



AIRED
AI reshapes education

WP4: ETHICAL AND INCLUSIVE USE OF AI

D4.1. Mapping AI Risks in Education and Training: Insights from Ireland, Spain, and France



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Mapping AI Risks in Education and Training: Insights from Ireland, Spain, and France

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1. Executive Summary

The AIRED: Artificial Intelligence Reshapes Education project (2024-1-FR01-KA220-VET-000256094) explores the ethical and inclusive use of artificial intelligence (AI) in education and training. The current report, developed as part of Work Package 4, utilises national desk research, case studies and survey results to outline key AI risks in education, training and professional settings in Ireland, Spain, and France.

This mapping exercise includes common themes and unique challenges faced in each country. More specifically, the key risks identified through national research and outlined in this report include: bias and discrimination, over-reliance on AI, digital inequity, job displacement, emotional dependency, privacy and data protection, limited resources and infrastructure, academic integrity and plagiarism, lack of educator expertise, ethical concerns, inaccurate outputs, algorithmic transparency, linguistic inequity and cultural bias.

Considering the risks identified, the report identifies key recommendations for the responsible integration of AI in education, drawing on best practices from Ireland, Spain, and France. While AI has the potential to enhance teaching and learning, its effective use requires clear ethical guidelines, investment in digital infrastructure, and comprehensive training for educators. Governments should prioritise policies that ensure data privacy, transparency, and fairness, while higher education institutions and schools must implement structured approaches to AI literacy and usage. This report not only highlights these recommendations, but also forms the foundation for the next project deliverable, which will provide a more detailed examination of best practices, practical examples, and solutions for ethical AI use in education.

2. Introduction and Project Context

The rapid and massive deployment of artificial intelligence tools is profoundly challenging professional practices in education and training. The AIRED: Artificial Intelligence Reshapes Education (2024-1-FR01-KA220-VET-000256094) project is dedicated to supporting educators and trainers in navigating the rapid integration of artificial intelligence (AI) in education. By bringing together higher education institutions, researchers, experts in educational inclusion, and digital training specialists, the project aims to provide professionals with the necessary skills, methods, and ethical guidelines for the responsible and inclusive use of AI.

As part of this initiative, Work Package 4 (WP4): Ethical and Inclusive Use of AI focuses on identifying and addressing the key risks associated with AI tools in education and training. Each project partner was tasked with conducting desk research on AI-related risks in education and training within their respective countries, consulting relevant case studies, and distributing surveys to educators to gather insights on real-world experiences and concerns. The data collected from these efforts has been systematically reviewed and consolidated into the current report to highlight overlapping and unique challenges and risks associated with integrating AI in education and training.

Led by ICEP Europe, this risk analysis serves as a foundation for developing best-practice guidelines and training resources that will support educators in integrating AI responsibly. The findings presented here will inform the broader AIRED training module, ensuring that professionals across Europe can engage with AI technologies in an informed, ethical, and effective manner. By bringing together diverse perspectives, the report also aims to inform policy discussions and support the development of ethical and inclusive AI practices in education.

3. National Perspectives on AI Risks

3.1 Desk Research

A variety of well-documented risks affect all users of AI, no matter their geographical location or profession. Bias and discrimination arise as AI models are trained on human-generated data, which can perpetuate stereotypes and inequities across various sectors (Hannah et al., 2024). Over-reliance on AI tools threatens critical thinking and creativity, as people may depend on machines for problem-solving rather than engaging in their own cognitive processes (George et al., 2024). Privacy concerns are heightened by the collection and manipulation of personal data, with AI potentially influencing emotional responses and behaviours (Kim et al., 2025). Additional risks include the potential for inaccurate information, excessive energy consumption and the dominance of private companies whose interests may not align with the public good. Furthermore, anthropomorphism in AI interactions could lead to emotional dependencies (Akbulut et al., 2024), which could have psychological repercussions, particularly for vulnerable populations. These broad, well-documented risks form the backdrop against which national contexts must be examined, as the specific challenges and implications of AI adoption can vary depending on local educational systems, policies, and professional practices.

The following country-specific findings are drawn from national reports on the risks of AI conducted by the AIRE project partners across Ireland, Spain and France, focusing on its impact on education, training, and professional practice. While there are similarities in the concerns surrounding AI's integration, each country faces unique risks shaped by its educational systems, training structures, and professional practices. The reports highlight issues such as ethical considerations, data privacy, teacher training, and the potential for AI to alter professional roles, amongst others. These national perspectives provide crucial insights into the challenges and opportunities of AI adoption, emphasising the need for tailored approaches to ensure its responsible and equitable use in education and training.

Ireland

Artificial Intelligence tools are increasingly used in Irish education, including chatbots, course creation tools, and presentations, offering opportunities to streamline workloads,

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enhance accessibility, and personalise learning. However, these tools raise significant concerns, such as dependence on technology, inequities across schools, data privacy issues, and a lack of transparency and accountability (Irfan et al., 2023a). The rapid evolution of AI makes it difficult for educators to integrate these tools effectively while ensuring ethical use. Moreover, there are fears that AI could displace jobs and alter skill requirements in many sectors, including education (Bukartaite & Hooper, 2023). While AI is unlikely to eliminate jobs entirely, it will transform the work of educators as we know it today (Bukartaite & Hooper, 2023). Addressing these concerns requires a focus on digital literacy, critical thinking, lifelong learning, and clear ethical guidelines in Irish education.

Ireland is recognised as a global AI leader, with numerous companies and research centres established in recent years (Becker, 2017). The National Strategy for Higher Education acknowledges AI's potential to tailor learning and improve teaching (Irfan et al., 2023a). However, many Irish teachers are not yet experts in AI or feel confident using it in their teaching. A recent study found that 55% of Irish teachers have used AI tools, but 53% of them do not fully understand how the algorithms work, limiting their effectiveness (Daskalaki et al., 2024). AI tools are often used to support teacher training (72%) and improve lesson accessibility (54%) (Daskalaki et al., 2024). Without proper training and guidelines, AI's integration may lead to reliance on inaccurate outputs, data privacy issues, and academic integrity concerns.



A recent study found that 55% of Irish teachers have used AI tools, but 53% of them do not fully understand how the algorithms work, limiting their effectiveness (Daskalaki et al., 2024).

Educators in Ireland share concerns about AI's risks, including students trusting AI-generated information without critical thinking, potentially accepting inaccurate or misleading content (Daskalaki et al., 2024). AI tools, like ChatGPT, are popular among students for essay writing (Byrne & Mooney, 2023), but educators worry about over-reliance on these tools, which may result in generic information, unrelated citations, and a loss of research skills (Morris & Connolly, 2023). There are also ethical concerns regarding biased, incorrect, or harmful material generated by AI (Daskalaki et al., 2024).

The use of generative AI (GenAI) in lesson planning, assessment, and feedback is divisive. Primary school teachers see benefits in efficiency but worry about long-term implications, such as implicit biases in learning content and increased educational inequity (Hsu et al., 2024). Over-reliance on GenAI may exacerbate societally entrenched biases, especially since ChatGPT is widely used in Irish education (Hsu et al., 2024). Additionally, AI assistants (AIAs) pose privacy risks, collecting extensive data on students' behaviour and personal information (Cunneen et al., 2020). Without proper safeguards, this data could be misused,

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particularly for minors and vulnerable populations. Ireland's adherence to GDPR is critical but challenging due to complex AI data flows.

It is also important to acknowledge that there are challenges in appropriately adopting new technologies like AI in Irish classrooms due to limited resources and a cultural preference for traditional teaching methods (Dooly et al., 2024), which suggests further risks of inappropriate and uncontrolled use. In Ireland, most teaching occurs in-person, with online learning being more common for adult and lifelong learning rather than mainstream education (Dooly et al., 2024). Although 91% of secondary school teachers surveyed express an interest in learning more about how to adopt AI-assisted technologies into their work, they expressed feeling held back by insufficient resources, including lack of time to learn and reflect on new technologies and insufficient technical support in classrooms (Association of Secondary Teachers in Ireland, 2024). This is concerning, as lack of support in integrating AI in the classroom implies a lack of knowledge and guidance on risks and challenges associated with the use of this type of technology. To move forward, a focus on lifelong learning and innovative teaching methods are needed to help educators embrace new technology in their work, with clear guidelines in place to mitigate risks and ensure these methods can be seamlessly integrated into their existing workload.

Ireland's dual-language education system also faces unique challenges, particularly in Irish-language schools due to limited data availability for training AI tools in Irish (Wieczorek and Costello, 2024). AI tools require large amounts of training data, which is harder to collect for minority languages like Irish, leading to errors and disparities in AI quality. The cost of developing Irish-language AI tools may not be justifiable due to the small user base, raising concerns about unequal access in schools (Wieczorek and Costello, 2024). This



AI-driven educational tools may reinforce linguistic inequalities, limiting the availability of high-quality AI-assisted learning resources for Irish-speaking students and educators.

raises the risk that AI-driven educational tools may reinforce linguistic inequalities, limiting the availability of high-quality AI-assisted learning resources for Irish-speaking students and educators and potentially undermining efforts to promote and preserve the language.

In conclusion, integrating AI in Irish education presents risks, including over-reliance on technology, lack of educator expertise, potential biases, privacy concerns, and inequities in access. These risks must be managed through proper training, ethical guidelines, and safeguards to ensure effective and equitable AI use in education.

Spain

AI tools are becoming increasingly more accessible across education sectors in Spain. The Basque Country, an autonomous community in Spain, is characterised by its decentralised education system, where both the national government and regional authorities share educational competencies. In 1980, the Basque Country gained control over its educational system, which has since focused on developing a skilled workforce through Vocational Education and Training (VET). VET in the Basque Country is regarded as a European model, largely due to the efforts of former Vice Minister Jorge Arévalo (Tknika: Basque VET Applied Research Centre, 2017). For the 2024-2025 academic year, the Basque Government launched a programme aimed at assisting students in implementing AI in their work and training teachers in how to use and monitor AI tools in the classroom (Guillenea, 2024). However, although current efforts in the integration of AI in education are promising, several concerns remain.

Despite a positive attitude towards AI, only about 25% of teachers in Spain have incorporated AI tools into their practice, according to a study by University of the Basque Country researchers (Galindo-Domínguez, 2024). The COVID-19 pandemic exacerbated gaps in digital skills, as teachers were forced to adapt to online learning. Although the Basque Government has introduced a certification process for teachers to improve their digital skills, 70% of Spanish teachers have learned to use AI tools independently, posing a risk of leaving educators behind in the AI integration process, potentially affecting students' opportunities.

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Additionally, the challenge lies in the potential bias within AI algorithms and their impact on student-teacher relationships. Currently, the predominant form of AI is machine learning (ML), where software learns from examples. Therefore, the success of AI, whether it is ML or generative AI, heavily depends on the quality of the training data provided. Ensuring high-quality data falls under the responsibility of Chief Data Officers (CDOs), data engineers, and knowledge curators - roles that are not commonly found in educational institutions (Davenport & Tiwari, 2024). This becomes critical when considering using AI for tasks like grading assignments or exams. Without experts who can identify biases in algorithms trained on historical grading patterns (Ferman & Fontes, 2022), AI models could inadvertently perpetuate unfair grading practices, particularly affecting underrepresented ethnic or gender groups.

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There is also a great concern among teachers for the ethical usage of other peoples' work. A Basque University study has investigated plagiarism among 507 Spanish university students and has found that there is a correlation between the frequency of using ChatGPT for academic purposes and plagiarism but has not found causality on it (Galindo-Domínguez et al., 2025). More specifically, if a student is part of a cheating culture or lacks motivation, they are more likely to engage in plagiarism, regardless of how often they use ChatGPT. This may put at ease the concerns among college professors but may not be the case in earlier stages of education, where students find it too tempting to borrow from ChatGPT responses and introduce them immediately in their work.

Since AI systems depend heavily on data collection, ensuring the privacy and security of student information is a critical concern in educational settings. These systems may gather various types of personal data, including family background, learning habits, and even emotional responses. In Spain, the Organic Law 3/2018 on Personal Data Protection and the Guarantee of Digital Rights, issued on December 5, 2018, was implemented in compliance with European regulations and later amended in May 2023. The European Union has also emphasised the ethical use of AI tools in education, leading to the publication of the Ethical Guidelines on the Use of Artificial Intelligence and Data in Teaching and Learning for Educators in October 2022. These guidelines were developed as part of Action 6 of the Digital Education Action Plan.

AI can affect traditional standard pedagogical and methodological approaches to the teaching-learning process in Spain. There are risks of over-reliance on technology, both on the part of the teachers/trainers as well as the learners, which could lead to inferior quality and scarcer interactions between teachers and students and among students themselves (Instituto Nacional de Ciberseguridad, 2024). The usage of AI in education should complement the teaching-learning process, not substitute the teacher/trainer or isolate the learner. Critically, researchers across Spain express concerns over the potential of generative AI to inhibit students' learning and skill acquisition, as the use of AI can prevent students from carrying their own research independently and instead relying on the instant responses from AI tools (Díaz-Merry, 2024).

In summary, while AI offers potential benefits for the education system in the Basque Country, its integration presents significant challenges, including digital skill gaps, ethical concerns, privacy issues, and risks to traditional teaching methods. These concerns highlight the need for careful implementation and oversight of AI tools in education.

France

Teachers in France have expressed concerns over AI's potential to dehumanise education, weakening teacher-student relationships and threatening the role of educators (French Government, 2021). National policy emphasises a "co-pilot" approach, wherein AI supports, but does not replace, educators. AI is envisioned as a tool fit for automating tasks such as grading and providing instant feedback, allowing educators more time to focus on mentoring and critical thinking. However, this requires significant teacher training to develop new digital competencies and recognise AI's limitations. France's €700 million investment in AI education underscores the need for widespread AI literacy, structured teacher training, and interdisciplinary programmes to ensure responsible adoption of AI in education (French Government, 2021).

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Collin and Marceau (2021) discussed how AI integration in education raises ethical concerns related to data privacy, decision-making autonomy, and equity. They highlighted that AI-driven tools often rely on large datasets, which can introduce biases and compromise privacy if not managed transparently. Additionally, the development of AI in education is mainly led by private corporations, not educational institutions, leading to a lack of pedagogical expertise in AI design. This raises concerns about fairness and inclusivity, as inadequate representation in design teams can result in biased outcomes. These issues are compounded by persistent inequalities in the French educational system. The 2018 International Program for Learning Assessment (PISA) report revealed that socio-economic

Socio-economic background heavily influences student performance in France, suggesting that AI integration could perpetuate or worsen existing disparities if not carefully managed (Morin, 2019).

background heavily influences student performance in France, suggesting that AI integration could perpetuate or worsen existing disparities if not carefully managed (Morin, 2019). Collin and Marceau (2021) also emphasised the risk of AI diminishing teachers' professional

judgment and students' agency, shifting decision-making power to AI systems. They advocated for incorporating ethical considerations into AI development and ensuring that AI

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supports, rather than replaces, educational roles while integrating critical AI literacy into teacher training programmes.

The 2022 Association Française pour l'Intelligence Artificielle (AFIA) emphasised the importance of explainability, stating that teachers need to understand and trust AI-driven recommendations in order to use them effectively (DNE-TN2, 2024). Without transparent algorithms, teachers cannot integrate AI meaningfully into their practices, creating a challenge for professional expertise.

Bias and equity concerns are especially prominent, as AI models trained on historical data can inadvertently reinforce stereotypes or inequalities (Verger, 2024). An AI tutor may unfairly predict lower success for students from under-resourced areas, perpetuating a cycle of disadvantage. Similarly, adaptive systems might misinterpret slower responses from students with disabilities, offering trivial tasks that degrade the learning experience. These examples highlight the importance of fairness and non-discrimination in AI design. Experts advocate for regular audits and bias mitigation to ensure inclusive outcomes (Verger, 2024).

In conclusion, while AI holds the potential to enhance education by automating tasks and supporting teachers, its integration into the French education system must be approached with caution. Ethical concerns surrounding data privacy, bias, and equity, along with the need for teacher training and transparent AI systems, highlight the importance of careful implementation. Ensuring that AI supports rather than replaces educators, while addressing the risks of perpetuating inequalities, will be crucial for fostering a more inclusive and effective educational environment.

3.2 Case Studies and Examples

Several real-world cases in Ireland, Spain and France demonstrate both the potential benefits and the aforementioned risks of AI in education across various levels. While AI offers opportunities for enhanced learning and efficiency, concerns around ethical use, academic integrity, and policy development remain significant. The following examples highlight how different institutions in the three countries are navigating these complexities.

Ireland

The European Commission has classified AI in education as "high-risk," emphasising the need for ethical guidelines and transparency (European Commission, 2022). In Ireland,

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educational institutions are under increasing pressure to respond to the rapid evolution of AI, frequently updating policies to ensure responsible use (QOI, 2023). While universities have been proactive in adapting, primary and secondary schools face challenges in keeping pace.

AI Policy Development in Higher Education

Irish universities have taken the lead in establishing AI policies and guidelines. The University of Limerick recently revised its policies to emphasise ethical AI use, focusing on data integrity, bias mitigation, and academic transparency (Irfan et al., 2023b). Faculty-specific guidelines and continuous evaluation ensure responsible AI integration while maintaining fairness in assessments.

Similarly, Dublin City University (DCU) has created an AI "sandbox" for staff and students, offering key documentation, government reports, literature reviews, and resources on academic integrity (Dublin City University, 2024). These initiatives help students and faculty navigate AI tools responsibly while staying aligned with evolving academic standards.

Trinity College Dublin, in collaboration with other Irish universities, has also played a key role in AI education. The university's ADAPT Centre conducts research on human-centric AI and has recently launched a programme to help secondary school educators teach students how to critically engage with AI tools (ADAPT, 2024). While higher education institutions are equipping students with AI literacy, there is a notable gap in direct support for primary and secondary school teachers using AI in their own work.

Challenges in Primary and Secondary Education

Unlike universities, many primary and secondary schools struggle to update their policies and resources in response to AI developments. Many schools still rely on outdated Acceptable Usage Policies (AUPs), some of which reference obsolete technologies like floppy disks (Casey, 2024). Limited resources and guidance make it difficult for schools to revise policies, stay informed about AI risks, and implement responsible practices.

The Department of Education has announced plans to release AI guidelines for schools by early 2025. However, responsibility for selecting and implementing AI resources will fall on individual school management boards (Casey, 2024; Murphy, 2024). This decentralised approach has raised concerns, as many schools lack the IT infrastructure and expertise to make informed decisions. Schools in rural and disadvantaged areas are particularly affected, as they often struggle with inadequate digital resources (Scully et al., 2021).

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Additionally, school staff report that insufficient funding and IT support hinder their ability to integrate AI into the curriculum effectively (Hsu et al., 2024). While AI offers opportunities for personalised learning, concerns remain about equity, privacy, and ensuring teachers are adequately supported in using these tools.

Spain

As artificial intelligence becomes increasingly integrated into education, institutions must find ways to address both its opportunities and challenges. Centro de Estudios AEG-Ikastetxea, a vocational and higher education institution in Spain and a partner on the AIRED project, has encountered a range of AI-related issues, from preventing academic dishonesty to enhancing practical training and managing students' over-reliance on AI tools. The following case studies outline how the institution has navigated these challenges.

Case Study 1: Preventing Cheating in Digital Exams

Context and Problem Overview

Centro de Estudios AEG-Ikastetxea has used digital tools for over 20 years, with every classroom equipped with computers for individual student use. In line with sustainability goals, the institution phased out paper-based exams, initially using an intranet system and later transitioning to Google Workspace for Education (GSuite). However, this shift introduced a major challenge - students could easily access online resources during exams, making it difficult to ensure academic integrity.

Solution

To address this issue, the institution implemented ChromEx, an application designed for GSuite that allows for secure, digital test-taking. Later upgraded to Trelson Assessment, this platform now includes two-factor authentication, data encryption, and most importantly, the ability to block access to external websites and applications during exams. This ensures that students cannot look up answers or use AI tools to complete their assessments.

Conclusion

The same technology that initially created the problem provided the solution. By integrating secure exam software, the institution successfully transitioned to fully digital assessments while maintaining academic integrity and meeting sustainability targets.

Case Study 2: AI-Supported Textile Classification

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Context and Problem Overview

Centro de Estudios AEG-Ikastetxea offers three textile specialisations: Pattern Making and Fashion Design, Tailored Clothing and Costumes, and Technical Textile Design. While students use digital tools like Illustrator and Photoshop, their training remains largely hands-on. A challenge arose when first-year textile students needed to classify fibres outside of the school lab, where traditional methods (e.g., burning fibres or using chemicals) were not feasible.

Solution

The institution facilitated a collaboration between textile students and Web Applications Development (DAW) students. The DAW students, who were learning the basics of machine learning, introduced their peers to Teachable Machine, a web-based tool that allows users to create simple AI models. Together, they trained a model to recognise different fibres (cotton, linen, nylon, silk, wool) by uploading images. While the system was not 100% accurate due to variations in fabric samples, it provided a practical alternative for fibre identification outside the lab.

Conclusion

This initiative demonstrated how AI can enhance hands-on learning by offering new ways to classify and analyse materials. It also fostered interdisciplinary collaboration, bridging the gap between technical and traditional skill sets.

Case Study 3: Managing Students' Over-Reliance on AI

Context and Problem Overview

Each December, Centro de Estudios AEG-Ikastetxea hosts the Super Challenge, a project-based activity where vocational students collaborate across disciplines to develop a business idea. The challenge involves research, financial planning, marketing strategies, and a final presentation. Before AI tools like ChatGPT became widespread, students engaged in extensive brainstorming and problem-solving. However, since its launch in late 2022, teachers have observed a significant shift - students now rely heavily on ChatGPT to complete nearly every aspect of the challenge, from generating business ideas to writing reports and creating marketing plans.

Solution

Although no definitive solution has been found, the institution has adjusted its assessment criteria, placing greater emphasis on the presentation rather than the written report. This

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encourages students to actively engage with their work and demonstrate understanding beyond what AI-generated content can provide. However, preventing excessive AI use remains a challenge, and further strategies are being explored.

Conclusion

While it is promising that students readily adopt AI tools, this case highlights the risk of over-reliance on AI and reduced critical thinking. Moving forward, educational institutions must find ways to balance AI-assisted learning with independent problem-solving and creativity.

France

AI in Pre-Primary Education (Ages 3–6):

The AppLINOU project (2020), developed by the University of Lorraine, provides an adaptive tablet tool to help preschoolers develop literacy and numeracy skills. Piloted in 72 classes, it aimed to reduce socio-economic gaps by personalising learning. Results were promising, showing positive effects on skill development when the tool was embraced by teachers. Another example is Kaligo (2025), an AI-powered handwriting app for children aged 3-7, which provides personalised feedback on pen strokes. Additionally, humanoid robots like NAO (SoftBank Robotics, 2021) were tested as interactive assistants in French nursery schools. Though engagement was high, not all children responded positively, and concerns about replacing human interaction remain, with the robots used as supplementary tools.

AI in Primary Education (Ages 6–11):

The Lalilo platform (2024) provides personalised reading exercises for primary students, offering differentiated instruction at scale. Teachers have found it useful in modifying their teaching approaches based on individual student progress. While such tools show promise in improving engagement and learning outcomes, they require careful teacher oversight and alignment with curriculum standards.

AI in Lower Secondary Education (Ages 11–15):

Projet ACTIF (2025) involves an AI-driven tool, Kassis Collège, which enables teachers to create interactive exercises and receive real-time feedback through AI analysis. Trials have shown high student engagement, though the learning outcomes were comparable to traditional methods, highlighting the importance of structured guidance alongside technology.

AI in Upper Secondary Education (Ages 15-18):

MIA Seconde (2025), an AI-driven personalised learning platform for high school students, aims to reduce learning gaps through adaptive tutoring. While students appreciated the tool's features, issues like content alignment and engagement remain, and the nationwide rollout has been delayed to 2025 for refinements.

AI in Higher Education (Ages 18+):

The rise of generative AI tools like ChatGPT has sparked debate about academic integrity in French universities. While some institutions, such as Sciences Po, have banned these tools for coursework due to plagiarism concerns, others emphasise the need for responsible AI usage (De Clercq, 2023). Studies show that generative AI can enhance creativity and ideation, but it also risks promoting over-reliance and superficial analysis. Therefore, educational institutions are integrating AI into learning environments, teaching students to engage with these tools critically and responsibly to maximise benefits while mitigating potential risks.

3.3 Key Insights from Surveys

To enhance our understanding and gather further empirical data on the risks and ethical considerations surrounding the use of AI in education and training, the AIRED project partners conducted a comprehensive survey of attitudes and experiences with AI amongst teachers, trainers and other education professionals in their national contexts. This initiative aimed to contribute valuable perspectives to the ongoing discourse on AI ethics in educational settings and to support the data presented above. The risks identified by the survey respondents are outlined below.

Ireland

The responses from Irish professionals (n = 39) highlighted several key concerns which mirrors those found in existing research:

Academic Integrity and Plagiarism: Many respondents observed that students are increasingly using AI to complete assignments, leading to concerns about authenticity and originality. One respondent expressed frustration, stating: "I have students who used AI for projects and pretended they wrote the information all by themselves." Another stated: "Many of my students are presenting AI work as their own when clearly it is not."

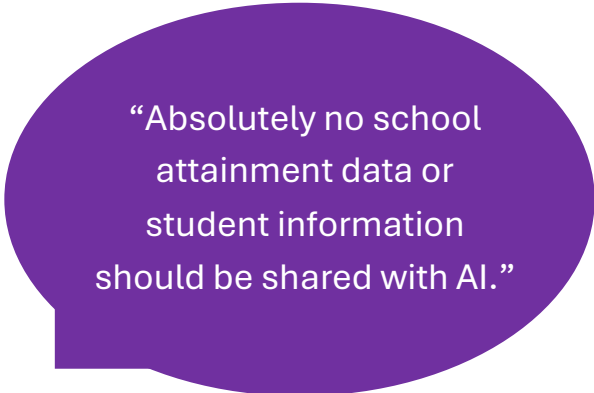
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Lack of Critical Thinking and Over-reliance on AI: There is apprehension that AI's tendency to provide surface-level information might hinder students' development of critical thinking skills. One respondent commented: "If you require critical analysis as demonstration of learning, it is not currently achieved through AI which tends to respond with a list of 'factoids'." Another warned against "over-reliance by those who do not have the requisite knowledge of the subject."

Privacy and Data Protection: The potential misuse of student data by AI systems emerged as a significant ethical issue. Respondents stressed the importance of safeguarding personal information, with one stating, "Absolutely no school attainment data or student information should be shared with AI systems."

Another highlighted concerns about "GDPR, and acquisition of knowledge for the individual student as opposed to knowledge of how to generate information through the effective use of AI."

Bias and Accuracy: Respondents expressed worries about AI strengthening biases and disseminating inaccurate information. One respondent mentioned "biases inputted by humans," while another noted that "some of it can be inaccurate."



"Absolutely no school attainment data or student information should be shared with AI."

Copyright and Intellectual Property: The use of AI-generated materials raised questions about copyright infringement and the ethical use of content created by others. Respondents highlighted the necessity of acknowledging sources and respecting intellectual property rights when utilising AI tools: "AI has been trained on and uses content created by others."

These observations from Irish professionals highlight the complex ethical risks and challenges of integrating AI into their work. The feedback aligns with existing research on AI ethics in educational contexts and global concerns about academic integrity, critical thinking, data privacy, bias, and intellectual property rights.

Spain

Among Spanish respondents (n = 123), similar concerns over the risks posed by the use of AI in classrooms were observed. 89.4% of responses indicated some degree of concern regarding the use of AI, which can be organised into four broad categories:

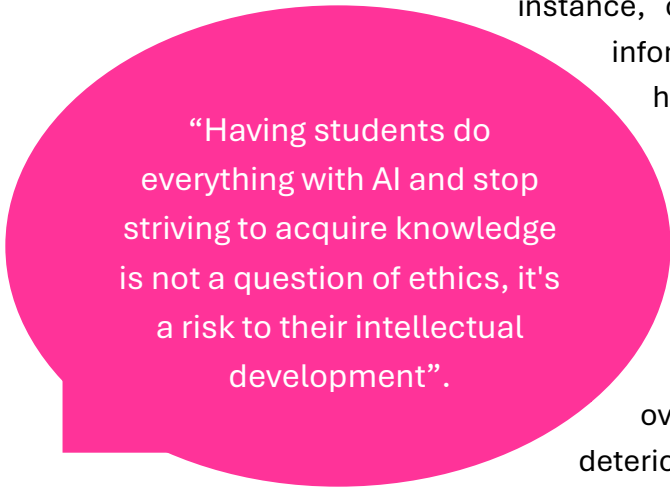
Authorship Preservation: Educators expressed ethical concerns around AI models being trained on existing works without crediting the original authors, highlighting the potential of

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copyright infringement in teaching materials. Furthermore, one respondent highlighted the risk of AI altering the original meaning of information by stripping answers of the context and intent from the original author, potentially utilising its pre-existing knowledge of the user's personal profile to cater answers to their needs.

Privacy: Concerns around privacy were commonly raised among respondents, particularly around data collection and the generation of images from real photographs. One response cautioned that educators should be especially careful with the type of data they fed into AI systems. Another educator expressed concerns over “student performance data or reports being stored [by AI] and made accessible to third parties”.

Impact on Teaching and Learning: Several educators expressed concern that students could develop a dependence on AI tools, leading to a loss of creative and transversal thinking. For instance, one response noted that when asking for information, AI tools tend to explain it directly, hindering opportunities for critical thinking and independent learning. Another participant noted that “having students do everything with AI and stop striving to acquire knowledge is not a question of ethics, it's a risk to their intellectual development”. In general, there were concerns that an overreliance on these tools could lead to deterioration of cognitive and active reasoning.



“Having students do everything with AI and stop striving to acquire knowledge is not a question of ethics, it's a risk to their intellectual development”.

Bias and Discrimination: The potential for AI to unintentionally propagate bias and discrimination were also discussed, including implicit sexist, racist, and anti-LGBT rhetoric, with one participant stating that “as everything depends on how you intend to use AI, it has biases, just like humans”. Some expressed concerns around how these biases could lead to value distortion and behavioural conditioning. Another issue discussed was the fact that not everyone has access to AI tools, widening educational equity gaps and discrimination.

However, it should be noted that among some educators who discussed potential risks, a few mentioned the positive aspects of AI, and emphasised that it is necessary to accompany students in the process of using AI as a valuable tool to assist in learning.

France

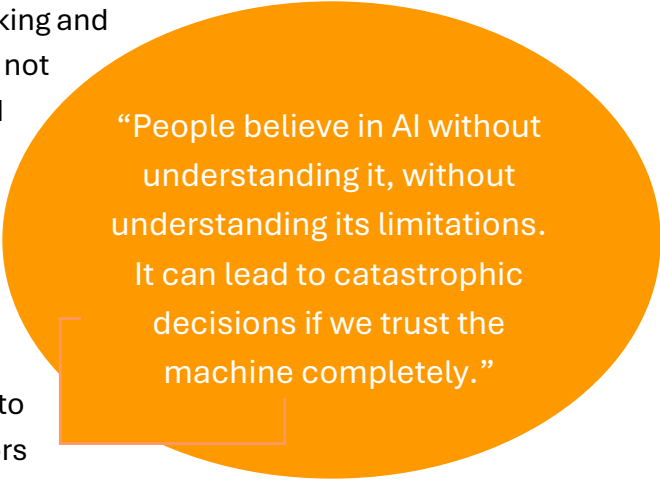
Survey respondents from France (n = 35) offered valuable insights into their perspectives on the adoption of AI in education, as well as associated risks and concerns. Although participants expressed a general openness to AI, several critical concerns were mentioned. All respondents expressed some level of concern regarding the ethical implications of using AI in education, with a few responses expressing the need to monitor its use carefully. Key concerns include:

Bias and Plagiarism: A pressing issue is bias in AI-driven learning personalisation, with most respondents rating AI's ability to tailor learning experiences as only moderately effective, some viewing it as effect, and a small number believing it to be ineffective and problematic. Given the nature of how AI systems are trained, some responses noted the high risk of bias, particularly when questions are formulated in a specific way. One respondent noted that “we must ensure the complete neutrality of what we obtain. Given that an AI can be trained [...] ethical risks are fully possible.” The issue of plagiarism and copyright infringement was, again, commonly alluded to.

Data Security and Compliance: Nearly half of all respondents expressed low confidence in AI's ability to adhere to data protection laws. Primarily, there were concerns for the loss of control of information and the dissemination of harmful or false information, with one individual describing how AI “could become a tool for untruth, disinformation, and intelligence gathering.” Some responses describe fears over the misuse of sensitive and/or personal information held by AI databases and potential political implications.

Overreliance of Tools and Critical Thinking: Several respondents expressed their belief that the overuse of AI can lead to a decline in critical thinking and independent thought, particularly when users do not cross-check information. One response described how “people believe in AI without understanding it, without understanding its limitations. It can lead to catastrophic decisions if we trust the machine completely.”

Decrease of Quality in Educational Materials: Responses displayed a general apprehension to trusting AI-generated information. Some educators believed there to be a risk of teachers utilising AI as a leading source for course content, leading to a decline in “the quality of information and the use of varied



“People believe in AI without understanding it, without understanding its limitations. It can lead to catastrophic decisions if we trust the machine completely.”

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sources.” However, one response clarifies that the creation of tools should come primarily from the user, and that AI should instead be used as a purely assistive tool.

The findings suggest that while AI is gaining traction in the French education sector, educators remain cautious about its ethical implications, fairness, and compliance with regulations. There is a clear demand for more structured AI training and policy clarity, ensuring that AI enhances education without reinforcing existing biases or compromising professional autonomy.

4. Mapping AI Risks: Key Themes and Patterns

To provide a comprehensive overview of the key risks associated with AI in education and training identified across Ireland, Spain, and France, the following visual map has been created. This map highlights the common themes and unique challenges faced in each national context, offering a clear and concise representation of the critical risks that emerged from our research.

The map presents risks which include: bias and discrimination, over-reliance on AI, digital inequity, job displacement, emotional dependency, privacy and data protection, limited resources and infrastructure, academic integrity and plagiarism, lack of educator expertise, ethical concerns, inaccurate outputs, algorithmic transparency, linguistic inequity and cultural bias. By visually mapping these risks, we aim to support more informed decision-making and the development of targeted solutions for the ethical and effective integration of AI in educational settings.



5. Recommendations and Solutions

The integration of AI into education offers significant potential for enhancing teaching and learning experiences. However, to ensure its effective use, various countries have adopted different strategies to support teachers and address the risks and challenges that arise. The following section lists recommendations for AI integration gathered through a review of solutions and best practices in Ireland, Spain, and France.

Schools

- **Dedicate Time for AI Training:** Schools should allocate specific working hours for AI-related training rather than relying on teachers' free time.
- **Use AI to Support Personalised Learning:** AI tools should be leveraged to create customised learning pathways that accommodate students' diverse needs.
- **Ensure Teacher Oversight in AI Use:** Educators should be actively involved when students use AI tools to provide guidance and ensure responsible application.

Higher Education Institutions

- **Establish Ethical Guidelines and Best Practices:** Universities should develop and promote clear guidelines for the responsible use of AI in teaching, learning, and research.
- **Embed AI Literacy into Curricula:** AI education should be incorporated across all disciplines to equip students with critical thinking and evaluation skills.
- **Implement Institutional Protocols for AI Use:** Clear policies should be set on AI usage in grading, content creation, and academic integrity. These policies should be regularly reviewed and updated according to current best practice guidelines.

Government and Policy Level

- **Develop Ethical and Responsible AI Guidelines:** Clear, flexible guidelines should be established to ensure AI use in education prioritises data privacy, transparency, and fairness.
- **Expand Professional Development Opportunities:** Educators and professionals should have access to tailored training programmes that enhance their understanding of AI tools and their applications.
- **Strengthen Digital Infrastructure and School Support:** Governments should invest in secure digital infrastructure, accessible learning platforms, and technical support to facilitate responsible AI integration.
- **Support Research and Best Practices:** Ongoing research initiatives and peer-learning networks should be funded to refine AI strategies and share best practices in education.

This list of recommendations will be expanded upon and enhanced with country-specific examples in the next AIRED project deliverable, *4.2: A Comprehensive List of Best Practices for Ethical AI Use*.

6. Conclusion

The AIRED project's comprehensive mapping of AI risks in education and training across Ireland, Spain, and France highlights the multifaceted challenges and opportunities presented by the integration of AI technologies in educational contexts. By synthesising insights from national desk research, case studies, and survey data, this report identifies critical areas of concern, including bias and discrimination, data privacy, over-reliance on AI tools, academic integrity, and the lack of educator expertise. These findings reflect both shared and context-specific challenges across the three countries.

Key themes that emerged from the analysis include the need for robust ethical guidelines, enhanced professional development opportunities for educators, and the establishment of clear policies to safeguard privacy and data security. The potential for AI to exacerbate inequalities, particularly in under-resourced schools or for minority languages, underscores the importance of equitable access to AI tools and infrastructure.

The insights gained from this risk mapping exercise will serve as the foundation for the next phase of the AIRED project, which aims to deliver a comprehensive list of best practices for ethical AI use in education and training. This ongoing work will ensure that AI integration is both responsible and effective, ultimately enhancing learning experiences and supporting the professional growth of educators across Europe.

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