



WP4 Ethical and inclusive use of AI

Task 1: Analysis of Risks of AI in Education and Training in Spain

Delivery date: 05/03/2025



Co-funded by
the European Union

Project acronym:	AIRED
Project full title:	AIRED Artificial Intelligence reshapes education
Action type:	KA220-VET - Cooperation partnerships in vocational education and training (KA220-VET)
Grant agreement no.:	2024-1-FR01-KA220-VET-000256094
Deliverable name:	Ethical framework -Risks analysis
Distribution level:	Private
Responsible author(s)/partner:	Asun Alonso - José M ^a Arrieta/ AEG
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Reviewed by:	Partners
Total number of pages:	21

Revision history

Number	Date	Description
0.1	24/02/2025	Draft
0.2	04/03/2025	Draft
0.3	05/03/2025	Final

Statement of Originality

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Funding Acknowledgement

The **AIRED** project has received funding from the European Union EACEA.A – Erasmus+, EU Solidarity Corps under Grant Agreement n. 2024-1-FR01-KA220-VET-000256094

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1. Executive summary

As stated in our project proposal, the AIRED project aims to prepare the current and next generation of educators and all those involved in the knowledge chain to integrate artificial intelligence tools into their work, while maintaining human creativity and ethical considerations, promoting evidence-based solutions for societal challenges in education, social justice, equity, and inclusion.

This report contains primary and secondary research on the risks and challenges linked to the deployment of AI tools in education and training. Primary research comes mostly from surveys conducted among the project's target audience of teachers, trainers and managers in educational institutions as well as insights from direct teaching and training experiences in the classroom, and secondary research focuses on compiling the current state of legislation on AI usage at a national and regional level in Spain.

The report focuses on the following:

- Overview of risk in professional practices
- Case Studies and examples
- Key insights from surveys and interviews
- Recommendations and context specific solutions

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2. Introduction and context

Carrying out a risk analysis on the deployment of AI in educational contexts is crucial for several reasons because the astounding speed at which the capabilities of the AI tools are expanding is not always allowing for a measured and thoughtful usage of these resources at education, training and management levels. While introducing AI at different stages of all sort of educational courses has obvious advantages, such as:

- the increased ease of customizing learning paths, thus enhancing the learning experience and integrating a variety of learning abilities,
- the automatization of repetitive administrative or managerial tasks,
- or the adaptability and flexibility of AI tools to evolve towards new educational trends among many others,

it is not free of risks that imply ethical, privacy or biases concerns for a start. It is in the spirit of the AIRED project to make the educational community aware of these issues in order to facilitate the understanding and management of the risks associated with AI usage in the field.

This is one of the debates raised by the use of AI: how can we harness its full potential without replacing the human dimensions and interactions of learning, training and management?

Artificial intelligence is a disruptive technology that has come into our lives to change the way we function in many areas. Its implementation in some of these areas has been neither simple nor free of controversy, and one of the sectors in which the use of AI generates the most doubts is education, where it raises fears from different perspectives, all of them more than understandable because it is about the use and exposure to AI of mostly young people who are immersed in their most crucial to acquire the learning and training that will conform them into skilled, functional, and hopefully happily integrated members of a community and work environment.

Could AI replace the work of teachers? Is it a danger for learners to use AI to do their academic and training tasks?, how much student data can school administrations share with AI? Basically, where is the limit for learners, teachers, trainers or school managers between relying on this technology to help them with a task or subject or directly doing their homework, presentations, theses, didactic units, or monitoring students?

In fact, the place of AI technology in education in general is such a topical debate that UNESCO decided to dedicate this year's International Education Day 2025 (January 24th) to artificial intelligence.

AI is undoubtedly increasingly present in education, but in many cases the guidelines are not clear. According to studies by the same organization ([UNESCO's Global Education Monitoring Report 2023](#)), in countries with higher incomes, more than two thirds of secondary school students use AI to do their homework, and an increasing number of education professionals are also using this tool to prepare classes or even evaluate student work. Also in other processes in the world of education, such as guidance or admissions, AI is already playing a major role. UNESCO also found that in 2023, while restricting the use of mobile phones in the classrooms, only 10% of schools and universities were monitoring the use of AI.

This context of mixed opportunities and threats in AI usage in education is addressed in the next sections of this report, aligning with the interest and concerns of the European Commission, who lists the following as AI tools used in educational contexts and has just recently launched on 3rd March 2025 an EU-wide survey on their implementation:

- **adaptive learning systems** to adapt content to students' needs
- **AI-based assessment tools** to provide real-time feedback and automated assessments
- **NLP tools** to assist with language learning and translation
- **learning analytics** to offer predictive analytics for personalised recommendations
- **assistive AI** to improve accessibility for students with disabilities
- **generative AI** to generate quizzes, lesson plans, and educational content
- **AI-powered school management** to automate scheduling and administrative processes

3. Overview of risks in professional practices

The Basque Country or Euskadi is a Spanish autonomous community, considered a historical nationality, located on the eastern end of the Cantabrian Sea coast, bordering France. It consists of the provinces and historical territories of Alava, Guipuzcoa and Vizcaya.

One of the main characteristics of the education system in Spain is its decentralisation. This means that Spain's education system shares educational competencies between the General State Administration (Ministry of Education and Vocational Training) and the authorities of each of the autonomous regions, respectively their Departments for Education; there is a Basic Common Curriculum

for all 17 autonomous regions and then ample margin for each of them to complete this common curriculum.

The [Royal Decree 2808 /1980, of September 26, 1980](#) transferred to the Autonomous Administration of the Basque Country the competences in the field of education. The strong development in the 1970's and 1980's of an industrial and machine tool economy in many locations of the Basque territory, manifested the need for a qualified workforce and led the educational authorities to make a strong commitment to Vocational Training. After many years of constant investment and innovation, especially in modernization of facilities and implementation of new teaching methodologies, the Basque Country's VET has become [a model to be followed throughout Europe](#) . This has been greatly contributed to by the former Vice Minister of Education of the Basque Government and national government advisor too, [Mr. Jorge Arévalo](#), a passionate and tireless advocate for VET and VET modernization.

This sound VET learning and training model in the Basque Country and other parts of Spain, is not free of challenges and risks when it comes to implementing the usage of AI. Here we have a number of concerns:

- **Integration Gaps:** despite a positive attitude towards AI, only about 25% of teachers in Spain have incorporated AI-based tools into their teaching practices, indicating challenges in integration, according to a [study by the University of the Basque Country](#) researchers. Teachers in Primary, Secondary and University levels use AI tools differently, thus requiring specific training tailored for their needs. The onset of COVID 19 put teachers and trainers of all levels of education under a big strain because they had to adapt, in many cases literally from one day to the next, from in-presence lessons to online lessons. A big number of them were already familiar with digital tools and digital lessons but on the whole, it manifested a gap in digital skills in a significant percentage of teaching staff.

To address this need, the Basque Government has since implemented a certification process through which teachers can obtain recognition for their digital skills level competence. However, the surveys that are part of work package 3 in this project, show so far that around 70% of teachers in Spain have learned how to use AI tools on their own, without any formal instruction. The same percentage can be applied to teachers in our area. There is a risk of leaving teachers behind in the implementation of AI in educational processes if they are not equipped with meaningful tools and some kind of formal instruction to use them. Leaving teachers and trainers

behind obviously entails leaving their students behind too, thus creating yet another gap in opportunities for social equity and advancement.

- **Ethical Issues:** the bias that may be present in AI algorithms and the impact on student-teacher relationships is challenging. The vast majority of AI out there so far is machine learning (ML), which is put simply, software that learns by example. So, as with almost anything related to AI, it all starts with the quality of the examples, the data, fed to train the AI system, which is the work that really matters to the success of AI, be it just ML or generative AI since both learn from examples. According to a report by [Thomas H. Davenport and Priyanka Tiwari](#) feeding quality data falls under the responsibility of Chief Data Officers (CDO), data engineers and knowledge curators and we can all agree that these experts' profiles are not the most abundant or representative in educational institutions. If we were to use **AI to grade assignments or exams**, without specialists that can detect biases in the algorithms fed with previous [teachers' grading bias](#), for instance, a model could perpetuate harsher unfairly grading to underrepresented demographics, such as ethnic or gender groups.

Another concern comes from **AI tools that assess student engagement or emotional state through facial recognition**. This assessment could be biased if they are trained on databases that favour the inclusion of specific racial or ethnic groups. The misinterpretation of facial expressions can deem a learner lazy or disinterested when they are only conforming to their cultural way of social communication. For instance, in the case of northern European or south Eastern learners whose culture does not favour the public expression of feelings, neither to show enthusiasm and engagement nor the contrary.

There is also a great concern among teachers for the **ethical usage of other peoples' work**: [a Basque University study](#) has looked into 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, ie., 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 all too tempting to borrow from ChatGPT replies and introduce them straight away in their work.

- **Privacy Issues:** as mentioned above, since AI systems rely heavily on data collection, concerns about the privacy and security of student information are assured in educational settings: all sorts of students' personal data and family background, learning habits, even emotional responses may be collected. There are data protection laws like the European Union General Data Protection Regulation ([GDPR](#)) or the Family Educational Rights and Privacy Act ([FERPA](#)) in the US, which is basically concerned with how students records are stored, handled and released, ie. who and how has access to learners performance data. In Spain, the Organic Law 3/2018 on Personal Data Protection and guarantee of digital rights of 5th December 2018 was issued in compliance with the European one and modified in [May 2023](#) . The European Union has also shown concern for the ethical usage of AI tools in education to the point of issuing the **Ethical Guidelines on the use of artificial intelligence and data in teaching and learning for educators** that were published in October 2022 as part of Action 6 of [the Digital Education Action Plan](#).
- **Impact on Teaching and Learning:** AI can affect traditional standard pedagogical and methodological approaches to the teaching-learning process. 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 . The usage of AI in education should complement the teaching-learning process, not substitute the teacher/trainer or isolate the learner. And most worrying of all, **generative AI should not replace the students' effort to learn** by offering elaborate instant responses that prevent them from carrying out their own search from a variety of sources and reach their own conclusions after a conscious and critical approach and work on the information gathered.
- **Adaptive Learning Systems:** Learning systems that adjust the difficulty of questions and the rhythm of learners' progress based on a student's previous answers might be biased if they are trained on data where results from students following **diverse learning paths is not present**. For instance, systems focused on speeding up the curriculum for students who perform well based on traditional metrics (like standardized test scores), potentially neglecting students who learn at different paces, or use different learning skills, or have learning disabilities. This could result in students being either underserved and left with a feeling of wasted lesson time and others, on the contrary, overwhelmed and frustrated.

4. Case studies and examples

Case study 1 Centro de Estudios AEG-Ikastetxea VET-HEI

- Getting students to take exams on the computer without them being able to copy.

Context and problem overview: at our educational institution, every classroom is fitted with computers so that each student has their own desktop or laptop. We have been using digital tools and the Internet for classes for over 20 years now. In 2002, the Spanish Association for Standardisation and Certification (AENOR), which became AENOR Internacional, S.A.U. in January 2017, issued our first Quality Management System Certificate (ER-01211/2002), then our Information Security Management (SI-0043/2018) and also our Environmental Management System Certification (GA-2014/10083). The latter contains our organisation's commitment to sustainability, environmental care and energy efficiency. We are taking measures to continuously reduce our electricity and water consumption as well as that of paper and photocopies. In this line, the faculty raised the need to abandon written exams and implement the use of computers for testing and evaluations. And so we did for a few years using our intranet for the purpose. But then it was decided we adopt the platform GSuite for education, which allowed us to offer our students and teachers a number of tools for every day use in the classroom: calendar, docs, spreadsheets, Drive, hangouts, chat, Meet, jamboard, keep, sites, classroom, ... all very practical indeed but constantly online. Exams became unmanageable since students could easily copy from any source.

How we solved it: we found out that ChromEx is an application that works only for GSuite (Google Workspace) to create, manage and evaluate digital exams, and not only the typical 'test type'. But you can't use **ChromEx** with a normal Gmail, it must be installed in the GSuite Administrator, and pre-register teachers who are going to use the tool in their classrooms. In time, this tool became **Trelson Assessment**, and has been much improved. It now uses a two-factor authentication, it encrypts data and prevents rogue accesses to exams. And most importantly and the solution to the problem: the platform **blocks access to unwanted websites and applications during the exam** so that learners cannot cheat.

Conclusion: The technology that caused the issue in the first place also offered the solution. We are now able to hugely save on paper and photocopies, thus meeting our sustainability KPIs, while at the same time preventing learners from cheating and allowing for a fairer test-evaluation process.

Case study 2 Centro de Estudios AEG-Ikastetxea VET-HEI

- The first year of a textile class needed to be able to classify fibres even when away from the school lab.

Context and problem overview: our institution has 3 different Textile specialities for VET students: Pattern Making and Fashion Design, Tailored Clothing and Costumes, Technical Textile Design. Textile learners use software like Illustrator to make spec sheets, Lectra for pattern making and digitalization, Photoshop to create mood boards, Texdesign to recreate fabrics, and so on. Even though sophisticated tools are now available on the market to recreate the quality, sheen and drape of a fabric, and despite the fact that they are familiar with the computer aided processes mentioned above, textile students are more focused on the manual part of their speciality and we did not want them to miss the AI revolution and how it could complement their artisan skills.

How we solved it: We asked the Textile students to team up with a first year class of Web Applications Development (DAW) so that they could work on the challenge together. Conveniently, the DAW class were starting to explore the rudiments of training machines and came up with this idea: they introduced their Textile peers to [Teachable Machine](#), “a web-based GUI tool for creating custom machine learning (ML) classification models without specialized technical expertise. [...] to help students, teachers, designers, and others learn about ML by creating and using their own classification models.”

The students got together and they assembled different samples of cotton, linen, nylon, silk, woolen ... fibres and trained the machine by uploading their images so that when the process was finished, if a cotton fibre was presented, the system would recognize it. You can keep the data in your own device, transfer it to a server, download your samples to Drive or send them to a mobile device. It must be said that the system was not 100% accurate because the quality of the samples, their size and the weave, were not always optimal, but it was much more practical than having to burn the fibres or using chemicals for analysis when the learners were not in the school lab.

Conclusion: AI tools can enhance the process of learning/training in ways that make knowledge acquisition more engaging, practical and meaningful for today's classrooms requirements. They can also help bridge the gap between those learners more endowed with technical abilities and those that still have a more traditional approach to gaining insight into new subjects.

Case study 3 Centro de Estudios AEG-Ikastetxea VET-HEI

- Students' over reliance on AI

Context and problem overview: The second week of every December AEG celebrates the **Super Challenge (SC)**, an activity that brings together VET students from all of our specialities (Developers, System Administrators, Business and Finance, Marketing and Advertising and Fashion and Costume Designers). Besides, for the second year in a row, the SC welcomes a group of 10 International Trade students from a Lycée in Bordeaux (France). Locals and visitors are divided into groups that have one or two students of every speciality and are instructed to work for 4 sessions of 6 hours to come up with a business idea and work on it in all its aspects: market research, analysis of the product or service, viability and financial analysis, marketing plan, etc. All this work appears in a report that they must hand in and the final is the fifth session, which is a presentation that takes place in the assembly hall of a university residence with the attendance of the entire faculty and all the first-year students, who vote for the best business proposal.

ChatGPT was launched 30th November 2022. **The Dec 2022 edition of the SC was the last one where students actually used their own efforts and traditional methods of group work to carry out the challenge tasks and the chatbot was consulted only tentatively.** In the last two editions, Dec 23 and Dec 24, as the teachers walked the classrooms gathering evidence of the students' work progress they realized that fewer and fewer learners were actually posing them any questions (as they used to do, specially in the first sessions of the challenge) related to this or that particular aspect of the tasks they were doing in the different stages of the process of putting together a business idea. The teachers also noted how the students were using ChatGPT as a source to come up with all sorts of tasks required to do the work at hand: from naming the business, to designing the logo, to elaborating the CANVAS, the financial plan, the SWOT, ... everything. Four groups out of twelve were even caught asking ChatGPT for the very initial idea of a possible business product or service, thus skipping even the brain storming phase to pull business ideas together and commonly decide on the best one.

How we solved it: we are still at it. The reports that were handed in for grading and that contained all the written work of the business idea were in the most part correct but the teachers detected errors too. This is likely due to poor phrasing or input from students in their chatbot queries, or possibly because of AI hallucinations. Additionally, **students may have become overly reliant on AI and neglected to check their responses against their own knowledge or information from other sources.** But soon (if not already) generative models will be refined enough to a point where it is impossible to distinguish between machine provided data or student work. In view of this situation, **we have decided to give more value to the presentation than to the written report when it**

comes to grading the students' work in the SC. But we have not come up yet with a solution to prevent students using ChatGPT massively to do the SC activity.

Conclusion: it is encouraging to see that our students are not afraid of using new tools and that they are early adopters of AI technology (along with other 100 million active users that ChatGPT amassed in 3 months) but it is discouraging to realise how easily human nature tends to the principle of least effort and non-critical acceptance of information.

5. Key insights from survey and interviews

A consolidated report on all surveys (in English, French and Spanish) is still pending because the reception of replies is still ongoing. So far we have 42 replies on the Spanish version to which 52% correspond to teachers in Primary, Secondary and VT education, 30% are trainers and researchers and the rest fall into various other categories like special education or managerial positions. Around 40% of them are in their 20's - 30's and the rest in their 40's -50's and 60's (actually, the average age of teachers in the Basque Country in 2021 was 47, and in 2017, 44% of teachers were over 50 and only 3.6% under 30 in higher education in Spain, according to the [Commission's Education and Training Report on Spain 2019](#)). Also, aligned with information contained in this report as regards "The teacher population is ageing and predominantly female", our respondents were 62% women, with an average of 13.5 years of experience teaching groups of 20-25 learners.

62% used AI either daily or weekly and 55% were planning to use it more in the future because 31% were interested and 35.7% were also willing to spend time to make the most of it. However, 9.5% admitted not being interested and 7.1% were not interested either but had to use it anyway.

The respondents general feelings about AI were for the most part positive ones like: curious (66%), comfortable (59.5%), inspired (31.8%). But some of them also felt fearful (19%), indifferent (14.3%) or threatened (11.9%). A majority of 85.7% was willing to share with AI teaching/training/management content created by them and 26.2% tracking of learners activity but only 4.8% would share personal data or students' data.

Over reliance on AI is the term that most respondents are very familiar with, followed by AI's environmental impact, legal and regulatory conditions and ethical concerns, all at the same level of awareness. The terms they are least aware of are AI's hallucinations and AI's biases.

The concerns mentioned by respondents fall into 3 broad categories, some of which have already been mentioned in section 3 above:

- **AUTHORSHIP PRESERVATION:**

- Use of didactic activities without naming authorship (misappropriation of content generated by others).
- Using AI without respecting the general organic law of protection, manipulating answers or routing answers.

- **PRIVACY:**

- Data collection.
- Generation of images from real photograph.
- We have to be careful not to provide sensitive information as we handle a lot of it, like student performance data or reports being stored and made accessible to third parties.

- **IMPACT ON TEACHING AND LEARNING:**

- When you ask for information about something in particular, the AI explains it directly to you and in the end it prevents you from learning.
- Excessive dependence on the tool and loss of creative and transversal thinking.
- There would be a cognitive deterioration as the pupils will not think for themselves and they will lose the ability to reason on their own.
- Cases of gender inequality, racism, xenophobia, LGTBI phobia, hoaxes...
- Value distortion and behavioural conditioning.
- Another problem is that not everyone has access to this technology so it is somewhat discriminatory.

However, 4 out of 42 (9.5%) did not appreciate any relevant risk in integrating AI into education and some of those who saw risks also mentioned that it had positive aspects and that it is necessary to accompany students in the process of using AI as a valuable tool for their learning.

As regards how they learnt to use AI tools for their teaching, training or management practice, 64% did so by experimenting with the tool on their own and 16.7% feel that they have no training and do not feel confident in AI usage, which prevents them from introducing it in their daily lessons or training. 31% admitted that they have a fair amount of learning to do and 14.3% confide in colleagues for guidance and usage tips.

The activities for which they use AI tools mostly are these in descending order of frequency:

- create innovative learning/training materials
- creating evaluation materials
- write reports for administration tasks
- search and provide feedback on new tools, resources, methodologies, and so on.

On the contrary, the use of AI to track learners's performance in class is rarely done by any respondent followed by the simulation of labs and hands-on exercises.

Some suggestions on the activities that participants would like AI to do for them are:

- to better edit
- to provide gamification
- to generate rubrics (this is a very cumbersome evaluation process that consists of the following steps: determine learning objectives, identify the elements or aspects to be assessed, define descriptors, rate scales and criteria, determine the weight of each criterion, review the rubric designed and reflect on its educational impact)
- to provide studies guidance and counselling

Finally, asked about what support would help them learn more about using AI in teaching, training, or management, there was a near tie between those who preferred face-to face training and those who favoured an online interactive course. Many also valued access to specific tools and to have an IT or AI expert available for consultation (38%). And 28% would appreciate extra planning time.

6. Recommendations and context-specific solutions

The risks identified in section 3 are very much in line with those that were mentioned by the participants in the Spanish survey. The scope and degree of these risks' impact on different educational aspects could be diminished or entirely avoided (less likely, but possible) by following these inputs:

- **Integration Gaps:** ever so often the complaints of different types of education professionals could be resolved by improving two variables: time and money. Time for teachers to devote to their own training in AI tools and their usage and money to pay for specialist courses to train these teachers.

In the Basque Country, there have been a number of offers by the Dept. of Education of the Basque Government such as the one that took place last year (course 23-24): [Introduction to AI](#).

- **Ethics** and **privacy** in educational artificial intelligence.
- Applications of artificial intelligence in education.
- **AI tools** and resources for teachers.
- Integration of artificial intelligence in the curriculum.
- AI-related skills development.
- Challenges and opportunities of AI in education.

The course looked promising and was offered via Meet connection, but it had a duration of only 18 hours, which of course were taken from the teachers' own free time. There was this other one offered by [Tknika](#) for course 24-25 (as recently as January 2025) with the following content:

- Introduction to generic AI tools applied to education:
 - Basic concepts of artificial intelligence (AI).
 - Functioning and potential of language models such as ChatGPT.
 - Examples of educational applications.
- Practical applications of generative AI in the classroom:
 - Generation of personalised educational resources.
 - Creation of interactive and dynamic activities.
 - Use to foster creativity and critical thinking.
- Integration of generative AI in the classroom:
 - Strategies for adapting content to different subjects and educational levels.
 - Design of AI-assisted collaborative activities.
 - Role of the teacher as facilitator in digital environments.
- Ethical and responsible aspects in the use of AI:
 - Privacy, security and ethics in the use of generative AI tools.
 - Managing misinformation and promoting critical thinking.
- Evaluation and feedback with AI tools:
 - Techniques for evaluating the impact of AI on learning.
 - Using AI to provide constructive feedback.

and all of this for the whole of 4 hours duration, for 50 teachers, in person!! Other available courses for 23-24 and their duration, number of positions offered and type of course attendance are these:

Google NoteBook LM -5 hours, 20 teachers, in-person

Introduction to NLP and Transformer Models using Hugging Face I -10 hours, 100 teachers, online

Configuration of object display model in image on Jetson nano, -6 hours, 16 teachers, in-person

From the Metaverse to the Classroom: Immersing ourselves in Virtual Environments (part of the content was creating interactive and virtual environments with Artificial Intelligence) -16 hours, 25 teachers, online and in-person

Application of artificial intelligence at Ikasenpresa -4 hours, 30 teachers, in-person

Online Chatbot design course from scratch, -20 hours, 100 teachers, online;
Generative AI in VET, -1 hour, 100 teachers, online

Chat GPT Workshop 3 days -15 hours (9am-2pm, which are working hours for teachers who have to ask for leave and miss their lessons), 50 teachers, online and in-person;

Introduction to AI code generation -4 hours, 300 IT teachers preferably but everyone welcome, online.

These examples demonstrate that education authorities have a very precise knowledge of the needs of teachers, trainers and managers' needs for AI instruction and are organising course to bridge the formation gaps but these courses are not facilitating that instruction to the fullest because they do not come together with measures that decrease teachers, trainers and managers duties time. In our region, the offer of courses is enough and appropriate but the variable that is lacking is time for acquire and assimilate the necessary new knowledge in all AI fields related to education.

- **Ethical Issues: -bias to grade exams**
 - bias to assess students engagement or emotional state**
 - ethical usage of other people's work**

As seen in the previous section, to tackle these risks it is essential that teachers, trainers and managers have instruction in AI topics. Ideally, the **inclusion of CDO, data engineers and knowledge or data curators in the faculty of HEIs** would be a big step forward in helping the educational community lead with ethical issues risks because the different biases present in AI would be greatly minimised. Other than resorting to this optimal solution, there is always the alternative to **enrol in courses dealing with this risk**, which there are on offer, as we can see above.

Other practical measures could be taken, such as **using data sets as varied as possible** that encompass the largest representative students samples to avoid biases, **inform the whole educational community about the usage of AI tools** and what they are being used for, whether it be for grading, creating teaching materials, selecting students for Erasmus+ traineeship, ... and most importantly, **provide every teacher, trainer, manager with the institutions' stance and rules of AI usage**, creating user protocols and establishing boundaries or non-authorised uses.

- **Privacy Issues:** As mentioned in section 4, our school undergoes yearly audits on Information Security Management, which assures the correct use of all data collected from students and about their families too, from the moment they ask for information about any given course on offer to the time when they finalise their staying with us and get their Certification as Higher Technicians in the different specialisations that we provide. We do not only have information about learners, there is teachers' data and other administrative personnel, janitors and external providers, besides the dozens of companies to which we send students on traineeships. All sorts of sensible data that must be saved in different formats. The best recommendation would be to strictly follow GDPR and count on regular external audits to confirm compliance with legislation. In our case, students and staff sign a document allowing our institution the usage of our image for educational purposes, ie., in the context of academic activities only.
- **Impact on Teaching and Learning:** as mentioned in section 4, Case Study 3, one of our major concerns is for our students to lose their ability for critical thinking and to see how easily they stop making efforts to acquire knowledge by doing their own research and drawing their own conclusions and instead simply make a query on ChatGPT or DeepSeek to copy and paste the results on their answer sheet, or essay, or project written report.

After some time trying to prevent this by **simply appealing to their sense of responsibility**, we have decided that a different approach is necessary and have started to implement changes at different stages of the 3 terms that our courses are divided into.

For instance, we are **valuing the presentations more than the written reports**. Presentations involve the whole group of students and must be done orally, with the help of visual displays, but the explanations are oral and students cannot simply read from the PowerPoint or whatever other visual display they are using, they must look at the audience and know what they are saying. In this way, **whatever effort they saved themselves while**

copying the relevant information from the AI on their written record, they must make now, at least partially (the presentation lasts for about 15 min. max for around 5 or 6 students per group).

Also, we have promoted **more group communication in the lessons, more debates, more confronting ideas or solutions to tasks**. We are **making them talk more**, which is not easy because they are used to communicating through Whatsapp messages and voice notes, and they find it hard to express ideas and reasoning in longer sentences or for longer than 2 minutes. For example, they have an aversion to talking on the phone, to making personal calls or business calls when they are on work placement. It is hard to believe when they spend all day with a phone in their hands, but that is how it is nowadays. **It is also important to assign students tasks to do while they are in the classroom** rather than for homework only so that **the teacher can be present when they access AI tools** and be aware of how and what they are using AI for. We consider it relevant for a teacher to **be vigilant and accessible** at the same time.

- **Adaptive Learning Systems:** We are a small school that functions in many ways like a big family. The atmosphere in the school amongst our pupils and between pupils and staff is always very relaxed and friendly. Teachers can be having coffee with pupils at break time in the corridor and pupils can be chatting to each other sitting on the floor or on the benches. Almost everyone knows everyone else by name or at least knows which year group they are from and the teachers know a lot about the environment and the personal circumstances of the pupils. We take pride in trying to offer teaching with a high degree of personalisation.

However, this comes at a cost in terms of time and resources, especially time spent on preparing diversified or additional materials for classes in order to cater for several different learning paces and abilities in the classroom. So far, it is the teachers who have developed these materials and we are just starting to experiment with AI to supply us with adapted content to the needs of both faster and slower learners. **AI can help us a lot in this respect, to design learning pathways that are appropriate to the needs of different types of our learners.**

But to avoid biases, we will have to **make sure that the system is trained with the widest possible data sets** that represent the gender, age, socio-economic background, learning abilities, learning disabilities, preferred type of learning (either visual or auditory, more theoretical or hands-on), previous knowledge (we have many students who have a

previous Higher Technician certificate or who have one or more college courses already done, as well as some with college degrees). **Monitoring of results and analysis** is also important since it allows for adjustments if a parameter is clearly off rank or hints at it.

Asking students for their feedback on their experience of the adaptive learning system should also give us very valuable information. We have already been trying this for a couple of academic years. **We use what we call the “Reflective Diary”**, which is a didactic strategy that allows for the development of Metacognitive skills and consists of the students reflecting and writing about their learning process at the end of each school day. **The students’ answer a questionnaire about what they have done during the morning lessons, the way they have felt or reacted during their learning process and the mental processes they followed to gain the knowledge or competence.** This is a useful tool for us to know if students are finding their learning paths meaningful and whether they feel they are making progress. It is another measure to validate the accuracy of the adaptive learning systems and check for biases. During these two course years’ experience we have also found that filling in the Reflective Diary daily can be too much of a chore for the students, and this last year the frequency has been changed to weekly. However, students who wish to complete it daily may continue to do so.

7. Conclusions

While AI offers significant benefits in personalizing and enriching education and speeding up administrative processes, educators in Spain and the Basque Country face challenges related mainly to:

- digital competences and integration of AI in educational practices
- ethical considerations
- concerns about data and privacy protection
- biases avoidance in adaptive learning systems

Another widespread concern is the astonishing pace at which all the advancement in AI technology is happening, considering that ChatGPT was released for common use a bit over two years ago at the time of this writing.

As Kai-Fu Lee wrote in August 2023 in the foreword of [Ten Visions of Our Future 2024](#) (Kai-Fu Lee is the CEO of Sinovation Ventures and a bestselling author, former president of Google China, senior executive at Microsoft, SGI and Apple. Co-chair of the Artificial Intelligence Council at the World Economic Forum, among other merits). “[...] **In this new age, the relative cost of creation has become negligible. An advertising campaign that previously would have taken ten**

people to complete in a week could now be produced by a single person assisted by AI in an hour, with evocative copy, stunning graphics, even an entire website designed from a prompt”.

We could complete the paragraph by stating that this one person should have previous marketing knowledge in order to appreciate the support and advantage in time and cost saving terms that the AI is providing. This is what we must be able to convince our students of. That AI is here and it is unparalleled in helping those who already know something. Otherwise, they will be at its mercy, unable for critical thinking or discerning what is true from what is inaccurate or has been manipulated.

There are ways to accompany students in a responsible and productive use of AI tools and ways to minimise AI’s educational implementation risks, some of which we have read in this report.