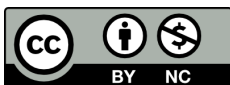


Artificial Intelligence Competence Needs for Youth Workers

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TABLE OF CONTENTS

| | |
|---|-----------|
| Executive Summary | 6 |
| 1. Project Overview | 7 |
| 2. Research Methodology | 9 |
| 2.1 Research Questions | 9 |
| 2.2 Research Methods | 9 |
| 2.2.1 Systematic Review | 9 |
| 2.2.2 Focus Groups | 11 |
| 2.2.3 Interviews | 11 |
| 2.3 Limitations | 12 |
| 3. Artificial Intelligence and Youth Work | 13 |
| 3.1 Introduction to Artificial Intelligence | 14 |
| 3.2 Artificial Intelligence and Youth | 20 |
| 3.3 The Multi-Dimensional Impacts of AI | 25 |
| 3.3.1 AI's Impact on Education | 25 |
| 3.3.2 Impact on Educational Accessibility and Inclusion | 27 |
| 3.3.3. AI's Social and Psychological Impact | 29 |
| 3.3.4. The Demand for AI Competences in the Labour Market | 31 |
| 3.4 The Role of Youth Workers in the AI Revolution | 34 |
| 3.5 AI for Youth Work: Use Cases | 39 |
| 4. AI Competence Needs for Youth Workers | 45 |
| 4.1 Existing Competence Frameworks | 46 |
| 4.1.1 The Digital Competence Framework for Citizens (DigComp 2.2) | 46 |
| 4.1.2 Digital Promise's AI Literacy Framework | 53 |
| 4.1.3 UNESCO's Mapping of Government-endorsed AI Curricula | 54 |
| 4.1.4 European Framework for the Digital Competence of Educators (DigCompEdu) | 55 |
| 4.1.5 UNESCO's AI Competency Framework for Teachers | 59 |
| 4.1.6 AI and Digital Transformation Competency Framework for Civil Servants | 60 |
| 4.2 Experiences from the Field: Focus Groups with Youth Work Professionals | 61 |
| 4.2.1 Focus Group Objectives | 61 |
| 4.2.2 Focus Group Process | 61 |
| 4.2.3 Composition of the Group | 62 |
| 4.2.4 Activity execution | 63 |
| 4.2.4.1. National Focus Group - Italy | 63 |
| 4.2.4.2. National Focus Group - Romania | 69 |
| 4.2.4.3. National Focus Group - Greece | 76 |
| 4.2.4.4. National Focus Group - Portugal | 81 |
| 4.2.5 Key Conclusions | 87 |

| | |
|-------------------------|-----------|
| 5. Conclusions | 92 |
| Acknowledgements | 95 |

LIST OF TABLES

| | |
|---|----|
| Table 1. AI in Education: Categories and Use Cases..... | 26 |
| Table 2. AI's Influences on Human Behavior..... | 30 |
| Table 3. DigComp 2.2: Competences Overview..... | 47 |
| Table 4. DigCompEdu Integration by the AI Pioneers Consortium..... | 58 |
| Table 5. Overview of UNESCO's draft AI Competency Framework for Teachers..... | 59 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1. Schematic representation of the functioning mechanisms of an AI system..... | 15 |
| Figure 2. Hierarchical representation of AI systems..... | 19 |
| Figure 3. Youth Interaction, Perception and Understanding of AI..... | 20 |
| Figure 4. Active users of Generative AI by Age Group..... | 21 |
| Figure 5. The Most Exciting AI ApplicationsI by Age Group..... | 22 |
| Figure 6. Generative AI use among Gen Z by gender..... | 23 |
| Figure 7. Cultural Differences in AI Usage and Perception..... | 24 |
| Figure 8. DigCompEdu Overview - © European Union 2017..... | 56 |
| Figure 9. Focus Group in Italy: Infographic..... | 63 |
| Figure 10. Focus Group in Romania: Infographic..... | 69 |
| Figure 11. Focus Group in Greece: Infographic..... | 76 |
| Figure 12. Focus Group in Portugal: Infographic..... | 81 |



ACRONYMS AND ABBREVIATIONS

| | |
|--------------|--|
| ADT | Accessible Digital Textbooks |
| AI | Artificial Intelligence |
| AI4YouthWork | Artificial Intelligence for Youth Work |
| AI HLEG | High-Level Expert Group on AI |
| ANN | Artificial Neural Network |
| CC | Creative Commons |
| ETS | European Training Strategy |
| GPT | Generative Pre-trained Transformer |
| NFL | Non Formal Learning |
| OECD | Organisation for Economic Co-operation and Development |
| SSRN | Social Science Research Network |
| UDL | Universal Design for Learning |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNICEF | United Nations Children's Fund |

EXECUTIVE SUMMARY

Artificial Intelligence for Youth Work (AI4YouthWork) is a pioneering initiative co-funded by the Erasmus+ programme of the European Union, dedicated to enhancing the youth sector across Europe through the integration of artificial intelligence (AI). The project unites four organisations - Lascò (Italy), Team 4 Excellence (Romania), Kyttaro Enallaktikon Anazitiseon Neon (Greece), and Contextos (Portugal) -, aspiring to contribute to increasing youth professionals' capacity to harness AI's potential to enhance the quality, attractiveness and effectiveness of their work, and prepare young people to thrive in AI-powered environments.

This study aims to advance knowledge on the specific competencies required by youth workers to integrate AI effectively into their professional activities and to picture the current knowledge, skills, and attitudes owned by youth professionals.

- **Chapter 1** introduces the project, highlighting the steps and methodological approaches to achieving the main objectives and expected results.
- **Chapter 2**, dedicated to the research methodology, outlines the approach and techniques used to conduct this study. It includes the research design, data collection methods through systematic review, focus groups and interviews, data analysis procedures, and limitations and criteria for ensuring the validity and reliability of the findings.
- **Chapter 3** presents the results of the desk research conducted by the consortium partners to explore the intersections of artificial intelligence, youth and youth work. The chapter is divided into four main sections, addressing an introduction to AI, the impact of AI on youth, the role of youth workers in the AI revolution, and practical applications of AI in youth work settings.
- **Chapter 4** outlines the needs, challenges, and tasks involved in integrating AI into youth work, presenting the results of focus groups conducted in each partner country.
- **Chapter 5** sets out the publication's conclusions, formulating recommendations for the development of an AI Competence Framework and enhancing the capacity of youth workers to harness AI in their professional work.

1. PROJECT OVERVIEW

Artificial Intelligence for Youth Work (AI4YouthWork) is a Cooperation Partnership in the Youth field co-funded by Erasmus+, the European Union's programme to support education, training, youth and sport in Europe.

The project brings together four organisations from four European countries:

| | |
|--|--|
|  Lascò (Coordinator) Digital innovation company lasco.io |  Team 4 Excellence Non-profit organisation trainingclub.eu |
|  Kyttaro Enallaktikon Anazitiseon Neon Non-governmental organisation kean.gr |  Contextos Social cooperative contextos.org.pt |



OBJECTIVES

The project aims to **contribute to increasing youth professionals' capacity to harness AI's potential to enhance** the quality, attractiveness, and effectiveness of their work.

Specific objectives:

- **Identify the competencies youth work professionals need** to integrate AI into their work.
- **Equip youth work professionals** with training and learning resources to adopt trustworthy AI solutions and foster young people's AI literacy.
- **Increase the awareness** of youth work professionals and young people on the benefits and limitations of adopting artificial intelligence.



KEY RESULTS

1 AI Competence Framework for Youth Workers

A **framework** identifying the **key competence areas, knowledge, attitudes, and skills** needed by youth workers to effectively integrate artificial intelligence into their work and guide youth in navigating an AI-powered future.

2 Digital Catalogue of e-Learning Experiences on AI

A digital catalogue of **open educational resources** on artificial intelligence for youth workers in English, Italian, Greek, Portuguese and Romanian, tailored to foster each competence outlined in the Competence Framework.

3 AI Training Toolkit

A **toolkit** for youth workers, including two key components:

(i) A **map of relevant, trustworthy AI-powered solutions** for youth work meeting the requirements defined in the *Ethics Guidelines for Trustworthy AI*¹ by the European High-Level Expert Group on AI (AI HLEG), the independent expert group set up by the European Commission in June 2018;

(ii) A collection of **workshop plans** to foster AI literacy among young people, encouraging critical thinking and responsible AI usage.

Learn more:
www.ai4youthwork.eu



¹ High-Level Expert Group on Artificial Intelligence (2018). *Ethics Guidelines for Trustworthy AI*.
<https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>

2. RESEARCH METHODOLOGY

The research methodology employed in this study was designed to gather and analyse data on the competence needs of youth workers in the era of AI to ultimately inform the development of an *AI Competence Framework for Youth Workers*.

2.1 Research Questions

This study proposes three main **research questions (RQs)**:

- RQ1** *How is AI transforming the way young people live, participate and learn?*
- RQ2** *What challenges and opportunities do youth work professionals face when integrating AI into their practice?*
- RQ3** *What competencies are essential for integrating AI into youth work?*

RQ1 seeks to explore the multifaceted impact of AI on young people's lives, focusing on their daily activities, social participation and educational experiences. It aims to understand the extent to which AI influences their behaviour, interactions, and overall well-being.

RQ2 addresses the practical implications of AI integration in youth work. It investigates the potential benefits and new possibilities that AI can bring to the field, as well as specific difficulties that youth work professionals encounter.

RQ3 aims to identify the key knowledge, attitudes, and skills youth workers need to effectively incorporate AI into their practice.

2.2 Research Methods

The research was conducted through a systematic review, focus groups, and interviews.

2.2.1 Systematic Review

The first component of the research methodology involved a systematic **review of existing competence frameworks and relevant literature**. A search strategy was designed by expanding the research questions (RQs) and identifying relevant keywords and search strings. Synonyms

and alternative spellings were also considered to maximise the retrieval of relevant publications and articles.

The research team focused on two **main terms of interest** in performing database searches: 'AI competencies' and 'artificial intelligence in youth work'. Synonyms and related terms were used to ensure a broad search. For instance, 'AI competence frameworks' included terms like 'digital competencies', 'AI skills, and 'AI competency models'. For 'AI in youth work', we included terms like 'AI in non-formal education', 'AI in education' and 'AI and youth'. The Boolean operators OR and AND were used to incorporate synonyms and connect keywords, forming the final search string.

The search was conducted on multiple databases and platforms, including the *United Nations Educational, Scientific and Cultural Organization (UNESCO) Digital Library*, the *Organisation for Economic Co-operation and Development (OECD) iLibrary*, the *Council of Europe's* online resource databases, the *EU Science Hub* of the European Commission's Joint Research Centre, the *Social Science Research Network (SSRN)* and *Springer*, as well as the *Erasmus+ Projects Results Platform* to identify relevant research results of complementary European projects. These databases were chosen for their comprehensive selection of relevant and recent articles. The search targeted titles, abstracts, and keywords, focusing on articles published from 2019 onwards to capture the most current advancements in the field.

One hundred forty-five articles were retrieved. Further refinement was conducted based on the relevance of the title, abstract and keywords to the research questions. A total of **48** sources were included in the research after data extraction.

The collected documents were systematically reviewed to extract relevant information on AI competencies and their integration into youth work. The analysis focused on identifying commonalities, intersections, and gaps within existing frameworks and literature. Insights were categorised and synthesised to provide a holistic understanding of the current state of knowledge on AI's impact on youth and youth work.

2.2.2 Focus Groups

The second research component involved conducting **focus groups with youth work professionals** to gather qualitative data on their needs, challenges, and perspectives regarding AI integration into their work.

Each partner organisation identified and recruited **10 youth work professionals** from their respective countries, ensuring diverse experiences and backgrounds in youth work and digital youth work.

Focus group sessions were structured to facilitate open and in-depth discussions on AI competencies, current practices, and the potential impact of AI on youth work. Discussions were guided by a set of predetermined questions designed to elicit detailed responses and insights from participants.

Results from the sessions were reported using a common reporting template to ensure a consistent capture of participants' contributions. Thematic analysis was then employed to identify key themes and patterns in the data. Insights from the focus groups were integrated with findings from the systematic review to provide a comprehensive understanding of AI competency needs for youth work professionals.

2.2.3 Interviews

The third component consisted of **interviews with three experts in AI**, youth work, and digital education to gain additional insights and validate findings from the systematic review and focus groups.

Experts were selected based on their experience and expertise in AI, digital competencies and youth work. Semi-structured interviews were conducted, allowing for flexibility in exploring topics of interest while ensuring consistency across interviews. Questions focused on AI competency requirements, best practices for integrating AI into non-formal education, and the future direction of AI in non-formal learning environments.

Interviews were transcribed, and content analysis was performed to extract relevant insights and corroborate findings from the other research components. The results contributed to formulating recommendations for developing an *AI Competence Framework for Youth Workers*.

2.3 Limitations

This study presents potential limitations:



- The systematic review was limited to articles published from 2019 onwards, potentially excluding relevant earlier works that could have provided additional insights.
- The focus groups were only conducted in partner countries, which may not fully represent the global diversity of youth work practices and challenges.
- While the number of participants in the focus groups and interviews is sufficient for qualitative analysis, it does not capture the full spectrum of experiences and perspectives within the field of youth work.
- While comprehensive, the reliance on selected databases and platforms may still miss some relevant sources of information, especially those not indexed in these databases.
- AI is a rapidly evolving field, and the findings from this research may quickly become outdated as new technologies and applications emerge.

Further research with a broader scope, larger sample sizes and continuous updates are necessary to keep the competence needs analysis relevant and comprehensive.

3. ARTIFICIAL INTELLIGENCE AND YOUTH WORK

This chapter presents the results of the desk research conducted by the consortium to explore the intersections of artificial intelligence, youth and youth work. The chapter is divided into four main sections, addressing an introduction to AI, the impact of AI on youth, the role of youth workers in the AI revolution, and practical applications of AI in youth work settings.

Section 3.1, "*Introduction to Artificial Intelligence*", introduces readers to AI's fundamental concepts and definitions to lay the foundation for a common understanding of AI systems.

Section 3.2, "*Artificial Intelligence and Youth*", delves into how AI interacts with and impacts young people. It addresses data on the increasing use of AI among young people in the EU, the growing demand for AI skills, and AI's multidimensional impact - educational, social and psychological - on youth.

Section 3.3, "*The Role of Youth Workers in the AI Revolution*," highlights youth workers' critical role in guiding young people in the responsible use of AI technologies. The section outlines the potential roles and responsibilities of youth workers to help young people prepare for and adapt to AI-influenced environments.

The final section, "*AI for Youth Work: Use Cases*", provides practical examples of how AI can be integrated into youth work settings to augment youth workers' competencies.

In summary, Chapter 3 explores AI's potential in youth work, highlighting opportunities and challenges. It stresses the importance of equipping young people and youth workers with the necessary skills and knowledge to harness AI's benefits while addressing its risks.

3.1 Introduction to Artificial Intelligence

Authors: ABBRUZZESE Gianluca, LANZETTA Miriam

To fully grasp the impact of artificial intelligence on young people and youth work, it is essential first to understand what AI is, what it is not and how it functions. The definition provided by the High-Level Expert Group on Artificial Intelligence (AI HLEG)² - the independent expert group set up by the European Commission in June 2018 - can help us achieve this understanding:



Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can either use symbolic rules or learn a numeric model, and they can also adapt their behaviour by analysing how the environment is affected by their previous actions.

As a scientific discipline, AI includes several approaches and techniques, such as machine learning (of which deep learning and reinforcement learning are specific examples), machine reasoning (which includes planning, scheduling, knowledge representation and reasoning, search, and optimisation), and robotics (which includes control, perception, sensors and actuators, as well as the integration of all other techniques into cyber-physical systems).

High-Level Expert Group on Artificial Intelligence (AI HLEG)

² High-Level Expert Group on Artificial Intelligence (2018). *A Definition of AI: Main Capabilities and Disciplines*. Retrieved from: <https://digital-strategy.ec.europa.eu/en/library/definition-artificial-intelligence-main-capabilities-and-scientific-disciplines>

The Expert Group, expanding the definition of AI in the Commission Communication on AI³, has clarified aspects of AI as a scientific discipline and technology. It depicts AI systems as *rational systems* because they can choose the best action to pursue an objective based on the available resources.

How do AI systems work?

AI systems perceive their environment through data acquisition, interpret the collected data, reason based on this information, and then decide on the best course of action to achieve the given goal. The following figure provides a schematic representation of an AI system's functioning.

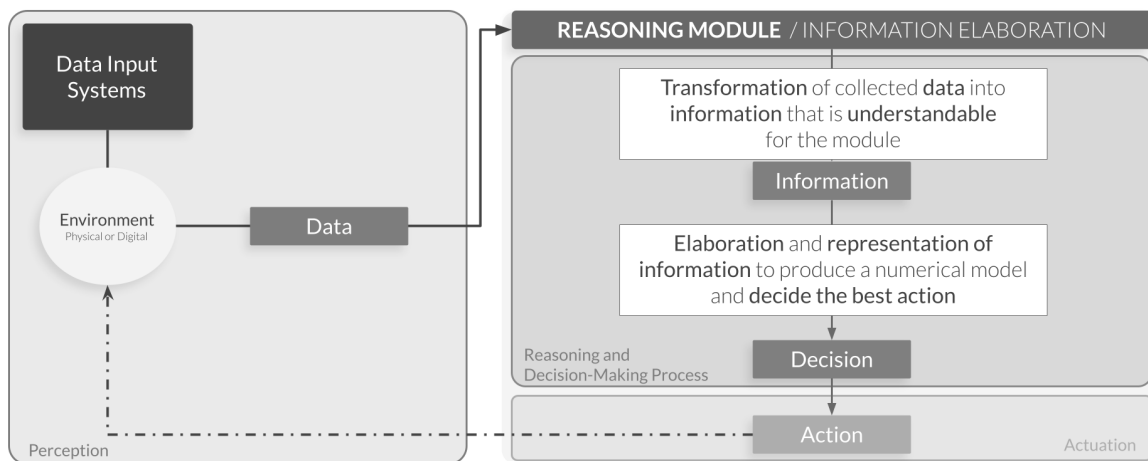


Figure 1. Schematic representation of the functioning mechanisms of an AI system

As indicated in the AI HLEG's definition of AI, the functioning mechanisms of an AI system can be understood through three key phases: **perception**, **reasoning and decision-making**, and **actuation**.

In the **perception** phase, data input systems - or *sensors* - collect information from the environment, which can be either physical or digital. Whether structured or unstructured, this data is gathered and processed to become usable information for the AI system.

³ European Commission (2018). *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on Artificial Intelligence for Europe*. Brussels, COM(2018) 237 final.

During the **reasoning and decision-making phase**, the system transforms the collected data into an understandable format and represents it to produce a numerical model. It then uses this model to interpret the information and decide on the best action to achieve its goals.

Finally, in the **actuation phase**, the system implements the chosen action based on its decision. This action can possibly modify the environment, feeding new data back into the perception phase.

Machine reasoning and machine learning are the key techniques upon which the decision-making processes of AI systems rely:

- **Machine reasoning** includes planning, scheduling, knowledge representation, and optimisation techniques. These techniques allow AI systems to solve complex problems by logically processing and reasoning through data, essential for tasks requiring strategic thinking and decision-making.
- **Machine learning** is a subset of AI that focuses on algorithms that enable systems to learn from and make predictions based on data.

How do AI systems learn?

The most widely used approaches to machine learning are reinforcement learning, unsupervised learning, and supervised learning. Each of these learning paradigms has distinct mechanisms and applications.

In **reinforcement learning**, the system is free to make decisions over time and receives feedback as rewards or penalties to indicate whether its actions were effective. The system learns to make better decisions by maximising the cumulative rewards for its actions.

Example: **Online Recommendation Systems**

Online recommendation systems suggest products or content to users based on their previous interactions. The system learns through feedback (the "reward") from the user's actions, such as clicking on a link or purchasing a suggested product.



In **unsupervised learning**, the model works with a dataset that does not include labelled outputs. The primary objective is to uncover hidden patterns or structures within the data.

Example: **Marketing Customer Segmentation**

Without predefined labels for how customers should be categorised, the system can identify groups of customers with similar behaviours or characteristics. These segments can then be used to personalise marketing campaigns.



In **supervised learning**, the model is trained on a dataset that includes both input data and the corresponding desired outputs. The goal is to learn a mapping from inputs to outputs that allows the model to make accurate predictions on new, similar data.

Example: **Email Spam Recognition**

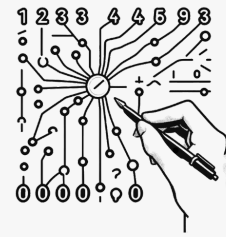
The system is trained with a series of emails labelled as "spam" or "not spam." The model learns to classify new emails into these categories based on their content and other attributes.



Some machine learning approaches use algorithms based on **Artificial Neural Networks** (ANN), which are inspired by the neural networks of the biological brain. These networks consist of units (artificial neurons) organised in layers that learn the relationships between input and output through weighted connections. In a neural network, the input data (e.g., an image) is processed to produce an output (e.g., identifying what the image is about). During the training phase, the network adjusts the weights of these connections to minimise the error between the expected output and its actual output based on the provided examples.

Example: Handwriting Recognition

An ANN can be trained to recognise handwritten digits (0-9). The input data consists of images of handwritten digits, each labelled with the corresponding digit. During the training phase, the ANN learns to associate the pixel patterns in the images with the correct digits. After training, the network can take a new image of a handwritten digit and identify it.



Deep learning takes ANN's capabilities a step further. It is a branch of machine learning that uses deep ANN, leveraging multi-layered neural networks to analyse various levels of characteristics in data. Deep learning models have numerous layers, each of which extracts higher-level features from the raw input data. This hierarchical structure allows deep learning models to handle very complex patterns and representations, making them particularly powerful for tasks such as image and speech recognition, natural language processing, and other applications involving large amounts of unstructured data. The depth of these networks enables them to learn intricate patterns and make highly accurate predictions, often surpassing the capabilities of traditional machine learning models.

Example: Image Recognition

A deep learning model can be trained to recognise objects in photographs. The input data consists of thousands of labelled images, each containing various objects like cats, dogs, cars, etc. The model has multiple layers, each learning to detect increasingly complex features, starting from edges and textures to shapes and, ultimately, entire objects. This hierarchical learning enables it to identify and classify objects within new images, even if they are in different positions, scales or lighting conditions.



Generative AI (GenAI) is a prime example of deep learning in action. GenAI uses deep neural networks to generate new content, such as text, images, music, and more, based on the data it has been trained on. Thanks to the democratisation of GenAI, these advanced technologies have become more accessible to the public, increasing awareness of AI's capabilities. GenAI models,

such as Open AI's *Generative Pre-trained Transformer (GPT)* foundation models, illustrate some of the powerful applications of deep learning.

Wrapping up

We've explored many concepts of AI, including its foundational principles and various learning paradigms. It is not in the scope of this publication to cover every aspect of AI in exhaustive detail, but we have explored key areas that are crucial for understanding how AI systems function and their potential applications.

The following image provides a visual representation of the hierarchical relationship between various components of AI, illustrating how each layer builds upon the previous one to contribute to the overall functionality of AI systems:

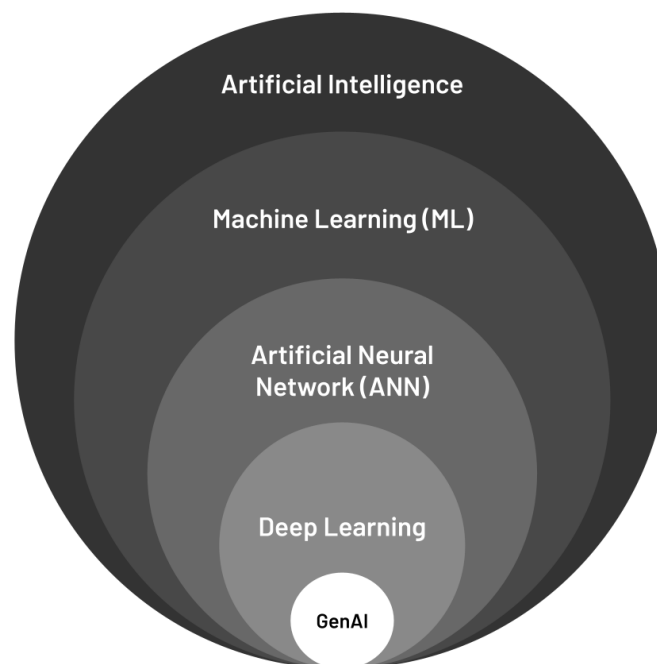


Figure 2. Hierarchical representation of AI systems

3.2 Artificial Intelligence and Youth

Authors: ABBRUZZESE Gianluca, LANZETTA Miriam

The rapid developments in AI technology and the rise of accessible AI-powered tools are transforming the way we live, work and learn. Young people have already warmly embraced these solutions: a survey conducted by the United Nations Office of Information and Communications Technology in 2022⁴ with 254 youth (10 to 24 years old) from 36 countries shows that about **80% said they interact with AI multiple times a day**. They also expressed a high level of engagement with AI-related issues, with 93% interested in discussing AI use and regulation and 86% wanting to collaborate with AI in the future. However, while 86% expressed awareness of AI, **only 24% indicated they understand how AI works**.

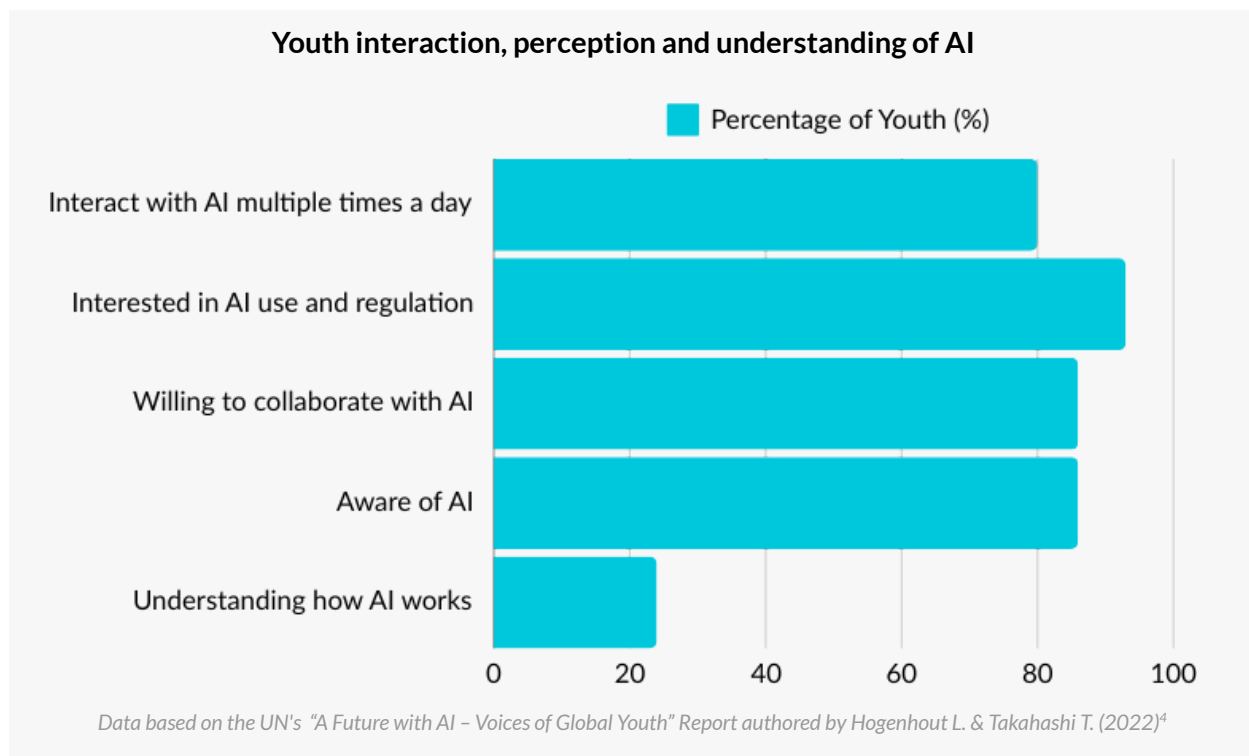


Figure 3. Youth Interaction, Perception and Understanding of AI

⁴ Hogenhout L., Takahashi T. (2022). *A Future with AI - Voices of Global Youth*. United Nations Office of Information and Communications Technology. Retrieved from: <https://unite.un.org/news/future-ai-voices-global-youth-report-launched>

More recently, Microsoft’s 2024 Global Online Safety Survey⁵ has highlighted that **young adults are the most active users and experimenters (56%) of generative AI**. The survey, conducted from July 27 to August 22, 2023, included 16,795 respondents across 17 countries, with a balanced representation of teens (ages 13-17), young adults (18-24), *Millennials* (25-44), *Generation X* (45-59) and *Boomers* (60-64). Out of 39% of the overall respondents who had ever used generative AI, **young adults represented the age group with the highest share of users (56%)**, followed by Millennials (43%), **teens (38%)**, Gen X (30%) and Boomers (19%). The following figure presents the distribution of generative AI users by age group, categorised as *Users*, *Experimenters* or *Non-Users* based on the frequency of use of generative AI.

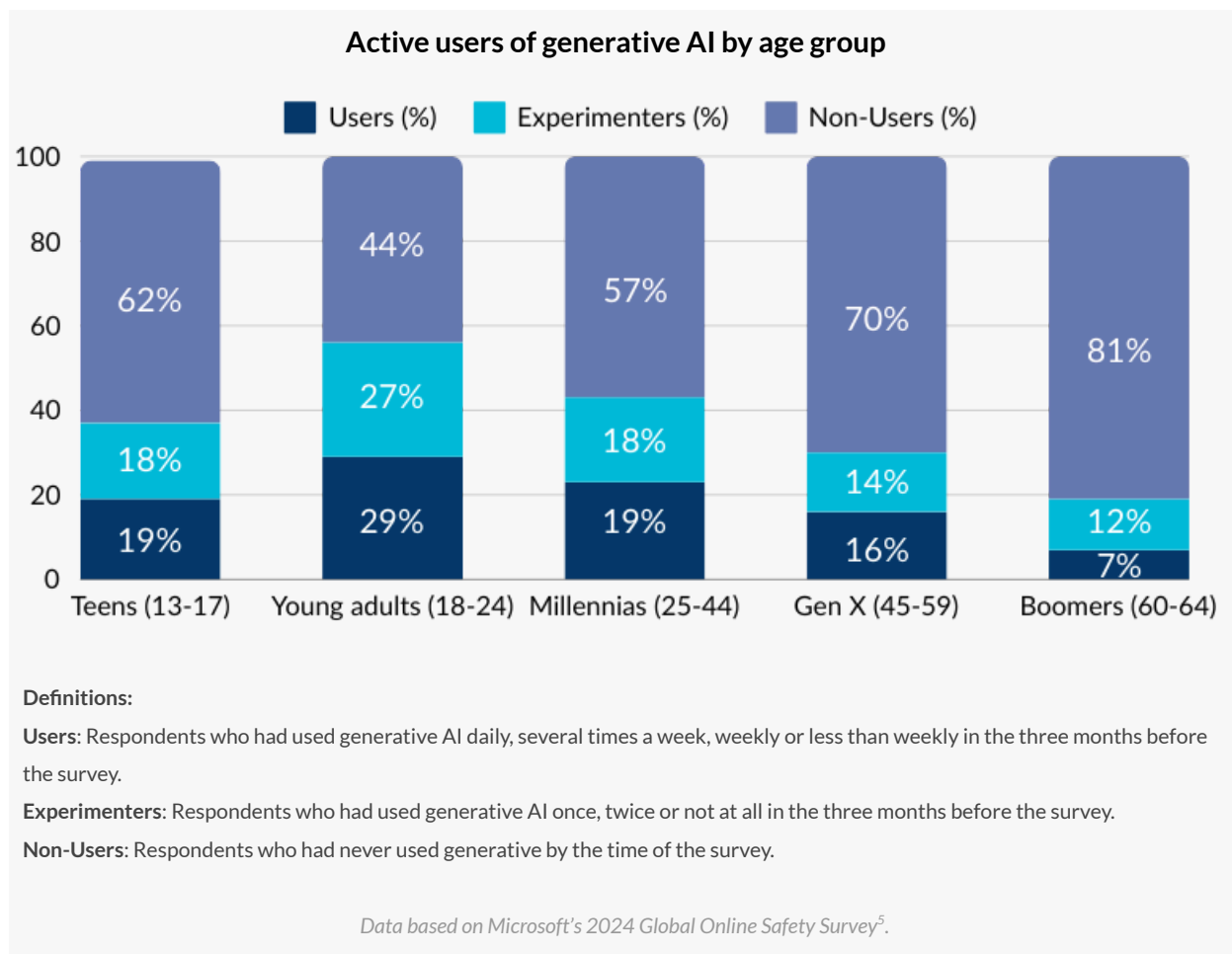


Figure 4. Active users of Generative AI by Age Group

⁵ Gregoire, C. (2024, February 5). *Increased uptake of generative AI technology brings excitement and highlights the importance of family conversations about online safety, says new research from Microsoft*. Microsoft On the Issues. <https://blogs.microsoft.com/on-the-issues/2024/02/05/generative-ai-online-safety-day-global-survey/>

How do they use AI? Teens and young adults (together, *Generation Z* or *Gen Z*) and Millennials are excited about using Generative AI for work or school and entertainment. The excitement is particularly pronounced in scenarios where AI can assist in practical, everyday tasks, like translation, increasing efficiency at work (applicable to > 18-year-olds only), answering questions and asking for information, assisting with homework and school projects, entertainment, and image or video generation. The following figure presents the most exciting AI applications for the different age groups identified in Microsoft’s Global survey.

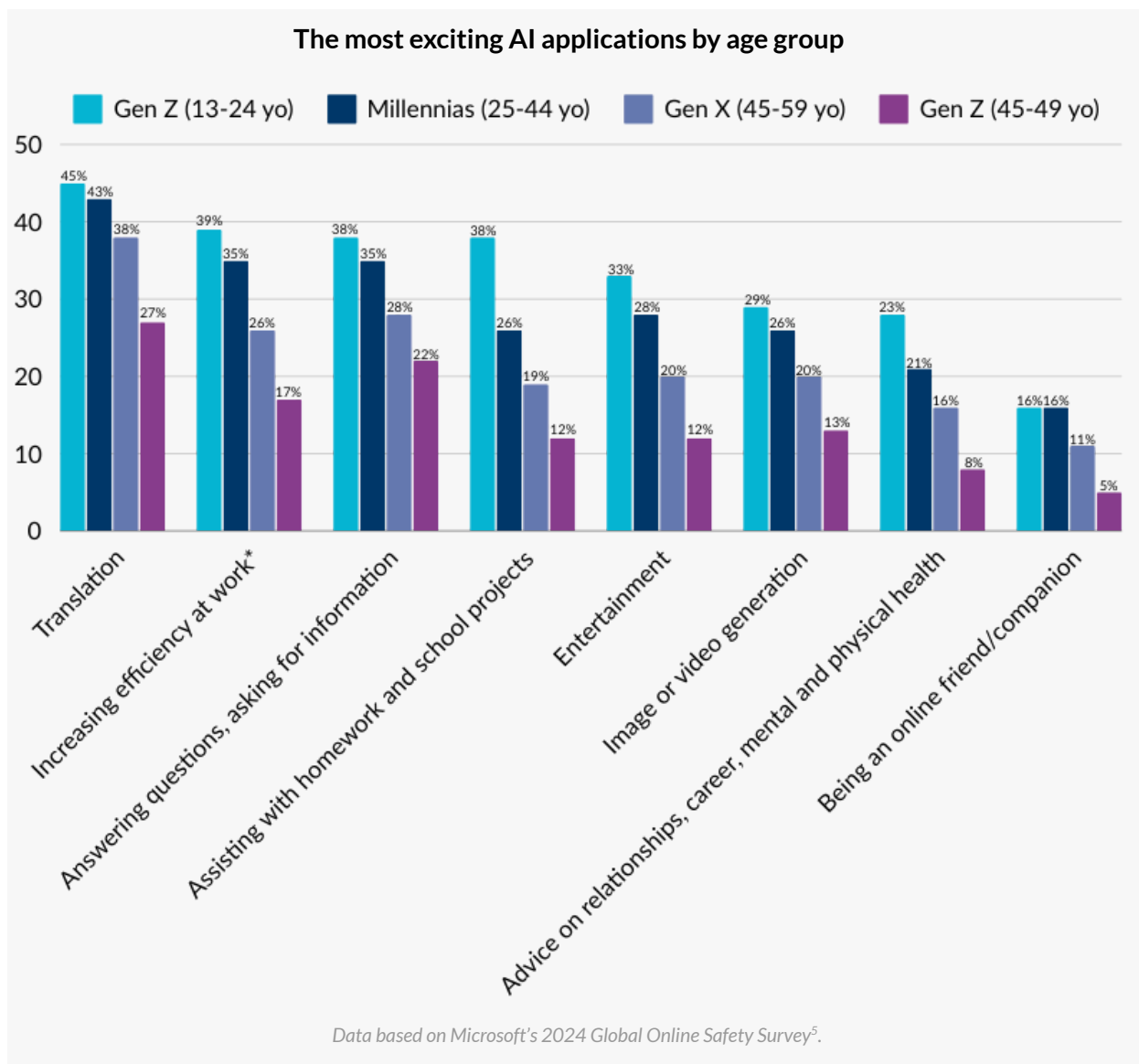


Figure 5. The Most Exciting AI Applications by Age Group

The study revealed **gender and cultural differences** in AI usage and perceptions among young adults.

Male young adults were more likely to use AI, with 63% of them reporting usage compared to 49% of female young adults. Among teens, this difference was slightly less pronounced, with 40% of males using AI compared to 35% of females.

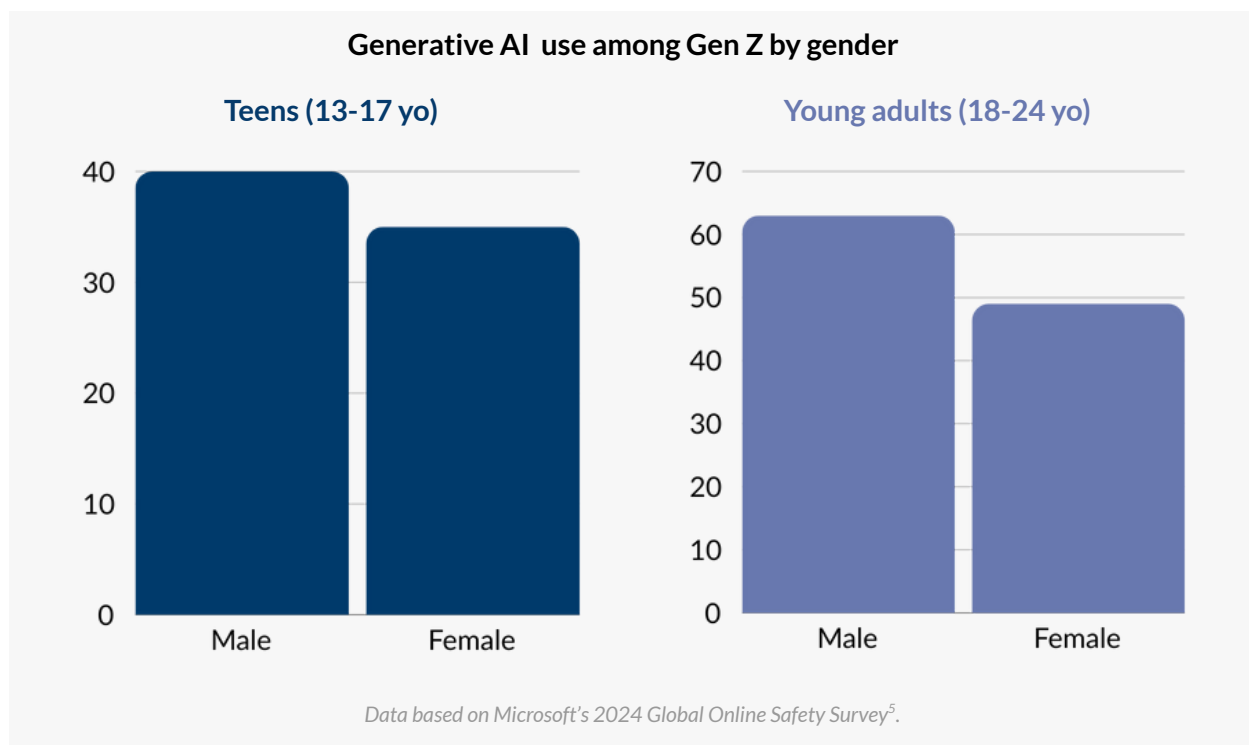


Figure 6. Generative AI use among Gen Z by gender

Although the study did not provide a detailed age breakdown, it found that male participants were generally more excited about AI applications, scoring 3 points higher on average than female participants. This difference in excitement might be linked to the varying levels of concern between genders about generative AI scenarios. Female respondents expressed higher levels of worry, particularly regarding sexual or online abuse (+7 points), creating relationships with AI (+7 points), and amplifying biases (+6 points).

Cultural differences also played a role in the responses toward generative AI. Participants from collectivist countries showed more positive attitudes towards AI compared to those from

individualistic countries⁶. For instance, 45% of respondents from collectivist countries (e.g., Spain, Brazil, Colombia, India, Mexico, Singapore, and South Korea) had used generative AI, compared to 34% from individualist countries (e.g., Australia, Canada, Czech Republic, Denmark, France, Germany, Italy, South Africa, United Kingdom, and USA).. Additionally, more individuals from collectivist cultures reported using AI weekly or more frequently (36% versus 32%) and expressed higher levels of excitement about AI applications (35%, which is 10 percentage points more than their individualist counterparts).

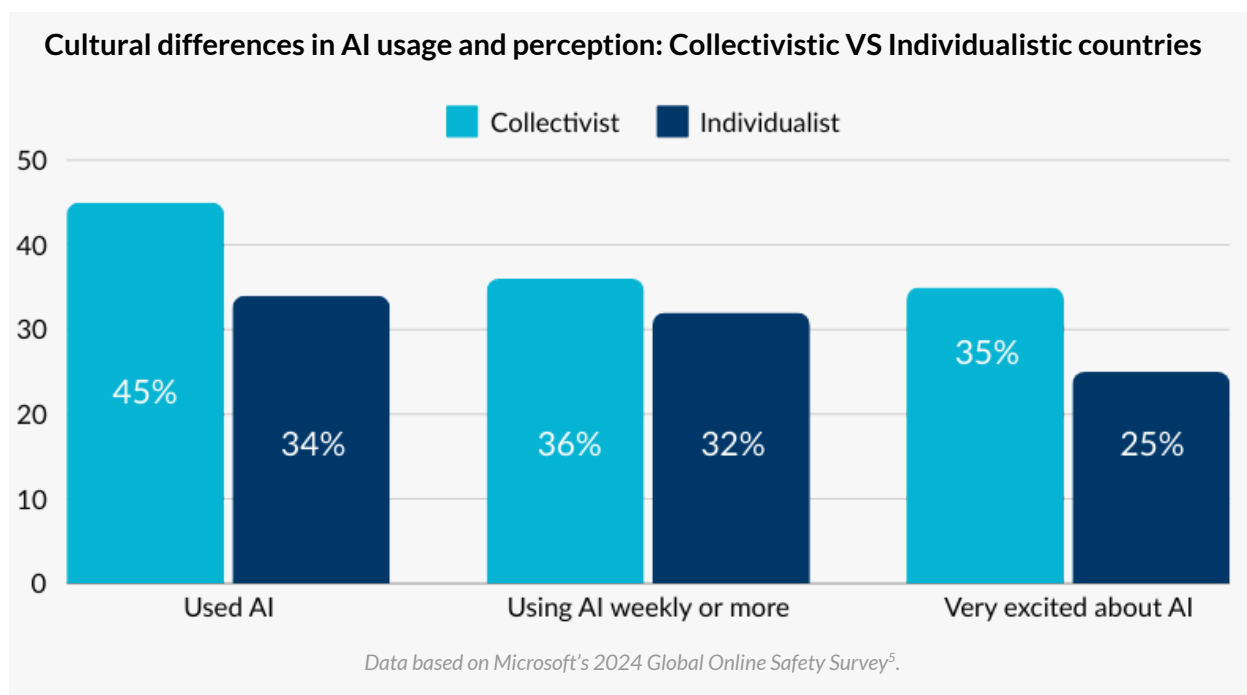


Figure 7. Cultural Differences in AI Usage and Perception

⁶ The classification of the country's culture is based on the 6-D model of National Culture by Professor Geert Hofstede. Hofstede's Model consists of six dimensions: *Power Distance, Individualism, Motivation towards Achievement and Success, Uncertainty, Avoidance, Long Term Orientation, Indulgence*. For more information: <https://www.hofstede-insights.com/intercultural-management>. The website, owned by The Culture Factor Group, also offers a country scoring tool: <https://www.hofstede-insights.com/country-comparison-tool>.

3.3 The Multi-Dimensional Impacts of AI

Author: MARAVELAKI Anastasia Sonia

The integration of AI into various facets of life, from education to social interactions, heralds a paradigm shift with profound implications for individuals and societies. As AI permeates recommendation systems, social media algorithms, and educational platforms, its influence on decision-making processes, economic behaviours, and learning methodologies becomes increasingly evident. However, alongside its promises, AI presents challenges, such as fostering healthy socialisation and mitigating the risks of digital addiction among youth. Navigating this evolving landscape necessitates a new set of skills and competencies, encompassing data literacy, critical thinking, and ethical considerations. Moreover, emerging job categories underscore the demand for specialised AI expertise in diverse industries. In essence, the rise of AI underscores the imperative for individuals, societies, and regulatory frameworks to adapt and harness its potential while addressing its ethical, social and psychological implications.

3.3.1 AI's Impact on Education

AI has the potential to significantly benefit education by transforming traditional teaching and learning practices, enhancing administrative efficiency, and providing personalised learning experiences. According to the European Commission's "*Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators*"⁷, AI can help educators understand and exploit AI's full potential while being aware of possible risks to engage positively, critically, and ethically with these systems. However, evidence-based research on the impact of AI in education is still limited, so it is important to maintain a critical and supervised attitude. Sometimes, AI systems can be used in different ways to support teaching or facilitate learning. When we talk about the types of AI systems that are used for teaching, learning, assessment, and school administration, a common distinction is made between "student-facing," "teacher-facing," and "system-facing" AI systems.

The Commission's guidelines provide four use cases, which are presented in the following table.

⁷ European Commission, Directorate-General for Education, Youth, Sport and Culture (2022). *Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2766/153756>



1

Student Teaching Using AI to teach learners (*student-facing*)

Intelligent tutoring systems can provide individualised instruction and feedback, allowing learners to follow a step-by-step sequence of tasks without requiring teacher intervention. Dialogue-based tutoring systems adapt to student engagement levels, maintaining motivation and focus. AI-based language learning applications, used in both formal and non-formal contexts, offer real-time feedback on pronunciation, comprehension, and fluency, making language acquisition more accessible and engaging.

2

Student Supporting Using AI to support student learning (*student-facing*)

Exploratory learning environments provide multiple representations to help learners find their own paths to achieving learning goals. Formative writing assessments offer regular automated feedback, encouraging continuous improvement. AI-supported collaborative learning uses data on each learner's work style and performance to form balanced groups, enhancing teamwork by monitoring and suggesting improvements in group dynamics.

3

Teacher Supporting Using AI to support the teacher (*teacher-facing*)

AI systems can reduce teachers' workloads through summative writing assessments, where AI evaluates and grades written work by identifying features like word usage, grammar, and sentence structure. AI also monitors student forums, providing automatic feedback and highlighting learners who need help or are not participating. AI teaching assistants answer common questions, broadening their range of responses over time. Pedagogical resource recommendation engines suggest specific learning activities based on each student's preferences, progress, and needs.

4

System Supporting Using AI to support diagnostic or system-wide planning (*system-facing*)

System-wide AI applications support diagnostic and system-wide planning. Educational data mining helps allocate resources efficiently by analysing student data to create class groupings, assign teachers timetables, and identify learners needing additional support. Learning analytics measure cognitive skills such as vocabulary, listening, spatial reasoning, problem-solving, and memory to diagnose learning difficulties early. AI-based guidance services help learners create pathways for future education by forming competence profiles based on their previous education and interests.

Table 1. AI in Education: Categories and Use Cases

These use cases provide some insight into how AI systems are being used by educators and learners to support the teaching, learning, and assessment process. However, as addressed by the panellists in the “Education Meets AI” session during the World Economic Forum’s 2024 Annual Meeting in Switzerland⁸, educators also face **two significant challenges**:

1. **Understanding how AI works** in order to share their knowledge with learners and prepare them for a labour market that may be completely different from what their parents have experienced.;
2. **Instilling strong digital discipline** in learners as they adopt AI tools helps them become conscious, critical, and responsible users of AI technology.

As highlighted by the founder and Chief Executive Officer of the educational non-profit Code.org, Hadi Partovi, young people do not see education as limited to the formal education system. They attend school but also use platforms like YouTube for learning, often challenging the constraints imposed by their schools. For instance, when schools prohibit the use of ChatGPT, learners are likely to explore it out of curiosity. Therefore, it is crucial for educational systems to recognise and embrace technological advancements rather than lag behind, as learners will inevitably access these technologies with or without the school system.

3.3.2 Impact on Educational Accessibility and Inclusion

The foundation of special education lies in adopting a tailored and individualised approach. As researched by Abbasi⁹ AI’s sophisticated capabilities can bring unprecedented levels of customisation to the educational process. By leveraging **adaptive learning technologies and advanced AI algorithms**, distinct learning paths can be created to meet the diverse needs of children in special education. These AI systems assess and understand each student’s unique learning style, pace, and comprehension level. For example, if a student’s learning preference is visual, the AI can modify and present information visually, enhancing engagement and understanding.

⁸ World Economic Forum (2024). *This is how to help young people navigate the opportunities and risks of AI and digital technology*. <https://www.weforum.org/agenda/2024/01/ai-digital-children-risks-opportunities/>

⁹ Abbasi M. U. (2024). *Impact of AI on the inclusion of Learners with Special needs: Public Policy Perspective in Contemporary Scenario*. 11. 73-91. Retrieved from: https://www.researchgate.net/publication/377590496_Impact_of_AI_on_the_inclusion_of_Learners_with_Special_needs_Public_Policy_Perspective_in_Contemporary_Scenario

AI technologies also help overcome communication barriers that often impede the educational progress of learners with special needs. Advanced AI features like voice recognition, and text-to-speech technologies enable learners with speech or physical limitations to communicate more effectively. A study by the World Economic Forum¹⁰, conducted between 2007 and 2020, revealed that **technology-supported personalised learning significantly improves learning outcomes**. While technology hasn't fully matched the benefits of one-on-one tutoring, recent AI advancements can analyse large data sets, offering personalised learning content, experiences, and real-time feedback similar to a private tutor.

These AI algorithms can customise content, adjust the learning pace and difficulty, and adapt learning styles based on the student's performance, behaviour, and preferences. By analysing data patterns, AI can predict learning challenges, identify gaps, and craft personalised learning journeys by examining learners' learning history, preferences, and performance. However, these new tools are most effective when teachers rigorously test them, personalise support, tailor culturally relevant teaching materials, and provide instant translations to adapt content to learners' needs. The relevance of the materials and examples is crucial for creating an engaging, understandable, and applicable learning environment. AI tools, in collaboration with teachers, can connect examples and concepts to each student's interests, experiences, and backgrounds.

Furthermore, AI can present materials in various formats to meet different visual, auditory, and physical needs. Customisable interfaces and adaptive technologies are particularly beneficial for neurodiverse learners and those with different physical abilities. For instance, AI technology can caption classroom lessons for learners with hearing impairments, allowing them access to any classroom without relying on human sign language assistants. This enhances personalised communication between teachers and learners.

Digital learning, when designed with accessibility features like text-to-speech, closed captioning, alternative text descriptions, and customisable display settings, can support learners with diverse access needs and learning preferences. The integration of accessible digital learning tools in classrooms also enables teachers to adopt more inclusive practices.

¹⁰ World Economic Forum (2024). *Shaping the Future of Learning: The Role of AI in Education 4.0*. <https://www.weforum.org/agenda/2024/05/ways-ai-can-benefit-education/>

A notable example of this inclusive approach is the **Accessible Digital Textbooks (ADT) initiative**¹¹, which is a collaboration among UNICEF, ministries of education, organisations for people with disabilities, publishers, and technology partners. This initiative aims to create inclusive digital learning tools known as Accessible Digital Textbooks, which allow children with and without disabilities to learn together. Launched in 2014, the ADT initiative emerged from extensive consultations and workshops led by UNICEF, involving representatives from several countries. These consultations led to the development of guidelines to help ministries of education, publishers, technology and content developers, teachers, and implementers digitally adapt textbooks based on **Universal Design for Learning (UDL)** principles. UDL is an educational framework that acknowledges the diverse learning styles of all children and promotes differentiated teaching techniques to ensure accessibility. The ADT is a digital adaptation of curriculum-based textbooks following UDL principles, providing educational content in various formats, such as narration (text-to-speech), sign language videos, and interactive activities, to meet all learning preferences and access needs. The ultimate goal of the ADT initiative is to foster inclusive education systems by developing tools that make inclusive teaching and learning more achievable in classrooms.

3.3.3. AI's Social and Psychological Impact

The rapid growth of AI has ushered in significant changes across various aspects of life, particularly impacting human behaviour and well-being. AI's influence on how people think, behave, and interact with their environment is profound, bringing both incredible opportunities and possible challenges. As AI systems continue to improve and integrate into daily life, understanding their effects is crucial for individuals and societies.

Research by Mishra et al.¹² shows how AI can influence human behaviour in various ways, transforming our interactions and decisions in different fields.

¹¹ UNICEF (2023). *Accessible Digital Textbooks: Creating Digital Tools to Enable Inclusive Education*. <https://www.unicef.org/innocenti/media/2641/file/UNICEF-Accessible-Digital-Textbooks-Jamaica-2023.pdf>

¹² Mishra M. K., Pattanayak M., Shankar U., Murthy G. V. K & Singh S. (2023). *Impact of Artificial Intelligence on Human Behaviour & Well-Being-an Empirical Analysis*. 44. 1001-4055. Retrieved from: https://www.researchgate.net/publication/374294070_Impact_of_Artificial_Intelligence_on_Human_Behaviour_Well-Being-an_Empirical_Analysis

| Field | The influence of AI |
|--------------------------|---|
| Purchasing & Consumption | Algorithms analyse user data and preferences to personalise content and product suggestions. This personalisation significantly impacts purchasing decisions, media consumption patterns, and literary or auditory preferences, thereby shaping behaviour and choices. Advanced algorithms deliver highly targeted advertisements, influencing consumer behaviour and increasing interest in specific products and services. AI also affects entertainment preferences, impacting how people engage with music, art, and other media. |
| Social Media | AI determines the content displayed on social media platforms by curating users' feeds based on their interests and engagement patterns. This can create echo chambers and filter bubbles, reinforcing existing beliefs and behaviours. |
| Education | AI in educational platforms tailors lessons and feedback to individual learning styles, influencing how learners acquire knowledge and engage with educational materials. |
| Customer Experience | The rise of AI-powered customer service tools shapes customer interactions, influencing user satisfaction and loyalty. |
| Economy | AI-driven automation affects labour markets and income distribution, impacting career choices and economic behaviour. |
| Cybersecurity | AI techniques identify and address cyber threats, shaping how individuals and organisations protect their online activities and data. |
| Diversity & Inclusion | AI algorithms can inadvertently perpetuate existing biases in training data, leading to discriminatory outcomes that influence the behaviour and opportunities of certain demographic groups. On the other hand, AI technologies such as voice recognition and natural language processing can enhance accessibility for people with disabilities. |
| Information | AI's ability to produce deep fake content and manipulate information raises significant ethical concerns, impacting trust in digital media and raising questions about content authenticity. |

Table 2. AI's Influences on Human Behavior

The table summarises the diverse influences of AI across various fields, highlighting how AI technologies shape behaviour, decisions and interactions in multiple aspects of daily life. Users of AI systems are becoming aware of these influences. According to Microsoft's 2024 Global Online Safety Survey - introduced at the beginning of this chapter -out of more than 16,700 participants in the study, a substantial 87% of respondents worry about at least one scenario of generative AI use. Specifically, 71% are very or somewhat worried about AI-generated scams, 69% about deep fakes and sexual or online abuse, and 66% about AI hallucinations. Other concerns include data privacy (62%), the amplification of biases (60%), and the creation of relationships with AI (56%).

3.3.4. The Demand for AI Competences in the Labour Market

AI is reshaping workplaces across various industries. According to the 2023 Employment Outlook by the OECD¹³ general digital skills and basic knowledge of AI are increasingly essential for workers to effectively utilise AI applications. Analytical and soft skills are becoming more critical for several reasons. Firstly, automating simpler tasks often leaves workers with more complex tasks, necessitating higher analytical skills such as specialised knowledge and the ability to comprehend and apply new ideas. Secondly, task automation often leads workers to undertake tasks that require soft and interpersonal skills. Moreover, AI enhances the importance of creativity and communication within companies and increases the need for highly educated workers, as AI applications are designed to be user-friendly and intuitive, requiring a similar level of digital proficiency as using a smartphone.

Conversely, AI development demands specialised knowledge and skills, intersecting computer programming, database management, and statistics. Online job postings mentioning "artificial intelligence" often list programming languages like Python, big data management, and data analysis and visualisation skills. Specific knowledge of AI models (e.g., decision trees, deep learning, neural networks, random forests), AI tools (e.g., TensorFlow, PyTorch), and AI software (e.g., Java, Gradle, Galaxy Cluster) is also necessary. Findings from OECD surveys¹⁴ involving firms in Austria, Canada, France, Germany, Ireland, the United Kingdom, and the United States that are adopting AI confirm that most workers developing and maintaining AI possess these

¹³ OECD (2023). *OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market*. OECD Publishing, Paris, <https://doi.org/10.1787/08785bba-en>. 5.

¹⁴ Lane M., Williams M. & Broecke S. (2023). *The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers*. OECD Social, Employment and Migration Working Papers, No. 288, OECD Publishing, Paris. <https://doi.org/10.1787/ea0a0fe1-en>.

specialised skills, while other skills are already becoming redundant. For instance, among workers and employers in the finance and manufacturing sectors in the targeted OECD countries, about half of AI users report that AI has reduced the value of some of their skills (51% in finance and 45% in manufacturing). These proportions are even higher among workers who noted that some of their tasks had been automated (56% in finance and 51% in manufacturing).

The emergence of new job types for building, training, updating and maintaining AI technologies is becoming increasingly evident. However, Wilson et al.¹⁵ has already identified in 2017 three new categories of AI-driven business and technology jobs:

1. **Trainers:** These roles involve teaching AI systems to perform tasks, typically requiring technical and data science skills. For example, chatbots need training to communicate with humans using compassionate and sympathetic language and to understand humour and language subtleties, necessitating interpersonal skills for the trainer.
2. **Explainers:** These roles clarify the functioning of algorithms and the different outcomes generated, particularly for managers and non-technical professionals in firms implementing AI applications, as well as consumers and the general public. Although these roles may become less necessary as AI systems become more transparent, they are currently crucial for ensuring transparency.
3. **Sustainers:** These roles involve ensuring that AI systems work as intended, detecting biases, fakes, and mistakes, and addressing unintended consequences promptly. They monitor algorithms' outcomes to ensure they continue to function correctly over time as technology, data, and the environment evolve. These roles are already emerging in firms implementing AI.

In the EU, the latest Eurostat data¹⁶ shows that 8% of enterprises with 10 or more employees used AI technologies to conduct their business in 2023. The most used types of AI technology included automating workflows or assisting in decision-making (AI-based software robotic process automation; 3%), performing analysis of written language (text mining; 2.9%), and machine learning (e.g., deep learning; 2.6%). Other AI technologies used included converting

¹⁵ Wilson H., Daugherty P. & Morini-Bianzino N. (2017). *The Jobs That Artificial Intelligence Will Create*. <https://sloanreview.mit.edu/article/will-ai-create-as-many-jobs-as-it-eliminates/>.

¹⁶ Eurostat (2024). *Use of artificial intelligence in enterprises*. Statistics Explained. Retrieved from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Use_of_artificial_intelligence_in_enterprises. Accessed on 25 May 2024.

spoken language into machine-readable format (speech recognition; 2.5%), identifying objects or persons based on images (image recognition, image processing; 2.2%), generating written or spoken language (natural language generation; 2.1%), and enabling physical movement of machines via autonomous decisions based on observation of surroundings (autonomous robots, self-driving vehicles, and autonomous drones; 0.9%).

The highest shares of enterprises using AI technologies were in Denmark (15.2%), Finland (15.1%), and Luxembourg (14.4%), while the lowest shares were recorded in Romania (1.5%), Bulgaria (3.6%), and Poland and Hungary (both 3.7%).

Although currently only 8% of companies in the EU are using AI technology, **it is expected that this percentage will increase, as will the demand for AI competencies among young people.**

3.4 The Role of Youth Workers in the AI Revolution

Authors: MACHADO Jorge, MARQUES Salomé, SCHNEIDER Beatryz

Professionals working with youth play a fundamental role in bridging the knowledge gap about AI, especially considering the limited understanding of this technology in the European youth sector. The rapid transition to online and digital work environments has revealed a growing digital divide in the European youth sector. Some organisations can keep up with and adapt to digital transformation, while others face significant challenges related to basic connectivity and skill development¹⁷. This divide highlights the need for targeted support and resources to ensure all youth workers can effectively integrate digital tools and AI into their practices.

Currently, AI can serve different objectives depending on its application. Research by Pawluczuk¹⁷ has portrayed diverse youth workers' perspectives on AI. For some, AI is seen as a tool, similar to a "work companion," where professionals can train the technology to perform specific tasks and achieve determined results, such as organising schedules, building websites, and creating graphics. These applications can greatly enhance efficiency and allow youth workers to focus more on directly engaging young people. However, there was also a sense of discomfort regarding AI, linked to fears that the technology might take over educators' roles over time, potentially dehumanising youth work. The concern is that **reliance on AI could reduce the personal interaction and emotional connection crucial in youth work, leading to a more transactional and less empathetic approach**. This potential shift could undermine effective youth engagement's trust and relationship-building foundation.

Furthermore, youth workers expressed a sense of injustice accompanied by AI's unpredictability. They noted that professionals often lack control over the data collected by different technologies, which can significantly influence young people's choices, beliefs, and self-development. This unpredictability raises ethical concerns about privacy, consent, and manipulating young minds. Youth workers stressed the importance of maintaining transparency and ethical standards in using AI to protect young people's interests and rights.

¹⁷ Pawluczuk A. (2023). *Automating Youth Work: Youth Workers Views on AI*". Research commissioned by the European Union-Council of Europe Youth Partnership. Retrieved from: https://pjp-eu.coe.int/documents/42128013/116591216/AI_views+of+youth+workers.pdf/93ac326a-cf80-3fa4-c4e5-56ee4038a766?t=1682336763487

Ethical and regulatory issues were identified as obstacles to adopting technology in educational practice due to concerns about aligning the work with European youth work values, such as inclusion, social cohesion, participation, youth empowerment, and communication. Ethical problems were also mentioned, where AI applications impose different biases based on input data and how they were trained, necessitating that educational practice with the technology be attentive to legal issues and ethical risks related to learners' privacy. In light of the introduction of this new technology, it is crucial to be prepared for the impact of AI on daily life, highlighting the importance of a broader understanding of its social and cultural implications.

With the rapid advancement of technologies and artificial intelligence, establishing guidelines for their use in education has become crucial. Towards this direction, the *2015 Qingdao Declaration*¹⁸ emphasises leveraging emerging technologies to enhance educational systems, access, quality, equity, and service delivery. Similarly, the *Beijing Consensus on Artificial Intelligence and Education*¹⁹ offers recommendations for using AI to achieve Sustainable Development Goal 4 of the 2030 Education Agenda.

As youth workers, the *Beijing Consensus on Artificial Intelligence and Education* offers guidelines and responsibilities for practice alongside artificial intelligence and shows how it can be integrated into the educational context. It shows how it can be integrated into the educational context. Initially, it was stated that AI could help personalise learning to meet each student's individual needs within formal, informal, and non-formal education contexts. One example is integrated lifelong learning systems with the potential to be accessed at any time and by anyone, allowing for flexible learning pathways and other benefits for the student. The document also explores using AI to assess student learning more effectively and provide better feedback. A good practice that follows this approach is the Brazilian platform *Letrus*, which uses AI to correct learners' essays more quickly with precise feedback on spelling and writing. A teacher then reviews the text, and the essay is returned to the student within three days, which could take months. Additionally, teachers can add their comments or challenge the AI system's conclusions. This approach offers opportunities for targeted class support and ensures that teachers remain

¹⁸ UNESCO (2015). *Qingdao Declaration, 2015: Seize Digital Opportunities, Lead Education Transformation*. : International Conference on Information and Communication Technology (ICT) and Post-2015 Education, Qingdao, China. <https://unesdoc.unesco.org/ark:/48223/pf0000233352>

¹⁹UNESCO (2019). *Beijing Consensus on Artificial Intelligence and Education*. <https://unesdoc.unesco.org/ark:/48223/pf0000372249>.

the main facilitators of the educational journey, with AI acting only as a supplementary support tool²⁰.

Increasing accessibility is also a common goal in educational practice, as stated in the document. AI should ensure that quality education and learning opportunities are promoted regardless of learners' conditions. The declaration states that the development and use of AI should not widen the digital divide or have a biased perspective against minority groups, highlighting the active role of youth workers in maintaining a relationship that adheres to values such as inclusion, respect for diversity, responsibility and quality. The World Economic Forum²¹, in the article "*How AI Can Accelerate Holistic Student Development and Make Teaching More Rewarding*," recommends two practices for youth workers related to accessibility: digital literacy to mitigate the growing digital exclusion and technology co-creation, where experts, along with educators can create a strong pedagogy that meets local needs and cultural contexts and overcomes existing biases and inequalities. Finally, youth workers can use AI to support implementing systems to automate lesson planning, assessment, and communication with parents. Professionals have described managing administrative processes, projects, digital offices, and meeting spaces as transformative in reducing workload, allowing them to spend more time with young people and perform quality youth work.

Hasse et al.²² discussed the growing importance of promoting AI literacy to empower everyone to understand what it means to coexist with AI and to make the most of what it offers while being protected from undue influences on their agency or human dignity.

Given that youth workers' nature of work with young people is more open to experimentation and exploration of real-world problems, young people need to be guided to understand how AI, automation, and especially automated decision-making can influence their treatment in society.

In other words, just as they are educated in mathematics, all young people must understand whether the AI they interact with treats them fairly and ethically. Additionally, professionals

²⁰ UNESCO (2021). *Letrus Writing Skills Program, Letrus (Centro de Autoria e Cultura LTDA): improving learners' writing skills through using artificial intelligence*. <https://unesdoc.unesco.org/ark:/48223/pf0000380194>

²¹ World Economic Forum. (2023, May 4). *How AI can accelerate learners' holistic development and create a more rewarding learning experience*. <https://www.weforum.org/agenda/2023/05/ai-accelerate-learners-holistic-development-teaching-fulfilling/>

²² Hasse A., Cortesi S., Lombana-Bermudez A. & Gasser U. (2019) *Youth and Artificial Intelligence: Where We Stand*. Berkman Klein Center Research Publication No. 2019-3, Available at SSRN: <https://ssrn.com/abstract=3385718> or <http://dx.doi.org/10.2139/ssrn.3385718>

need to manage digital youth work while protecting young people from potential side effects such as privacy violations, teaching the balance between using AI for effective learning, and ensuring that young people develop critical thinking and creativity. This learning, however, presents significant challenges and risks, such as the need for more effective and continuous support, strategic regulation or updated digital security monitoring, and clear guidelines. With each passing day, those involved in education need more training and knowledge.

Considering all the issues related to the educational practice of youth workers and the existing documents, it is evident that the role of educators involves responsibilities related to young people, their work, and the technological changes taking place. As highlighted by Stefan, youth leaders and workers should be critical supporters of AI technologies, even with the low adoption of these technologies in the sector and the low literacy levels of those involved. Investing sufficient resources in building a culture that embraces technology while remaining critical of its use is important. For professionals to foster an understanding of artificial intelligence, it is essential to develop specific educational programs that can be implemented in schools, community centres, and online platforms. These programs should include workshops and interactive courses that offer opportunities for young people and youth professionals to develop competencies (knowledge, attitudes, skills, values) related to AI, addressing its benefits, risks, and ethical implications.

One of UNESCO's recommendations for Member States is to promote AI education, such as basic literacy, numeracy, coding, digital skills, media, and information literacy, as well as critical and creative thinking, teamwork, communication, socio-emotional aspects, and AI²³. Additionally, it is important to encourage project-based learning, challenging young people to apply AI to solve real-world problems. Using games and simulations can make learning about AI more fun and engaging, capturing the interest of young people playfully and educationally. Finally, it is crucial to promote critical thinking so that young people can critically evaluate information about AI and make informed decisions about its use. In this way, they will be better prepared to deal with emerging technologies consciously and responsibly.

Advocating for positive artificial intelligence policies and practices is also critical to ensuring this technology is used beneficially and responsibly toward young people. To achieve this,

²³ UNESCO (2022). *Recommendation on the Ethics of Artificial Intelligence*. SHS/BIO/PI/2021/1.

professionals must engage with policymakers to ensure that AI-related regulations are appropriate and protect the rights of young people. This engagement can include active participation in debates, presenting research, and collaborating in the creation of guidelines that consider the specific needs of this age group. Young people can also be supported in mobilising through bodies and representatives of international organisations to debate a beneficial technology-related agenda for youth and in monitoring and evaluating the impact of any AI strategy.

In conclusion, regarding the construction and sharing of knowledge in the field, youth workers can create networks and communities to maximise the impact of technology. Among the activities that can be implemented are the organisation of conferences and workshops on AI, training opportunities, updates, and networking among young professionals and AI experts to disseminate new ideas and approaches, promoting a deeper and more applicable understanding of emerging technologies and their application in youth work. According to the World Economic Forum, “by building capacity, we can ensure that leaders develop the expertise to serve their communities and that all staff are equipped to use AI responsibly and effectively throughout the education system”²⁰. Also, collaboration with researchers, programmers, and other stakeholders is essential to promoting young people's positive use of AI. These partnerships result in the development of new tools and resources that specifically cater to the needs of young people.

3.5 AI for Youth Work: Use Cases

Authors: ABBRUZZESE Gianluca, LANZETTA Miriam, MANGIULLO Angela

The integration of AI in youth work presents significant opportunities. This chapter explores practical AI use cases that can augment youth workers' capabilities and support them in their activities. Use cases were identified during the systematic review, focus groups, and interviews conducted by the consortium. Particularly, the consortium first identified AI applications used by young people and educators operating in different fields of education and training and then analysed their potential adaptability and benefits in youth work.

The *Competence Model for Youth Workers to Work Internationally*²⁴, published by JUGEND für Europa and SALTO Training & Cooperation in the framework of the *European Training Strategy* (ETS) in the field of youth, was used as a framework to scope the areas in which AI may benefit youth work. Hence, use cases were categorised based on the nine competence areas outlined in the Model:

- Facilitating learning
- Designing programmes
- Managing resources
- Collaborating in teams
- Communicating meaningfully
- Displaying intercultural sensitivity
- Networking and advocating
- Assessing and evaluating
- Being civically engaged

This approach aims to provide youth workers with insights into how they might integrate these technologies into their daily practices and augment their competencies through AI. In the following pages, we outline potential use cases, categorised by each competence from the ETS Competence Model.

Disclaimer: Any tools mentioned in this section are provided for informational purposes only and do not constitute an endorsement by the authors. Readers are encouraged to independently evaluate and verify the suitability, security and functionality of any tool before adoption.

²⁴ Evrard G., Bergstein R., Knoch S. B., Nicodemi S., Di Paola M., Hadzibegovic A. (2023). *A Competence Model for Youth Workers*. JUGEND für Europa/SALTO Training & Cooperation. Available at <https://www.salto-youth.net/rc/training-and-cooperation/tc-rc-nanetworktcs/youthworkers-competence-model/>

Facilitating learning

| Title | Provider | Description |
|-----------------------------|---------------------|---|
| Algor | Algor Lab S.r.l. | Algor is an AI tool that generates maps, summaries, and flashcards from text, simplifying the process of creating study materials from large amounts of information. |
| HandTalk | Hand Talk | HandTalk is an app that converts spoken and written language into sign language using a virtual interpreter. It is particularly beneficial for enhancing communication accessibility for the deaf and hard of hearing (DHH) community. |
| Kahoot! | Kahoot! | Kahoot! leverages AI to create interactive quizzes and games that can be used to design engaging educational sessions, maintaining interest and participation among young learners. |
| Mentimeter | Mentimeter | AI-powered interactive presentation tool that analyses participant responses in real-time. The AI Menti Builder can be used, for instance, in group meetings, workshops, surveys, fun quizzes and more. |
| Microsoft Translator | Microsoft | This tool offers real-time translation and subtitle services, which are valuable in learning environments that are increasingly diverse. It supports various languages, helping bridge communication gaps between young people and youth workers who may not be fluent in the activities' primary language. |
| MindNode | IdeasOnCanvas GmbH | MindNode is an app designed for brainstorming and mind mapping. It uses AI to suggest keywords and related concepts, helping users organise their thoughts and make connections between different ideas. |
| Pitch | Pitch Software GmbH | An AI-driven presentation tool that aids in creating professional presentations facilitating the design and delivery of educational materials. |
| Quizlet | Quizlet | Quizlet offers diverse study modes, activities, and AI-based learning tools, making the review of any topic interactive and effective. It includes features like flashcard sets, diagram sets, learning modes, and expert solutions, all designed to cater to different learning styles. |
| Synthesisia | Synthesisia | Uses AI to create realistic video content with virtual avatars, making educational materials more engaging for learners. |



Designing programmes

| Title | Provider | Description |
|---------------------|-------------------|--|
| ChatGPT | OpenAI | ChatGPT is an AI-driven conversational agent that can assist in designing educational programmes by generating ideas, answering questions, and providing content suggestions. It can help youth workers create engaging and relevant activities. |
| ChatSonic | ChatSonic.pro | ChatSonic is an AI chatbot integrated with Google Search to create content with the latest information. It generates visuals, voice commands, and more. |
| Coassemble | Coassemble | Coassemble is an AI-powered learning management system that enables youth workers to design and deliver custom online training programs. It includes tools for course creation, assessments, and progress tracking. |
| Gemini | Google | Gemini is an AI-powered tool by Google. Like ChatGPT, it can assist in designing educational programmes by providing ideas and suggestions for structuring content. |
| Magic School | Magic School, Inc | MagicSchool is an AI platform designed for educators and schools. Among its features, it helps develop lesson plans, differentiate, write assessments or individualised education programs. |



Managing resources

| Title | Provider | Description |
|---------------|-----------|---|
| Asana | Asana | Asana is a work management platform which integrates AI for smart status updates (e.g., automated real-time data pulls to identify risks and roadblocks), smart goals and summaries, auto-generation of charts and custom fields to organise projects, and an AI-Powered Chat to assist in task management, answering questions and providing in-product support. |
| Trello | Atlassian | Trello is a project management tool that uses AI to enhance productivity by automating tasks, setting reminders, and organising resources. It can help youth workers manage their projects and resources efficiently. |

| | | |
|-----------------------|------------|--|
| Monday | Monday.com | Monday.com incorporates AI to streamline workflows, manage tasks, and collaborate on projects. It can help youth workers keep track of resources and deadlines. |
| ClickUp BrAIIn | ClickUp | ClickUp's AI assistant (ClickUp BrAIIn) can support task prioritisation, resource allocation and workflow optimisation. It can help youth workers streamline resource management and improve productivity. |



Collaborating in teams

| Title | Provider | Description |
|------------------------|--------------------|---|
| Slack | Slack Technologies | Slack uses AI to facilitate team communication and collaboration. It offers real-time messaging, file sharing, and integrations with various tools, promoting efficient teamwork. |
| Microsoft Teams | Microsoft | Microsoft Teams uses AI to enhance virtual collaboration through features like real-time translation, meeting transcriptions, and smart suggestions for file sharing and communication. |
| Miro | Miro | Miro is an online collaborative whiteboard platform that leverages AI to assist in brainstorming, planning, and team collaboration. It offers tools for real-time ideation and project management. |
| MURAL | MURAL | MURAL is a digital workspace for visual collaboration that uses AI to facilitate brainstorming, planning, and team coordination. It can support youth workers in creating interactive and engaging team sessions. |



Communicating meaningfully

| Title | Provider | Description |
|------------------|----------------|---|
| Grammarly | Grammarly Inc. | Grammarly uses AI to improve written communication by providing suggestions for improving grammar and style. It can support youth workers in enhancing the clarity and correctness of their written interactions. |
| Otter.ai | Otter.ai | Otter.ai provides AI-driven transcription services, converting spoken language into written text. It aids in documenting |

meetings, creating accessible content, and enhancing communication.

| | | |
|-------------------------|----------|---|
| DeepL Translator | DeepL SE | DeepL Translator is an AI-powered translation tool that offers high-quality translations for various languages, facilitating effective communication across language barriers. |
| Canva | Canva | Canva uses AI to enhance visual communication by providing tools for creating professional-quality designs quickly and easily. Features such as Magic Write for on-brand copywriting, Magic Media for generating images and videos from text prompts, and Magic Animate for adding animations streamline the design process and help youth workers communicate their messages more effectively. |
| Gemini | Google | Google's Gemini can help develop clear and impactful communications. It can generate, edit and refine text or images. |


Displaying intercultural sensitivity

| Title | Provider | Description |
|----------------------------------|----------|---|
| Google Arts & Culture | Google | Google Arts & Culture uses AI to provide insights into various cultures through virtual tours, exhibitions, and educational resources, enhancing intercultural sensitivity and awareness. |

Networking and advocating

| Title | Provider | Description |
|------------------|----------------------|---|
| LinkedIn | LinkedIn Corporation | LinkedIn uses AI to suggest connections, recommend content, and highlight networking opportunities. It can support youth workers in building professional networks and advocating for their causes. |
| Hootsuite | Hootsuite | Hootsuite leverages AI to manage social media accounts, schedule posts, and analyse engagement, thus potentially helping youth workers advocate effectively on social platforms. |

Buffer Buffer Buffer is an AI-driven social media management tool that assists in planning, scheduling, and analysing social media campaigns, enhancing advocacy efforts.


Assessing and evaluating

| Title | Provider | Description |
|---------------------|------------------|--|
| SurveyMonkey | Momentive Inc. | SurveyMonkey uses AI to design, distribute and analyse surveys. It may be used, for instance, to gather feedback and assess program effectiveness. |
| Tableau | Tableau Software | Tableau leverages AI to analyse data and generate visual reports. The tool may help youth workers evaluate their activities and make data-driven decisions. |
| Power BI | Microsoft | Power BI is an AI-powered business analytics tool that provides interactive visualisations and insights, supporting the assessment and evaluation of youth work initiatives. |


Being civically engaged

| Title | Provider | Description |
|---------------------|-------------|--|
| Change.org | Change.org | Change.org leverages AI to promote civic engagement by facilitating petition creation and mobilising supporters for various causes. |
| Full Fact AI | Full Fact | Full Fact AI is AI-enabled software produced by the London-based charity <i>Full Fact</i> . It can be used by fact checkers and good information-focused organisations to check and challenge false claims, ultimately identifying the most important bad information to address. |
| Go Vocal | Go Vocal NV | The GoVocal platform uses AI to enhance community engagement by providing tools for creating targeted email campaigns, automating activity digests, and enabling smart grouping based on conditions like location or interests. The AI also aids in managing and moderating engagement by analysing and summarising community input, facilitating faster and more effective decision-making processes. |

4. AI COMPETENCE NEEDS FOR YOUTH WORKERS

The previous chapter has addressed the multifaceted relations between artificial intelligence and youth and youth work. Chapter 3 provided an in-depth exploration of AI, including the perceptions and perspectives of young people and youth workers and its impacts on education, accessibility, inclusion, and the social and psychological dimensions. It also examined the evolving role of youth workers within the AI revolution and practical use cases of AI in youth work, illustrating how these technologies can be integrated into the practices of youth professionals.

In this context, Chapter 4 delves into the specific AI competence needs. It begins by reviewing existing competence frameworks and research that can serve as a foundation for developing AI-related skills, followed by insights and findings from focus groups with youth work professionals, shedding light on their experiences and challenges in adapting to AI. Ultimately, the chapter aims to provide insights to inform the development of an AI competence framework tailored for youth workers, which is aimed at equipping them with the necessary skills to thrive in an increasingly AI-driven environment.



4.1 Existing Competence Frameworks

Authors: ACOMI Nicoleta, LANZETTA Miriam

As AI technologies become more integrated into everyday life, youth workers must be equipped with the necessary AI competencies to effectively engage with, educate, and support young people. This section synthesises findings from over 30 relevant sources and presents in detail the most appropriate **sources that can provide an overview of existing competence frameworks directly or indirectly related to AI competences.**

Results of the analysis are presented following a progression:

- Frameworks mainly addressing foundational **AI competences**, presented in sections 4.1.1, 4.1.2 and 4.1.3;
- Frameworks addressing **digital and AI competences of educators**, presented in sections from 4.1.3 to 4.1.6.

4.1.1 The Digital Competence Framework for Citizens (DigComp 2.2)

The European *Digital Competence Framework for Citizens (DigComp)*²⁵ has served as a pivotal reference in defining digital competence across Europe for over a decade. It provides a common language to identify and describe the competences **every individual needs** to thrive in a digital economy and society.

In 2022, the framework underwent a significant update to version 2.2, to take into account the knowledge, skills and attitudes needed by citizens to engage confidently, critically and safely with new and emerging digital technologies, including systems driven by AI.

DigComp 2.2 delineates five core areas of competence: Information and Data Literacy; Communication and Collaboration; Digital Content Creation; Safety; and Problem Solving. The 2.2 update introduces new examples of knowledge, skills, and attitudes that pertain to AI.

The following table provides a summary of the competences specified within each competence area, highlighting those updated to include AI-related examples.

²⁵ Vuorikari, R., Kluzer, S. and Punie, Y. (2022). *DigComp 2.2: The Digital Competence Framework for Citizens*. EUR 31006 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-48882-8, doi:10.2760/115376, JRC128415.

| Competence area | Competences |
|--|--|
| 1. Information and data literacy | 1.1 Browsing, searching and filtering data, information and digital content* 1.2 Evaluating data, information and digital content * 1.3 Managing data, information and digital content* |
| 2. Communication and collaboration | 2.1 Interacting through digital technologies * 2.2 Sharing through digital technologies * 2.3 Engaging citizenship through digital technologies * 2.4 Collaborating through digital technologies 2.5 Netiquette 2.6 Managing digital identity * |
| 3. Digital content creation | 3.1 Developing digital content * 3.2 Integrating and re-elaborating digital content * 3.3 Copyright and licences 3.4 Programming * |
| 4. Safety | 4.1 Protecting devices 4.2 Protecting personal data and privacy * 4.3 Protecting health and well-being 4.4 Protecting the environment * |
| 5. Problem solving | 5.1 Solving technical problems * 5.2 Identifying needs and technological responses * 5.3 Creatively using digital technology * 5.4 Identifying digital competence gaps * |
| Key: (*) Updated with new examples of knowledge, skills and attitudes | |

Table 3. DigComp 2.2: Competences Overview

The following sections present the new examples of knowledge, skills and attitudes introduced under each relevant competence.

1. Information and data literacy

1.1 Browsing, searching and filtering data, information and digital content

To articulate information needs , to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.

- Knowledge**
- Aware that search engines, social media and content platforms often use AI algorithms to generate responses that are adapted to the individual user (e.g. users continue to see similar results or content). This is often referred to as

1.1 Browsing, searching and filtering data, information and digital content

To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.

“personalisation”.

- Aware that AI algorithms work in ways that are usually not visible or easily understood by users. This is often referred to as “black box” decision-making as it may be impossible to trace back how and why an algorithm makes specific suggestions or predictions.

Skills

- Knows how to formulate search queries to achieve the desired output when interacting with conversational agents or smart speakers (e.g. Siri, Alexa, Cortana, Google Assistant), e.g. recognising that, for the system to be able to respond as required, the query must be unambiguous and spoken clearly so that the system can respond.

Attitudes

- Weighs the benefits and disadvantages of using AI-driven search engines (e.g. while they might help users find the desired information, they may compromise privacy and personal data, or subject the user to commercial interests).

1.2 Evaluating data, information and digital content

To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.

Knowledge

- Knows that the term “deep-fakes” refers to AI-generated images, videos or audio recordings of events or persons that did not really happen (e.g. speeches by politicians, celebrity faces on pornographic imagery). They may be impossible to distinguish from the real thing.
- Aware that AI algorithms might not be configured to provide only the information that the user wants; they might also embody a commercial or political message (e.g. to encourage users to stay on the site, to watch or buy something particular, to share specific opinions). This can also have negative consequences (e.g. reproducing stereotypes, sharing misinformation).
- Aware that the data, on which AI depends, may include biases. If so, these biases can become automated and worsened by the use of AI. For example, search results about occupation may include stereotypes about male or female jobs (e.g. male bus drivers, female salesperson).

Skills

- Able to recognise that some AI algorithms may reinforce existing views in digital environments by creating “echo chambers” or “filter bubbles” (e.g. if a social media stream favours a particular political ideology, additional recommendations can reinforce that ideology without exposing it to opposing arguments).

1.3 Managing data, information and digital content

To organise, store and retrieve data, information, and content in digital environments. To organise and process them in a structured environment.

- Knowledge**
- Aware that sensors used in many digital technologies and applications (e.g. facial tracking cameras, virtual assistants, wearable technologies, mobile phones, smart devices) generate large amounts of data, including personal data, that can be used to train an AI system.

2. Communication and collaboration

2.1 Interacting through digital technologies

To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.

- Skills**
- Knows how to identify signs that indicate whether one is communicating with a human or an AI-based conversational agent (e.g. when using text- or voice-based chatbots).
 - Able to interact and give feedback to the AI system (e.g. by giving user ratings, likes, tags to online content) to influence what it next recommends (e.g. to get more recommendations on similar movies that the user previously liked).

- Attitudes**
- Open to AI systems supporting humans to make informed decisions in accordance with their goals (e.g. users actively deciding whether to act upon a recommendation or not).

2.2 Sharing through digital technologies

To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.

- Knowledge**
- Aware that everything that one shares publicly online (e.g. images, videos, sounds) can be used to train AI systems. For example, commercial software companies who develop AI facial recognition systems can use personal images shared online (e.g. family photographs) to train and improve the software's capability to automatically recognise those persons in other images, which might not be desirable (e.g. might be a breach of privacy).

2.3 Engaging in citizenship through digital technologies

To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.

- Knowledge**
- Knows that a secure electronic identification, (e.g. identity cards which contain digital certificates), enables citizens to increase safety when using online services provided by the government or by the private sector.
 - Knows that all EU citizens have the right to not be subject to fully automated decision-making (e.g. if an automatic system refuses a credit application, the customer has the right to ask for the decision to be reviewed by a person).
 - Recognises that while the application of AI systems in many domains is usually uncontroversial (e.g. AI that helps avert climate change), AI that directly interacts with humans and takes decisions about their life can often be controversial (e.g. CV-sorting software for recruitment procedures, scoring of exams that may determine access to education).
 - Knows that AI per se is neither good nor bad. What determines whether the outcomes of an AI system are positive or negative for society are how the AI system is designed and used, by whom and for what purposes.
- Skills**
- Knows how to identify areas where AI can bring benefits to various aspects of everyday life. For example, in healthcare, AI might contribute to early diagnosis, while in agriculture, it might be used to detect pest infestations.
- Attitudes**
- Readiness to contemplate ethical questions related to AI systems (e.g. in which contexts, such as sentencing criminals, should AI recommendations not be used without human intervention)?

2.6 Managing digital identity

To create, and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.

- Knowledge**
- Aware that AI systems collect and process multiple types of user data (e.g. personal data, behavioural data and contextual data) to create user profiles which are then used, for example, to predict what the user might want to see or do next (e.g. offer advertisements, recommendations, services).
- Skills**
- Knows how to modify user configurations (e.g. in apps, software, digital platforms) to enable, prevent or moderate the AI system tracking, collecting or analysing data (e.g. not allowing the mobile phone to track the user's location).
- Attitudes**
- Identifies both the positive and negative implications of the use of all data (collection, encoding and processing), but especially personal data, by AI driven

digital technologies such as apps and online services.

3. Digital content creation

3.1 Developing content

To create and edit digital content in different formats, to express oneself through digital means.

- Knowledge**
- Knows that AI systems can be used to automatically create digital content (e.g. texts, news, essays, tweets, music, images) using existing digital content as its source. Such content may be difficult to distinguish from human creations.

3.2 Integrating and re-elaborating digital content

To modify, refine, improve and integrate information and content into an existing body of knowledge to create new, original and relevant content and knowledge.

- Skills**
- Knows how to incorporate AI edited/manipulated digital content in one's own work (e.g. incorporate AI generated melodies in one's own musical composition). This use of AI can be controversial as it raises questions about the role of AI in artworks, and for example, who should be credited.

3.4 Programming

To plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.

- Attitudes**
- Considers ethics (including but not limited to human agency and oversight, transparency, non-discrimination, accessibility, and biases and fairness) as one of the core pillars when developing or deploying AI systems.

4. Safety

4.2 Protecting personal data and privacy

To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damages. To understand that digital services use a "Privacy policy" to inform how personal data is used.

- Knowledge**
- Knows that the processing of personal data is subject to local regulations such as the EU's General Data Protection Regulation (GDPR) (e.g. voice interactions with a virtual assistant are personal data in terms of the GDPR and can expose users to certain data protection, privacy and security risks).
- Attitudes**
- Weights the benefits and risks before allowing third parties to process personal data (e.g. recognizes that a voice assistant on a smartphone, that is used to give commands to a robot vacuum cleaner, could give third parties - companies, governments, cybercriminals - access to the data).

4.4 Protecting the environment

To be aware of the environmental impact of digital technologies and their use.

- Knowledge**
- Aware that certain activities (e.g. training AI and producing cryptocurrencies like Bitcoin) are resource intensive processes in terms of data and computing power. Therefore, energy consumption can be high which can also have a high environmental impact.
- Attitudes**
- Considers the ethical consequences of AI systems throughout their life-cycle: they include both the environmental impact (environmental consequences of the production of digital devices and services) and societal impact, e.g. platformization of work and algorithmic management that may repress workers' privacy or rights; the use of low-cost labour for labelling images to train AI systems.

5. Problem solving

5.1 Solving technical problems

To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).

- Knowledge**
- Aware that AI is a product of human intelligence and decision-making (i.e. humans choose, clean and encode the data, they design the algorithms, train the models, and curate and apply human values to the outputs) and therefore does not exist independently of humans.

5.2 Identifying needs and technological responses

To assess needs and to identify, evaluate, select and use digital tools and possible technological responses and to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility).

- Knowledge**
- Able to identify some examples of AI systems: product recommenders (e.g. on online shopping sites), voice recognition (e.g. by virtual assistants), image recognition (e.g. for detecting tumours in x-rays) and facial recognition (e.g. in surveillance systems).
 - Aware that AI-driven speech-based technology enables the use of spoken commands that can enhance the accessibility of digital tools and devices (e.g. for those with mobility or visual limitations, limited cognition, language or learning difficulties), however, languages spoken by smaller populations are often not available, or perform worse, due to commercial prioritisation.
- Skills**
- Knows how and when to use machine translation solutions (e.g. Google Translate, DeepL) and simultaneous interpretation apps (e.g. iTranslate) to get a rough understanding of a document or conversation. However, also knows that when the content requires an accurate translation (e.g. in healthcare, commerce or diplomacy), a more precise translation may be needed.

5.3 Creatively using digital technology

To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.

- Attitudes**
- Open to engage in collaborative processes to co-design and co-create new products and services based on AI systems to support and enhance citizens' participation in society.

5.4 Identifying digital competence gaps

To understand where one's own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.

- Knowledge**
- Aware that AI is a constantly-evolving field, whose development and impact is still very unclear.

- Attitudes**
- Has a disposition to keep learning, to educate oneself and stay informed about AI (e.g. to understand how AI algorithms work; to understand how automatic decision-making can be biased; to distinguish between realistic and unrealistic AI; and to understand the difference between Artificial Narrow Intelligence, i.e. today's AI capable of narrow tasks such as game playing, and Artificial General Intelligence, i.e. AI that surpasses human intelligence, which still remains science fiction).

4.1.2 Digital Promise's AI Literacy Framework

Digital Promise, a global nonprofit working to expand opportunity for each learner, has developed an *AI Literacy Framework*²⁶ presenting a comprehensive approach to engaging with AI through three interconnected *Modes of Engagement*:

1. **Understanding AI:** Acquiring foundational knowledge about AI and how it works in order to make informed decisions about using and evaluating AI systems and tools. This mode involves a deep dive into the technical knowledge underpinning AI. It encompasses the use of data, creation of automations, and critical underlying skills such as algorithmic thinking, pattern recognition, abstraction, and decomposition. This foundational understanding is crucial for AI literacy as it equips users with the necessary knowledge to make informed decisions regarding the use and evaluation of AI, especially understanding how AI leverages large datasets to develop associations and automate predictions.

²⁶ Mills K., Ruiz P., Lee K., Coenraad M., Fusco J., Roschelle J., Weisgrau J. (2024). *AI Literacy: A Framework to Understand, Evaluate, and Use Emerging Technology*. Digital Promise. DOI: <https://doi.org/10.51388/20.500.12265/218>

2. **Evaluating AI:** Centering human judgment and justice to critically consider the benefits and/or costs of AI to individuals, society, and the environment. This mode encourages users to evaluate AI tools from four key perspectives: transparency, safety, ethics, and impact. These components prompt users to question the data and methods used in AI systems, the security and privacy of data, the societal biases reproduced by datasets, and the credibility and biases of AI outputs. This evaluation is pivotal in ensuring that AI usage is not only technically proficient but also ethically sound and socially responsible.
3. **Using AI:** Interacting, creating, and problem-solving with AI as a progression of use for distinct contexts and purposes. This mode is structured around three distinct interactions defined in the research-based 4 As framework²⁷, which focuses on how families engage with AI, such as **Interact**, **Create** and **Apply**:
 - *Interacting* with AI involves engaging with systems that collect data to provide automated decisions, connections, and suggestions;
 - *Creating* with AI involves leveraging AI systems to develop synthetic content;
 - *Applying* AI entails developing AI systems to process and predict information.

4.1.3 UNESCO's Mapping of Government-endorsed AI Curricula

A mapping of government-endorsed K-12 AI curricula at the international level developed by UNESCO²⁸ provides a comprehensive overview of AI curriculum areas, useful for informing educators and curriculum developers about integrating AI into educational settings. While it is not a proper framework, it offers a clear depiction of competences and areas crucial for understanding and implementing AI in education.

The mapping revealed AI curriculum content is structured into three main categories: AI foundations, ethics and social impact, and understanding, using, and developing AI. Each category encompasses specific topic areas that reflect key competencies required for engaging with AI:

²⁷ Druga S., Yip J., Preston M. and Dillon D. (2021). *The 4As: Ask, Adapt, Author, Analyze - AI Literacy Framework for Families*. In *Algorithmic Rights and Protections for Children*. <https://doi.org/10.1162/ba67f642.646d0673>.

²⁸ UNESCO (2022). *K-12 AI curricula: a mapping of government-endorsed AI curricula*. UNESDOC Digital Library. <https://unesdoc.unesco.org/ark:/48223/pf0000380602.locale=en>

1. **AI Foundations:** This category includes fundamental technical skills necessary for AI engagement such as algorithms and programming, data literacy, and contextual problem-solving. These areas form the technical backbone of AI education, emphasizing the skills needed to manipulate and understand data and the basic programming required to interact with AI systems.
2. **Ethics and Social Impact:** It covers the ethical considerations and societal implications of AI. This includes understanding the ethical challenges associated with AI, such as transparency, auditability, fairness, and the broader social impacts like changes to the workforce and legal frameworks. This category aims to prepare students to navigate the complex ethical landscape of AI and its effects on society.
3. **Understanding, Using, and Developing AI:** This category includes more advanced competencies involving the direct interaction with AI technologies and techniques, and the development of new AI technologies. It includes learning how AI processes work (e.g., machine learning models and neural networks), using AI technologies in practical applications, and developing new AI solutions to address social challenges or provide new services.

Teachers, youth workers and educators shall support youth to develop personal empowerment and reflection, critical thinking and ethics, and design thinking skills to engage in creative and responsible AI projects and initiatives.

4.1.4 European Framework for the Digital Competence of Educators (DigCompEdu)

The European Framework for the Digital Competence of Educators (DigCompEdu), developed by the Joint Research Centre of the European Commission²⁹, captures and describes educator-specific digital competences. It proposes 22 elementary competences organised in 6 areas, each focusing on different aspects of educators' professional activities:

1. **Professional Engagement** - Using digital technologies for communication, collaboration and professional development.
2. **Digital Resources** - Sourcing, creating and sharing digital resources.

²⁹ Redecker C. (2017). *European Framework for the Digital Competence of Educators: DigCompEdu*. Punie, Y. (ed). EUR 28775 EN. Publications Office of the European Union, Luxembourg. ISBN 978-92-79-73494-6, doi:10.2760/159770, JRC107466

3. **Teaching and Learning** - Managing and orchestrating the use of digital technologies in teaching and learning.
4. **Assessment** - Using digital technologies and strategies to enhance assessment.
5. **Empowering Learners** - Using digital technologies to enhance inclusion, personalisation and learners' active engagement.
6. **Facilitating Learners' Digital Competence** - Enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing and problem-solving

The following figure presents an overview of the competences within each area.

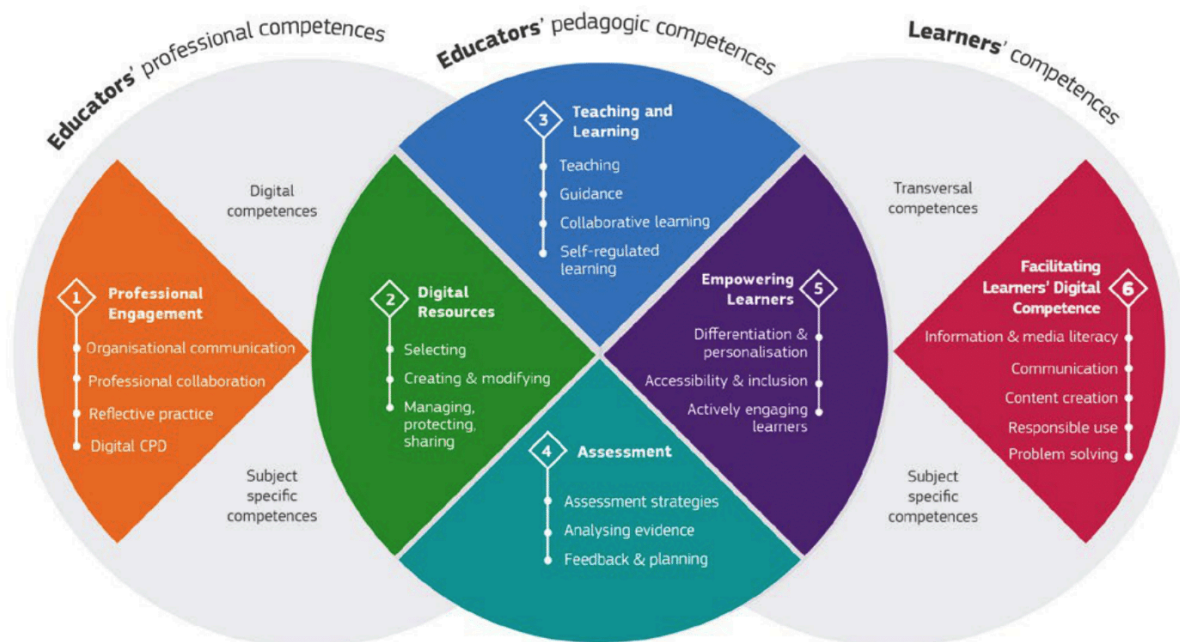


Figure 8. DigCompEdu Overview - © European Union 2017

While the DigCompEdu framework primarily addresses digital technologies broadly, its principles are transferable to the context of artificial intelligence. To support its application in AI, the “AI Pioneers” initiative, an Erasmus+ Forward Looking project involving an international,

multidisciplinary consortium³⁰, has developed a “Supplement to the DigCompEdu Framework”³¹, integrating critical competencies relating to AI in education. A summary of the integrations proposed by the consortium is presented in the following table.

³⁰ Project full title: *AI and the future of Education*. Call for proposal: ERASMUS-EDU-2022-PI-FORWARD-LOT1. **Project ID: 101087261**. More information at <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43353764/101087261/ERASMUS2027>.

³¹Bekiaridis G., Attwell G. (2024). Supplement to the DigCompEDU Framework. Retrieved from: <https://aipioneers.org/supplement-to-the-digcompedu-framework/>

| DigCompEdu Area | AI Pioneers integration |
|---|--|
| 1. Professional Engagement | <p>In this domain, AI competencies revolve around educators' ability to utilise AI tools for professional development, communication, and collaboration. This includes employing AI for maintaining and expanding personal learning networks, staying current with the latest AI advancements in education, and using AI-enhanced communication tools to engage effectively with peers and stakeholders. This comprehensive use of AI fosters a more connected and informed educational environment, enhancing educators' professional interactions and continuous learning processes.</p> |
| 2. Digital Resources | <p>AI competencies in the area of Digital Resources are centred on the creation, evaluation, and adaptation of AI-enhanced digital educational resources. Educators are expected to master the use of AI tools to develop and customise learning materials tailored to specific educational needs. They should also be adept at assessing the quality of AI-generated content, ensuring its accuracy and appropriateness for educational use. Furthermore, there is an emphasis on the responsible management and sharing of digital resources, ensuring that these practices uphold ethical standards and contribute to a more effective educational ecosystem.</p> |
| 3. Teaching and Learning | <p>AI competencies in this domain involve the integration of AI into teaching strategies and learning activities. Educators learn to utilise AI to support personalised learning experiences and employ AI tools for interactive and engaging instruction. This competency area emphasises understanding how AI can aid in managing and enhancing learning experiences in diverse educational settings.</p> |
| 4. Assessment | <p>AI competencies in the assessment domain focus on utilising AI tools for efficient and effective evaluation of students. This includes the deployment of automated grading systems and AI-driven analytics that assess student progress. Additionally, AI is used to provide personalised feedback and support, thereby streamlining the assessment process and enhancing its accuracy.</p> |
| 5. Empowering Learners | <p>In this area, AI competencies are aimed at addressing diverse learning needs and styles to promote inclusivity and accessibility. Educators are equipped to use AI to support special educational needs, facilitate self-regulated learning, and encourage students to critically consider the impact of AI. This competency ensures that all learners can benefit from tailored educational experiences that AI tools offer.</p> |
| 6. Facilitating Learners' Digital Competence | <p>AI competencies here are essential for educators to help students develop their digital competencies. This involves instructing students about AI concepts, ethical AI usage, data literacy, and the broader role of AI in society. Educators also guide students in critically assessing AI-generated information, fostering an understanding of AI's limitations and potential biases.</p> |

Table 4. DigCompEdu Integration by the AI Pioneers Consortium

4.1.5 UNESCO's AI Competency Framework for Teachers

UNESCO is currently developing AI competency frameworks for both teachers and students for school education as part of its broader "AI and the Futures of Learning" initiative³². For educators, and school teachers in particular, the AI Competency Framework will define the knowledge, skills and attitudes that teachers should possess to understand the roles of AI in education and use AI in their teaching practices in an ethical and effective manner. While the final framework will be presented during the second edition of Digital Learning Week in September 2024, the draft will be presented during Digital Learning Week in September 2023.

The draft framework organises competencies around five key aspects, each progressing through three levels: Acquire, Deepen, and Create.

| Aspects | Progression | | |
|---------------------------------|--|---------------------------------------|---|
| | Acquire | Deepen | Create |
| Human-centred Mindset | Human agency | Human accountability | AI social responsibility |
| Ethics of AI | Ethical principles | Safe and responsible use | Co-creating AI ethics |
| AI Foundations & Applications | Basic AI techniques and applications | Application skills | Creating with AI |
| AI Pedagogy | AI-assisted teaching | AI-pedagogy integration | AI-enhanced pedagogical transformation |
| AI for Professional Development | AI enabling lifelong professional learning | AI to enhance organisational learning | AI to support professional transformation |

Table 5. Overview of UNESCO's draft AI Competency Framework for Teachers

Although this framework is specifically addressed to school teachers, its principles and structure can be equally beneficial for youth workers, promoting more informed, ethical and effective use of AI in diverse educational contexts.

³² <https://www.unesco.org/en/digital-education/ai-future-learning/competency-frameworks>

4.1.6 AI and Digital Transformation Competency Framework for Civil Servants

The *AI and Digital Transformation Competency Framework for Civil Servants*³³ is a strategic tool designed to enhance digital capacity building initiatives within governmental bodies by the Working Group on AI Capacity Building of the Broadband Commission for Sustainable Development, an initiative launched by the International Telecommunication Union and UNESCO to promote international cooperation to close digital gaps in and between countries. The framework aims to equip civil servants with the necessary competencies to drive digital transformation and improve digital governance effectively.

The framework offers three competency domains:

1. **Digital Planning and Design:** This domain focuses on identifying digital transformation challenges and developing strategic visions for inclusive and sustainable digital policies. Competencies in this domain include *system thinking, problem identification and solutions, strategic foresight* and *agile strategy*.
2. **Data Use and Governance:** This domain stresses the importance of understanding and leveraging data as a pivotal asset in policy making and public service delivery. This domain encourages civil servants to engage in data-driven decision-making, ensuring data is used responsibly and ethically while considering privacy and security concerns. Competences in this domain include *digital literacy, data-driven decision making, open data and open government, privacy and security, legal, regulatory and ethical frameworks* and *AI fundamentals*.
3. **Digital Management and Execution:** It involves applying management and collaboration tools to address complex challenges and foster new modalities for civic participation. This domain also emphasises the development of a conducive digital culture that supports collaboration, innovation, and effective leadership in digital projects. Competences included are *people-centricity, iteration, agile execution* and *digital leadership*.

³³ Balbo Di Vinadio T., van Noordt C. Vargas Alvarez del Castillo C. and Avila R. (2022). Artificial Intelligence and Digital Transformation Competencies for Civil Servants. Retrieved at <https://www.broadbandcommission.org/wp-content/uploads/2022/09/Artificial-Intelligence-and-Digital-Transformation-Competencies-for-Civil-Servants.pdf>

4.2 Experiences from the Field: Focus Groups with Youth Work Professionals

Authors: ACOMI Nicoleta, ACOMI Ovidiu

Contributors: LANZETTA Miriam, MACHADO Jorge, MANGIULLO Angela, MARAVELAKI Anastasia Sonia, MARQUES Salomé

According to Krueger and Casey (2014)³⁴, a focus group is a suitable method to collect qualitative data, exploring people's opinions, attitudes, and experiences on a specific topic or issue. They define focus groups as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment". Therefore, a focus group was chosen to collect qualitative data from youth work professionals across four countries: Italy, Portugal, Romania, and Greece. They define focus groups as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment". Therefore, a focus group was chosen to collect qualitative data from youth work professionals across four countries: Italy, Portugal, Romania, and Greece.

4.2.1 Focus Group Objectives

The main objective of the focus group was to gather youth work professionals' needs, challenges, and jobs to be done for integrating AI into their work to ultimately support the identification of their competence needs to harness the potential of AI in their work.

4.2.2 Focus Group Process

The focus groups followed a semi-structured format based on a common guideline developed by the project consortium. The guideline included instructions for facilitators, brainstorming suggestions, discussion questions on the topics below, and reporting templates ensuring the consistency and quality of data collection across different countries and contexts. The guideline also provided ethical considerations and practical tips for conducting online focus groups, such as choosing an appropriate platform, inviting and engaging participants, and managing digital collaboration tools.

³⁴ Krueger, R. A., & Casey, M. A. (2014). *Focus groups: A practical guide for applied research* (5th ed.). SAGE Publications.

- The definition and understanding of AI;
- The current and potential use of AI in youth work activities;
- The benefits and risks of AI for youth work and young people;
- The skills and competencies needed to use AI in youth work;
- The preferred modes and formats of AI training and support;

4.2.3 Composition of the Group

The focus groups comprised 72 youth work professionals representing different types and levels of experience, fields of action, and target groups. The recruitment process was oriented towards achieving diverse participant groups in terms of age, educational, cultural, and socioeconomic backgrounds, gender identities, and orientations. Furthermore, the group included both digitally included and AI-enthusiastic youth workers and those with limited digital competencies who may feel alienated and excluded from the topic.

The focus groups were conducted online, through video-conferencing platforms, and face-to-face between 20 April and 23 May 2024 and lasted about 90 minutes.

Each partner summarised and analysed the results from each focus group, using a common template to report the main findings and conclusions.

4.2.4 Activity execution

4.2.4.1. National Focus Group - Italy

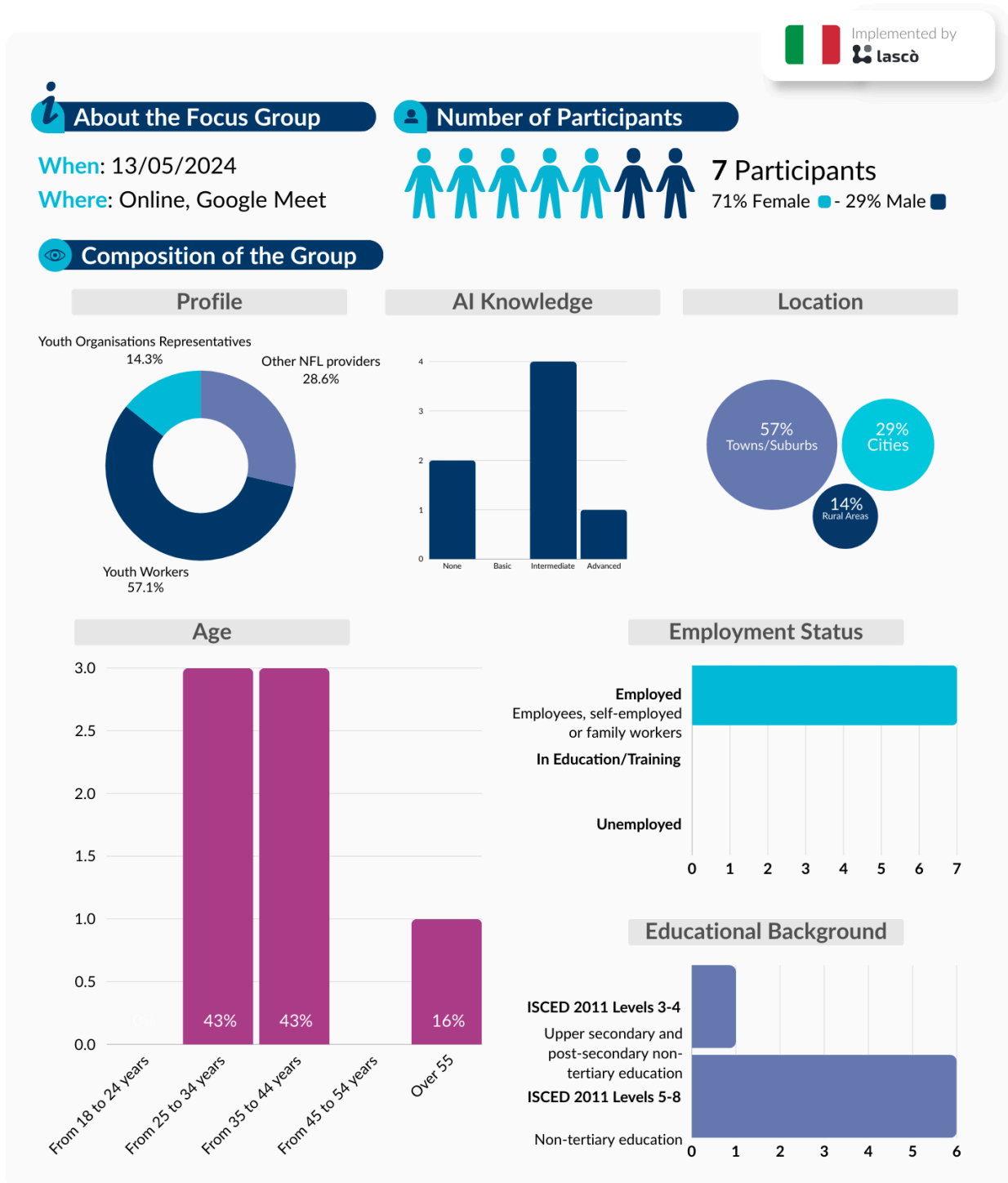


Figure 9. Focus Group in Italy: Infographic

Activity Summary

A group of 7 participants contributed to the online focus group session on 13th May 2024. This session aimed to share knowledge and insights on possible applications of AI in youth work-related professions based on youth workers' needs and challenges. Furthermore, the session addressed the importance of developing and strengthening AI and digital skills that are fundamental to efficiently directing the AI potential into youth work.

After a brief introduction of the participants, an overview of the main objectives of the session and a presentation of AI fundamentals and use cases by the session's facilitator, participants discussed the main challenges and concerns about AI practice within their jobs. Through brainstorming and collaborative activities on a virtual whiteboard, the group outlined the potential benefits of integrating AI into their training planning and activities, such as a more accurate analysis of youth needs and program outcomes that can lead to better engagement during training sessions.

Key Outcomes:

The following paragraphs present the main outcomes for each key question (Q) the focus group facilitator posed to the participants.

Q1: Do you know (other) relevant AI applications for youth work?

Participants indicated the following tools as most relevant in use:

- **Microsoft Translator:** AI can automatically detect the language of the speaker, considering the broader context of sentences and paragraphs. This helps provide translations that make sense in context rather than translating word-for-word. Real-time translation ensures that language barriers do not hinder participation, promoting cultural exchanges and fostering an inclusive environment.
- **Padlet:** it is a tool for collaboration and information sharing. AI can analyse the content added to a Padlet and automatically tag or categorise it. It makes it easier to organise and search for information within a board. Interactive and well-organised content can increase engagement among young people, making sessions more dynamic and engaging.

- **Synthesia:** This application uses AI to create realistic video content featuring AI-generated avatars, making educational content or training material more interesting so that young people can actively engage with the content.
- **Kahoot!:** AI algorithms analyse user performance and behaviour to tailor quizzes and games to individual learning needs, providing a more personalised experience.
- **Mentimeter:** AI improves the creation of interactive and dynamic presentations that capture the attention of young people, encouraging active participation; it facilitates the inclusion of open-ended questions and real-time analysis, giving all participants a voice and ensuring their feedback is heard and considered.
- **DeepAI:** a text, image and video generator. It can help create content, create images from scratch, or edit existing images with AI.

Q2: What positive outcomes/benefits do you see in the case studies provided?

- **Engagement:** AI's capabilities to analyse learners' performance and behaviour to suggest quizzes, games, or activities suitable to their learning needs can help design and deliver a more personalised experience. Presenting content learners perceive as fitting for their learning levels, and concerns can make the educational experience more enjoyable and engaging.
- **Language and accessibility:** Some of the applications (e.g., HandTalk or Microsoft Translators, ChatGPT) can allow youth work professionals to create content in multiple languages and leverage other communication modalities (e.g., visual-manual modality, like HandTalk). Hence, these applications can help break down communication barriers, supporting communication between people from different backgrounds and enhancing inclusivity.
- **Time optimisation and content creation:** AI-powered content generation and recommendations save time for youth work professionals, encouraging creativity and allowing them to focus on interaction and mentorship.

Q3: What challenges do you see in using AI solutions in your work?

- **Data and privacy:** AI systems often require access to personal data to function effectively. This raises concerns about how data is collected, stored, and used.
- **Uncertainty avoidance:** Some youth work professionals may hesitate to adopt AI technology due to a lack of familiarity or understanding about how it works and its potential impact on their work.

- **Skills requirement:** Youth work professionals may lack the necessary skills to effectively use and manage AI tools.

Q4: What skills do you think are essential for youth workers to effectively use AI tools?

Participants pointed to the need for **all the competencies outlined in the European LifeComp³⁵ and DigComp³⁶ Frameworks** as the must-have foundational set of knowledge, attitudes and skills, prerequisites for effective use of AI. Particularly among the competencies mentioned during the focus group:

- **Learning to learn:** recognising one's own knowledge gap about AI and pursuing continuous professional development opportunities to bridge it;
- **Critical thinking:** it is essential to critically evaluate AI-generated content, data, and recommendations for ensuring that youth workers make informed decisions and avoid potential biases.
- **Flexibility:** youth workers should demonstrate adaptation and resilience to face new technological challenges.
- **Data literacy:** ability to read, understand, create and communicate data.
- **Digital literacy:** proficiency in using digital tools and platforms is essential for navigating AI tools effectively.
- **AI literacy:** familiarity with AI concepts, terminology, and applications is crucial for understanding how AI tools work and their potential impact on youth work practices.

A practical example of integrated LifeComp- and DigComp-based training for youth workers was presented by one of the participants, representative of a non-profit organisation based in Caserta, *Associazione Arcipelago APS*. Particularly, the organisation is leading a complementary project ("*AI Skills 4 Youth Workers*", a small-scale partnership in youth co-funded by the Erasmus+ Programme under Grant Agreement Number 2023-3-IT03-KA210-YOU-000176076) that will implement a training program for youth workers on AI, based on LifeComp and DigComp frameworks. The program, called

³⁵ Sala, A., Punie, Y., Garkov, V. and Cabrera Giraldez, M. (2020). *LifeComp: The European Framework for Personal, Social and Learning to Learn Key Competence*. EUR 30246 EN, Publications Office of the European Union, Luxembourg. ISBN 978-92-76-19417-0, doi:10.2760/922681, JRC120911.

³⁶ Vuorikari, R., Kluzer, S. and Punie, Y. (2022). *DigComp 2.2. The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes*. EUR 31006 EN, Publications Office of the European Union, Luxembourg. ISBN 978-92-76-48883-5, doi:10.2760/490274, JRC128415.

GymComp, will consist of online sessions aimed at enhancing digital (DigComp 2.2) and relational/communication (LifeComp) competencies for using generative AI in non-formal education contexts. The sessions, planned in the second semester of 2024, cover the following competences:

| DigComp | LifeComp |
|--|---|
| <p>Information and data literacy</p> <ul style="list-style-type: none"> ▪ Browsing, searching and filtering data, information and digital content; ▪ Evaluating data, information and digital content; ▪ Managing data, information and digital content. <p>Communication and collaboration</p> <ul style="list-style-type: none"> ▪ Engaging in citizenship through digital technologies. <p>Digital content creation</p> <ul style="list-style-type: none"> ▪ Developing digital content. <p>Safety</p> <ul style="list-style-type: none"> ▪ Protecting personal data and privacy. | <p>Social area</p> <ul style="list-style-type: none"> ▪ Empathy; ▪ Communication; ▪ Collaboration. <p>Learning to learn area</p> <ul style="list-style-type: none"> ▪ Growth mindset; ▪ Critical thinking; ▪ Managing learning. |

Q5: How can we support youth workers in acquiring these AI-related competencies?

- **Training:** providing opportunities for youth workers to gain hands-on experience with AI tools through interactive workshops, hackathons, and collaborative projects. Encourage experimentation and exploration in a supportive environment.
- **Online learning resources:** providing a collection of online courses, tutorials, and learning materials on AI topics that youth workers can access at their own pace to deepen their knowledge and skills.



Participants' Feedback



I would recommend the activities of this project as they can help bring out the creativity of young people and distract them from the problems of everyday life by providing support in dealing with emotional and psychological difficulties.



I believe it is very important to support people (learners and non-learners) towards this change so that they can acquire or improve the understanding and awareness useful in their working and daily life, especially in a fragile context such as the educational one.



I believe that the contents of the project are very interesting and useful for youth workers.



I find the possibility of reaching as many young people as possible through a part of their "language" and being able to provide them with the basis to use it at its best is exciting.



AI to support Youth Workers is an unmissable opportunity.



This is the future of education.

4.2.4.2. National Focus Group - Romania

Implemented by
TEAM 4
excellence

About the Focus Group

When: 23/05/2024
Where: Constanta, Romania

Number of Participants

40 Participants
87.5% Female - 12.5% Male

Composition of the Group

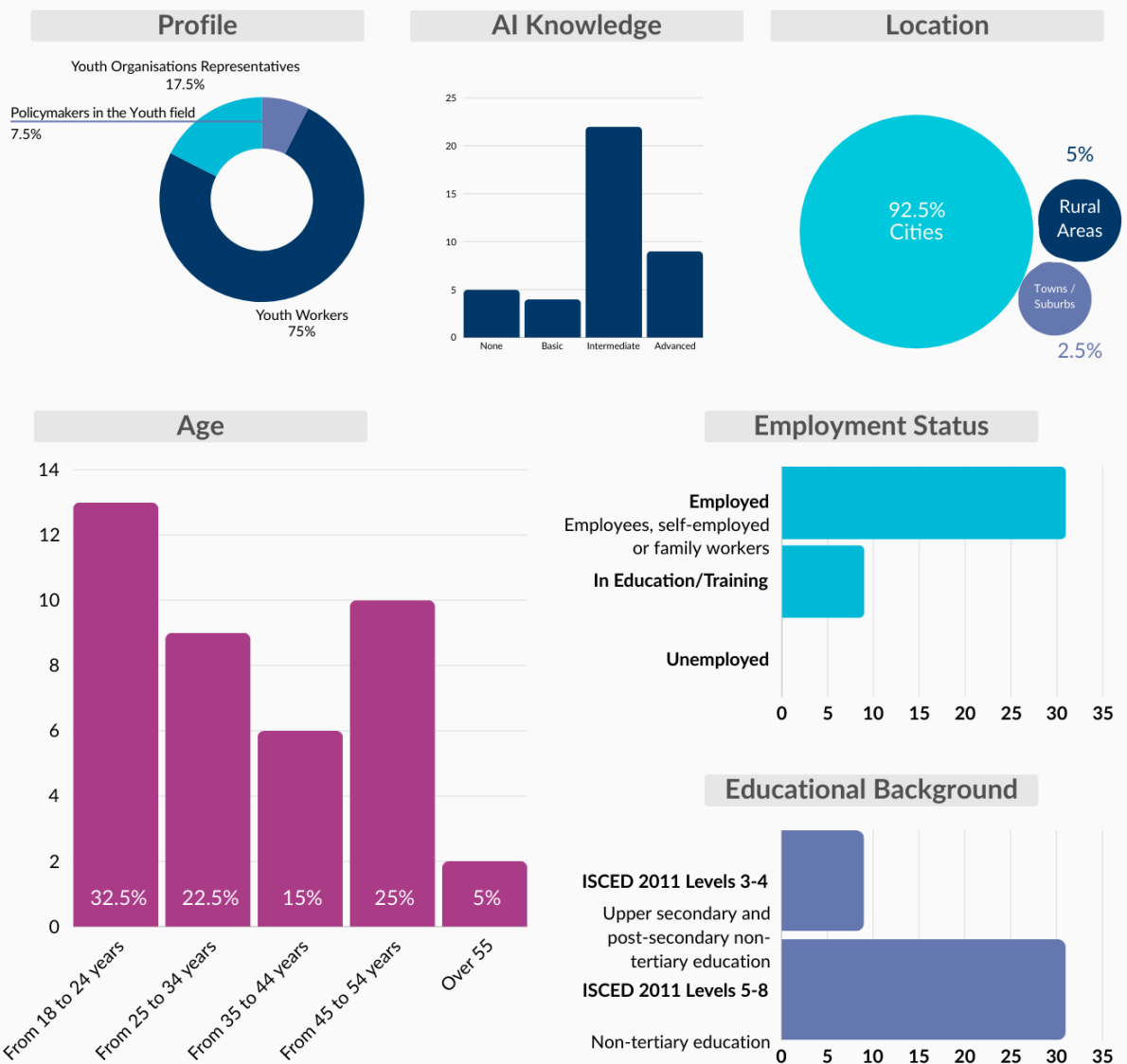


Figure 10. Focus Group in Romania: Infographic

Activity Summary

The activity was organised at Constanta Maritime University and gathered 40 participants from 8 organisations. The focus group started with an icebreaker to make the people relax and connect with each other. After the brief introduction of the project and of the participants, the facilitator invited them to a brainstorming session. She launched the scenario question, "If you could automate one part of your daily routine with AI, what would it be and why?". Participants demonstrated various levels of AI knowledge. They suggested a few AI tools that they are already using. They mentioned that they would like to use AI mainly to create educational content and learning materials and for administrative tasks like scheduling lesson planning.

Then, the facilitator and project manager from T4E, Dr. Nicoleta Acomi, presented the scope of the project. The Focus group continued with the 5 questions which were addressed by the facilitator and the responses were collected on small post-its and advertised on a flipchart paper. The activity continued with discussions about AI tools and they presented the benefits and challenges. In the continuation of the discussions, they identified the skills needed and a set of activities that can lead to development of the competencies.

Key Outcomes:

The following paragraphs present the main outcomes for each key question (Q) posed by the focus group facilitator to the participants.

Q1: *Do you know (other) relevant AI applications for youth work?*

The activity facilitator invited the participants to brainstorm and identify AI tools. With the support and guidance of the facilitator, together they discussed the tools and the relevance for youth work:

1. **ChatGPT** - generates and customises educational content tailored to diverse needs
2. **Copilot** – for content creation, code generation and software development
3. **Bark** - AI-driven storytelling and creative writing tools
4. **Gemini** - advanced data analysis and decision-making
5. **Bing** - AI-powered search capabilities enable rapid access to information and resources

6. **Mid Journey** - creation of visual content and graphics
7. **Logic Pro** - powerful audio production tools help to create high-quality audio content for educational and creative projects.
8. **Open AI** - several tools and resources, various applications from content generation to data analysis
9. **Magic School AI** - educational tools and resources, enhancing teaching and learning experiences with personalised content
10. **Quillbolt** - a paraphrasing tool helping youth workers rephrase and refine content to improve clarity and originality
11. **Pilsart** - artistic creation to produce unique and visually appealing art projects
12. **Language tool** - communicate with different nationalities
13. **Read AI** - enhance reading comprehension and analysis
14. **Mentimeter** - an interactive presentation tool that uses AI to analyse participant responses and engagement in real-time

Q2: What positive outcomes/benefits do you see in the case studies provided?

Even if not all youth workers were advanced in each of the AI tools that were discussed, they identified a range of positive outcomes, as follows:

- Reducing the time allocated to some tasks;
- In order to produce valuable results, youth workers are required to allocate a huge amount of time;
- Rapid access to information;
- Improved accessibility to education;
- Quick access to huge amounts of data;
- Support of rapid statistics;
- A smoother process for analysing results;
- Learning paths adapted to the level of participant;
- Support for educators;
- Help for preparation of exams
- Immediate feedback;
- Free to some extent;
- Develop the imagination;

- Generate ideas for future research;
- Generate creative content, ideas for activities, and innovative teaching materials;
- Save time and, therefore, money;
- Increase availability of content;
- Higher productivity;
- It is somehow anonymous, and youth may feel more comfortable asking questions and seeking help from an AI without judgement;
- With relevant input, help in decision-making and strategic planning;
- Adapt content and responses based on the user's level of understanding;

Q3: What challenges do you see in using AI solutions in your work?

For each of the benefits, the youth workers also identified some challenges of using AI tools in youth work. Below are their identified challenges:

- Dependency of technology
- Users are not developing critical thinking
- Reduce social interaction
- Trends to reduce creativity
- Require advanced IT competencies
- Copyright issues
- Deontology
- Compliance with data protection laws (such as GDPR) when collecting and processing data, especially since it involves young users
- Occasionally provide inaccurate or misleading information, which can be detrimental to education
- If the context is not well explained, the AI may give inappropriate or less useful responses
- There is a risk of becoming too dependent on AI solutions, neglecting the importance of judgment over-reliance
- The need for advanced training to fully utilise the platform's capabilities and interpret the data correctly
- Risk of misinterpreting data, which can lead to incorrect conclusions
- The use of AI can be technically challenging and time-consuming

- AI may not always be able to accurately interpret cultural nuances, slang, or local contexts in youth feedback, leading to potential misunderstandings
- Technological barriers, because not all youth have access to smartphones and the internet, and the intensive use of AI in youth work may lead to divides
- Youth workers could be resistant to adopting new technologies

Q4: What skills do you think are essential for youth workers to effectively use AI tools?

Based on the collected responses, to effectively use AI tools in youth work, youth workers need to develop a combination of technical, analytical, and soft skills.

- Digital skills - computer literacy, familiarity with programming languages
- Language skills to interact with AI
- Desire to innovate - the innovative mindset helps in discovering unique solutions to problems.
- Critical thinking to use relevant information
- Creativity to adopt AI tools to the specific needs of youth work
- Terminology and practice in the field of work
- Willingness to learn - given the rapidly evolving nature of AI, a continuous desire to learn and stay updated with the latest developments is vital
- Analytical skills to process and interpret large volumes of data generated by AI tools
- Ethical responsibility – youth workers must be aware of the ethical implications of AI, such as privacy concerns and bias, to ensure that AI tools are used in ways that protect and respect the rights of young people
- Ability to organise, which includes planning, coordinating resources, AI integration

Q5: How can we support youth workers in acquiring these AI-related competencies?

Participants mentioned several ways that can help in developing AI-related skills:

- Organising knowledge exchange events - conferences, seminars, and meetups where youth workers can share experiences, best practices, and insights about AI
- Networking and learning sessions to learn from peers and experts in the field, fostering a collaborative environment for knowledge exchange

- Select a range of courses and recommend youth workers to participate -curate a list of relevant courses that cover various aspects of AI.
- MOOCs (Massive Open Online Courses), university programs, and specialised training modules tailored to youth work
- Workshops - that provide practical training on AI tools and techniques (interactive, allowing participants to actively engage with the material practice skills in real-time)
- Practise the use of available tools
- Self-learning
- Continuous training - implement training programs that keep youth workers updated on the latest developments in AI
- Individual research to understand the use of AI applications in youth work - read academic papers, follow AI trends

Facilitators' Comments:

Integrating AI tools into youth work presents significant opportunities for enhancing educational and support services. However, it also requires a balanced approach to overcome challenges and ensure ethical use. By fostering a culture of continuous learning and innovation and providing targeted support through events, courses, and practical training, we can equip youth workers with the necessary skills to effectively leverage AI in their professional activities.

Participants' Feedback



The event provided invaluable insights into AI tools for youth work.



Loved the practical sessions.



Great networking opportunity.



I enhanced my understanding of the use of AI in education.



I identified new tools like ChatGPT and MidJourney for our projects.



Happy to exchange ideas and best practices.



Congratulations on the supportive environment for continuous learning.



I gained practical tips for implementing AI.



Waiting for more such events in the future!

4.2.4.3. National Focus Group - Greece



About the Focus Group

When: 08/05/2024, 14/05/2024

Where: Online

Number of Participants

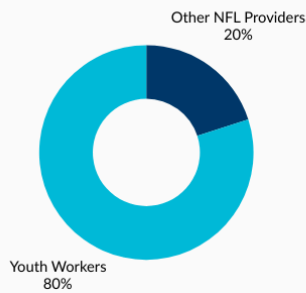


10 Participants

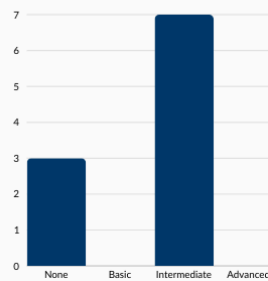
80% Female ■ - 20% Male ■

Composition of the Group

Profile



AI Knowledge



Location



Employment Status



Educational Background

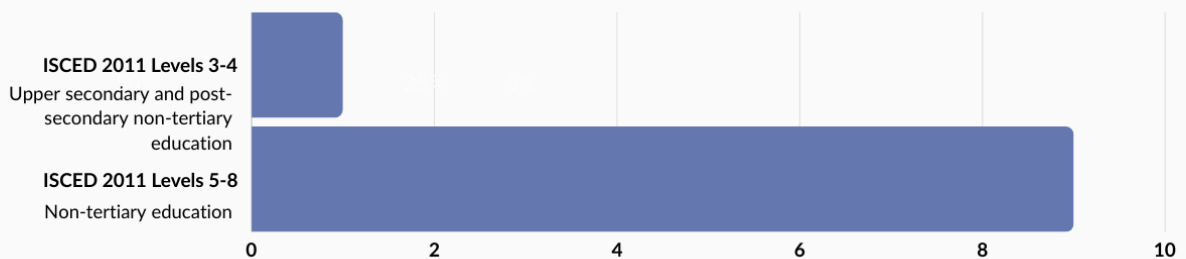


Figure 11. Focus Group in Greece: Infographic

Activity Summary

Two online Focus Groups were conducted, with five participants in each, held on the 8th and 14th of May. The first group comprised youth workers from the Athens area, while the second group consisted of youth workers from the Larisa region. The discussions primarily revolved around the utilisation and implementation of AI technologies in the work of youth workers, the current AI tools or technologies utilised by them in their interactions with young people, and the needs and challenges encountered in integrating such technologies into their daily practices. Additionally, the groups addressed the support required for those less familiar with these tools. Both groups adhered to the Focus Group Methodology without deviation from the planned procedure.

Key Outcomes

Q1: Do you know (other) relevant AI applications for youth work?

Participants in the two focus groups highlighted several practical applications of AI tools for both youth workers and young people. For youth workers, AI tools can significantly streamline administrative tasks, enhancing efficiency and effectiveness. One prominent suggestion was the use of AI for responding to emails, particularly when the information required is repetitive. This can save substantial time and ensure consistency in communication. Furthermore, AI can be leveraged to create and organise schedules on a daily, weekly, or monthly basis. This functionality ensures clear and equitable task assignments among youth workers, promoting better team coordination and workload management.

Additionally, AI tools can facilitate translation tasks, breaking down language barriers and enabling communication with non-native speakers. This is especially useful in diverse communities or international projects. Also, using an avatar to have a dialogue in a foreign language can help youth practice in their own time. Youth workers can also use AI for data analysis, helping them to derive insights from large datasets and inform their strategies and decisions. When it comes to reporting, AI can assist in structuring reports or statements, ensuring clarity and professionalism.

For content creation, AI tools prove invaluable. They can generate engaging social media posts, design visually appealing posters and invitations for events, and create multimedia content like videos and images for websites. These capabilities can significantly enhance outreach and

engagement efforts. One example given by the participants was the development of a storybook on diversity, which would be illustrated or animated with the help of AI technology. In another instance, AI can help prepare a presentation using a microphone and even create doodles or animations during the narration. In general, any tools that can produce videos, images, or music are very useful and can be used in a wide variety of activities, as they serve an educational purpose.

For young people, AI can be an excellent resource for career development. AI tools can assist them in creating their CVs, offering insights to tailor their resumes towards specific fields. These tools can help organise the information in an attractive and concise manner, increasing their chances of making a positive impression on potential employers.

Q2: What positive outcomes/benefits do you see in the case studies provided?

Youth workers identified numerous benefits of AI, highlighting its potential to provide easy access to information and streamline the collection and analysis of large data sets. Tasks that would otherwise require extensive time and effort can now be completed more efficiently, freeing up time for youth workers to focus on other critical areas of their work. Importantly, the youth workers emphasised that AI technology should be seen as a tool to enhance human efficiency rather than replace human roles. The integration of AI should augment their capabilities, enabling them to perform their jobs more effectively.

Additionally, AI offers open access to all youth, enabling them to join online platforms and share their news, ideas, and problems regardless of their geographic location. This inclusivity is particularly valuable in fostering a sense of community and shared purpose among young people from diverse backgrounds. The Lomap initiative was cited as an excellent example of this, providing a platform for a large number of young people to come together, exchange experiences, and address local challenges.

Another positive outcome discussed in the focus group was the role of youth workers, trainers, and educators in raising awareness about the appropriate use of AI technology. They stressed the importance of educating young people on using AI as a tool to enhance and refine their original ideas rather than relying on it to create their work. By understanding AI's potential to improve, correct, and enrich their creations, young people can leverage this technology

responsibly and creatively, maximising its benefits while maintaining the integrity of their personal contributions.

Q3: What challenges do you see in using AI solutions in your work?

Greek youth workers face several challenges in incorporating AI tools into their work, primarily due to technical limitations and the need for adequate ICT infrastructure and training. To effectively integrate these tools, they emphasised the importance of having user-friendly and easily accessible technology, particularly for young people from diverse backgrounds.

A significant hurdle is the language barrier, as many AI tools are primarily available in English rather than Greek. This limitation restricts the usability and accessibility of these technologies for Greek-speaking youth and youth workers. To address this, there is a need for more localised AI solutions that support the Greek language, ensuring broader adoption and effectiveness.

Youth workers also highlighted the importance of using AI tools in ways that sustain young people's interest in learning, whether for educational or social purposes. AI should be leveraged to enhance engagement and motivation, making learning more interactive and enjoyable. However, they also expressed concerns about the potential impact of AI on social interaction. Over-reliance on AI tools could reduce face-to-face communication, leading to a decline in offline socialisation among youth and even among colleagues who might otherwise collaborate and brainstorm in person. It is crucial for youth workers to ensure that AI tools complement rather than replace personal connections. Maintaining this balance will help ensure that AI serves as a tool for enrichment rather than isolation, supporting both educational and social development.

Q4: What skills do you think are essential for youth workers to effectively use AI tools?

The most important skill emphasised by all participants was basic **computer literacy**. A solid foundation in computer skills is essential for effectively utilising AI tools. Additionally, a good understanding of English is crucial, as most AI tools are currently available primarily in English. Accessibility and adequate resources are also vital, along with the freedom to use AI technology within their organisations.

Critical thinking is another key skill that should always be applied when using AI tools. This

involves making informed decisions about which tools to use, how to integrate them into their work, and how to interpret and utilise the outcomes. For instance, when using AI for data analysis or content creation, it is important to ensure compliance with regulations such as GDPR. Youth workers also pointed out the necessity of recognising the limitations of each AI tool to use them effectively. For example, tools like ChatGPT have been trained on data up to 2021, meaning their knowledge is not current beyond that point. This limitation must be considered when seeking information or solutions.

Furthermore, youth workers need to assess their specific needs to select the most suitable tools. Identifying the requirements of their tasks and the capabilities of various AI technologies can help them choose the right tools to enhance their work.

Q5: How can we support youth workers in acquiring these AI-related competencies?

A significant support for youth workers would be to receive training on AI tools. It was suggested that integrating such training into high school or university IT classes could be highly beneficial. Early exposure to AI tools would equip young people with valuable skills that are increasingly appreciated by potential employers.

Participants also proposed the creation of a catalogue or guidebook of AI tools. This resource would categorise tools and provide short descriptions of their features, level of difficulty, and potential uses. Such a guide would help users quickly identify the tools best suited to their needs and skill levels. Additionally, the inclusion of links to instructional YouTube videos could further enhance understanding, offering step-by-step guidance and practical demonstrations. Furthermore, user comments with solutions to common problems and a chat option for real-time assistance would greatly enhance the utility of this guidebook. The groups also discussed the value of self-assessment tools to measure one's level of AI competency. They emphasised that for these assessments to be genuinely useful, the feedback should include data on the percentage of people experiencing similar difficulties in specific areas. Providing targeted solutions based on these insights would help users improve their skills more effectively.

Participants' Feedback:

All participants were enthusiastic about the activity. Most of the participants felt that they gained valuable insights and expressed their intention to follow the project's developments and outcomes. None of the participants made any suggestions for improvement.

4.2.4.4. National Focus Group - Portugal



About the Focus Group

When: 10/05/2024, 13/05/2024
Where: Online

Number of Participants



15 Participants
60% Female - 40% Male

Composition of the Group



Figure 12. Focus Group in Portugal: Infographic

Activity Summary

A group of 15 participants, all professionals in the field of youth work, participated in two focus group sessions held on May 10 and 13, 2024, facilitated by Salomé Marques and Jorge Machado, respectively, Project Manager and Project Coordinator of CONTEXTOS.

The purpose of these sessions was to gather insights into the specific needs, challenges, and tasks that youth work professionals encounter in their efforts to integrate AI into their practices. The discussions aimed to support the identification of the necessary competencies required to harness the potential of AI in youth work effectively.

In the first part, participants shared their experiences and perspectives on the current state of AI integration within their organisations. They discussed various obstacles they face, such as limited access to AI technologies, a lack of training and understanding of AI applications, and concerns about data privacy and ethical considerations. The group also highlighted the potential benefits of AI, including improved efficiency in administrative tasks, enhanced engagement with youth through personalised communication, and more accurate analysis of youth needs and program outcomes.

In the second part, the focus shifted to identifying specific jobs to be done and the competencies required to address the challenges and use the opportunities presented by AI. Participants engaged in collaborative activities (Jamboard) to map out the skills and knowledge areas essential for effective AI integration.

The outcomes of these focus group sessions provided valuable insights into the professional development needs of youth workers in the context of Artificial intelligence and for the AI4YouthWork project.

Key Outcomes:

Q1: Do you know (other) relevant AI applications for youth work?

Participants indicated several AI tools that they use in their daily work, and they believe these are highly beneficial for them, namely:

1. **Quillbot:** An AI-powered writing assistant that can help improve the quality of written content, making it a valuable tool for creating clear and engaging communications.

2. **Perplexity AI:** A versatile AI that can assist with research and provide accurate information quickly, supporting youth workers in staying informed and prepared.
3. **Canva AI:** An AI-driven design tool that simplifies the creation of visual content such as posters, social media graphics, and presentations, making it accessible for users without a design background.
4. **ChatGPT & ChatSonic:** A conversational AI that can generate specific exercises tailored to the needs of individual youth, providing personalised educational support and engagement.
5. **Grammarly:** An AI-powered writing assistant that helps ensure grammar and spelling accuracy, enhancing the professionalism of written communications.
6. **Bing AI:** A search engine with AI capabilities that can help youth workers quickly find relevant information and resources.
7. **Pitch:** An AI-driven presentation tool that facilitates the creation of professional presentations, aiding in effective communication and advocacy.
8. **Adobe Express AI:** An application that leverages AI to streamline the creative process, helping to produce high-quality visual content effortlessly.
9. **TurboScribe and Gamma:** Tools that can transcribe and organise meeting notes or generate structured content, improving efficiency in documentation and project planning.
10. **Plagiarism Checker** (<https://my.plag.pt/login>): An AI tool to verify the originality of content, ensuring the integrity of educational materials and other documents.
11. **Prezi and Slido:** These tools enhance presentations and interactive sessions, making it easier to engage with and involve young audiences.

Q2: What positive outcomes/benefits do you see in the case studies provided?

Participants indicated several benefits of using AI applications in daily work, including:

1. **High-Quality and Free Translation:** The availability of *high-quality translation at no cost is a great benefit*. This not only broadens access to information in different languages but also facilitates international communication and collaboration.
2. **Content Creation Tools:** Tools like Bing AI and Canva AI play an important role in creating dynamic and intuitive content in English. Bing AI supports bibliographic research, providing notifications and updated news, as well as ensuring data protection and security. On the other hand, Canva streamlines the creative process, allowing the

efficient construction of templates, logos, and symbols.

3. **Time Optimization and Creativity Support:** The use of AI tools allows better time management and support in structuring texts or projects. This results in efficiency in daily work and in resolving bureaucratic tasks, as well as encouraging creativity.
4. **Critical Thinking and Education:** AI tools can be used or trained to recognise fake news and false information. Encouraging research with ChatGPT or similar tools, followed by questioning the results, promotes critical thinking and the development of fundamental language skills for creating prompts.

Q3: What challenges do you see in using AI solutions in your work?

Participants identified several challenges or obstacles to incorporating AI into their daily work, including:

1. **Bias/Error:** AI solutions often reflect the biases present in their training data. For example, in research, it's essential to include both supportive and critical sources. However, AI may inadvertently favour certain perspectives, skewing the results. This can hinder the development of critical thinking, particularly among young people.
2. **Accessibility and Cost:**
 - a. **Freemium Models:** Many AI tools offer a basic version for free, which is often quite comprehensive. However, the paid versions include advanced features like video creation with subtitles, which are highly valuable as they combine multiple functionalities into one tool.
 - b. **Subscription Plans:** The trial period (usually 30 days) is often insufficient to fully assess the tool's utility and adaptability to an organisation's needs. Furthermore, high subscription fees can be prohibitive, especially for organisations with limited financial resources.
3. **Quality Control:** While AI can significantly increase the volume of translated material within the same timeframe, it requires a thorough review. This ensures accuracy and maintains the quality of the translated content.
4. **Ethical and Intellectual Honesty**
 - a. **Plagiarism:** AI can unintentionally produce content that borders on plagiarism, especially with images and drawings. It's crucial to teach the ethical usage of AI, differentiating between assistance and plagiarism.
 - b. **Educational Impact:** Over-reliance on AI tools in education might impair

learners' critical analysis skills, making it essential to integrate AI ethically and constructively.

5. **Balancing AI Use in Education/Youth Work:** AI has significantly transformed the educational landscape, offering tools and platforms that enhance learning efficiency and accessibility. However, there's a delicate balance between using AI for efficient learning and ensuring that youth develop critical thinking and creativity. Relying heavily on AI for answers can diminish youth's ability to think critically and solve problems independently. Youth might become passive learners, expecting AI to provide solutions.
6. **Verification and Reliability:** Ensuring the reliability of AI-generated information is challenging. Cross-referencing with verified sources is essential to maintain the integrity of the data.
7. **Resistance to Change:**
 - a. **Education System Reform:** The current education system is stagnant compared to AI advancements. Reform is necessary to integrate AI effectively.
 - b. **Workplace Fear:** There is a natural fear of evolution among professionals, who may resist using these tools to protect their jobs.
8. **Youth Worker Ethics:**
 - a. **Ethical Use:** As a youth worker, it's vital to use AI ethically and understand when and how to use AI for beneficial purposes without compromising moral standards. Use AI as a supplementary tool rather than the primary source of information.
 - b. **Teaching AI Literacy:** Educating young people on the ethical and practical use of AI, emphasising its role as a support tool rather than a replacement for critical thinking and originality.
9. **Interoperability.**

Q4: What skills do you think are essential for youth workers to effectively use AI tools?

For the participants, it is necessary to develop the following skills and attitudes:

1. **Prompt Engineering:** Knowing how, when, and in what way to give instructions to the AI tool to obtain the desired results. Writing clear and detailed prompts to generate relevant and personalised content for youth.
2. **Knowledge of AI Tools:** Being aware of the various AI tools available and knowing how to use them in different contexts (education, communication, marketing, management, evaluation, etc.).

3. **Understanding ethical limitations:** Knowing and respecting the ethical limits of using AI, including issues of human rights, privacy, and plagiarism. Implementing practices that ensure ethical use of AI, avoiding false information and plagiarism.
4. **Adaptation and resilience:** Demonstrating flexibility and resilience in the face of technological challenges and changes.
5. **Communication, content creation and social media management:** Using AI to create content for social media and establish a brand image. Automating the creation of posts that follow a common and universal layout.
6. **Inclusivity / Cultural Sensitivity:** Understanding and respecting cultural norms, customs, and etiquette is very important. AI systems should be programmed to recognise and adapt to these cultural nuances, making interactions more respectful and engaging.
7. **Growth mindset and innovation:** Maintaining an open mindset towards innovation and acceptance of new technological realities. Staying updated with the evolution of AI and being willing to discuss the ethics and regulation of emerging technologies.
8. **Critical thinking and context evaluation:** Critically evaluate the results obtained by AI and decide when it is not ethical to use these tools. Conducting a critical analysis of the data generated by AI to ensure its relevance and accuracy.

Q5: How can we support youth workers in acquiring these AI-related competencies?

To support youth workers in acquiring AI-related competencies, we can implement the following strategies:

1. **Training Sessions on AI Tools:** Conducting training sessions focused on the various tools available will equip youth workers with the knowledge they need to effectively utilise AI in their daily work.
2. **Project Management Apps:** Introducing youth workers to project management apps (Click Up, Monday, Notion, etc.) can help them organise and streamline their tasks efficiently. These apps often incorporate AI features that can automate and enhance project management processes, making it easier for youth workers to manage their projects.
3. **AI Literacy Programs:** Developing and providing programs that focus on AI literacy. These programs should cover what AI is, the various applications of AI, and how to use AI tools effectively. Youth workers will understand AI better and use AI efficiently in

their daily activities.

4. **Prompts Engineering:** Training youth workers to divide information clearly and into defined blocks - prompts - will make it easier for AI systems to understand and process their input. This skill is essential for youth workers since AI can provide accurate and useful responses to their daily work.

Facilitators' Comments:

The activity "Competence Needs," aimed at outlining the skills, attitudes, and knowledge required for effectively integrating AI into youth work, was difficult to implement due to the complexities of the **ETS Competence Model for Youth Workers**. It required more time than the planned 35 minutes and needed additional preparation before the focus group.

The focus group discussions yielded key lessons that highlight the significance and complex nature of AI in youth work. Participants highlighted the need to delve deeper into understanding AI and its diverse applications, recognising its potential to transform various aspects of their work. Emphasis was placed on the ethical and responsible use of AI, highlighting the need for guidelines and frameworks to ensure its positive impact.

Furthermore, the group identified the importance of fostering critical thinking and problem-solving skills in the context of AI, equipping young people and youth workers with the necessary tools to navigate and use AI tools effectively.

Lastly, the focus group stressed the need for training and resources to support the adoption and effective use of AI in youth work. Access to relevant training programs and materials is needed to empower youth workers and ensure they are well-prepared to utilise AI responsibly and innovatively in their practice.

Participants' Feedback:

Participants provided positive feedback, *expressing motivation and eagerness to receive the activity results and engage more deeply in the project activities.*

4.2.5 Key Conclusions

The focus groups revealed that AI applications are already being utilised by youth workers to enhance various aspects of their professional activities. Tools such as Microsoft Translator, Padlet, Synthesia, Kahoot!, and Mentimeter are recognised for their ability to break language barriers, streamline information organisation, and enhance engagement through dynamic content creation. Participants emphasised the significant potential of AI to improve

administrative efficiency by automating routine tasks like email responses, scheduling, and data analysis. This allows youth workers to focus more on direct interactions and strategic planning. Furthermore, AI's capability to facilitate translation and communication across different languages was highlighted as crucial in diverse and international contexts, fostering inclusivity and effective communication.

For content creation and career development, AI tools were seen as invaluable assets for both youth workers and young people. Applications like Canva AI, ChatGPT, and Quillbot can generate engaging social media posts, design visually appealing materials, and create multimedia content, thereby enhancing outreach and engagement efforts. Additionally, AI can assist young people in creating professional CVs, offering tailored advice to improve their employability. The use of AI in educational settings, such as developing personalised exercises or creating storybooks on diversity, was also highlighted as a significant benefit. Overall, the focus groups underscored the transformative impact of AI in making youth work more effective, inclusive, and engaging while also preparing young people for future career opportunities.

Participants in the focus groups highlighted several significant benefits of AI applications in youth work, emphasising their potential to enhance engagement, accessibility, and efficiency. AI tools like personalised quizzes and games can analyse learners' performance and behaviour to tailor activities to their learning needs, making the educational experience more engaging and enjoyable. Language and accessibility features in AI applications break down linguistic barriers, allowing youth workers to create multilingual content and fostering cultural exchange and inclusivity. The ability of AI to automate tasks such as question generation and content recommendations saves valuable time, enabling youth workers to focus more on interaction and mentorship. This time optimisation is crucial for producing high-quality results and supports creative content generation, innovative teaching materials, and effective strategic planning.

Moreover, **AI technology was seen as a powerful ally in increasing productivity and access to information.** Participants noted that AI facilitates rapid access to large data sets and supports quick statistical analysis, idea generation for future research, and creative content development. These capabilities not only enhance the availability of educational resources but also streamline processes such as report analysis, exam preparation, and immediate feedback provision. AI's role in providing high-quality, free translation services and supporting critical thinking through tools like ChatGPT underscores its value in promoting inclusive education and informed

decision-making. Youth workers underscored the importance of using AI to augment, rather than replace, human roles, ensuring that the technology enhances their capabilities and effectiveness in engaging and supporting young people.

Despite the promising benefits of AI in enhancing engagement, accessibility, and efficiency in youth work, participants identified several challenges that need to be addressed to ensure the effective integration of AI tools. One of the foremost concerns is data privacy and security, as AI systems often require access to personal data, raising issues about how this data is collected, stored, and utilised. Additionally, there is a significant skill gap among youth work professionals, many of whom lack the necessary technical competencies to effectively use and manage AI tools. This is compounded by general uncertainty and hesitation in adopting AI technologies due to unfamiliarity and fear of their potential impact on their work. Other notable challenges include the potential for AI tools to reduce critical thinking and creativity, the risk of over-reliance on technology, and the technical and time-consuming nature of integrating AI into daily workflows.

In addition, participants highlighted specific obstacles related to accessibility and cultural nuances. Many AI tools are primarily available in English, limiting their usability for non-English speaking youth workers and young people. This is particularly problematic in countries like Greece, where there is a pressing need for localised AI solutions that support the native language. Additionally, AI's inability to accurately interpret cultural contexts and local slang can lead to misunderstandings. The cost of advanced AI tools, often hidden behind subscription models, poses another barrier, especially for organisations with limited financial resources. Ethical considerations, such as the risk of plagiarism and ensuring intellectual honesty, were also raised. Participants emphasised the need for a balanced approach to using AI in youth work, ensuring that it complements rather than replaces human interaction and critical thinking, and stressed the importance of educating both youth workers and young people on the ethical and practical use of AI.

The responses from participants highlight that effectively utilising AI tools in youth work necessitates a blend of technical, analytical, and soft skills. Key among these are computer, data, and AI literacy, which are fundamental requirements for navigating AI. Additionally, proficiency in English is crucial due to the predominance of AI tools available primarily in that language. Participants underscored the importance of continuous learning and professional development to stay current with the rapidly evolving AI landscape. Critical thinking emerged as

a vital skill, enabling youth workers to make informed decisions about the integration and application of AI tools while ensuring compliance with regulations such as GDPR. Recognising the limitations of AI tools, such as the outdated knowledge of models like ChatGPT, is also essential for their effective use.

Participants also emphasised the necessity of ethical responsibility and cultural sensitivity in employing AI tools. This includes understanding and respecting the ethical implications of AI, such as privacy concerns and bias, to ensure that these tools are used in ways that protect and respect young people's rights. Additionally, youth workers need to develop prompt engineering skills to generate relevant and personalised content effectively. Adaptation and resilience in the face of technological challenges, coupled with a growth mindset towards innovation, are crucial for integrating AI into youth work. Facilitating access to AI tools for all young people and organising workshops and training sessions on AI usage were also identified as critical steps towards inclusive and effective AI integration in youth work practices.

To support youth workers in acquiring AI-related competencies, it is crucial to provide comprehensive training and resources that facilitate hands-on learning and continuous skill development. Participants emphasised the importance of interactive workshops, hackathons, and collaborative projects that offer practical experience with AI tools in a supportive environment. These training sessions should be complemented by a collection of online courses, tutorials, and learning materials that youth workers can access at their own pace. Additionally, incorporating AI training into high school or university IT classes can equip young people with valuable skills early on, preparing them for future roles that increasingly demand AI literacy.

Participants also highlighted the need for knowledge exchange events, such as conferences, seminars, and meetups, where youth workers can share experiences, best practices, and insights about AI. Networking and learning sessions with peers and experts foster a collaborative environment for knowledge exchange. Furthermore, creating a catalogue or guidebook of AI tools, complete with short descriptions, instructional videos, and user comments, would help users quickly identify the most suitable tools for their needs. Implementing self-assessment tools to measure AI competency and providing targeted feedback and solutions based on these assessments would further enhance skill development. Lastly, introducing youth workers to project management apps and training them in prompt



engineering can streamline their tasks and improve their ability to utilise AI effectively in their daily work.

The feedback received from participants highlighted a highly positive reception of the project activities, emphasising the value and impact of the sessions on their professional and personal development. Participants appreciated the creativity and emotional support the activities provided, which helped them manage everyday challenges and emotional difficulties. They underscored the importance of fostering an understanding and awareness of AI, particularly in the educational context, which can be fragile and in need of innovative solutions.

Overall, participants expressed motivation and enthusiasm to stay engaged with the project, looking forward to future events and the continued development of AI applications in youth work. The positive feedback and lack of suggestions for improvement indicate a high level of satisfaction and a strong endorsement of the project's direction and impact.

5. CONCLUSIONS

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This research has provided significant insights into the competencies required by youth workers to effectively integrate AI into their professional activities.

AI technologies significantly influence how young people live, participate and learn. The studies presented in Chapter 3 have explored the ways **many young people are using AI, although lacking a deep understanding of how it works**. The Chapter has also highlighted the cultural and gender differences in AI usage and perceptions, as well as the multi-dimensional impact of AI on youth, affecting education, social interactions and psychological well-being.

Youth workers play a critical role in guiding young people to make an effective and responsible use of AI systems. They can help bridge the knowledge gap, promoting AI literacy and ultimately empowering young people to understand and critically evaluate AI. **On the other hand, AI presents numerous opportunities for youth work professionals to augment their competencies.** Practical examples of AI applications in youth work settings were presented in Section 3.4, categorised based on the *ETS' Competence Model for Youth Workers to Work Internationally*. Potential benefits and uses in various competence areas have been identified, particularly for facilitating learning, designing programs, managing resources, collaborating in teams, communicating meaningfully, displaying intercultural sensitivity, networking and advocating, assessing and evaluating, and being civically engaged.

Chapter 4 has outlined the experiences, needs and challenges of youth workers in relation to AI integration into their practices. **The focus groups revealed that AI applications are already being utilised by youth workers to enhance various aspects of their professional activities,** from tools to overcome language barriers or streamline information organisation to applications for content creation to enhance engagement. Participants emphasised the potential of AI to improve administrative efficiency by automating routine tasks like email responses, scheduling, and data analysis, **ultimately allowing youth workers to focus more on direct interactions and strategic planning.**

However, **several challenges were identified by participants:** data privacy and security, youth workers' competence gap and resistance to AI technologies due to unfamiliarity and fear of its

potential impact on their work, the potential for AI tools to reduce critical thinking and creativity, the risk of over-reliance on technology, and the technical and time-consuming nature of integrating AI into daily workflows.

Participants in this study emphasised that **a blend of technical, analytical and soft skills is crucial for navigating the AI landscape**. Participants pointed to the need for all the competencies outlined in the European LifeComp and DigComp Frameworks as fundamental requirements for effectively integrating AI, either as a subject of non-formal learning sessions or as a means to enhance their work. The most recurring competences can be summarised as follows:

- **Learning-to-learn competencies** include (i) **growth mindset**, (ii) **critical thinking**, and (iii) **managing learning** competencies. These competencies are the key to: (i) nurturing a desire to innovate, discover unique solutions and maintain an open mindset towards technological advancements; (ii) evaluating AI-generated content, data and recommendations critically to make informed decisions and avoid potential biases; (iii) recognise knowledge gaps about AI and pursue continuous professional development opportunities to bridge them.
- **Personal competencies**, including **flexibility**, are necessary for adaptation and resilience in the face of new technological challenges and changes.
- **Social competences**, including **communication**, to effectively interact with AI systems and leverage AI's capabilities to create contents for written, verbal and visual communications.
- Linked to the previous purpose, participants also mentioned **prompt engineering** as an essential skill for writing clear and detailed prompts and generating relevant and personalised content.
- **Digital competencies**: Proficiency in using digital tools and platforms, essential for navigating AI tools. Among the digital competencies mentioned by participants, **data literacy** is considered an indispensable tool for young people and youth workers, who should have the competences needed for reading, understanding, creating and communicating data effectively, being aware of the origins and destinations of data fed into AI systems.



- **AI literacy:** Familiarity with AI concepts, terminology, and applications to understand how AI tools work and their impact on youth work practices. This also includes awareness of various AI tools available and how they could be used in different contexts, such as education, communication, marketing, management, and evaluation.
- **Ethical Responsibility:** Awareness of ethical implications, such as privacy concerns and bias, ensuring AI tools are used to protect and respect young people's rights.
- **Organisational skills:** Planning, coordinating resources and integrating AI effectively into youth work.

In conclusion, the *AI Competence Framework for Youth Workers* must encompass this comprehensive set of knowledge, attitudes and skills which are essential for empowering youth workers to effectively integrate AI into their practices and to thrive in an increasingly AI-driven world.

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