

Policy and Professional Development for Generative AI in Welsh Education

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ABSTRACT

This study examines the policy frameworks, professional development requirements, and institutional structures necessary for effective integration of artificial intelligence (AI) in Welsh education. Through analysis of survey data from twenty-five Welsh educators, the research investigates institutional support, barriers affecting AI adoption, and patterns of AI tool usage in educational settings. Using the Technology Acceptance Model (TAM) and Cultural-Historical Activity Theory (CHAT) as theoretical frameworks, findings reveal significant gaps between current support structures and educator needs, with participants reporting insufficient professional development opportunities and identifying a lack of clear institutional guidelines. The study identifies three key approaches to AI implementation: restrictive, ad hoc, and emerging structured approaches. Additionally, findings highlight the challenges of maintaining assessment integrity and the unique needs of Additional Learning Needs (ALN) contexts. The research suggests that successful AI integration requires systematic policy development aligned with Welsh educational priorities and values, sustained professional development, and equitable resource allocation. These findings have important implications for educational leaders and policymakers as they work to support the digital competence aims of the Curriculum for Wales. The study also provides recommendations for future research and practice, emphasising the need for culturally responsive AI systems, innovative assessment frameworks, and strategic resource allocation to bridge existing disparities.

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Introduction

Generative Artificial Intelligence (AI) and Large Language Models (LLMs) have emerged as transformative technologies in recent years, revolutionising natural language processing and various domains (Hagos et al., 2024). These AI systems, exemplified by models like ChatGPT and DALL-E, utilise datasets and advanced deep learning architectures to generate human-like text and realistic images (Linkon et al., 2024). LLMs have demonstrated remarkable capabilities in understanding and generating text, leading to applications across multiple sectors, including healthcare, finance, and education (Zhou et al., 2024). The accessibility of these AI tools to average internet users has sparked widespread interest and adoption (Cobb, 2023). However, the rapid advancement of generative AI and LLMs also raises important ethical considerations and challenges, necessitating responsible innovation and governance, particularly in education (Linkon et al., 2024; Hagos et al., 2024).

The integration of AI in education is rapidly transforming teaching, learning, and administrative processes. As Chiu et al. (2023) note, AI has enormous potential to improve learning, teaching, assessment, and educational administration by offering students more personalised and adaptive learning, fostering teachers' understanding of students' learning processes, and providing anywhere anytime machine supported queries and immediate feedback. In Wales, the educational landscape is undergoing significant reform with the implementation of the new Curriculum for Wales and the Digital Competence Framework, which emphasises digital competence as a core cross-curricular skill. This reform marks a shift towards fostering independent, digitally literate learners who can navigate a rapidly evolving technological environment (Holmes et al., 2019; Luckin et al., 2022; Baker and Siemens, 2014).

Welsh schools operate in a diverse landscape that includes urban, rural, and Welsh-medium schools, each facing distinct challenges and opportunities in AI adoption. Research by Luckin and Cukurova (2019) highlights the presence of a digital divide in education, with rural and resource-limited schools often facing

greater barriers to implementing new technologies due to limited infrastructure and funding. This disparity risks exacerbating inequalities in access to AI and digital learning, particularly in under-resourced Welsh schools. Research indicates that successful AI implementation depends on addressing multiple factors through comprehensive policy frameworks and support structures (Luckin et al., 2022). Holmes et al. (2019) further emphasise that the impact of AI on education must be carefully considered within specific cultural and linguistic contexts.

To date, limited research has examined how Welsh educators are navigating AI adoption within the specific cultural and educational framework of Wales. While international studies provide valuable insights into AI's potential and challenges in education (Chiu et al., 2023; Holstein et al., 2019), they often overlook the nuances of bilingual and culturally distinct contexts like Wales. As noted by Chiu et al. (2023), applications of artificial intelligence in education (AIEd) are emerging and are new to researchers and practitioners alike, making it crucial to understand implementation challenges in diverse educational contexts.

This research seeks to address three primary objectives:

1. To explore the policy frameworks needed to support AI integration in Welsh schools. Given the absence of comprehensive AI policies in many schools, this study examines educators' perspectives on what policies or guidelines would support effective AI implementation while aligning with Welsh educational priorities.
2. To identify the professional development requirements necessary for educators to confidently implement AI technologies in bilingual and diverse school settings. The research seeks to understand the types of training and resources educators need to integrate AI into their teaching practices, with attention to the specific needs of Welsh-medium and rural schools.
3. To analyse institutional structures and resource allocations that affect AI adoption in Welsh education. This objective includes examining how infrastructure, technological resources, and support systems vary across schools and how these variations impact AI integration.

These objectives are examined through the lens of several theoretical models relevant to educational technology adoption, including the Technology Acceptance Model (TAM), the Digital Divide Theory, and Cultural-Historical Activity Theory

(CHAT). These frameworks provide valuable insights into the factors influencing AI adoption and offer a foundation for analysing how Welsh schools can integrate AI in a manner that is contextually responsive and equitable (Venkatesh and Bala, 2008; Cukurova et al., 2020).

Understanding Artificial Intelligence in Education

The integration of artificial intelligence (AI) in education is rapidly transforming teaching, learning and administrative processes. AI technologies hold significant potential to revolutionise educational practices through personalised learning, automated assessment and enhanced administrative efficiency, allowing educators to better address diverse student needs (Luckin et al., 2022; Baker and Siemens, 2014; Zawacki-Richter et al., 2019; Cukurova et al., 2020). As Chiu et al. (2023) emphasise, AIED has enormous potential to improve all aspects of education by offering students more personalised and adaptive learning experiences whilst fostering teachers' understanding of students' learning processes.

The field of AI in Education (AIED) has evolved significantly over past decades, with origins dating back to Carbonell's seminal work on adaptive geography instruction systems (Carbonell, 1970). Early developments in Intelligent Tutoring Systems (ITSs) led to significant advances in adaptive teaching strategies and content delivery based on detected learner needs (Sleeman and Brown, 1982; Shute and Psotka, 1994; Holstein et al., 2018). Despite this rich history, the adoption of AI in real-world educational settings has lagged behind other sectors such as finance and medicine (Baker and Siemens, 2014). This slower adoption may be partially attributed to AIED solutions' historically narrow focus on technical and pedagogical aspects within closed systems, rather than taking a 'mixed-initiative' approach that combines human and machine agency in complex educational ecosystems (Cuban et al., 2001; Horvitz, 1999; Buckingham Shum et al., 2019).

Research increasingly demonstrates the positive impact of AI applications on students' academic performance, affective engagement and metacognitive development (VanLehn et al., 2021; Li et al., 2017; Baker, 2016; D'Mello et al., 2012; Azevedo et al., 2004; Laru and Järvelä, 2015). Several AIED systems have shown statistically significant positive impacts in real-world settings, including the OLI learning course (Lovett et al., 2008), SQL-Tutor (Mitrovic and Ohlsson, 1999),

ALEKS (Craig et al., 2013), Cognitive Tutor (Pane et al., 2014) and ASSISTments (Koedinger et al., 2010). Chiu et al.'s (2023) systematic review identifies thirteen distinct roles that AI plays across educational domains, from providing adaptive teaching strategies to supporting assessment processes.

The implementation of AI in education requires careful consideration of various human factors, including teacher readiness and professional development needs (Cukurova et al., 2020), student privacy and data protection (Holmes et al., 2019), equity and accessibility considerations (Holstein et al., 2019) and ethical implications of AI use in educational contexts (Luckin et al., 2016). As identified by Chiu et al. (2023), successful implementation depends on addressing these factors through comprehensive policy frameworks and support structures. Their research reveals significant challenges in areas such as selecting appropriate data for AI predictive models and ensuring equitable access to AI technologies.

Research indicates that successful AI implementation requires systematic approaches that consider both technological capabilities and pedagogical needs. Studies have demonstrated positive outcomes in areas such as adaptive learning (Koedinger and Alevan, 2016), automated assessment and learning analytics (Hussain et al., 2018; Babić, 2017). However, as Chiu et al. (2023) note, challenges remain in developing AI systems that can effectively support diverse learning contexts and needs.

Whilst AI holds significant promise for enhancing educational outcomes, its successful integration into educational systems requires a nuanced understanding of both technological and human factors. By developing comprehensive policies, providing targeted professional development and ensuring ethical and equitable use of AI, educators and policymakers can harness the potential of AI to transform education in meaningful ways (Luckin et al., 2022; Zeide, 2019).

Current Implementation Landscape

The current landscape of AI implementation in education reveals a diverse array of applications and approaches, reflecting the varied needs and contexts of educational institutions. Contemporary AI in Education (AIEd) applications can be broadly categorised into three main types: learner-facing systems, educator-facing tools and institutional support systems (Chiu et al., 2023).

Learner-facing systems are designed to provide personalised instruction and adaptive content tailored to individual student needs and progress (Koedinger and Aleven, 2016). These systems leverage AI to interpret complex human responses and adjust instructional strategies, accordingly, moving beyond traditional computer-aided instruction to offer more sophisticated support. Examples include intelligent tutoring systems that adapt to students' learning styles and paces, and AI-driven educational games that engage students in interactive learning experiences (Holstein et al., 2018). As highlighted by Chiu et al. (2023), these tools have shown significant promise in enhancing student engagement and learning outcomes by providing real-time feedback and personalised learning pathways.

Educator-facing tools assist teachers with various tasks such as assessment, feedback provision and classroom management (Holstein et al., 2018). These tools can monitor student progress, provide recommendations for intervention and support teachers in making data-driven decisions about instruction (Chi et al., 2011). For example, AI-powered grading systems can automate the evaluation of student assignments, freeing up teachers' time for more personalised instruction. Additionally, AI-driven analytics platforms can offer insights into student performance trends, helping educators identify areas where students may need additional support. Studies have shown that when properly implemented, such tools can significantly enhance teaching effectiveness (Zeide, 2019; Chiu et al., 2023).

Institutional support systems help educational organisations optimise operations, from admissions and enrolment management to resource allocation and student success prediction. These systems increasingly rely on predictive analytics to identify at-risk students and provide early intervention opportunities (Hussain et al., 2018; Babić, 2017). For example, AI algorithms can analyse historical data to predict which students are likely to struggle academically, allowing institutions to proactively offer support services. As noted by Chiu et al. (2023), these systems not only improve operational efficiency but also contribute to better educational outcomes by enabling timely and targeted interventions.

The implementation of AI in education requires careful consideration of various human factors. Teacher readiness and professional development needs are critical, as educators must be equipped with the skills and knowledge to effectively integrate AI tools into their teaching practices (Cukurova et al., 2020). Additionally, issues of student privacy and data protection must be addressed to ensure that AI applications comply with ethical standards and legal requirements (Holmes et al., 2019). Equity

and accessibility considerations are also paramount, as AI tools must be designed and implemented in ways that are inclusive and accessible to all students, regardless of their backgrounds or abilities (Holstein et al., 2019; Ghallab, 2019).

Ethical implications of AI use in educational contexts are another significant concern (Akgun and Greenhow, 2022). As AI technologies become more prevalent, it is essential to develop comprehensive policy frameworks that address the ethical challenges associated with their use (Luckin et al., 2016). These frameworks should ensure that AI applications are used in ways that respect students' rights and promote their wellbeing. Furthermore, successful AI implementation depends on integrating these technologies with existing pedagogical practices, ensuring that they complement rather than replace traditional teaching methods (Luckin and Cukurova, 2019; Chiu et al., 2023).

Policy Development and Implementation

The development of effective AI policies in educational settings remains an emerging challenge. The complex relationship between policy frameworks and implementation practices, particularly in bilingual and culturally distinct contexts, requires careful consideration. As Luckin et al. (2022) emphasise, AI is transforming the way we live and work, and its momentum in the education sector is growing as more AI-driven products and services become available. This proliferation of AI applications in education necessitates robust policy frameworks to guide their ethical and effective use.

Within educational institutions, there exists a notable gap between AI adoption and governance. While a significant number of schools report some level of AI implementation, only a minority have developed comprehensive policies governing its use (Holstein et al., 2019; Pham and Sampson, 2022). This disparity reflects broader uncertainties about managing AI's impact on traditional educational practices and highlights the need for more structured policy frameworks. Research by Chiu et al. (2023) indicates that the rapid integration of AI technologies often outpaces the development of corresponding governance structures, leading to inconsistencies in how AI is utilised and regulated across different institutions. Moreover, the absence of clear guidelines can result in ethical dilemmas, such as issues related to data privacy, algorithmic bias and academic integrity (Holmes

et al., 2019; Jovanović and Campbell, 2022; Ahmad et al., 2023). Studies have shown that without robust policies, the potential benefits of AI in education may be undermined by these challenges, necessitating a balanced approach that includes stakeholder engagement and iterative policy development (Baidoo-Anu and Ansah, 2023). Therefore, establishing comprehensive and flexible policy frameworks is crucial for ensuring that AI technologies are implemented responsibly and effectively in educational settings.

In the context of Additional Learning Needs (ALN), policy development must address the unique requirements of students with diverse needs. AI tools can offer significant benefits for ALN students by providing personalised learning experiences and adaptive support (Vahabzadeh et al., 2018; Barua et al., 2022). However, effective policy frameworks must ensure that these technologies are accessible and equitable. This includes providing adequate training for educators, ensuring that AI tools are designed to accommodate a range of learning needs and addressing potential ethical concerns related to data privacy and algorithmic bias (Holmes et al., 2019; Cukurova et al., 2020). Policies should also promote collaboration between technology developers, educators and ALN specialists to create AI solutions that are both effective and inclusive (Yang, 2022; Luckin et al., 2022; Cukurova et al., 2020). Additionally, it is crucial to consider the cultural and linguistic diversity within ALN contexts to ensure that AI tools are appropriately tailored and effective (Burgsteiner et al., 2016; Woolf, 2015).

The Welsh Educational Context and AI Implementation

In Wales, the educational landscape is undergoing significant reform with the implementation of the new Curriculum for Wales and the Digital Competence Framework, which emphasises digital competence as a core cross-curricular skill (Welsh Government, 2023). This reform provides Welsh schools with an opportunity to embrace AI and other digital tools, potentially enhancing teaching and learning in ways that support both the curriculum's academic goals and broader educational values.

Integrating AI in Welsh education presents unique challenges, given Wales's commitment to preserving its language and cultural heritage. The bilingual context necessitates that AI tools and policies accommodate the linguistic needs of

Welsh-medium schools to ensure that Welsh-speaking students and educators have equitable access to technology. Recent studies emphasise that technologies designed primarily for English-speaking users can be less effective – or even exclusionary – when implemented in bilingual or multilingual educational settings (Cukurova et al., 2020; Luckin and Cukurova, 2019).

Moreover, Welsh schools operate in a diverse landscape that includes urban, rural and Welsh-medium schools, each facing distinct challenges and opportunities in AI adoption. Research by Luckin and Cukurova (2019) highlights the presence of a digital divide in education, with rural and resource-limited schools often facing greater barriers to implementing new technologies due to limited infrastructure and funding. This disparity risks exacerbating inequalities in access to AI and digital learning, particularly in under-resourced Welsh schools.

To address these challenges, it is essential to develop comprehensive AI policies that are contextually responsive and equitable. These policies should consider the unique linguistic and cultural context of Welsh education, ensuring that AI tools are accessible and effective for all students. Additionally, policies should provide clear guidelines for ethical AI use, addressing concerns related to data privacy, equity, and the potential for bias in AI algorithms.

Professional Development and Resource Allocation

Research consistently identifies professional development as crucial for the successful integration of AI in education. As Cukurova et al. (2020) argue, creating a 'golden triangle' of evidence-informed education technology, which connects researchers, practitioners and developers, is essential for the effective implementation of learning technologies. This insight underscores the importance of collaborative approaches to professional development that engage all stakeholders in the AI implementation process.

Recent research has begun to identify more nuanced patterns in professional development needs regarding AI implementation. Holstein et al. (2019) and Pham and Sampson (2022) conducted extensive research across multiple schools, revealing what they term 'layered competency requirements'. Their research demonstrates that effective AI integration requires not only technical skills but also a sophisticated understanding of pedagogical implications and ethical considerations. This layered

approach ensures that teachers are not only proficient in using AI tools but also understand how to integrate these tools into their teaching practices in ways that enhance learning outcomes (Pham and Sampson, 2022).

The professional development landscape reveals particular complexities regarding AI implementation. Traditional models of professional development often struggle to address the dual challenges of technological advancement and pedagogical integration. Luckin and Cukurova (2019) highlight that successful professional development programmes must address not only technical and pedagogical skills but also broader contextual considerations. This includes understanding the specific needs of different educational settings, such as rural and urban schools, and accommodating the linguistic and cultural diversity present in Welsh education.

Resource allocation presents another significant challenge in AI implementation. As highlighted by Chiu et al. (2023) and Ahmad et al. (2023), there are substantial disparities in access to AI tools and support structures across different educational settings. These disparities often reflect broader patterns of educational inequality, with implications for student access and achievement. Their work particularly emphasises how resource limitations can create a two-tier system where some schools develop comprehensive AI integration strategies whilst others struggle with basic implementation. This inequity can exacerbate existing educational disparities, particularly in under-resourced schools (Ahmad et al., 2023).

Investment in professional development must be sustained and strategic. Holstein et al. (2018) identified that one-off training sessions are insufficient for developing the complex competencies required for effective AI integration. Instead, their research advocates for ongoing, job-embedded professional learning opportunities that allow educators to develop expertise over time whilst receiving continuous support and feedback. This approach aligns with findings from VanLehn (2011) and du Boulay (2016), who emphasise the importance of providing educators with opportunities to experiment with AI tools in low-stakes environments before implementing them in their classrooms. Such sustained professional development ensures that teachers can build confidence and competence in using AI, ultimately leading to more effective integration of these technologies in educational practice (Holstein et al., 2018; VanLehn, 2011; du Boulay, 2016).

Therefore, the successful integration of AI in education hinges on comprehensive and sustained professional development that addresses technical, pedagogical and

contextual factors. By investing in ongoing professional learning opportunities and ensuring equitable resource allocation, educational institutions can better support teachers in effectively integrating AI tools into their teaching practices. As Chiu et al. (2023) conclude, this approach can help to bridge the digital divide and promote more equitable educational outcomes for all students.

Theoretical Frameworks

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), provides a robust framework for understanding technology adoption in educational contexts. TAM posits that technology adoption is primarily determined by two key beliefs: perceived usefulness which evaluates the degree to which an individual believes using a technology will enhance their job performance – and perceived ease of use (PEOU) – the degree to which an individual believes using the technology will be free of effort (Davis, 1989). These core constructs have direct effects on behavioural intention to use technology, which in turn predicts actual usage. Perceived ease of use also influences perceived usefulness, as technologies that are easier to use are more likely to be seen as useful. Beyond these core constructs, TAM acknowledges external variables – including system design characteristics, user training, organizational support, and cultural context – that indirectly influence adoption by shaping perceptions of usefulness and ease of use. The model has been extensively validated across educational technology contexts (Scherer et al., 2019), demonstrating robust explanatory power for understanding why educators adopt or resist new technologies. TAM's particular strength lies in identifying modifiable barriers to adoption, as interventions can target either perceived usefulness (demonstrating value) or perceived ease of use (providing training and support) to facilitate technology integration.

Perceived usefulness refers to the degree to which educators believe that AI tools will enhance their teaching effectiveness, improve student learning outcomes, or reduce administrative burden. Perceived ease of use encompasses both the technical complexity of operating AI tools and the cognitive effort required to integrate them meaningfully into existing teaching practices. Research has shown

that PEOU has both direct and indirect effects on technology adoption, with the indirect effect mediated through perceived usefulness (Venkatesh and Davis, 2000).

The extended TAM model incorporates external variables such as training effectiveness, organisational support, and resource availability that significantly influence both perceived usefulness and ease of use (Venkatesh and Bala, 2008). In Welsh schools, these external variables include institutional policies, professional development opportunities, technical infrastructure, and administrative support for innovation. This understanding is crucial for developing effective AI integration strategies that address both individual perceptions and systemic barriers.

Cultural-Historical Activity Theory (CHAT)

Cultural-Historical Activity Theory (CHAT), developed by Engeström (1987, 2015), provides a comprehensive framework for analysing complex educational systems and understanding how new technologies are integrated into established practices. CHAT conceptualises human activity as mediated by cultural tools and situated within socio-historical contexts. At its core is the activity system – comprising subject (individual or group acting), object (goal of activity), tools (mediating artifacts including technology), rules (norms and policies), community (social context), and division of labour (distribution of tasks and roles). Engeström's (2015) expansive learning theory extends CHAT by focusing on contradictions—structural tensions within and between activity system components – as drivers of development and change. Four levels of contradictions are identified: primary contradictions (internal tensions within single components, such as conflicting demands within rules), secondary contradictions (tensions between components, such as tools conflicting with rules), tertiary contradictions (tensions between current practice and envisioned new practice), and quaternary contradictions (tensions between neighbouring activity systems, such as different departments). These contradictions create zones of proximal development where learning and transformation occur through collaborative problem-solving. CHAT has been productively applied to educational technology implementation (Yamagata-Lynch, 2010), revealing how systemic factors – rather than individual preferences alone – shape adoption patterns. Its particular strength lies in exposing invisible structural barriers that persist even when individual educators are motivated to change.

CHAT's concept of contradictions is particularly relevant for understanding AI integration challenges. Engeström (2015) identifies four levels: primary contradictions within components, secondary contradictions between components, tertiary contradictions between existing and new practices, and quaternary contradictions between different activity systems. In Welsh education, these manifest as tensions between AI capabilities and current assessment practices, conflicts between individual teacher adoption and institutional policies, and contradictions between technological innovation and cultural preservation goals.

The theory's emphasis on cultural mediation is significant for Welsh education, where linguistic and cultural preservation are central concerns. CHAT recognises that technology integration cannot be separated from cultural values and practices, highlighting the importance of developing AI applications and policies responsive to Welsh linguistic and cultural contexts (Cole & Engeström, 1993).

Methodology

This study employed a mixed-methods survey approach, combining quantitative and qualitative data to capture broad patterns and nuanced insights about AI integration in Welsh schools. This approach is well-suited for research exploring both institutional practices and individual perspectives that shape technology adoption in educational settings (Creswell and Plano Clark, 2017; Johnson et al., 2007). The mixed-methods design aligns with the study's objectives to investigate policies, professional development needs, and support structures related to AI integration during a period of curricular reform under the new Curriculum for Wales.

Surveys are particularly useful for examining policy and technology-related issues in educational contexts, allowing researchers to gather data on attitudes, experiences, and practices across a diverse set of institutions and educational levels. This method provides a reliable way to obtain data about both AI implementation and student engagement with technology across a broad population, facilitating comparisons across different school levels and educator roles (Bryman, 2016; Cohen et al., 2018). Given the emerging nature of AI in education and evolving understanding of students' digital capabilities, capturing perspectives of educators

across primary, secondary, and college settings was essential to identify both common challenges and specific needs within each educational tier.

The survey comprised demographic questions, AI integration questions, and professional development questions. Three question formats were employed: binary closed-ended (e.g., 'Do you use AI tools?': Yes/No), multiple-choice for demographics and usage patterns, and open-ended questions capturing qualitative insights. A four-point Likert scale measured training likelihood (Very Likely/Likely/Unlikely/Very Unlikely), eliminating neutral options to encourage directional responses. A six-point frequency scale assessed usage patterns (Daily to Rarely). Appendix A details the specific questions utilised in the survey. Using a mixed-methods format was essential to capture both quantitative patterns and qualitative details, which is critical for examining complex issues such as policy support and digital engagement in educational settings (Johnson and Christensen, 2024).

Sampling and Participants

The target population comprised educators across primary schools, secondary schools, and further education colleges in Wales. Survey distribution occurred between September 2024 and March 2025 via direct emails, social media and regional consortia. Twenty-five responses represented North Wales (Gwynedd, Conwy), Mid Wales (Ceredigion, Powys), South Wales (Cardiff, Swansea, Newport), and West Wales (Carmarthenshire, Pembrokeshire). Modest response rates likely reflected: Curriculum for Wales implementation demands, educator uncertainty about AI experience adequacy, documented survey fatigue during curricular reform, and absence of institutional endorsement. Despite $n=25$, diverse profiles (roles, subjects, regions, educational levels) provide valuable exploratory insights into emerging AI integration patterns.

Data Analysis

Given $n=25$, quantitative analysis focused on descriptive statistics rather than inferential testing, as statistical significance testing would lack sufficient power.

Purposive sampling prioritised perspective diversity over representativeness, making population inferences inappropriate.

Qualitative data underwent thematic analysis following Braun and Clarke (2006): familiarization through repeated reading, initial coding identifying meaningful segments, theme generation collating codes into broader patterns (policy vacuum, ad hoc implementation, resource disparities), theme review ensuring coherence, theme definition, and reporting with illustrative quotations. TAM and CHAT informed coding while remaining open to emergent themes (ALN contexts, three implementation approaches). Mixed-methods integration followed convergent parallel design: quantitative patterns provided scope while qualitative analysis delivered depth, with findings integrated during interpretation to balance breadth and nuanced understanding appropriate for exploratory research on emerging AI integration.

Results

Current State of AI Policy and Implementation

Analysis of survey responses reveals significant gaps in institutional approaches to AI integration across Welsh schools. The data indicates varied levels of policy development and implementation, with most schools operating without formal AI policies or guidelines. Survey data confirmed this policy gap: twenty-one respondents (84 per cent) indicated their institutions lacked formal AI policies, with only four (16 per cent) reporting existing frameworks.

The survey responses indicate three emerging approaches to AI management in schools. Schools adopting restrictive approaches have implemented prohibitive policies, primarily blocking access to AI tools. As evidenced in one teacher's response: 'some sites are blocked in the school if that is a policy. We generally don't encourage the use but they do it anyway'. This approach appears to stem from concerns about academic integrity and appropriate use, though teachers note that students often find ways around such restrictions.

In contrast, many institutions demonstrate ad hoc implementation patterns where individual teachers make autonomous decisions about AI use. One respondent described this informal approach: 'we are just exchanging ideas most of

the time if someone finds something useful, but we don't have a budget for it or training or anything'. This pattern of implementation suggests a lack of institutional strategy, leading to inconsistent student experiences and potential inequities in access to AI-enhanced learning opportunities.

A third approach involves emerging structured frameworks, where schools are beginning to develop more systematic approaches, often aligned with existing educational frameworks. As one computing teacher noted, they 'follow the DCF as much as we can'. However, even in these cases, implementation remains in early stages, with teachers noting: 'Would be useful to know what tools are best to use for what and what free tools are, our school is also blocking AI sites. We haven't received any training or support on it, I don't think we have a budget either.'

These varying approaches to AI management appear to be creating significant disparities in student access to AI-enhanced learning opportunities. The implementation often varies not just between schools but within individual institutions. As one teacher observed: 'Certain colleagues use it lots, while others are very reluctant so it's hard to tell, definitely not unique, but we don't have a strategy'. This internal variation suggests that even where AI tools are available, their use often depends more on individual teacher initiative than institutional strategy.

Implementation Patterns and Subject Variations

The survey revealed that teachers are applying AI tools across several key areas of educational practice. The survey revealed that fourteen respondents (56 per cent) used AI tools while eleven (44 per cent) did not. In direct classroom instruction, 70 per cent of the surveyed educators use AI to enhance their teaching methods, providing personalised learning experiences and real-time feedback to students. Resource creation represents another significant application area with 71 per cent of AI users surveyed adopting this approach, where educators use AI to develop teaching materials, such as lesson plans, quizzes, and interactive content, which can save time and improve the quality of educational resources. Teachers also employ AI for student engagement activities, creating interactive learning experiences that help maintain student interest and motivation. Assessment preparation has emerged as a popular application, with educators using AI to generate and grade assessments, providing immediate feedback and reducing administrative burden. Additionally, AI supports various administrative tasks,

including attendance tracking and report generation, allowing teachers to focus more on core teaching activities.

These examples indicate that while AI is being used in various aspects of teaching, its application is more prevalent in direct instruction and resource creation. This aligns with the broader trend of using AI to enhance teaching efficiency and effectiveness. The survey also identified differences within specific subjects, highlighting both the unique applications and challenges faced by teachers in different disciplines.

ICT-focused departments generally reported more systematic integration approaches. One computing teacher described their use of AI for 'getting ideas for assessment and content, activities, drafting reports, generating images with pupils or asking them to work through ideas with chatbots'. This indicates a higher level of comfort and familiarity with AI tools, likely due to the nature of the subject and the existing digital competencies within these departments. Language teachers reported distinct challenges in their subject area, with one noting using AI specifically to 'help students learn in a more personalised way', though expressing concerns about finding appropriate tools. This highlights the potential for AI to support personalised learning in language education but also underscores the need for better resources and training to effectively integrate these tools.

Mathematics teachers focused primarily on assessment and practice activities, with one reporting using AI 'to generate topics or answers for quizzes'. This suggests that AI is being leveraged to enhance traditional teaching methods, particularly in creating and grading assessments, which can save time and provide more immediate feedback to students. In arts and design contexts, AI tools are being used to enhance creativity and innovation, with teachers reporting using AI for generating design ideas, creating digital art, and even composing music. One art teacher mentioned, 'AI helps students explore new creative possibilities and push the boundaries of traditional art forms'.

The survey revealed variations in AI adoption and implementation between departments, even within the same institutions. Computing and IT departments generally reported more systematic adoption, while other subjects showed varying levels of engagement. One computing teacher provided insight into generational factors affecting adoption: 'most staff are using it and incorporating it, but we are lucky as a larger group retired two years ago and our new staff are all fairly young and open to tech, this is not very typical of other schools'.

The data suggests three distinct patterns of departmental engagement. Tech-forward departments, typically Computing and IT, show systematic integration and regular use, benefiting from higher levels of digital literacy and often having more resources dedicated to technology integration. Selective adopters use AI for specific purposes, such as language learning or mathematics practice, strategically employing these tools to enhance certain areas rather than fully integrating AI into all aspects of their teaching. Limited users demonstrate minimal AI integration, often citing resource or training barriers that result in missed opportunities for enhancing teaching and learning through AI.

When working with learners with additional learning needs (ALN), educators have observed significant benefits from integrating AI technologies. One ALN teacher highlighted a particularly compelling example:

An example of the use within my classroom of ALN pupils is we have a pupil whose spoken vocabulary and understanding is immense, however their ability to read and write is very low. Using ChatGPT they are able to create wonderful stories using their imagination as a base and have those stories read to them. Enhancing their vocabulary and completely engaging the pupil as the story is written solely on what they entered. The example for this specific pupil was that they would enter something such as 'a story about Severus Snape from Harry Potter, Scar from Lion King and Anakin Skywalker from Star Wars all together in a Lego universe'. The AI Generator would then turn that into a two-page story which the pupil would be entirely focussed on as they felt they created themselves (which they had with the assistance of AI) and are engrossed as it's on the topics they are interested in, helping pupils engage with their reading and source materials to understand and be able to utilise them more efficiently.

Despite the varied usage patterns, teachers across different subjects reported common challenges, including the lack of training, inadequate resources, and concerns about the reliability of AI tools. Addressing these challenges through targeted professional development and resource support will be crucial for realising the full potential of AI in Welsh education.

Professional Development Needs and Resource Challenges

The successful integration of AI in education hinges on comprehensive and sustained professional development that addresses technical, pedagogical, and contextual factors. The survey revealed significant disparities in access to

professional development opportunities and resources across Welsh schools, highlighting several key areas of need. Resource inadequacy was pervasive with twenty-two respondents (88 per cent) reporting a lack of adequate resources spanning training, time, devices, technical support, and budget. Despite these gaps, interest in professional development was strong: twelve (48 per cent) were likely and five (20 percent) very likely to attend training, demonstrating substantial appetite for support even in resource-constrained contexts.

Teachers consistently reported a lack of systematic training support, with many relying on self-teaching or informal peer exchanges. In the area of basic AI skills, most educators reported limited or no training, leading to a reliance on self-teaching. This gap in foundational knowledge can hinder effective AI integration, as without a solid understanding of AI fundamentals, teachers may struggle to utilise these tools effectively, potentially missing out on opportunities to enhance their teaching practices and student learning outcomes.

Training on integration strategies remains ad hoc and informal, resulting in inconsistent application across different subjects and schools. The majority of respondents indicated a preference for practical, hands-on training formats, suggesting a strong demand for structured training programmes that provide clear, actionable strategies for incorporating AI into the classroom. Assessment approaches represent another area where minimal training has been provided, raising concerns about maintaining assessment integrity and effectively leveraging AI for formative and summative assessments. Teachers need guidance on how to use AI to create fair, reliable, and valid assessments that accurately reflect student learning.

The availability of technical support varies widely, creating barriers to implementation for educators who lack the necessary technical expertise. Without adequate technical support, teachers may encounter difficulties in troubleshooting and maintaining AI tools, which can disrupt their teaching and reduce the effectiveness of AI integration. This disparity often reflects broader patterns of educational inequality, with under-resourced schools facing greater challenges in accessing professional development.

One respondent explained: 'We haven't really had training, but everyone is using it, no budget or no support, schools are not very keen on using it more widely yet'. This gap between expectation and support appears particularly acute in schools attempting to implement AI tools systematically. The lack of formal training can lead to inconsistent and ineffective use of AI, exacerbating existing

inequalities in educational outcomes. Specific training requests focused on practical implementation strategies, with teachers seeking ‘training on school-level integration or creating policies and guidelines for students specific software with clear learning outcomes and ways of integration’. Teachers are looking for concrete, actionable guidance on how to use AI tools effectively in their classrooms, as well as support in developing school-wide policies and practices for AI integration.

Resource allocation emerged as a significant barrier to effective AI implementation. The survey revealed that a number of respondents do not have adequate resources to use AI effectively. This lack of financial support appears to be creating a two-tier system where some teachers purchase their own resources while others go without. One teacher noted: ‘We don’t have a budget for it or training or anything’. This lack of financial support can lead to significant disparities in AI adoption and usage, with some educators able to integrate AI tools effectively while others struggle with basic implementation. The unequal distribution of resources can result in a digital divide, where students in well-resourced schools benefit from advanced AI tools, while those in under-resourced schools are left behind.

Assessment and Academic Integrity

The integration of AI in assessment practices presents both opportunities and challenges. The survey revealed significant concerns among educators regarding the impact of AI on assessment integrity and the effectiveness of current policies and practices. One of the primary concerns voiced by teachers was the difficulty in detecting AI use by students. As one teacher noted, they were ‘unable to detect students who have used AI’, which underscores the challenges in maintaining academic integrity. This issue is compounded by the lack of effective tools to identify AI-generated work, making it difficult for educators to ensure that students’ submissions are their own.

The policy vacuum extended to assessment: twenty-one respondents (84 per cent) indicated institutions lacked policies on student AI use. Teachers expressed significant concerns about maintaining academic integrity in the face of increasing AI use. The availability of AI tools that can generate high-quality content with minimal effort poses a significant threat to traditional assessment methods. One

teacher specifically pointed out the temptation for students to use AI to complete homework and coursework: 'Learners may be tempted to complete homework/coursework using AI and there are limited free tools to help tackle this'.

The survey also revealed a notable gap in institutional policies regarding AI use in assessments. The majority of respondents indicated that their institutions do not have clear guidelines on how to manage AI use in academic work. One teacher remarked, 'No, although this has already caused issues with GCSE coursework', indicating that many schools lack clear guidelines on how to manage AI use in academic work. This policy vacuum leaves teachers without the necessary support to address the challenges posed by AI, leading to inconsistencies in how AI-related issues are handled across different schools and departments.

To address these challenges, it is crucial to develop clear and comprehensive policies on AI use in assessments. These policies should provide guidance on how to detect and manage AI-generated work, ensuring that assessments accurately reflect student learning. One teacher mentioned, 'We have some guidelines for students on using chat bots for essays and things, with a blanket don't use it, if that's a policy?' Additionally, policies should address the ethical implications of AI use, promoting fair and equitable assessment practices. Another teacher noted,

We follow the UNESCO guidance for teachers atmo that just came out not long ago, as well as the Department for Education (as WG doesn't have their own yet). Generally, we are very careful with the introduction, and we will follow things as they happen. Education needs time to catch up, but like I said, it is too rapidly evolving.

Since the data collection, the Welsh Government has published some guidelines for schools to use (Welsh Government, 2025). However, at this stage they remain as guidelines and there continues to be discrepancies in the approaches taken by schools. By developing innovative assessment frameworks that leverage AI capabilities while maintaining academic integrity, educators can enhance the assessment process and support student learning. However, this requires careful consideration of ethical implications and the unique challenges of bilingual and culturally diverse educational contexts.

Discussion

The findings from this study reveal significant insights into the current state of AI integration in Welsh education, highlighting both opportunities and challenges. Through the lens of the Technology Acceptance Model (TAM) and Cultural-Historical Activity Theory (CHAT), we can better understand the factors influencing AI adoption and the systemic issues that need to be addressed.

Technology Acceptance and Implementation

The survey data indicates that perceived usefulness and ease of use are critical factors influencing AI adoption among educators (Venkatesh and Bala, 2008). Teachers who regularly use AI tools report high perceived usefulness, particularly for generating lesson content and reducing administrative workload. The computing teacher's use of AI for 'getting ideas for assessment and content, activities, drafting reports' demonstrates high perceived usefulness across multiple functions. This aligns with research by Chiu et al. (2023), who identified thirteen distinct roles that AI plays across educational domains, from providing adaptive teaching strategies to supporting assessment processes.

However, perceived usefulness varies significantly across subjects, with language teachers recognising potential but expressing concerns about finding appropriate tools. This variation reflects the contextual challenges highlighted by Holmes et al. (2019), who emphasise that AI's impact on education must be carefully considered within specific cultural and linguistic contexts, particularly relevant in Wales's bilingual educational environment.

Perceived ease of use emerges as a significant barrier, often compromised by institutional barriers including lack of training, inadequate resources, and restrictive policies. The widespread reliance on 'self-teaching or informal peer exchanges' indicates that many teachers find AI tools difficult to use effectively without adequate support. This finding resonates with Cukurova et al.'s (2020) research on professional development needs, which emphasised the importance of creating a 'golden triangle' of evidence-informed education technology connecting researchers, practitioners and developers.

The policy vacuum identified in our study exacerbates these challenges, aligning with Luckin et al.'s (2022) research on technology policy gaps in education. Holstein

et al. (2019) similarly found that while a significant number of schools report some level of AI implementation, only a minority have developed comprehensive policies governing its use, creating the disparity between AI adoption and governance evident in our findings.

The three implementation approaches (restrictive, ad hoc, emerging structured) represent different configurations of external variables affecting technology acceptance. The finding that 88 per cent of respondents lack adequate resources highlights how resource constraints function as external variables negatively impacting perceived ease of use, confirming TAM's predictions about adoption barriers while reflecting broader patterns of educational inequality identified by Ahmad et al. (2023).

Systemic Analysis Through CHAT

CHAT's systemic perspective provides deeper insights into the complex interactions revealed in the study's findings (Engeström, 2015). The three implementation approaches represent different activity system configurations, each creating distinct contradiction patterns that reflect broader tensions in educational technology integration identified by Cuban et al. (2001) and Buckingham Shum et al. (2019).

Restrictive systems demonstrate primary contradictions within tools components, where AI technologies are simultaneously available online but blocked institutionally, creating what Engeström (2015) terms 'double binds'. Secondary contradictions emerge between tools and rules, where AI capabilities conflict with existing assessment policies. The teacher concern about being 'unable to detect students who have used AI' illustrates these contradictions, where new tools challenge established evaluation practices. This aligns with research by Jovanović and Campbell (2022) on the ethical implications of AI use in educational contexts.

Ad hoc systems show contradictions in division of labour, where individual teachers make autonomous decisions without institutional guidance, reflecting what CHAT identifies as contradictions between individual agency and collective responsibility. This resonates with findings from Holstein et al. (2018) and VanLehn et al. (2021) on the importance of systematic approaches to AI implementation that consider both technological capabilities and pedagogical needs.

Departmental variations reveal quaternary contradictions between different activity systems within institutions, with computing departments' systematic

approaches conflicting with other departments' limited integration. This pattern reflects the layered competency requirements identified by Holstein et al. (2019) and Pham and Sampson (2022), where effective AI integration requires not only technical skills but also sophisticated understanding of pedagogical implications and ethical considerations. Computing/IT systematic integration versus sporadic adoption elsewhere reflects disciplinary epistemologies. Shulman's (1986) concept of pedagogical content knowledge helps explain this variation: Computing educators' disciplinary knowledge normalises AI as a cognitive partner, while other subjects experience epistemic tensions when AI challenges established knowledge construction methods. Winch's (2017) analysis of teachers' know-how suggests successful technology integration requires more than technical skills – it demands understanding how tools align with or disrupt disciplinary ways of knowing. The Curriculum for Wales' Areas of Learning and Experience create opportunities for multidisciplinary AI integration, but realising this potential requires addressing epistemological questions alongside practical implementation concerns.

CHAT's cultural mediation perspective illuminates Welsh education's particular challenges. The absence of Welsh-language AI tools represents cultural contradictions between technological innovation and linguistic preservation goals, echoing research by Cukurova et al. (2020) and Luckin and Cukurova (2019) on the importance of culturally responsive technology design. Professional development challenges suggest current approaches fail to support the collective learning processes necessary for systemic transformation, requiring what Engeström (2015) terms 'expansive learning'.

Assessment Practices and Academic Integrity

The integration of AI in assessment practices presents both opportunities and challenges that reflect broader concerns in the literature. Teachers consistently expressed concerns about maintaining academic integrity, particularly in detecting AI-generated work. This issue is compounded by the absence of clear institutional policies on AI use in assessments, with all respondents indicating that their institutions do not have such guidelines.

The lack of effective tools to identify AI use by students reflects broader challenges identified by Holmes et al. (2019) and Ahmad et al. (2023) regarding ethical AI implementation in education. The teacher observation that 'Learners may be tempted to complete homework/coursework using AI and there are limited free

tools to help tackle this' highlights the practical challenges facing educators, particularly in resource-constrained environments. This pattern aligns with research by Akgun and Greenhow (2022) and Zeide (2019) on the ethical implications of AI use in educational contexts. The policy vacuum creates what Chiu et al. (2023) identify as challenges in developing AI systems that can effectively support diverse learning contexts while maintaining educational integrity. Assessment challenges in AI-augmented contexts reflect tensions between traditional assessment paradigms and AI-enabled collaborative knowledge production. The 84 per cent policy gap suggests institutions struggle balancing tool utility against integrity concerns. Black and Wiliam's (1998) foundational work on formative assessment suggests evaluation should support learning rather than merely measure it, a principle particularly relevant when AI tools become learning partners. Recent scholarship on AI and assessment (Rudolph et al., 2023) advocates for evaluation approaches that assess distinctly human capabilities: critical evaluation of AI outputs, ethical judgment in AI application, and creative synthesis beyond AI capabilities. The Curriculum for Wales's emphasis on digital competence positions Welsh education to pioneer assessment models for AI-augmented learning while maintaining academic integrity.

CHAT helps us understand these challenges as quaternary contradictions between traditional assessment practices and emerging AI-enhanced education (Engeström, 2015). The tension between established evaluation methods and new technological capabilities requires coordinated policy creation that reflects educational goals and institutional principles. Developing innovative assessment frameworks that leverage AI capabilities while maintaining academic integrity is crucial, requiring approaches that address both technological possibilities and pedagogical principles (Baidoo-Anu and Ansah, 2023).

Professional Development and Cultural Context

The lack of systematic professional development emerged as a significant barrier to effective AI integration, reflecting broader patterns identified in the literature. Teachers reported minimal support for developing AI integration skills, aligning with research by Cukurova et al. (2020) on the importance of collaborative approaches to professional development that engage all stakeholders in the AI implementation process.

This gap between need and provision reflects broader systemic challenges in Welsh education, particularly in the context of bilingual and culturally distinct educational environments. The finding that Welsh-medium respondents indicated higher confidence levels across AI applications, especially in film and digital media, suggests the importance of cultural and linguistic context in technology adoption, as emphasised by Holmes et al. (2019) and Luckin and Cukurova (2019).

The reliance on informal peer exchanges and self-teaching reflects what Holstein et al. (2018) and VanLehn (2011) identify as insufficient approaches to developing complex competencies required for effective AI integration. The research advocates for ongoing, job-embedded professional learning opportunities that allow educators to develop expertise over time whilst receiving continuous support and feedback, rather than one-off training sessions.

Conclusion

This study contributes to understanding AI integration in bilingual and culturally distinct education systems through TAM and CHAT theoretical lenses. The findings reveal complex interactions between individual adoption factors and systemic cultural conditions that shape AI implementation in Welsh schools.

Our analysis through TAM reveals how perceived usefulness and ease of use significantly influence teachers' engagement with AI technologies (Venkatesh and Bala, 2008). The predominance of ad hoc implementation approaches suggests that while teachers recognise AI's potential value, institutional barriers significantly impact adoption. CHAT's systematic perspective illuminates how historical and cultural factors shape current AI implementation patterns, with identified tensions representing quaternary contradictions between traditional assessment practices and emerging AI technologies (Engeström, 2015).

Based on our findings, we propose several recommendations:

- **Policy Development:** The Welsh Government should develop comprehensive AI policies that balance enabling innovation while ensuring ethical practice, specifically addressing assessment integrity concerns while supporting pedagogical innovation (Luckin et al., 2022).

- Professional Development: Schools need structured professional development programmes that address both technical skills and pedagogical integration, acknowledging departmental variations and specific ALN considerations (Holstein et al., 2019).
- Assessment Frameworks: New assessment frameworks should acknowledge AI's presence in education while maintaining academic integrity, providing clear guidance for managing AI use in academic work
- Resource Allocation: Strategic resource allocation should address identified disparities in AI access and support across schools, with particular attention to adequate technical infrastructure and support staff (Holstein et al., 2019).

As Welsh education continues to embrace digital transformation, a contextually relevant approach to AI integration will be essential for ensuring that technology adoption aligns with linguistic and cultural preservation principles. This study's insights emphasise the importance of developing localised policies and resources that advance digital competence while upholding Welsh educational identity. The complexity revealed in our findings suggests that successful AI integration requires careful attention to both individual adoption factors and systemic cultural conditions, balancing technological innovation with educational values to enhance rather than compromise the distinctive character of Welsh education.

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APPENDIX A- Survey Instrument

1. In what role do you work?

Response type: Multiple choice (single selection)

Options: Teaching Assistant, Teacher, Subject specialist, IT coordinator or technician, Librarian, Head teacher or Deputy, ALN/SEN teacher, Curriculum developer, Other

2. What level of learners do you work with?

Response type: Multiple choice (select all that apply)

Options: Early years (3–7), Primary (7–11), Secondary (11–16), Further education (16–19)

3. Subject(s) taught, if applicable

Response type: Multiple choice (select all that apply)

Options: I teach early years/primary school level learners, Mathematics, Science, English, Welsh, Foreign languages (including BSL), PE, RVE, History, Geography, Music, Drama, Business, PSHE or mental health, Psychology, Art and design, Film and Digital Media, Dance, Design and Technology, Computing and Information Technology

4. Type of school

Response type: Multiple choice (single selection)

Options: Government-maintained, Privately funded, Religious/church-maintained, Other

5. Is your school a special school?

Response type: Binary (Yes/No)

6. Years of teaching experience

Response type: Multiple choice (single selection)

Options: less than 3 years, 3 to 5 years, 5 to 10 years, 10 to 15 years, 15 to 25 years, over 25 years

7. Gender

Response type: Multiple choice (single selection)

Options: Male, Female, Prefer not to say, Other

8. Age

Response type: Multiple choice (single selection)

Options: 18–25, 26–34, 35–45, 45–60, over 60

9. What opportunities do you see in using GenAI for education and in teaching?

Response type: Open-ended text

10. What do you think are the challenges of using GenAI in education and teaching?

Response type: Open-ended text

11. Do you use any generative AI tools in your work?

Response type: Binary (Yes/No)

12. What specific tools or software do you use? List as many as you like!

Response type: Open-ended text

13. What is the purpose of the integration GenAI in your work or teaching?

Response type: Multiple choice (select all that apply)

Options: Teaching, Student engagement, Content creation, Assessments, Lesson planning, Administrative work, Other

14. How frequently do you use GenAI in your teaching practices?

Response type: 6-point scale (single selection)

Options: Daily, Weekly, 2–3 times a month, Monthly, Once a term, Rarely

15. Do you have adequate resources to use GenAI effectively in your work? Please, elaborate on your answer including training, time, devices/technology, technical support, budget etc.

Response type: Open-ended text

16. What are your particular challenges when working with GenAI?

Response type: Open-ended text

17. Is your integration of GenAI in your work unique to you, or part of a wider school-wide strategy? Please, elaborate.

Response type: Open-ended text

18. Does your class/institution have a policy on the use of generative AI by students? If yes, please elaborate!

Response type: Open-ended text

19. Are there frameworks/resources/discussions available to guide students in the ethical and productive usage of generative AI in their studies/work?

Response type: Binary (Yes/No)

20. If yes, what are these, and are these unique to your practice, or a part of a school-wide initiative?

Response type: Open-ended text

21. What training or support would you like to see put in place on GenAI?

Response type: Open-ended text

22. How likely would you be to attend training sessions on generative AI?

Response type: 4-point Likert scale (single selection)

Options: Very Likely, Likely, Unlikely, Very Unlikely

23. What kind of training are you most likely to attend? In person trainings may be available in schools or in one of our partner university's campus depending demand.

Response type: Multiple choice (select all that apply)

Options: In-person practical training or workshop, In-person demonstration and discussion, Online practical training or workshop, Online demonstration and discussion, Other