purposeful Approach to the Constant Comparative Method in the Analysis of Qualitative Interviews." *Quality & Quantity* 36: 391–409. https://doi.org/10.1023/A:1020909529486.

Burbules, N. C. 2004. "Ways of Thinking About Educational Quality." *Educational Researcher* 33, no. 6: 4–10. https://doi.org/10.3102/0013189X033006004.

Cheng, L., P. D. Antonenko, and A. D. Ritzhaupt. 2024. "The Impact of Teachers' Pedagogical Beliefs, Self-Efficacy, and Technology Value Beliefs on 3D Printing Integration in K-12 Science Classrooms." *Educational Technology Research and Development* 72: 181–208. https://doi.org/10.1007/s11423-023-10276-3.

Chiu, T. K. F. 2024. "The Impact of Generative AI (GenAI) on Practices, Policies and Research Direction in Education: A Case of ChatGPT and Midjourney." *Interactive Learning Environments* 32, no. 10: 6187–6203. https://doi.org/10.1080/10494820.2023.2253861.

Chiu, T. K. F., H. Meng, C.-S. Chai, I. King, S. Wong, and Y. Yam. 2022. "Creation and Evaluation of a Pretertiary Artificial Intelligence (AI) Curriculum." *IEEE Transactions on Education* 65, no. 1: 30–39. https://doi.org/10.1109/TE.2021.3085878.

Chung, J. 2023. "Research-Informed Teacher Education, Teacher Autonomy and Teacher Agency: The Example of Finland." *London Review of Education* 21, no. 1: 13. https://doi.org/10.14324/LRE.21.1.13.

Cornish, F., A. Gillespie, and T. Zittoun. 2023. "Collaborative Analysis of Qualitative Data." In *The SAGE Handbook of Qualitative Data Analysis*, edited by U. Flick, 79–93. Sage. https://doi.org/10.4135/9781446282243.

Cosgrove, J., and R. Cachia. 2025. *DigComp 3.0 - European Digital Competence Framework*, 5th ed. Publications Office of the European Union. https://doi.org/10.2760/0001149.

Dai, Y., A. Liu, J. Qin, et al. 2023. "Collaborative Construction of Artificial Intelligence Curriculum in Primary Schools." *Journal of Engineering Education* 112, no. 1: 23–42. https://doi.org/10.1002/jee.20503.

DiCicco-Bloom, B., and B. F. Crabtree. 2006. "The Qualitative Research Interview." *Medical Education* 40, no. 4: 314–321. https://doi.org/10.1111/j.1365-2929.2006.02418.x.

EDUFI, and Finnish National Agency for Education. 2014. *Perusopetuksen Opetussuunnitelman Perusteet*. Finnish National Agency for Education.

EDUFI, and Finnish National Agency for Education. 2025. *Tekoäly Varhaiskasvatuksessa ja Koulutuksessa – Lainsäädäntö ja Suositukset (AI Guidelines)*. Finnish National Agency for Education.

Eteläpelto, A., K. Vähäsantanen, P. Hökkä, and S. Paloniemi. 2013. "What Is Agency? Conceptualizing Professional Agency at Work." *Educational Research Review* 10: 45–65. https://doi.org/10.1016/j.edurev.2013.05.001.

Fagerlund, J., L. Palsa, and P. Mertala. 2025. "Exploration of Domains of Educational Purpose in K-12 Data Literacy Education Research." *Educational Research Review* 46: 100663. https://doi.org/10.1016/j.edurev.2024.100663.

Fan, Y., L. Tang, H. Le, et al. 2025. "Beware of Metacognitive Laziness: Effects of Generative Artificial Intelligence on Learning Motivation, Processes, and Performance." *British Journal of Educational Technology* 56: 489–530. https://doi.org/10.1111/bjet.13544.

Fengchun, M., and W. Holmes. 2023. *Guidance for Generative AI in Education and Research*. UNESCO. https://doi.org/10.54675/EWZM9535.

Fraillon, J. 2024. *An International Perspective on Digital Literacy. Results From ICILS 2023*. International Association for the Evaluation of Educational Achievement (IEA).

Hämäläinen, J. 2017. "Pedagoginen Suhde Herman Nohlin Mukaan." *Sosiaalipedagogiikka* 18: 151–158. https://doi.org/10.30675/sa.68945.

Hew, K. F., M. Lan, Y. Tang, C. Jia, and C. K. Lo. 2019. "Where Is the 'Theory' Within the Field of Educational Technology Research?" *British Journal of Educational Technology* 50, no. 3: 956–971. https://doi.org/10.1111/bjet.12770.

Hilt, L. T., H. Riese, and G. E. Søreide. 2018. "Narrow Identity Resources for Future Students: The 21st Century Skills Movement Encounters the Norwegian Education Policy Context." *Journal of Curriculum Studies* 51, no. 3: 384–402. https://doi.org/10.1080/00220272.2018.1502356.

Höper, L., and C. Schulte. 2024. "Empowering Students for the Data-Driven World: A Qualitative Study of the Relevance of Learning About Data-Driven Technologies." *Informatics in Education* 23, no. 3: 593–624. https://doi.org/10.15388/infedu.2024.19.

Kahila, J., H. Vartiainen, M. Tedre, et al. 2024. "Pedagogical Framework for Cultivating Children's Data Agency and Creative Abilities in the Age of AI." *Informatics in Education* 23, no. 2: 323–360. https://doi.org/10.15388/infedu.2024.15.

Kasneci, E., K. Sessler, S. Küchemann, et al. 2023. "ChatGPT for Good? On Opportunities and Challenges of Large Language Models for Education." *Learning and Individual Differences* 103: 102274. https://doi.org/10.1016/j.lindif.2023.102274.

Korhonen, T., L. Salo, H. Reinius, et al. 2024. "Creating Transformative Research-Practice Partnership in Collaboration With School, City, and University Actors." *Education in Science* 14: 399. https://doi.org/10.3390/educsci1404039.

Lee, S. J., and K. Kwon. 2024. "A Systematic Review of AI Education in K-12 Classrooms From 2018 to 2023: Topics, Strategies, and Learning Outcomes." *Computers and Education: Artificial Intelligence* 6: 100211. https://doi.org/10.1016/j.caeai.2024.100211.

Lindner, A., and M. Berges. 2020. "Can You Explain AI to Me? Teachers' Pre-Concepts About Artificial Intelligence." In *Proceedings of the IEEE Frontiers in Education Conference (FIE)*, 1–9. IEEE. https://doi.org/10.1109/FIE44824.2020.9274136.

Loftus, M., and M. G. Madden. 2020. "A Pedagogy of Data and Artificial Intelligence for Student Subjectification." *Teaching in Higher Education* 25, no. 4: 456–475. https://doi.org/10.1080/13562517.2020.1748593.

Long, D., and B. Magerko. 2020. "What Is AI Literacy? Competencies and Design Considerations." In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–16. ACM. https://doi.org/10.1145/3313831.3376727.

Mertala, P. 2020. "Data (Il)literacy Education as a Hidden Curriculum of the Datafication of Education." *Journal of Media Literacy Education* 12, no. 3: 30–42. https://doi.org/10.23860/JMLE-2020-12-3-4.

Mertala, P., and J. Fagerlund. 2024. "Finnish 5th and 6th Graders' Misconceptions About Artificial Intelligence." *International Journal of Child-Computer Interaction* 39: 100630. https://doi.org/10.1016/j.ijcci.2023.100630.

Mertala, P., J. Fagerlund, and O. Calderon. 2022. "Finnish 5th and 6th Grade Students' Pre-Instructional Conceptions of Artificial Intelligence (AI) and Their Implications for AI Literacy Education." *Computers and Education: Artificial Intelligence* 3: 100095. https://doi.org/10.1016/j.caeai.2022.100095.

Ng, D. T. K., J. Su, J. K. L. Leung, and S. K. W. Chu. 2024. "Artificial Intelligence (AI) Literacy Education in Secondary Schools: A Review." *Interactive Learning Environments* 32, no. 10: 6204–6224. https://doi.org/10.1080/10494820.2023.2255228.

Ning, Y., C. Zhang, B. Xu, Y. Zhou, and T. T. Wijaya. 2024. "Teachers' AI-TPACK: Exploring the Relationship Between Knowledge Elements." *Sustainability* 16, no. 3: 978. https://doi.org/10.3390/su16030978.

Nivanaho, N., M. Haavisto, T. Palonen, S. Lempinen, and P. Seppänen. 2024. "Shared and Contested Views of Education Professionals on the Forms of Privatization Within Comprehensive Schooling in Finland." In *Privatization in and of Public Education*, edited by K. Põder and A.

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Santalova, 130–150. Oxford University Press. https://doi.org/10.1093/oso/9780197673508.003.0007.

OECD. 2020. *TALIS 2018 Results. Teachers and School Leaders as Valued Professionals*. Vol. 2. OECD. https://doi.org/10.1787/19cf08df-en.

OECD. 2025. *Future of Education and Skills*. OECD. https://www.oecd.org/en/topics/future-of-education-and-skills.html.

Ottenbreit-Leftwich, A. T., K. D. Glazewski, T. J. Newby, and P. A. Ertmer. 2010. "Teacher Value Beliefs Associated With Using Technology: Addressing Professional and Student Needs." *Computers & Education* 55, no. 3: 1321–1335. https://doi.org/10.1016/j.compedu.2010.06.002.

Reichertz, J. 2013. "Induction, Deduction, Abduction." In *The SAGE Handbook of Qualitative Data Analysis*, edited by U. Flick, 123–135. Sage. https://doi.org/10.4135/9781446282243.

Salomaa, S., and P. Mertala. 2019. "An Education-Centred Approach to Digital Media Education." In *Early Learning in the Digital Age*, edited by C. Gray and I. Palaiologou, 151–164. Sage. https://doi.org/10.4135/9781526463173.n11.

Schulte, C., S. Sentance, S. Sparmann, et al. 2025. "What we Talk About When we Talk About K-12 Computing Education." In *Proceedings of the Working Group Reports on Innovation and Technology in Computer Science Education (ITiCSE 2024)*, 226–257. ACM. https://doi.org/10.1145/3689187.3709612.

Sharples, M. 2023. "Towards Social Generative AI for Education: Theory, Practices and Ethics." *Learning: Research and Practice* 9, no. 2: 159–167. https://doi.org/10.1080/23735082.2023.2261131.

Snider, V. E., and R. Roehl. 2007. "Teachers' Beliefs About Pedagogy and Related Issues." *Psychology in the Schools* 44, no. 8: 873–886. https://doi.org/10.1002/pits.20272.

Sperling, K., C.-J. Stenberg, C. McGrath, A. Åkerfeldt, F. Heintz, and L. Stenliden. 2024. "In Search of Artificial Intelligence (AI) Literacy in Teacher Education: A Scoping Review." *Computers and Education Open* 6: 100169. https://doi.org/10.1016/j.caeo.2024.100169.

Tedre, M., T. Toivonen, J. Kahila, H. Vartiainen, T. Valtonen, and I. Jormanainen. 2021. "Teaching Machine Learning in K–12 Classroom: Pedagogical and Technological Trajectories for Artificial Intelligence Education." *IEEE Access* 9: 110558–110572. https://doi.org/10.1109/ACCESS.2021.3097962.

Timmermans, S., and I. Tavory. 2022. *Data Analysis in Qualitative Research. Theorizing With Abductive Analysis*. University of Chicago Press.

Touretzky, D., C. Gardner-McCune, F. Martin, and D. Seehorn. 2019. "Envisioning AI for K-12: What Should Every Child Know About AI?" In *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 33, 9795–9799. https://doi.org/10.1609/aaai.v33i01.33019795.

UNESCO. 2022. *K-12 AI Curricula: A Mapping of Government-Endorsed AI Curricula*. UNESCO.

Uprichard, E. 2008. "Children as 'Being and Becomings': Children, Childhood and Temporality." *Children & Society* 22, no. 4: 303–313. https://doi.org/10.1111/j.1099-0860.2007.00110.x.

Valtonen, T., M. Tedre, K. Mäkitalo, and H. Vartiainen. 2019. "Media Literacy Education in the Age of Machine Learning." *Journal of Media Literacy Education* 11, no. 2: 20–36. https://doi.org/10.23860/JMLE-2019-11-2-2.

Vartiainen, H., J. Kahila, M. Tedre, S. López-Pernas, and N. Pope. 2024. "Enhancing Children's Understanding of Algorithmic Biases in and With Text-to-Image Generative AI." *New Media & Society* 27: 5342–5368. https://doi.org/10.1177/14614448241252820.

Vartiainen, H., M. Tedre, and I. Jormanainen. 2023. "Co-Creating Digital Art With Generative AI in K-9 Education: Socio-Material Insights." *International Journal of Education Through Art* 19, no. 3: 405–423. https://doi.org/10.1386/eta_00143_1.

Wheelahan, L., G. Moodie, and J. Doughney. 2022. "Challenging the Skills Fetish." *British Journal of Sociology of Education* 43, no. 3: 475–494. https://doi.org/10.1080/01425692.2022.2045186.

Yau, K. W., C. S. Chai, T. K. F. Chiu, H. Meng, I. King, and Y. Yam. 2023. "A Phenomenographic Approach on Teacher Conceptions of Teaching Artificial Intelligence (AI) in K-12 Schools." *Education and Information Technologies* 28: 1041–1064. https://doi.org/10.1007/s10639-022-11161-x.

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Appendix A

TABLE A1 | The semi-structured interview protocol.

Topic	Questions
1. Background and context	• Which school do you work at? • How long have you been a teacher? • How would you describe your own thoughts on what inspires you most about teaching? • What is your background in the use of digital technology in education? • What background do you have in teaching with AI prior to the project? • What made you join the AI project? What encouraged you to join? • Were there any difficulties or slowdowns in getting involved? • How did you start the AI project in your school or in your teaching initially? What was done afterwards? Where are we now?
2. Experiences in developing AI education	• How would you describe the factors that have enabled or driven forwards your AI education? • (Additional prompts regarding, for example, school leadership, curricula, IT or other administrative policies, faculty at the school, external stakeholders, resources, facilities, infrastructure, students) • What challenged or slowed you down? (Additional prompts as above) • How did you overcome the challenges?
3. Motivation towards AI education	• Could you describe a little bit what kind of AI educator and developer you are in your own opinion? • Is there something specific about AI education that motivates you on a personal level? • What is it about the subject that interests or delights you in particular? Can you guess why such things motivate you? • Can you identify anything in the subject that would have reduced your own motivation for it?
4. Competencies in AI education	• How would you describe your own knowledge of AI as a phenomenon or subject matter? • How would you describe your own capacity to integrate AI into education? • How would you describe your own technical competence in AI education? • Can you identify some areas where you feel you have strong competences? • Can you identify some areas where you feel that you may have room for improvement or learning? • What factors do you feel have most contributed to your competence? • And do you feel that there are some factors that have prevented you from accumulating more competence?
5. Purposes of AI education	• What do you think students should be taught with regard to AI? • Would you further expand your thinking on why such things are important to learn? • How have you taught your students these things in practice? (Or: How could you teach them.) • And what challenges have you experienced in teaching such things? (Or: what challenges you could imagine encountering.) • Imagining a situation where you have very little time to address AI in your teaching to a group of students, what teaching or educational purposes related to AI would you prioritise?
6. Future plans in developing AI education	• How will AI education be taken forwards from now on? • And what advice would you give to a teacher taking on AI? • Is there anything else you would like to share on the subject?

13652729, 2026, 5, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/jcal.70302 by University of Helsinki, Wiley Online Library on [31/07/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License