

**AI FOR
YOUTH**



RESEARCH REPORT



**Co-funded by
the European Union**

This document is published by the AI4YOUTH Consortium, formed by three organisations:

CONNECT INTERNATIONAL, a Brussels-based international network of organizations formed with a mission to create innovative European projects ensuring mainstreaming of digital rights and digital agenda with young people and other active citizens.

BACKSLASH, a non-governmental youth organization established in 2014 in Valencia, Spain, which aims to empower youth and the promotion of social inclusion by assisting young people in acquiring knowledge and developing their skills and competencies.

BUM, an organization founded in 2001 by a group of young people who wanted to change their society through activism. Since then the organization has grown and changed from a youth association to an organization working on the growth and development of the community.

AI4 YOUTH is a project funded under the Erasmus+ Programme of the European Commission. Project reference: 2023-1-ES02-KA220-YOU-000157056.

The objectives of the project are to develop a comprehensive analysis of the knowledge and skills of the youth sector concerning AI and algorithms, create a curriculum aimed at preparing young people for the AI era in education and employment, ensure access for European trainers to e-learning opportunities on AI literacy, and generate policy recommendations based on discussions with stakeholders on the benefits, challenges and opportunities of using AI with young people.

For more information visit the project website:

AI4YOUTH

CONNECT
INTERNATIONAL

BUM
BALKANURBANMOVEMENT

backslash



Co-funded by
the European Union

Authors of this research report: AI4YOUTH Consortium
Reproduction is authorised provided the source is acknowledged.

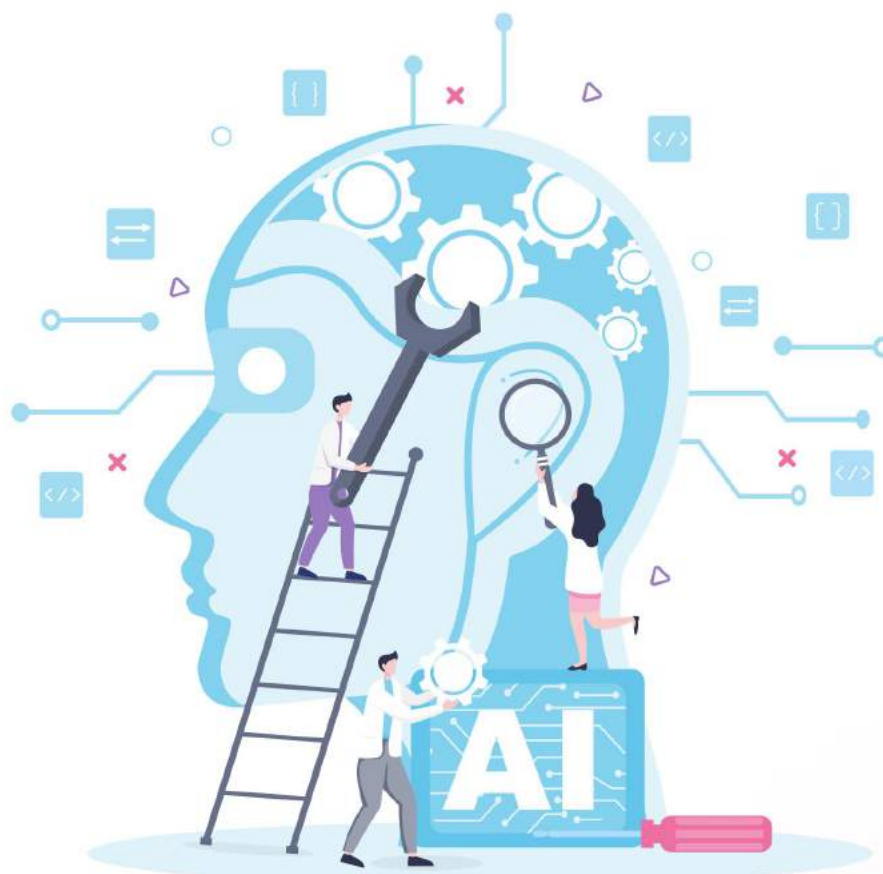
This document reflects the views only of the authors, and the European Commission or the funding National Agency cannot be held responsible for any use which may be made of the information contained therein.

The European Commission or the funding National Agency cannot be held responsible for any use which may be made of the information contained herein.

Background	2
Materials and methods	4
Subjects and procedure	5
Findings	6
Desk research	6
Questionnaires	16
Limitations of the research	29
References	34

Background

"By far, the greatest danger of Artificial Intelligence is that people conclude too early that they understand it." – Eliezer Yudkowsky, co-founder and research fellow at the Machine Intelligence Research Institute



This research paper is part of the Pan-European consortium project “AI4Youth” with the aim to critically explore the intersection between youth work and artificial intelligence (AI), and enhance the understanding and application of AI in the domains of education and employment. Through mixed research methodology, this initiative seeks not only enrich our current initiatives but also provide a solid foundation for future research endeavors in this evolving field. The essence of this project lies in its ability to streamline future research processes, making them more accessible and implementable for us and others in the field.

By making our findings and methodologies publicly available online, we are establishing a sustainable and reliable resource that will serve as future reference for anyone interested in the confluence of AI, education, and employment. This approach ensures the longevity and accessibility of our work, amplifying its impact beyond our immediate network.

This research paper consists of two parts:



Review of existing policies and analysis: This entails a thorough examination of current policies related to AI and algorithms in education and employment. The aim is to provide a comprehensive overview of the policy landscape, identifying gaps and laying the groundwork for further advancements.



Research on existing knowledge and practices: This involves surveying youth workers to gauge their understanding and skills regarding AI and algorithms. The insights gained from this survey will highlight existing knowledge gaps and form the basis for targeted training interventions.

The paper synthesizes the findings from both desk research and the survey of youth workers. It will offer a panoramic view of the current state of affairs, recommend strategies for improvement, and underscore the necessary skills and capacities to be integrated into future training curricula. By systematically addressing these components, the project aspires not only to enhance the understanding and application of AI in youth work but also to foster an environment conducive to continuous learning and adaptation. The ultimate goal is to equip youth workers and organizations with the knowledge and tools needed to navigate the complexities of AI in their professional roles, thereby enriching the educational and employment prospects of young people across Europe.

The use of AI in education and employment is a growing area of interest with a wide array of potential benefits and challenges. The literature on AI in education and employment is vast and rapidly evolving.

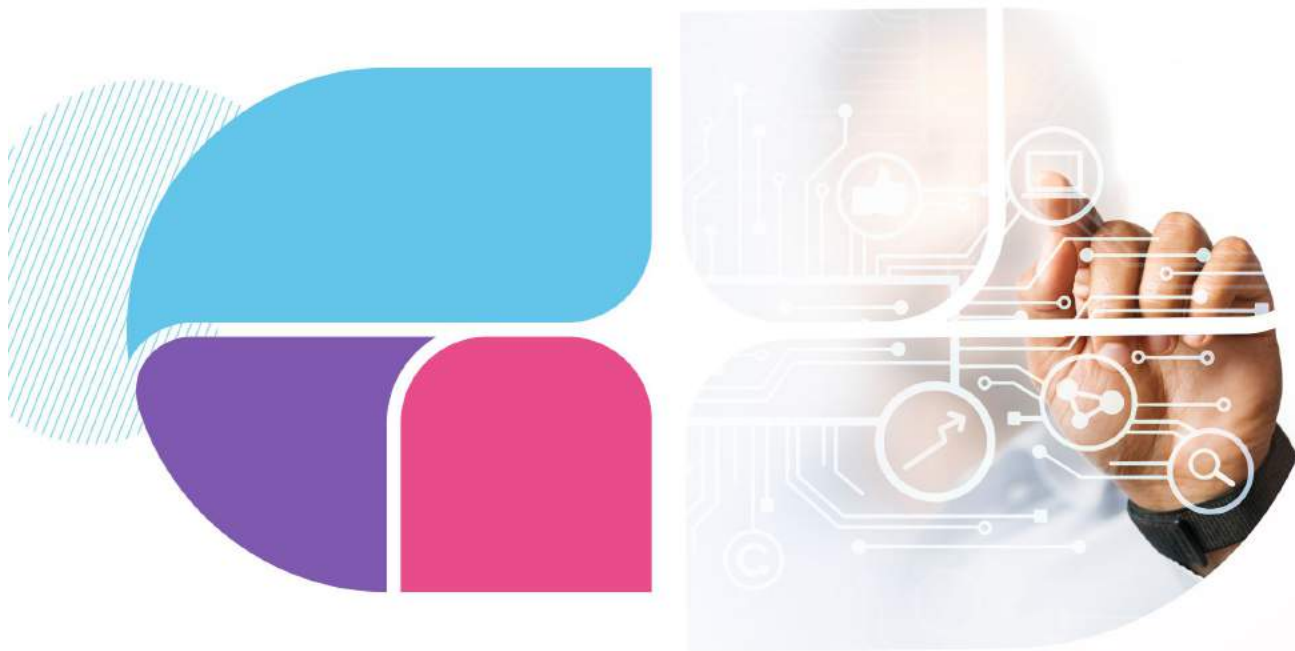
Some of the key sources include academic journals such as the "Journal of Artificial Intelligence and Education" and "Computers & Education," as well as reports from think tanks, governmental agencies, and international organizations like the World Economic Forum, UNESCO, and the OECD.

This paper will cover main highlights from the current research, policy discussions, and case studies illustrating both the potential and the challenges of implementing AI in these crucial areas of society.



Materials and methods

This research combines both qualitative research through desk research and quantitative research through questionnaires. This enriches the research design, enhances the depth and breadth of understanding, and strengthens the conclusions drawn from the research. It allows researchers to explore a topic from multiple angles, providing a more rounded and robust foundation for making informed decisions or recommendations. Different methods have respective strengths and limitations, and when combined they can offer a more well-rounded perspective and deeper insights. Qualitative insights can help to ensure that the quantitative measures are relevant and cover the necessary breadth of the use of AI in education and employment.



In the context of this research, a mixed method allows for mutual development of qualitative and quantitative elements. Qualitative research provides preliminary hypotheses, helps setting the problem and the direction of the research. Quantitative data uses statistics and data to further explore the problem set in the qualitative stage. Using both approaches allows for cross-validation where findings from one method can be corroborated with findings from the other method, increasing the reliability of the results. Combining methods leads to richer data sets that offer multiple dimensions of the subject matter, allowing for more nuanced analysis and interpretation.

Another reason for using the mixed-methods research was to engage a broader range of stakeholders, as it addresses the interests of those who prefer the detailed, narrative-based approach of qualitative research and those who seek the clarity and precision of quantitative analysis.

The comprehensive insights obtained from mixed-methods research are often more actionable and persuasive for policy-making and practical applications, as they provide both the scale of the issue and an in-depth understanding of the underlying factors.

Subjects and procedure

The quantitative element of the present research offers a general view of the perception of AI among youth workers. The qualitative element allows to dive deeper into some logics and give the overview of the existing policies and practices in Europe.

The research aimed to survey 100 youth workers to determine their current knowledge and understanding of AI and algorithms. The participants for the research were found through several methods, including online platforms, social media, advertisements, or referral networks. The survey was distributed out to 33 European countries, reaching out to youth work practitioners.

In order to ensure the representativeness and quality of the sample, a combination of different sampling techniques has been chosen.

Convenience Sampling: Participants were selected based on their availability and willingness to participate in the research.

Snowball Sampling: Through word-of-mouth or referral, trying to reach those who fit the criteria for the research.

Additionally, participants were informed about the purpose and methodology of the research and that their consent was obtained prior to their participation.

In April 2024, 100 respondents involved in youth work and employment across Europe took part in a survey comprising 22 questions and protecting respondents' privacy. Respondents filled in all questionnaires anonymously.. The survey was widely distributed online, and respondents returned their completed questionnaires..

Major findings and conclusions from both methods have been analyzed and summarized to complement the desk research on the topic of AI and education and employment in Europe and provide a clear picture and better understanding how youth workers perceive it.



Findings ▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶ Desk research

Several European countries have already developed national strategies and policies that address the use of AI in various sectors, including education and employment. These policies often emphasize ethical considerations, data protection, and the potential impacts of AI on the workforce.

France's AI strategy includes initiatives for education and labor. It emphasizes training for AI-related skills and ethical considerations in AI deployment. The National Strategy for AI was adopted by the President of the Republic in November 2021 as part of the "France 2030" plan. The National Strategy for AI is a follow up of the first phase of the strategy – "AI for humanity", which was implemented in France from 2018 to 2022. The priority of this second phase of the strategy is to ensure that France has the means to educate and attract the best international AI talents. This is a crucial challenge to enable France to have an impact on the global AI landscape and enhance the attractiveness to future industry leaders, particularly in the face of digital skills shortages.

The indicators set to be achieved till 2025 in the skills area are:

- ▶▶ Train and financially support a target of at least 2000 students in DUT / bachelor's / professional bachelor's programs; 1500 students in master's programs; and an additional 200 theses per year in steady-state.
- ▶▶ Position a minimum of 1 center of excellence among the top international ranks.
- ▶▶ Recruit 15 world-renowned foreign scientists by January 2024.



Germany has been at the forefront of integrating AI into education, emphasizing personalized learning and the automation of administrative tasks. The KI-Campus project, a digital learning platform for AI education, exemplifies Germany's commitment to fostering AI competencies among students and educators alike. This initiative addresses the benefits of AI in education, such as personalized learning, while also acknowledging the importance of data privacy and the mitigation of bias in AI applications.

Germany's AI strategy extends into the employment sector, focusing on the responsible use of AI in research, the ethical use of AI, and its implications for employment and skills development. The country's emphasis on ethical guidelines mirrors its approach in education, aiming to ensure fairness, accountability, and transparency in AI applications within the workplace. The strategy aims to make Germany a leading location for AI and to ensure that AI serves society. In November 2018, the German Federal Government launched its National AI strategy jointly developed by the Federal Ministry of Education and Research, the Federal Ministry for Economic Affairs and Energy, and the Federal Ministry of Labor and Social Affairs.

The German strategy proposes several policy reforms and initiatives for formal training and education, with special focus to the formation of educators, trainers, and the general public in order to guarantee a high-quality level of education in AI:

- ▶▶ Expanding learning platforms such as the AI Campus to develop a solid skill base in AI through courses, videos, podcasts and knowledge exchange;
- ▶▶ Creation of at least 100 additional professorships in the field of AI to ensure that AI has a strong foothold within the higher education system. AI professorships are for instance planned at the centers of excellence for AI and in the scope of the Tenure Track Program and the Excellence Strategy;
- ▶▶ Getting students more involved in STEM subjects as outlined in the STEM Action Plan.

On top of formal education and training reforms, the German Federal Government proposes a broad-based set of instruments to expand and upgrade AI-related skills of the workforce. As the required skills of individuals will change significantly with the upcoming AI technologies, the German Federal Government launches some large-scale qualifications initiatives with attention for lifelong learning and for reskilling and upskilling employees across their entire careers.



Finland, known for its innovative educational system, has launched AI education initiatives like the "Elements of AI" course, aimed at increasing AI literacy across the population. This approach not only utilizes AI for personalized learning but also empowers individuals with the knowledge to critically engage with AI technologies, addressing the challenge of technological literacy.

Finland has directed efforts toward enhancing technological literacy among the workforce, recognizing the importance of understanding AI's ethical implications. This focus is crucial for small and medium enterprises (SMEs) that are pivotal to Finland's economy, as it helps to overcome productivity challenges associated with the lag in AI deployment.

The program also includes discussions on the impact of AI on employment. In October 2017, the Finnish Ministry of Economic Affairs and Employment published its national AI strategy entitled "Finland's age of artificial intelligence". The strategy highlights Finland's possibilities in the global market along with its strengths and weaknesses in AI. It describes how AI will transform society and provides a range of policy actions and recommendations for Finland to thrive in the age of AI. In November 2020, Finland has launched an updated AI strategy: the "Artificial Intelligence 4.0 Program" promotes the development and introduction of AI and other digital technologies in companies, with a special focus on SMEs from several industrial and service sectors.

A Competence and Innovations Committee has been established under the Artificial Intelligence Program to support education reforms. In particular, the Finnish strategy provides the following policy recommendations towards education and training in AI:

- ▶▶ Guaranteeing AI literacy across the Finnish population (including elderly) to ensure that all citizens have a basic understanding of AI applications. With the objective to reach as many people as possible, the basic course is being translated in all languages of the European Union;
- ▶▶ Introducing Masters and Bachelors programs at university providing courses in AI, and also online introduction course to Python;
- ▶▶ Incentives and training mechanisms for teachers to use AI in their courses and teaching methods.
- ▶▶ Particular attention is devoted to the working-age population with policy recommendations targeting vocational training and lifelong learning opportunities, such as
- ▶▶ Massive Open Online Courses in AI and programming as a possible tool for further education of people in the labour market,
- ▶▶ A skills account or voucher will be created for all working-age people, which they can use to update their skills and purchase the training they need.

Sweden has initiated the national program for digitalization of the Swedish school system, which includes leveraging AI for personalized learning and administrative efficiency. The focus is also on enhancing digital competence among both students and teachers, acknowledging the importance of preparing the workforce for a future where AI plays a significant role.

The Swedish government has supported research and innovation in AI through its innovation agency, Vinnova, which funds projects aimed at ethical AI applications in various sectors, including employment. Initiatives focus on fair AI recruitment tools and AI-driven skills development platforms, emphasizing ethical considerations and the importance of dialogue between employers, employees, and unions regarding AI's role in the workplace.



The Netherlands is home to initiatives such as the AI for Education (AI4EDU) project, which aims to explore and implement AI solutions to personalize learning experiences and enhance educational outcomes. This includes research on AI's capability to adapt to individual learning needs and to support teachers in creating more engaging and effective learning environments.

The Dutch government has emphasized the importance of AI in driving economic growth and innovation, including in the labor market. Policies and programs focus on equipping the workforce with AI skills and fostering a labor market that is adaptable to technological changes. This includes partnerships between educational institutions, industry, and government to address the skills gap and prepare for future employment needs.

Spain has recognized the potential of AI to transform the education sector, with initiatives aimed at integrating AI tools into the classroom to support both students and teachers. Efforts include training educators to effectively use AI technologies and developing AI-based applications to enhance learning experiences and outcomes. The Spanish National AI Strategy outlines the country's approach to leveraging AI for economic and societal benefit, including in the realm of employment. The strategy includes measures to promote AI innovation within industries, to develop AI skills among the workforce, and to ensure ethical AI use in recruitment and employment practices.

On the other hand, in the field of employment, the Spanish Council of Ministers approved on 7 November 2023 a Royal Decree empowering the Ministry of Economic Affairs and Digital Transformation, through its Secretary of State for Digitalisation and Artificial Intelligence, to open the call for companies to participate in the controlled test environment -sandbox- of the European Regulation on Artificial Intelligence. This initiative is part of Spain's digital transformation strategy, called Agenda España Digital 2026, which is part of the Recovery Plan and, in particular, the National Strategy for National Intelligence.

<https://portal.mineco.gob.es/es-es/comunicacion/Paginas/entorno-controlado-de-pruebas-sandbox-del-Reglamento-Europeo-de-Inteligencia-Artificial.aspx>

Serbia has developed Strategy for the development of Artificial Intelligence in Republic of Serbia for the period 2022-2025

<https://www.srbija.gov.rs/tekst/437277>

with specific objectives and measures to: Develop the education geared to the needs of modern society and economy conditioned by the advancement of artificial intelligence through:

Enhancement of teaching contents at primary and high schools in accordance with the requirements conditioned by the progress of artificial intelligence, establishment of minimal standards regarding the presence of artificial intelligence in basic studies in the area of computer science and computer engineering,

development of postgraduate study programs in the field of artificial intelligence, development of professional training through short study programs and informal learning, greater openness of universities for cooperation with the aim of implementing study programs in the field of artificial intelligence. The whole set of Serbian legislation and AI regulation can be found at <https://attorney.rs/pravna-regulativa-vestacke-inteligencije-ai/>

In November 2023 Serbia has become a member of Alliance for Managing Artificial Intelligence.

<https://www.ai.gov.rs/vest/sr/572/kako-unaprediti-obrazovanje-pomocu-vi.php> and have established an Institute for AI development <https://ivi.ac.rs/>

Serbia just got a three year mandate in Global Partnership for AI which is in charge of making standardisation and regulations in the field <https://www.euronews.rs/magazin/nauka/117131/srbija-na-celu-globalnog-partnersva-za-vestacku-inteligenciju-imamo-potencijal-i-strucne-kadrove-u-ovoj-oblasti/vest>



The European Union has stressed the importance of ethical guidelines and data protection laws, such as the General Data Protection Regulation (GDPR), to address concerns related to data privacy and bias within AI applications in education. Europe's approach to AI emphasizes not just innovation and efficiency, but also prioritizes ethical standards, aiming to set a global benchmark for AI that respects fundamental rights and promotes societal well-being (Stahl, 2020). The EU's approach emphasizes the need for inclusivity, equity, and transparency in AI, reflecting a comprehensive strategy to leverage AI's benefits while mitigating its risks.



The European Union has highlighted the need for regulatory frameworks to address AI's impact on employment, with a particular focus on workers' rights. Initiatives like the European Pillar of Social Rights aim to anticipate and tackle growing inequalities exacerbated by AI, promoting upskilling and labor market resilience.

The latest regulation on artificial intelligence, the **Artificial Intelligence Act**, bans any use of AI to identify the emotional states of students and workers (Refer to Section 44 of the Act for more details). It classifies the following types of technological application in the educational setting as High-Risk (Annex III)

A

AI systems intended to be used to determine access or admission or to assign natural persons to educational and vocational training institutions at all levels;

B

AI systems intended to be used to evaluate learning outcomes, including when those outcomes are used to steer the learning process of natural persons in educational and vocational training institutions at all levels;

C

AI systems intended to be used for the purpose of assessing the appropriate level of education that an individual will receive or will be able to access, in the context of or within educational and vocational training institutions;

D

AI systems intended to be used for monitoring and detecting prohibited behaviour of students during tests in the context of or within educational and vocational training institutions

High-risk AI systems will be subject to strict obligations before they can be put on the market. A press release by the Commission describes the measures in the following way:

- ▶▶ "adequate risk assessment and mitigation systems;
- ▶▶ high quality of the datasets feeding the system to minimise risks and discriminatory outcomes;
- ▶▶ logging of activity to ensure traceability of results;
- ▶▶ detailed documentation providing all information necessary on the system and its purpose for authorities to assess its compliance;
- ▶▶ clear and adequate information to the deployer;
- ▶▶ appropriate human oversight measures to minimise risk;
- ▶▶ high level of robustness, security and accuracy."

By the time of this paper, the **AI Act** is the last and most relevant policy action of the **European Union** on the topic. However, it is worth mentioning that it results from multiple years of research from EU's institutions and various other documents:

-Ethics Guidelines for Trustworthy AI:

<https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>

The EU has published guidelines that outline requirements for trustworthy AI, including transparency, fairness, and accountability.

-White Paper on Artificial Intelligence: The EU's White Paper discusses ways to support the development and use of AI in Europe, including addressing societal and ethical challenges and ensuring that AI systems are safe and respect existing laws on fundamental rights and values.

-Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators

<https://op.europa.eu/en/publication-detail/-/publication/d81a0d54-5348-11ed-92ed-01aa75ed71a1>

-Final report of the Commission expert group on artificial intelligence and data in education and training

<https://op.europa.eu/en/publication-detail/-/publication/7f64223f-540d-11ed-92ed-01aa75ed71a1>

-Report By the European Digital Education Hub's Squad on artificial intelligence in education

<https://op.europa.eu/en/publication-detail/-/publication/9bb60fb1-b42a-11ee-b164-01aa75ed71a1>

-On the futures of technology in education: Emerging trends and policy implications

<https://op.europa.eu/en/publication-detail/-/publication/e4b09917-582f-11ee-9220-01aa75ed71a1>

-Unpacking the impact of digital technologies in education

<https://publications.jrc.ec.europa.eu/repository/handle/JRC132998>

These policies and strategies demonstrate a commitment to addressing the complex challenges and opportunities presented by AI in education and employment. They emphasize the importance of ethical standards, the protection of personal data, and the need for skills development to ensure that the benefits of AI are widely accessible.

The European AI Office has been established as part of the EU Digital strategy (available at <https://digital-strategy.ec.europa.eu/en/policies/ai-office>) that will support the development and use of trustworthy AI, while protecting against AI risks. The AI Office has been established within the European Commission as the centre of AI expertise and forms the foundation for a single European AI governance system. The EU aims to ensure that AI is safe and trustworthy. The AI Act is the first-ever comprehensive legal framework on AI worldwide, guaranteeing the health, safety and fundamental rights of people, and providing legal certainty to businesses across the 27 Member States. What AI means for employers is stated in the AI Act:

"AI tools intended to be used in the workplace are generally considered "high risk," and therefore subject to significant regulations. Generally, under the AI Act, employers must:

▶▶ inform workers' representatives and affected workers that they will be subject to the AI system;

▶▶ implement human oversight by individuals who have adequate competence, training, and authority, as well as the necessary support;

▶▶ monitor use of the system, and if an issue like discrimination arises, immediately suspend using the system and notify both the provider, the importer or distributor, and the "relevant market surveillance authority";

▶▶ maintain the logs automatically generated by the system for an appropriate period, which must be at least six months; and

¹For more information <https://digital-strategy.ec.europa.eu/en/policies/ai-office>

- ▶▶ comply with any applicable data privacy laws²

Documents by European institutions:

- AI, the future of work?

<https://op.europa.eu/en/publication-detail/-/publication/096526d7-17d8-11ea-8c1f-01aa75ed71a1> - Publications Office of the EU

- Futures of green skills and jobs in Europe in 2050

<https://op.europa.eu/en/publication-detail/-/publication/2f2543c2-c4b5-11ee-95d9-01aa75ed71a1/language-en/format-PDF/source-311689589>

- Advanced digital technologies and investment in employee training

<https://op.europa.eu/en/publication-detail/-/publication/6dfe780b-bc12-11ed-8912-01aa75ed71a1/language-en/format-PDF/source-311689960>

- The digital age: Implications of automation, digitisation and platforms for work and employment

<https://www.eurofound.europa.eu/en/publications/2021/digital-age-implications-automation-digitisation-and-platforms-work-and>

- Future of work, future of society

<https://op.europa.eu/en/publication-detail/-/publication/9ee4fad5-eef7-11e9-a32c-01aa75ed71a1/language-en/format-PDF/source-311690999>

Documents by other institutions:

- Trustworthy artificial intelligence (AI) in education - OECD

https://www.oecd-ilibrary.org/education/trustworthy-artificial-intelligence-ai-in-education_a6c90fa9-en

- Beijing Consensus on Artificial Intelligence and Education - UNESCO

<https://unesdoc.unesco.org/ark:/48223/pf0000368303>

- AI and education: guidance for policy-makers - UNESCO

<https://unesdoc.unesco.org/ark:/48223/pf0000376709>

²Ogletree Deakins. (2024, February 2). *EU Reaches Agreement on AI Act Text: What This Means for Employers*. Retrieved March 26, 2024, from

<https://ogletree.com/insights-resources/blog-posts/eu-reaches-agreement-on-ai-act-text-what-this-means-for-employers/>

- The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers

<https://www.oecd.org/publications/the-impact-of-ai-on-the-workplace-main-findings-from-the-oecd-ai-surveys-of-employers-and-workers-ea0a0fe1-en.htm>

- Council of Europe - Regulating Artificial Intelligence in Education

<https://rm.coe.int/regulating-artificial-intelligence-in-education-26th-session-council-o/1680ac9b7c>

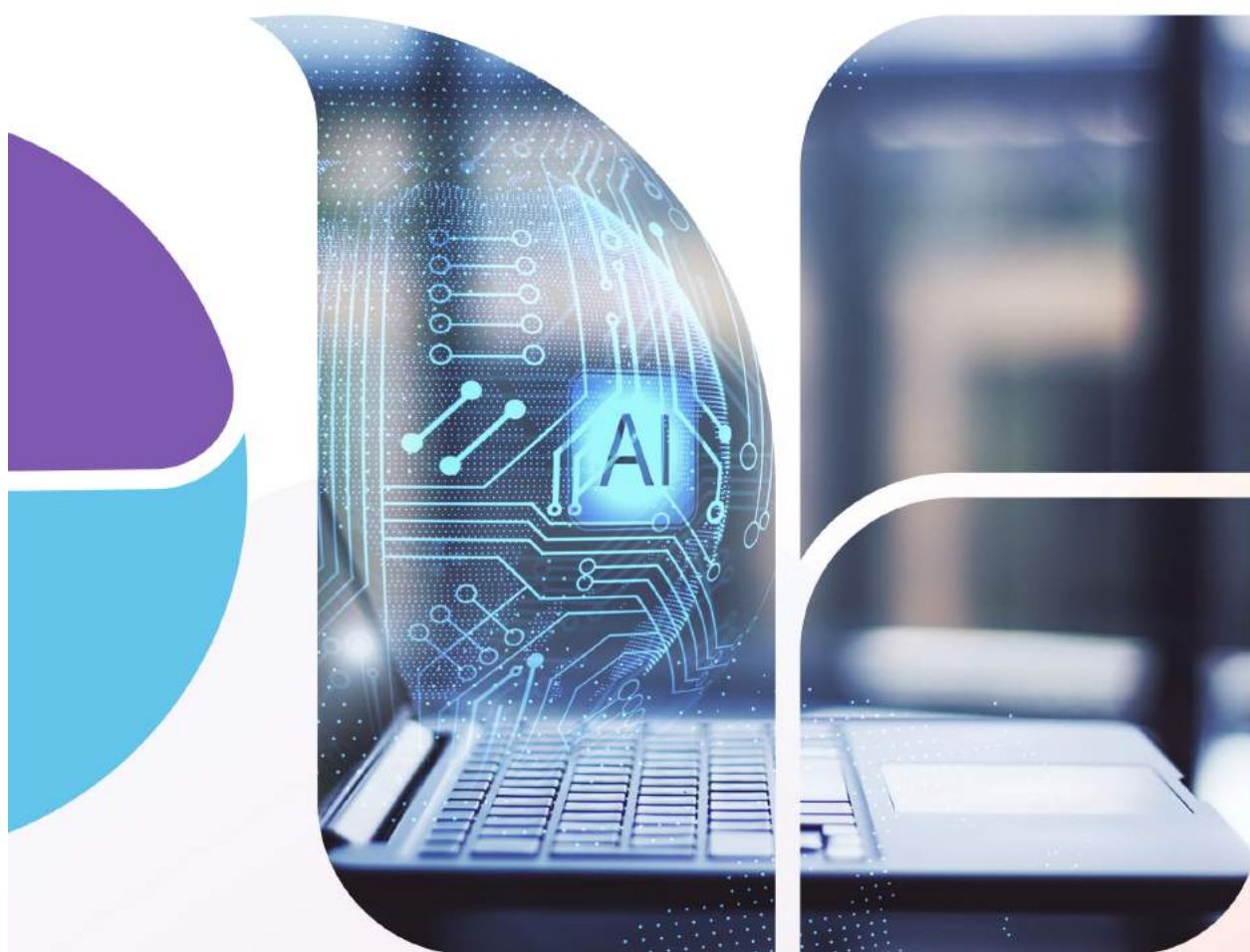
Academic resources:

- “Negotiating the algorithm”: Automation, artificial intelligence and labour protection - ILO

https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_634157.pdf

- Daron Acemoglu, Pascual Restrepo, The wrong kind of AI? Artificial intelligence and the future of labour demand, Cambridge Journal of Regions, Economy and Society, Volume 13, Issue 1, March 2020, Pages 25–35,

<https://academic.oup.com/cjres/article-abstract/13/1/25/5680462?redirectedFrom=fulltext>



Questionnaires

This questionnaire aims to assess youth workers' current understanding, skills, and perspectives on the use of artificial intelligence (AI) and algorithms in education and employment.. It seeks to explore potential training and professional development opportunities that could enhance their capabilities in integrating AI into their practices. This 10-minute survey consists of 22 questions structured into five key sections:



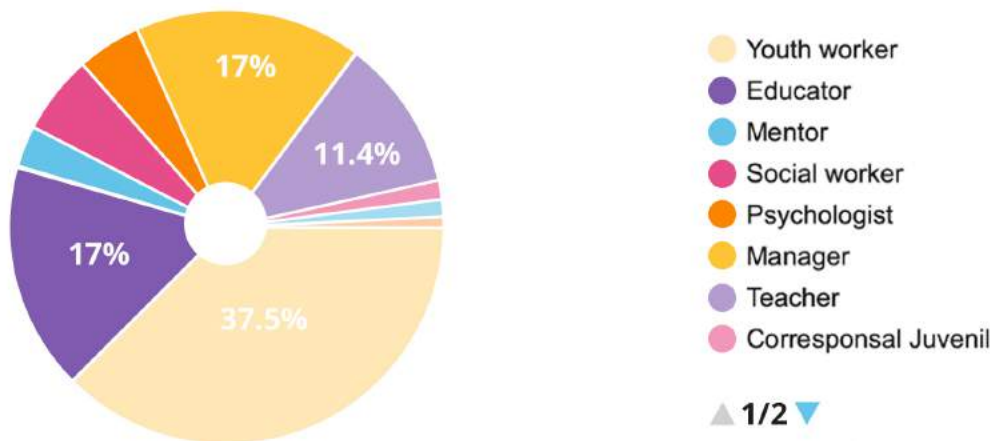
The responses will contribute to a clearer understanding of the current landscape and inform future initiatives.

Descriptive Statistics:

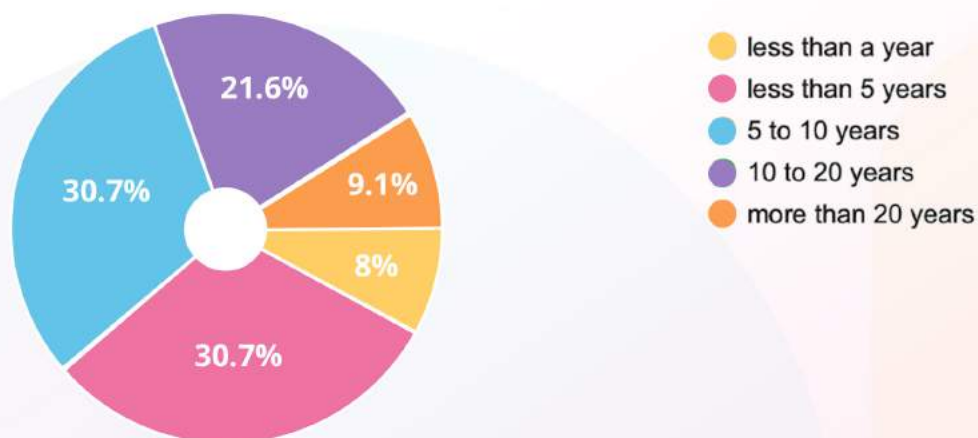
Here are some key insights from the categorical data:

The first two questions of the survey gave us information on the background of the respondents. **Youth workers are the most represented group** among the respondents, with the majority having fewer than 5 years of experience. This may be related to high turnover or a large influx of new workers in this field. **Educators and managers** also have a significant presence, with a balanced distribution across different experience levels, indicating stable career paths within these roles. **Teachers** predominantly have 5 to 10 years of experience, which might suggest a mid-career stage for most of them in youth-related educational roles. Other roles, such as **psychologists, social workers, and mentors** are less represented but show a mix of experience levels, reflecting varied career paths in these specialized fields.

1. What is your current role in working with youth?



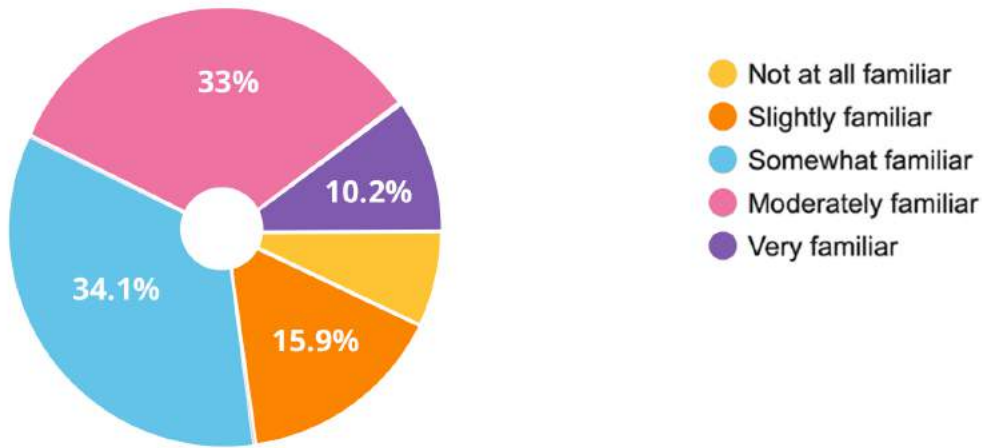
2. How many years of experience do you have in youth work?



The data highlight a diverse range of experience across different roles, with a notable concentration of youth workers in the early stages of their careers and a substantial representation of educators and managers with more extended experience. This variety can provide valuable insights into the planning of training programs, understanding needs at different career stages, and appropriately tailoring support to enhance the effectiveness and retention of those working with youth.

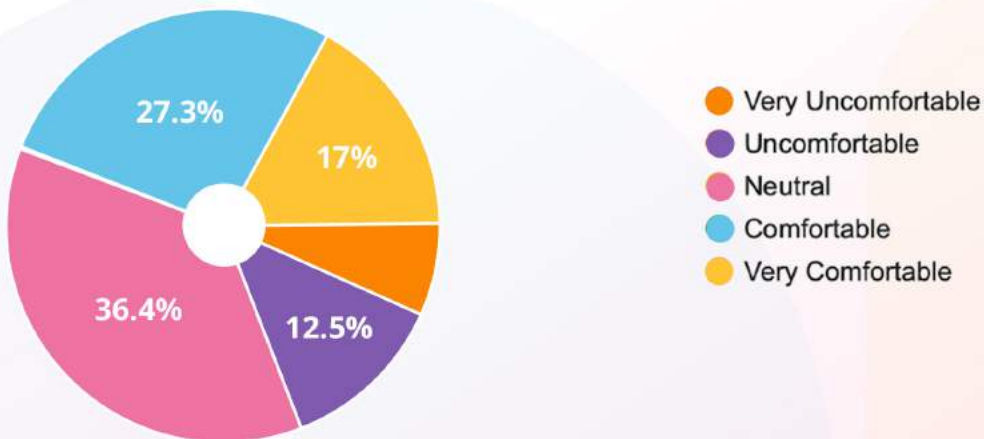
When asked about their **familiarity with AI**, most participants rate their understanding between "Somewhat familiar" and "Moderately familiar," indicating a general intermediate level of AI knowledge. There is a smaller group at the extremes ("Not at all familiar" and "Very familiar"), suggesting that targeted educational interventions, such as introductory sessions for the least familiar and advanced workshops or leadership roles for the most familiar, could be beneficial. This data provides valuable insight into designing differentiated educational programs that cater to varying levels of AI understanding among youth workers.

3. On a scale from 1 to 5, how would you rate your current understanding of Artificial Intelligence (AI)?



We can categorize the responses to the question about **how comfortable youth workers feel discussing AI and algorithms** with the youth they work with, into levels of comfort.

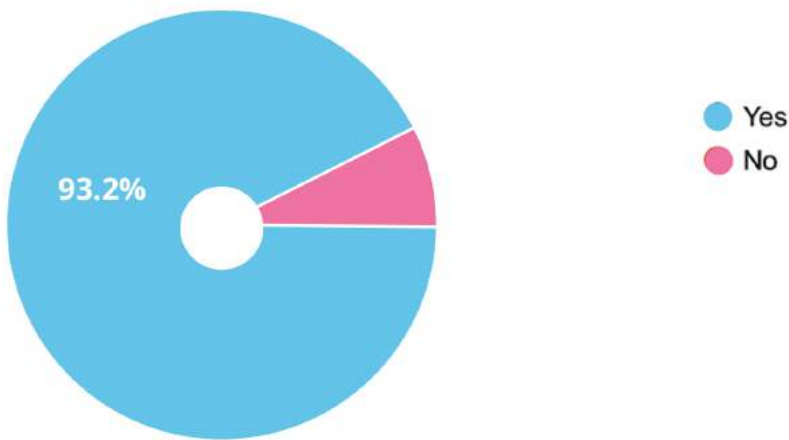
6. How comfortable do you feel discussing the concepts of AI and algorithms with the youth you work with?



The results show a fairly positive overall comfort level among youth workers discussing AI and algorithms, with a majority indicating they are either "Comfortable" or "Very Comfortable." However, a significant number of respondents feel "Neutral," suggesting they may not feel strongly one way or another, or may lack confidence or sufficient knowledge to feel comfortable. Those who are "Uncomfortable" or "Very Uncomfortable" represent a smaller but notable proportion, indicating areas where additional support or training could be beneficial. Easy-to-understand materials and resources would also help youth workers effectively discuss AI topics with youth.

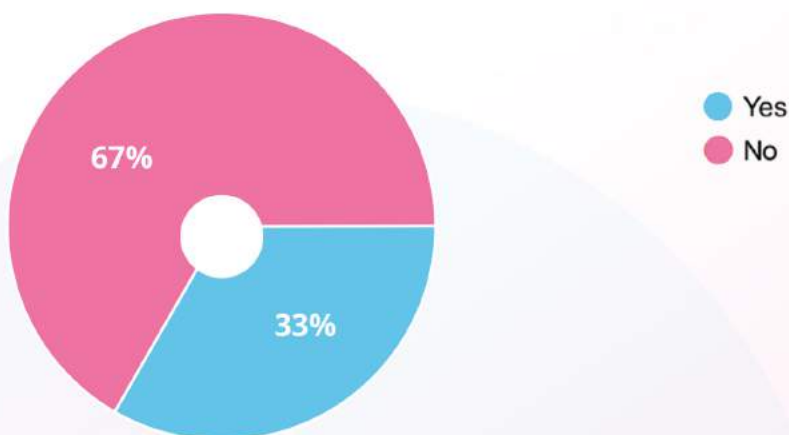
About 93% of respondents expressed **interest in joining a network or community** of practice focused on AI in youth work, while only about 7% were not interested, indicating strong support for such a community initiative.

20. Would you be interested in a network or community of practice focused on AI in youth work?



The data suggest a moderate **level of engagement** with professional development related to AI among the survey participants, with a slight leaning towards not participating.

8. Have you participated in any training or professional development related to AI?



For those who do engage, online courses seem to be the preferred method, likely due to their convenience and the ability to participate remotely.



Online courses are the most popular type of training among those who have participated in AI-related professional development. This might indicate a preference for the flexibility and accessibility that online courses offer.



Workshops and self-study are also common, indicating that respondents value both structured, interactive learning environments and independent learning approaches.



Conferences, though less frequent, are still notable for providing opportunities for networking and exposure to new ideas in the field.



TC Erasmus+ and general training courses were the least mentioned option, possibly due to their specificity or limited availability.

This information could be useful for planning future AI training initiatives, emphasizing more accessible, flexible training options like online courses to increase participation rates. Additionally, increasing awareness and availability of workshops and hands-on sessions might cater to those preferring interactive and practical learning experiences.

Text Analysis:

There are several questions with open-ended responses in the survey, touching on topics like AI tools used, training types, AI applications in youth work, and ethical implications. Nearly 87% of respondents stated that they have previously used AI tools or platforms in their work. From the responses on AI tools used by participants, here are the **most frequently mentioned tools**:

- 1 ChatGPT: Mentioned by 71 respondents
- 2 Duolingo: 43 mentions
- 3 Google Assistant: 36 mentions
- 4 Siri: 23 mentions
- 5 Alexa: 21 mentions

These results highlight a strong preference for voice assistants and educational tools in the context of AI applications in youth work. ChatGPT leads significantly, indicating its popular use among participants, likely due to its versatility and accessibility. This analysis provides insights into the tools currently utilized, also suggesting potential areas for further training or development.

Building on this question, when asked about **AI tools and applications identified by respondents as beneficial in their work with youth**, we can categorize and quantify how frequently each tool is mentioned. This will provide insights into which AI applications are considered most useful by youth workers.

- ▶▶ **ChatGPT**, the most frequently mentioned tool, indicates significant relevance and versatility in educational settings.
- ▶▶ **Duolingo** follows, highlighting the demand for tools that support language learning.
- ▶▶ **Grammarly** is frequently noted, underscoring the importance of writing skills in educational settings.
- ▶▶ **Google Bard** and **QuillBot** are also prominent, suggesting interest in diverse AI functionalities from conversational AI to writing assistance.
- ▶▶ Tools like **Open AI Playground**, **Fotor**, and **QuizGecko** show specialized uses but are important for specific educational purposes.



This analysis reveals that youth workers value a diverse array of AI tools that enhance language learning, writing, interactive learning, and creative tasks. The focus on these tools suggests a desire for integrating AI into various aspects of educational and developmental activities, enhancing both engagement and learning outcomes in youth education.

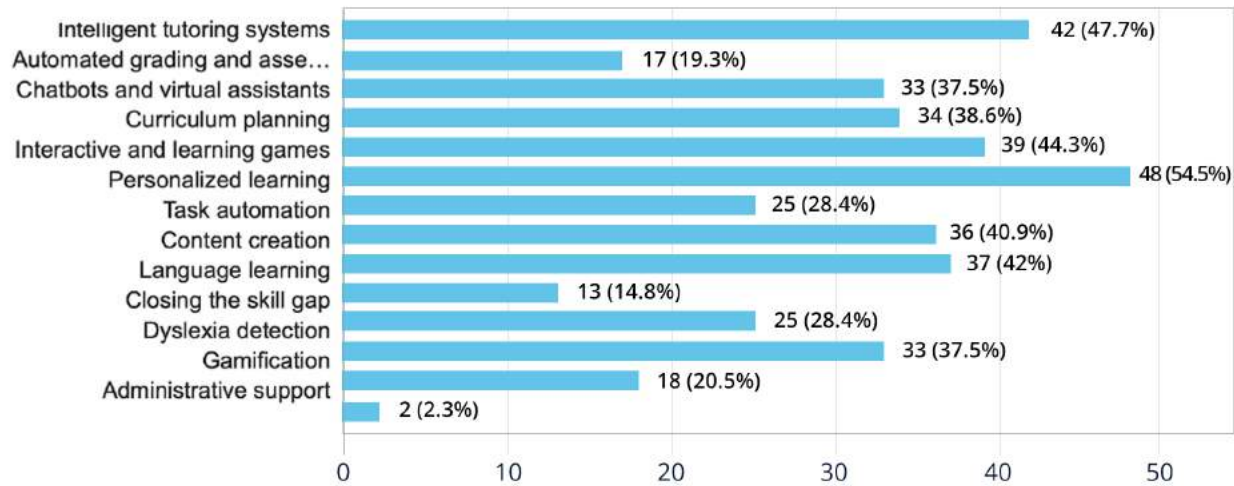
Since this question **“What AI topics are you most interested in learning more about?”** Given that the question 'What AI topics are you most interested in learning more about?' allows for multiple topics per response, the data presents complex patterns with varied combinations.. Here are the most frequently mentioned AI topics that respondents are interested in learning more about:

- 1 Using AI for Teaching and Education: 49 mentions
- 2 Ethics of AI: 46 mentions
- 3 Graphic and Video Documents Creation: 36 mentions
- 4 Foreign Language Teaching: 34 mentions
- 5 Text Editing: 34 mentions
- 6 Counseling and Self-Help: 23 mentions
- 7 Promotional Activities (Viral Marketing): 19 mentions
- 8 Deep Fake: 16 mentions
- 9 Animation: 15 mentions
- 10 Legal Services: 14 mentions
- 11 Augmented Reality (AR): 8 mentions
- 12 AI for Engineering: 1 mention
- 13 The State of Data Collection and Processing: 1 mention



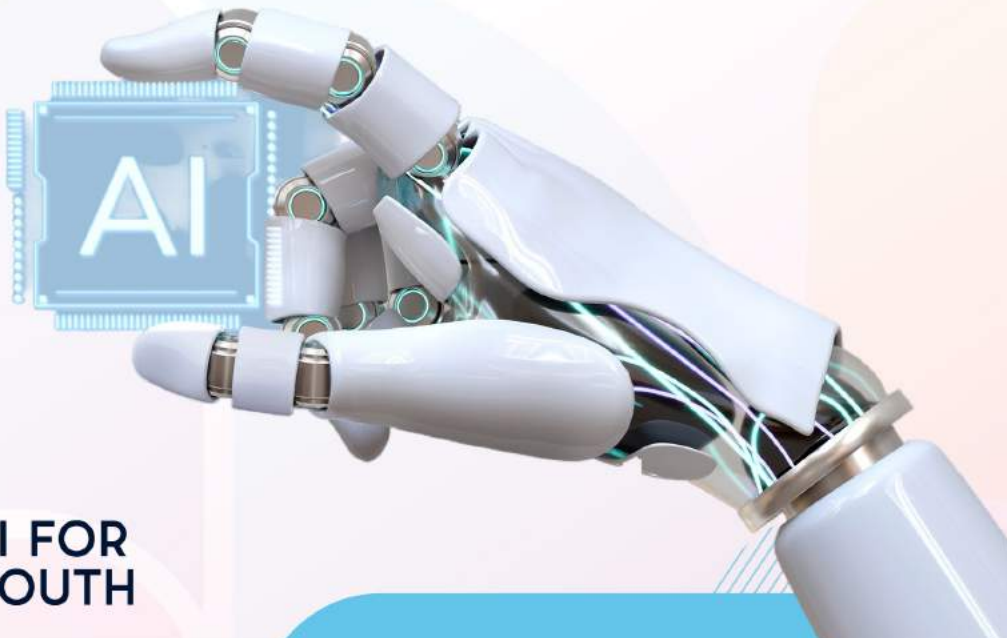
A very important question on how do respondents think **AI can be used to enhance educational outcomes for youth** reveals a broad recognition of the diverse applications of AI in enhancing educational outcomes. Personalized learning, intelligent tutoring systems, and interactive and learning games are highlighted as particularly valuable, suggesting a focus on adaptive, engaging, and individualized learning experiences. AI's role in administrative efficiency and specialized educational needs like dyslexia detection also indicates a wider understanding of its benefits beyond direct teaching aids.

11. How do you think AI can be used to enhance educational outcomes for youth? (you can tick more than one answer)

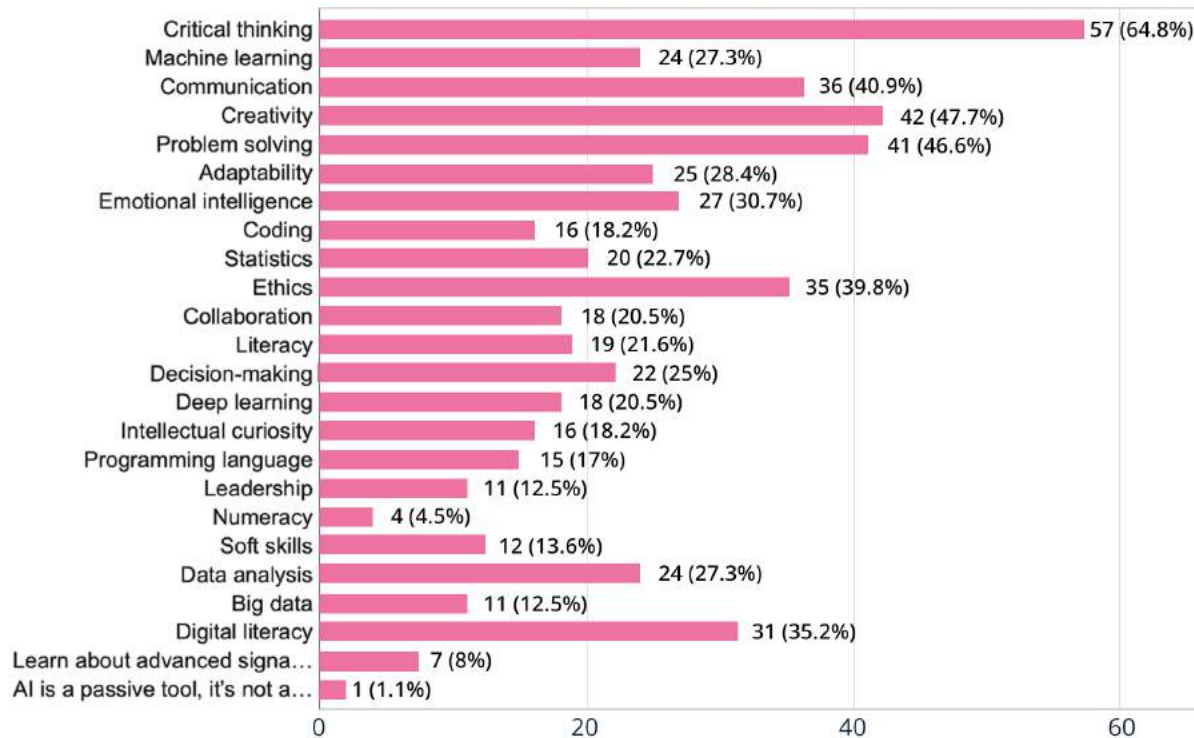


These insights could guide educational policy makers, software developers, and educators in prioritizing areas of AI development and implementation in educational settings, ensuring that the technologies developed are aligned with the needs and expectations of the educational community.

Question **what skills related to AI respondents think are most crucial for youth to learn** gives the diversity of responses and highlights a comprehensive skill set that encompasses both technical know-how and soft skills, essential for thriving in an AI-enhanced future. The consistent emphasis on critical thinking suggests it is crucial for effectively questioning and interpreting AI outputs, making informed decisions, and solving complex problems. Similarly, technical skills such as machine learning and coding are deemed equally important, indicating that youth need not only to use but also to understand and develop AI technologies.



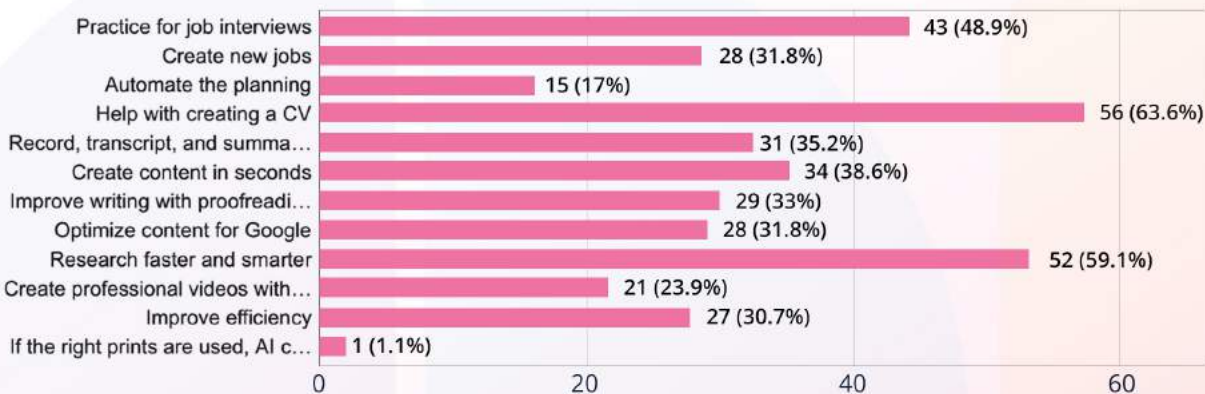
14. What skills related to AI do you think are most crucial for youth to learn? (you can tick more than one answer)



This also provides insights into necessary steps, such as recommending educational programs incorporate AI learning that balances technical training, such as machine learning and coding, with the development of critical thinking and problem-solving skills. Curricula should emphasize ethical considerations and digital literacy to prepare youth for responsible and informed interactions with technology. Additionally, they should focus on emotional intelligence and collaboration to ensure that youth can work effectively and empathetically in diverse, technologically advanced environments.

When asked how **AI could be used to support youth employment opportunities**, the responses revealed a strong belief in AI's potential to enhance employability and job performance through various means.. There is a focus on both the preparation phase of employment, such as CV writing and interview practice, and the operational efficiency within job settings, like meeting documentation and content creation. Furthermore, AI is perceived as a tool for creating new job opportunities, reinforcing an optimistic view of AI as a job creator rather than merely a job displacer.

15. How could AI be used to support youth employment opportunities?



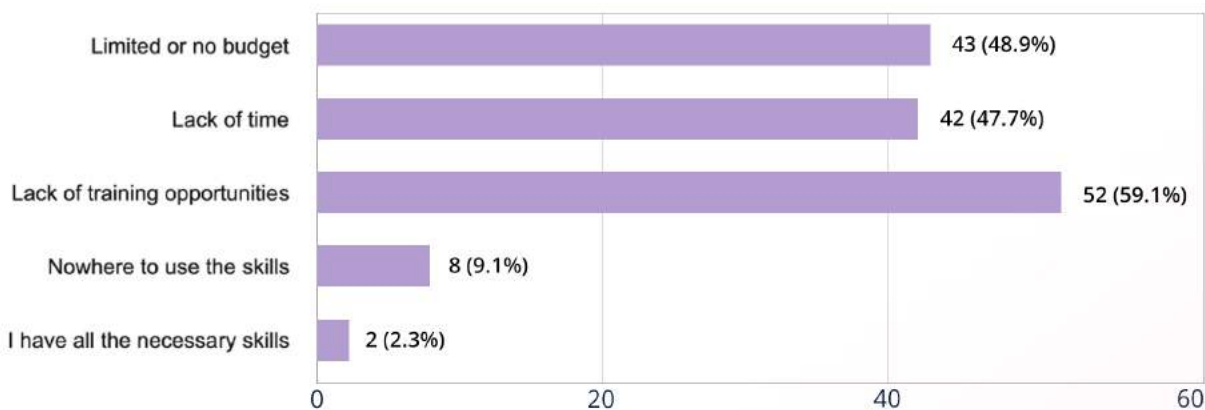
In discussing the challenges in integrating AI into youth education and employment, we can categorize and quantify the issues mentioned by respondents. The main challenges identified are:

■ The **lack of resources**, the second most common issue, suggests a foundational problem with funding or equipping programs to effectively adopt AI solutions.

■ **Limited understanding of AI** is also a major issue, signaling the need for educational programs that could enhance the AI literacy of youth workers.

■ **Legal and administrative challenges and communication issues**, although less frequently mentioned compared to the technical and resource challenges, still represent significant barriers that need to be addressed to facilitate smoother AI integration. The results indicate that addressing these challenges through targeted training, improved communication strategies, resource allocation, and the development of user-friendly AI tools could significantly enhance the effectiveness of AI integration into youth education and employment programs.

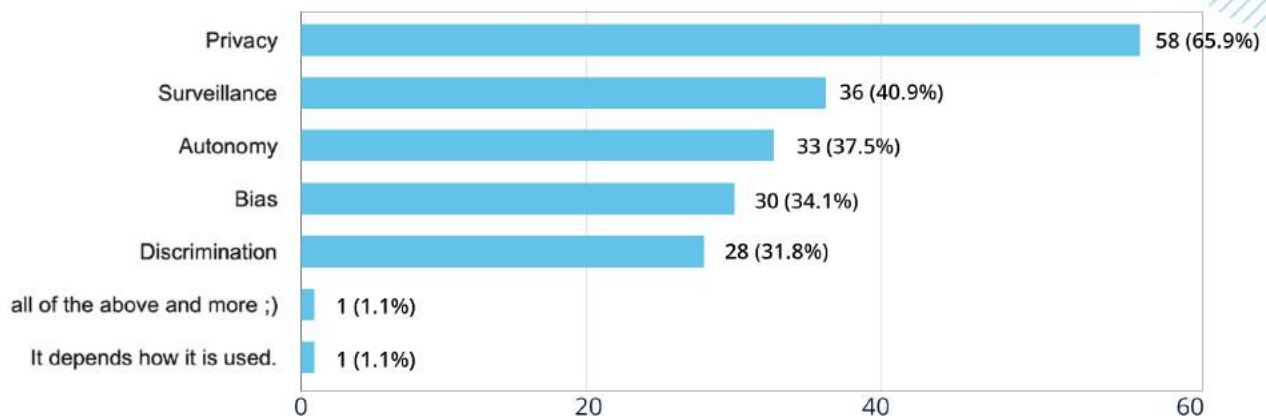
18. What barriers do you face in accessing professional development opportunities related to AI?



In response to questions about the ethical implications of using AI in education and employment for youth, respondents identified privacy and surveillance as the strongest threats for young people. This was followed by concerns over the lack of autonomy, potential bias, and discrimination.

The data clearly highlights a broad range of ethical concerns associated with the use of AI in educational and employment contexts for youth. Privacy emerges as the most common concern, pointing to the need for clearer data protection measures. Bias and discrimination are also major issues, highlighting the need for AI systems to be designed and implemented in a manner that promotes fairness and equality. Surveillance and autonomy concerns suggest apprehensions about the potential for AI to overreach into personal lives and decision-making processes.

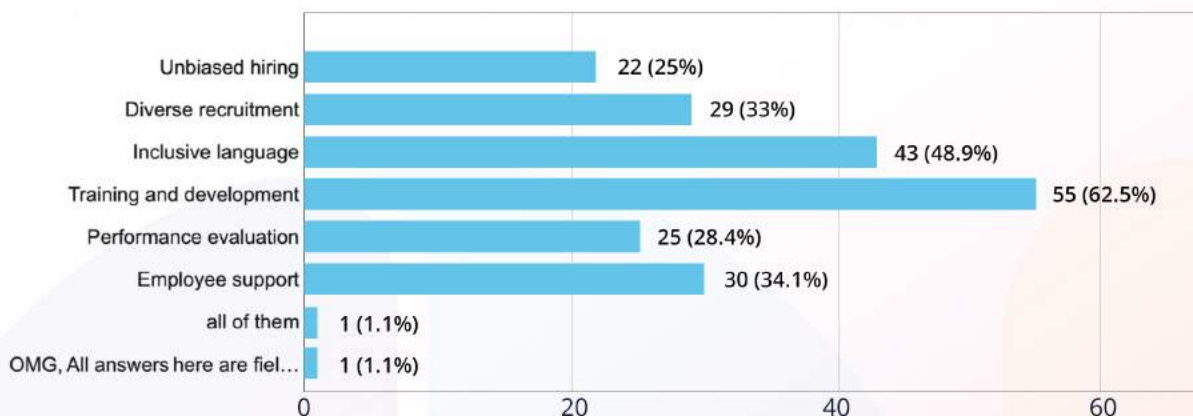
21. What do you see as potential the ethical implications of using AI in education and employment for youth?



The final question in the survey was **how can AI be used to promote inclusivity and diversity** in education and employment. These responses reveal a range of strategies that respondents believe can leverage AI to foster more inclusive and diverse environments.

- **Training and development:** the most frequently mentioned strategy, indicating a strong belief in the power of AI to customize learning and professional development to meet diverse needs.
- **Inclusive language:** Regularly mentioned, this suggests an emphasis on using AI to create environments that respect and acknowledge all forms of linguistic and cultural diversity.
- **Unbiased hiring and diverse recruitment:** Frequently noted, reflecting a priority on using AI to make hiring practices more equitable and reach a wider candidate pool.
- **Employee support and performance evaluation:** Mentioned multiple times, highlighting the role of AI in ensuring ongoing support and fair evaluation practices in the workplace.

22. How can AI be used to promote inclusivity and diversity in education and employment?



The data presents a clear consensus among respondents that AI can play a significant role in enhancing diversity and inclusivity in educational and employment settings. By automating and personalizing various processes, AI is seen as a tool that can help overcome traditional biases and barriers, making systems more equitable and supportive of all individuals. This includes as AI systems that can analyze job applications without bias, focusing solely on skills and qualifications to support diverse hiring practices, or AI-driven platforms that offer personalized training experiences, capable of adapting to the unique cultural and learning needs of diverse user groups.

Technological literacy: Mainstreaming technological literacy is essential. By prioritizing training and capacity building, as seen in Finland's national efforts, stakeholders can make informed, ethical, and productive use of AI.

Anticipating and tackling inequalities: Policy tools can govern changes to avoid exacerbating inequalities. The EU's focus on complementary technology and upskilling initiatives exemplifies how policy can shape AI's impact positively.

Addressing power imbalance and surveillance: The ethical deployment of AI in the workplace, as emphasized by Germany's AI strategy, requires strong regulations and open dialogue. Establishing new rights and protections for workers, as advocated by the EU, is crucial in maintaining a balanced power dynamic. The integration of AI in education and employment necessitates a comprehensive approach that balances technological advancements with ethical considerations and societal impacts. By drawing lessons from different European countries, policymakers can develop strategies that not only harness AI's potential but also safeguard against its risks, ensuring a future where AI serves the common good.

Based on the comprehensive survey data, structured into five key sections and covering various dimensions of AI in education and employment we can recognize several major points:

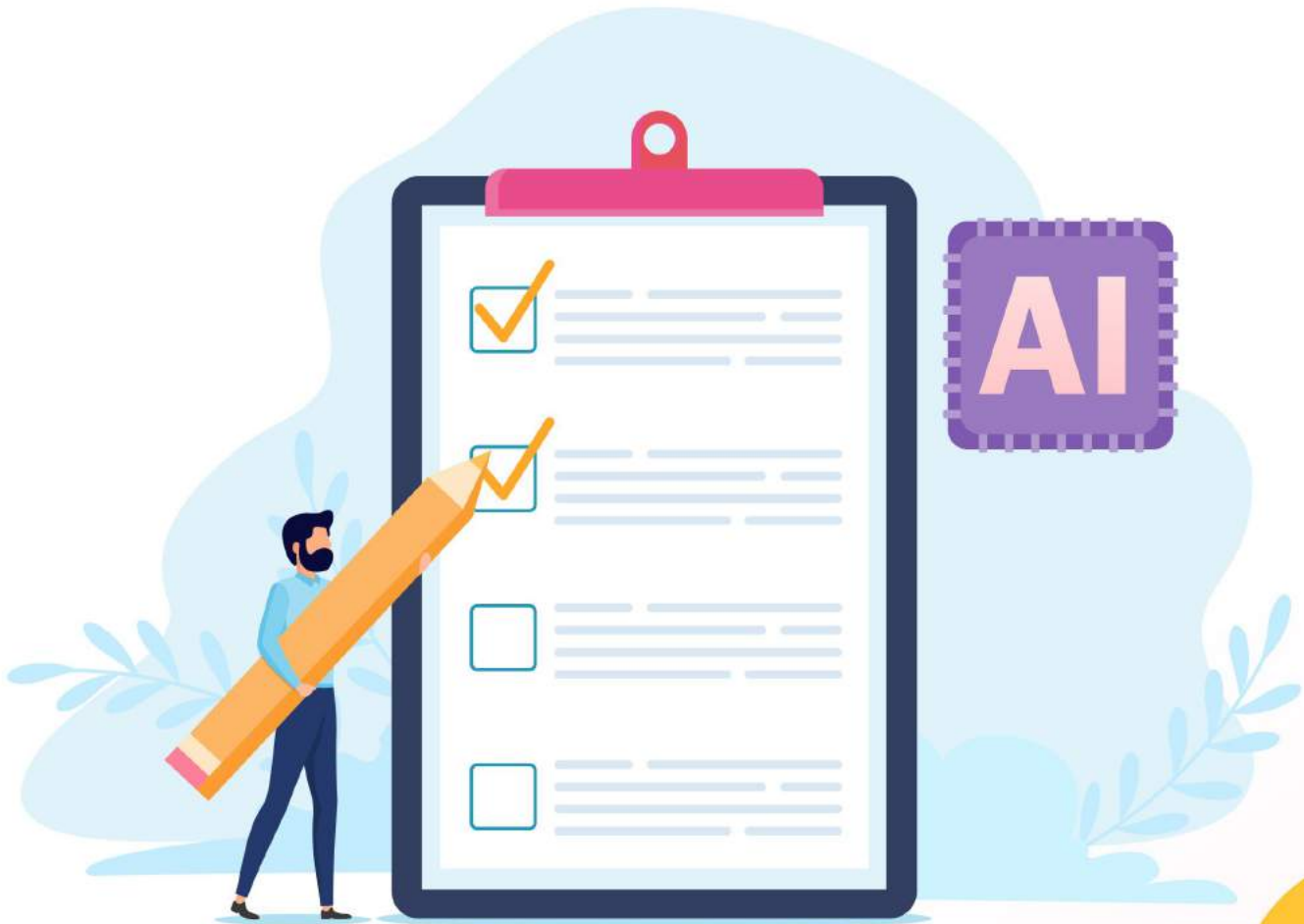
Diverse experience and backgrounds in youth work: The survey illustrates a broad range of experiences among respondents, from newcomers to seasoned professionals. This diversity offers a unique opportunity to tailor AI educational and training programs that address specific needs at different career stages, potentially increasing the adoption and effectiveness of AI tools in youth work.

General familiarity with AI: While there's a general intermediate level of understanding about AI, the presence of extremes (both low and high familiarity) suggests a need for differentiated learning pathways. Introductory sessions can help bring less familiar individuals up to speed, while advanced workshops can leverage the skills of more knowledgeable individuals, possibly turning them into AI champions within their communities.

Preferences in training and professional development: The preference for online courses and workshops underscores the need for flexible, accessible learning options that accommodate the varying schedules and learning preferences of youth workers. This also points to the potential effectiveness of blended learning formats that combine online and in-person sessions. The strong interest in a network or community of practice focused on AI indicates a significant demand for collaborative learning and support systems. This could facilitate the sharing of best practices, innovations, and challenges in AI application in youth work.

Ethical considerations and inclusivity: Ethical concerns and the need for AI to promote inclusivity and diversity are central to the respondents' interests. This suggests that any AI implementation strategy should not only address technical aspects but also consider ethical implications and strive to enhance equity in educational outcomes. The real power of AI in education lies in its potential to fundamentally shift our approach to teaching and learning, enabling personalized education that adapts to the needs and learning pace of individual students (Luckin, 2018).

The survey results provide valuable insights into the current landscape of AI in education, highlighting both the enthusiasm for its potential and the challenges that need to be addressed. By aligning AI tools and training with the needs and contexts of educators, particularly youth workers, there is a promising opportunity to enhance educational outcomes and foster a more inclusive and ethically aware educational environment. These findings can guide future initiatives, ensuring they are both impactful and responsive to the needs of those at the forefront of educational and youth work.



Limitations of the research

Delving deeper into the specific context of AI in education can help identify nuanced limitations and suggest areas for in-depth investigation in the future.

■ **Sample Representation:** Further studies might aim to include a more representative sample across different geographical regions and educational settings to generalize findings more broadly. AI's role in education and employment can vary significantly across countries due to differences in regulatory environments, technology adoption rates, and educational philosophies. Different educational settings (urban vs. rural, public vs. private, primary vs. secondary vs. tertiary) might have varied access to and attitudes toward AI.

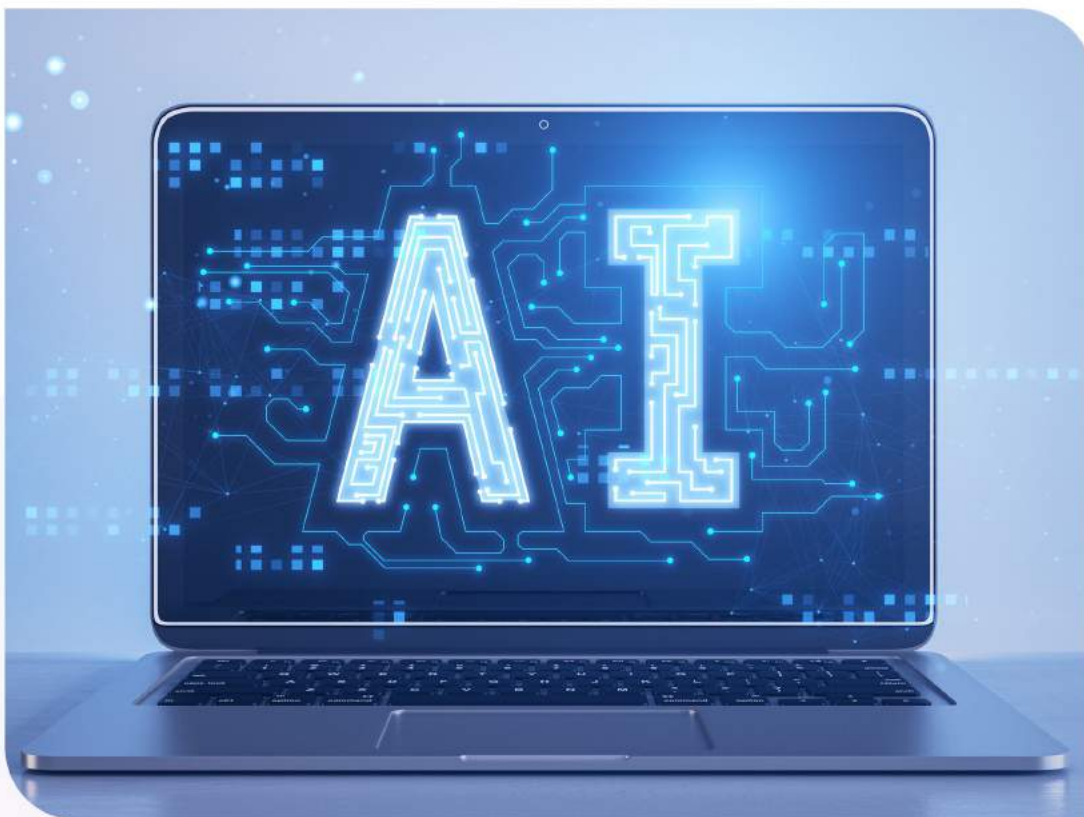
■ Longitudinal research could provide insights into how attitudes and the effectiveness of AI integration evolve over time. AI in education is a rapidly evolving field. Short-term studies might not capture the long-term effects and shifts in attitudes or outcomes.

■ More in-depth qualitative research could explore the reasons behind certain preferences or the specific challenges faced by educators in integrating AI into their practice. While quantitative data is excellent for identifying trends and general sentiments, qualitative data (like detailed open-ended responses) is crucial for understanding why those trends exist or how they impact individual behaviors and decisions.

■ Education is inherently interdisciplinary, and AI's impact touches on psychology, sociology, ethics, and technology. An analysis that incorporates these multiple perspectives could provide a more comprehensive understanding. How AI tools align with existing educational standards and curricula is also crucial.

■ Misconceptions: Misunderstandings or popular myths about AI (e.g., overestimating AI capabilities or fearing job displacement) could skew responses, especially if not clarified within the survey.

Addressing these detailed aspects in future research can enhance the understanding of AI's role in education and youth work, mitigate potential biases or limitations in the study design, and lead to more robust and actionable insights.



Conclusions

“Machine learning and deep learning will create a new set of hot jobs in the next 5 years.” ~Dave Waters - a computer scientist, CEO and co-founder of AI startup Nara Logics.

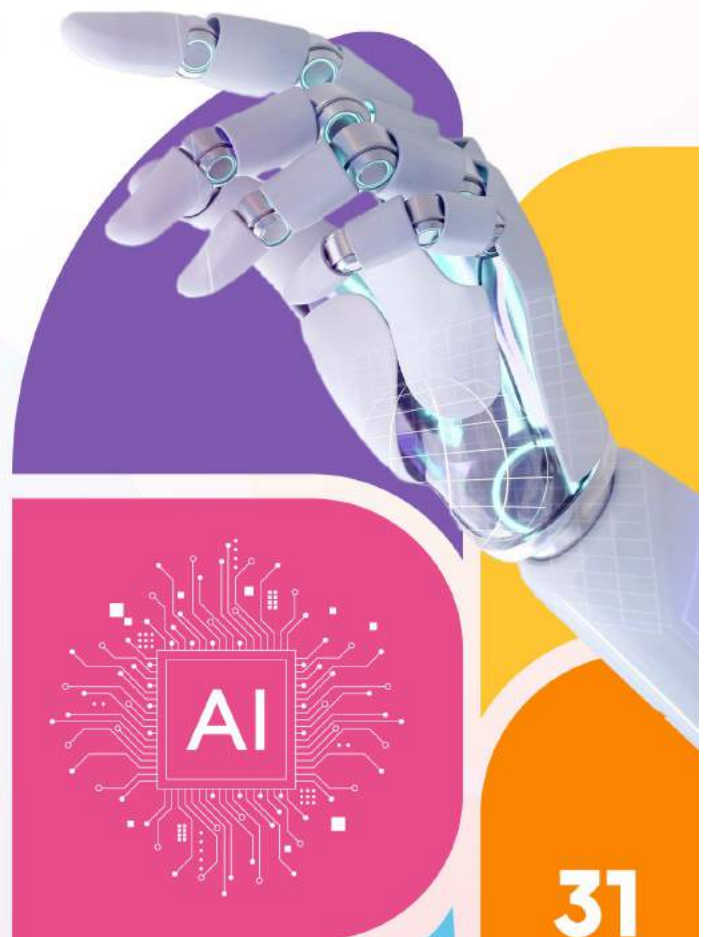
Combining the insights from the survey data and the broader context of AI integration in Europe provides a comprehensive understanding of the strategic importance of AI in education and employment, as well as the complexities involved in its ethical and effective implementation.

The integration of AI in education and employment is a dynamic area of development across Europe, with countries adopting varied strategies within the framework of EU guidelines. AI in education represents not just a technological transformation but also a profound socio-technical challenge, requiring nuanced understandings from educators and policymakers (Selwyn, 2019).

Across Europe, countries like Sweden, the Netherlands, Spain, Germany, and Finland showcase diverse strategies to integrate AI responsibly and through innovation. These national efforts are aligned with broader EU initiatives that emphasize trustworthy and ethical AI. By learning from each country's experiences and integrating these lessons into localized strategies, nations can effectively navigate the complexities of AI integration. The EU's Ethics Guidelines for Trustworthy AI and the varied national strategies illustrate the importance of maintaining a balance between harnessing the benefits of AI and mitigating its risks. This includes addressing technological determinism, preventing exacerbation of inequalities, and ensuring that power dynamics within workplaces do not become skewed.

The survey data underscores a robust interest in and moderate familiarity with AI among professionals such as youth workers, educators, and managers. This indicates substantial potential for further integration of AI technologies that could revolutionize educational methodologies and employment practices. However, challenges such as resource limitations, varying levels of AI literacy, and the need for ethical considerations remain prevalent.

There's a significant need for robust policies supporting AI education and training tailored to various expertise levels across professional domains. By investing in comprehensive educational programs and creating communities of practice, stakeholders can significantly enhance effective AI usage in education and employment. As seen in Finland, mainstreaming technological literacy is essential. This includes understanding potential ethical impacts, ensuring equitable technology access, and preparing for future labor market transformations due to AI disruptions.



Challenges and Concerns:

- **Data Privacy:** The collection and analysis of student data raise significant privacy concerns. Regulations like GDPR in Europe provide a framework for the protection of personal data in educational settings.
- **Bias and Fairness:** AI systems can inherit biases present in their training data, leading to unfair treatment of certain groups of students. AI systems used in recruitment can perpetuate biases if not carefully designed and monitored.
- **Accessibility:** There is a risk that the digital divide could widen if not all students have access to AI-powered learning tools. Organizations like UNESCO and the OECD have published guidelines on the ethical use of AI in education, emphasizing inclusivity, equity, and transparency.
- **Job Displacement:** Automation and AI could lead to the displacement of workers in certain sectors. Both in education and in the labour market AI could lead to higher inequalities. For example, automation is likely to have weaker effects on specialized workers and 'intelligent' and cheaper solutions can be left for the education of marginalised groups of society. Policy has the tools to govern and avoid such changes - by promoting development and deployment of complementary rather than automating technology (Acemoglu, 2020), by avoiding AI as a panacea (teachers are likely to be a better investment than AI in some contexts) and by promoting upskilling and labour market resilience.
- **Surveillance and Privacy:** The use of AI for employee monitoring raises ethical and privacy concerns. The deployment of AI can exacerbate the power imbalance between individuals (learners/workers) and institutions. Using AI to oversee individuals (even in softer versions as 'nudging') can lead to violation of privacy and cognitive freedom. Strong regulations and dialogue in the working place concerning AI, with workers unions, is recommended to foster a legitimate use of AI. The potentially disruptive effect of AI in the labour market should lead to more protection for workers, especially in non-standard employment, through establishment of new rights, capacity building of workers' unions, integration of psychosocial harms in monitoring practices and bodies across Europe and forms of non labour-based forms of income.
- **Technological determinism and rhetoric:** when digital policy is discussed we risk framing change as inevitable and inherently disruptive. However, emerging technologies are diverse (student-facing, teacher-facing, system facing / augmenting or automating tech) and tech can have multiple developments. AIED can have multiple outcomes in the quality of teaching, and technology can be more or less pro-worker. The outcome of the digital transformation depends on the material technology but also on the industrial, institutional, political and social choices. A first cornerstone of effective policy is a balanced and yet creative approach that avoids taking future scenarios for granted.
- **Resource Allocation:** Addressing the challenge of resource limitations requires strategic investments in AI tools and infrastructure that are specifically designed for educational environments, ensuring they are adaptable and scalable to meet diverse needs.

Broader Implications for Policy and Practice:

“Artificial intelligence has the potential to democratize access to education, healthcare and economic opportunities. Let's strive to make AI technology accessible and beneficial for all.” Rana el Kaliouby, CEO of Affectiva



Inclusive Policy Development: The data suggest a strong need for policies that support AI education and training, tailored to different levels of expertise and professional needs. Implementing comprehensive educational programs and creating communities of practice can significantly enhance the effective use of AI in youth education and employment. Although AI holds great promise, its deployment in sectors like education requires careful consideration of ethical and managerial implications to ensure that technology augments human capabilities without displacing them (Brynjolfsson, 2017).



Strategic Training Programs: Initiate tiered training programs to accommodate varying levels of AI familiarity, which will empower more educators and professionals to effectively use AI tools. Mainstreaming technological literacy, alongside tackling inequalities and ethical challenges, as emphasized in EU and national policies, are critical. These strategies ensure that AI not only fosters innovation and inclusivity but also aligns with the societal well-being. Knowledge of AI is essential for its ethical and productive use. In Europe, especially in small and medium enterprises, the lag in deploying AI is hampering productivity. While technological assessment is a complex practice, educators should be able to understand the technology they are working with and some of the ethical effects they have (for example, focus on 'instrumental rationality' and measurable performance over other forms of knowledge). Training and capacity building of workers, managers, educators and learners should be prioritised to ensure effective and right-based uses of AI.

The integration of AI into education and employment is not just about technological implementation but also involves a nuanced understanding of ethical, educational, and societal dimensions. By fostering an ecosystem that supports ethical guidelines, enhances technological literacy, and anticipates societal impacts, Europe can lead in creating a future where AI enhances educational experiences and employment opportunities, contributing to an inclusive, innovative, and ethically aligned society. The ethical use of AI requires not only that data processes are just and fair, but also that they have the capability to positively impact the well-being of individuals and the society at large (Floridi, 2016). This comprehensive approach ensures that as AI continues to evolve, it does so in a manner that is beneficial and equitable, supporting not just economic growth but also enhancing the quality of education and work life across Europe.



References

Adams, A., Cox, A. L. (2008). Questionnaires, in-depth interviews and focus groups. In: Cairns, Paul and Cox, Anna L. (eds). *Research Methods for Human Computer Interaction*. Cambridge, UK: Cambridge University Press, pp. 17–34.

Brynjolfsson, E., McAfee, A. (2017). The business of artificial intelligence. *Harvard Business Review*.

Convey, B. (2023). Future-proofing with ai: Navigating business landscape. LinkedIn.

<https://www.linkedin.com/pulse/future-proofing-ai-navigating-business-landscape-block-convey-llc/>

Acemoglu, D., Restrepo, P. (2020). The wrong kind of AI? Artificial intelligence and the future of labour demand, *Cambridge Journal of Regions, Economy and Society*, Vol. 13, Issue 1, March 2020, Pages 25–35,

<https://doi.org/10.1093/cjres/rsz022>

<https://academic.oup.com/cjres/article-abstract/13/1/25/5680462?redirectedFrom=fulltext>

Galindo, L., K. Perset and F. Sheeka (2021). An overview of national AI strategies and policies, *OECD Going Digital Toolkit Notes*, No. 14, OECD Publishing, Paris,

<https://doi.org/10.1787/c05140d9-en>.

Floridi, L. and Taddeo, M. (2016). What is data ethics? *Philosophical Transactions of the Royal Society*.

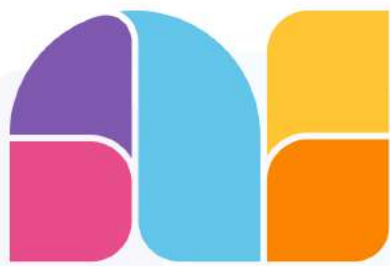
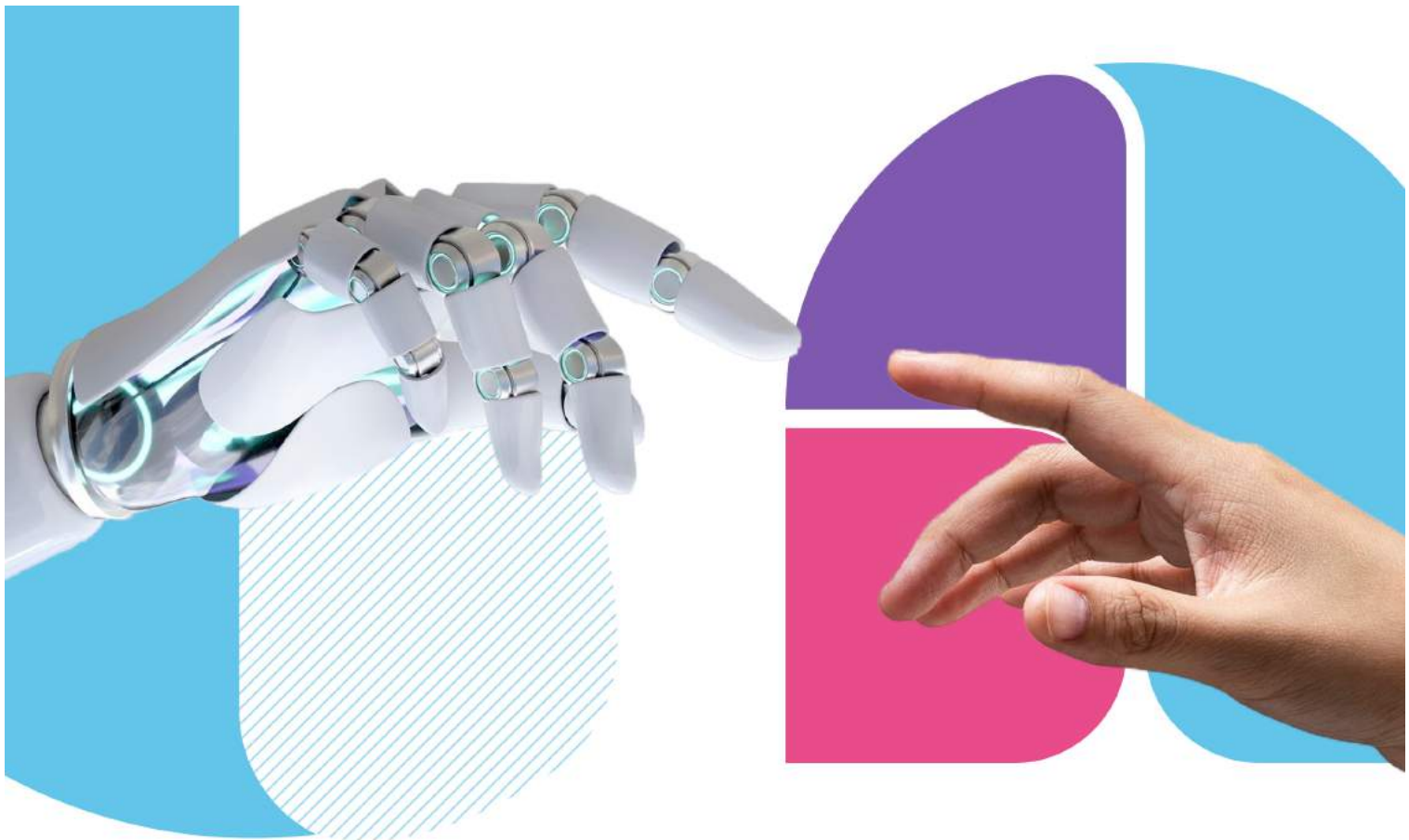
Luckin, R. (2018). *Machine Learning and Human Intelligence: The future of education for the 21st century*. UCL IoE Press.

Ogletree, D. (2024). EU Reaches Agreement on AI Act Text: What This Means for Employers. Retrieved March 26, 2024, from

<https://ogletree.com/insights-resources/blog-posts/eu-reaches-agreement-on-ai-act-text-what-this-means-for-employers/>

Selwyn, N. (2019). Artificial intelligence and the future of education systems. *British Journal of Educational Technology*.

Stahl, Bernd Carsten, et al. (2020). *Artificial Intelligence for Europe: Opportunities, Challenges and Risks*. Policy & Internet.



AI FOR YOUTH

CONNECT
INTERNATIONAL



backslash



Co-funded by
the European Union