Electronic, didactic and innovative platform for learning based on multimedia assets

e-DIPLOMA

Funded by
the European Union

D7.2: Ethics Plan

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	HISTORY OF CHANGES		
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V1.2	16.11.2022	UJI	▪ Version including suggestions of WP Contributors
V1.2.1	18.11.2022	CSI	▪ Version applying the contributions of the WP contributors
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V2.0	14.09.2023	CSI	▪ 1st Updated version: - Unexpected Finding Protocol, AI Gender Focus, Additional Risk Safeguards

(*) According to the section "Review and Submission of Deliverables" of the Project Handbook

▨▨▨▨▨ 1. Technical References

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2. Table of Contents

3. Introduction

3.1   Executive Summary

Distance learning has become a great ally in the current Pandemic situation. The e-DIPLOMA project will establish e-learning in an upper quality level in a three years' research project, posing the use of Augmented Reality/Virtual Reality, Artificial Intelligence (Machine Learning/Deep Learning), Interactive Technologies, chatbots and gamification in a newly designed e-learning platform. This project will use techniques and technologies previously proven successfully in the broadcasting, gaming, and eSports industries. They will be adapted to the educational world developing innovative learning practices. A co-creation methodology will be used to include the main educational actors (teachers, educators, pupils, families, course providers and policy makers) and their social relationships. Inclusiveness, accessibility, and sustainability will also be taken into account.

This project will also consider the demand for adequate teacher training in relation to new educational technologies, analyzing the shifting role of teachers, trainers and educational leaders in the digital transition affecting education and training as well as their training needs, including digital and leadership skills, required in an emerging society of permanent and quick technological change.

For this project to be realised, various actions have to be carried out by the consortium, which include third parties as research participants in conducting interviews and focus groups with relevant stakeholders, dissemination of surveys to the public, conduction of workshops, piloting and testing of the produced material during different phases of realisation.

As expected, the e-DIPLOMA project, faces three main categories of ethical challenges:

- Human participation in research and training activities of the project, and in particular, the involvement of minors.

- The collection of sensitive/personal data used in both research and technology development.

- The use of Artificial Intelligence/ possibly invasive, new technologies

The e-DIPLOMA consortium has a dedicated work-package (WP7) on data management and ethics, gender, privacy, security, and regulatory aspects to ensure that all these components are applied consistently and in harmony with each other throughout the project's lifecycle and beyond. Part of this, is the present Ethics Plan (EP) which is a strategic document describing all the fundamental ethical issues relevant to the e-DIPLOMA project and defining the procedures to be followed by all Consortium partners and Associate Partners working on the project. The Ethics Plan specifies all the ethical issues and provides information on how they will be processed during e-DIPLOMA project actions.

This document may be updated during the lifecycle of the project if needed, introducing further information as actions get finalised and reported. This is a living document that will be updated as the project progresses over time, indicatively, when getting closer to hitting milestones such as the creation of the platform and analysis of a situation/impact through surveys and interviews. These updated versions will be available in the Google Drive folder that the consortium shares.

3.2   Abbreviation List

This is the list of the acronyms that are used in the present document:

- EP: Ethics Plan

- AR: Augmented Reality

- VR: Virtual Reality

- AI: Artificial Intelligence

- WP: Work Packages

- EU: European Union

- EC: European Commission

- ALLEA: All European Academies

- FAIR: Findability, Accessibility, Interoperability, and Reusability

- GA: Grant Agreement

- EEA: External Ethics Advisor

- DMP: Data Management Plan

- GDPR: General Data Protection Regulation

3.3   Reference Documents

Sources used for developing ethics requirements of the e-DIPLOMA project:

- Artificial Intelligence Act https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0206

- D1.3 Data Management Plan (DMP) (still under construction)

- D9.1 H - Requirement No. 1 - Annex 1 Informed Consent Form

- D9.1 H - Requirement No. 1 - Annex 2 Informed Consent Form (Minors)

- D9.1 H - Requirement No. 1 - Annex 3 Virtual Reality side effects information form

- Data transfers outside the EU: International data transfers using model contracts

- Directive 95/46/EC

- Ethical guidelines on the use of artificial intelligence and data in teaching and learning for educators (https://education.ec.europa.eu/news/ethical-guidelines-on-the-use-of-artificial-intelligence-and-data-in-teaching-and-learning-for-educators)

- Ethics and data protection (2021) (https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ethics-and-data-protection_he_en.pdf)

- Ethics Issues Table and Ethics Self-Assessment for Horizon 2020 proposals; Horizon 2020 regulation No 1291/2013

- EU Directive 2016/680 of the European Parliament and of the Council of 27 April 2016

- European Code of Conduct for Research Integrity of ALLEA (All European Academies) http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

- FAIR Principles: https://www.go-fair.org/fair-principles/

- Grant Agreement (GA)

- Guidelines, Recommendations and Best Practices, European Data Protection Board https://edpb.europa.eu/our-work-tools/general-guidance/guidelines-recommendations-best-practices_en

- Handbook on European data protection law (2018 edition), European Union Agency for Fundamental Rights and Council of Europe, European Court of Human Rights, European Data Protection supervisor https://fra.europa.eu/en/publication/2018/handbook-european-data-protection-law-2018-edition

- Manual for Researchers: Information related to Ethics and Gender Issues (July 2019).

- Manual for Researchers: Interview guidelines (July 2019).

- Manual for Researchers: Work methodology and guidelines for the project (July 2019).

- Meetings with the project officer prior to sign the Grant Agreement.

4. Ethics in e-DIPLOMA project

Amongst the basics of Ethical Research Conduct relevant to the project research domain, the following must be ensured:

- Respect the integrity and dignity of persons.

- Follow the "Do no harm" principle. Any risks must be clearly communicated to the subjects involved.

- Recognize the rights of individuals to privacy, personal data protection and freedom of movement.

- Honour the requirement for informed consent and continuous dialogue with research subjects.

- Respect the principle of proportionality: not imposing more than is necessary on your subjects or going beyond stated objectives.

- Respect biodiversity and do not impose irreversible changes that threaten the environment or ecological balance.

- Build on the understanding that any benefits are for the good of society, and any widely shared expressions of concern about threats from your research must be considered.

- Use of trustworthy, legal, and ethical AI; human-centric approach.

The main concerns addressed by WP7 include different types of ethical considerations, such as:

1) Human agency and oversight of the digital system (e.g., carrying out an impact assessment ensuring that fundamental human rights and principles are upheld).

2) Technical robustness and safety (i.e., ensuring the integrity and resilience of the project results against vulnerabilities such as data pollution, physical infrastructure, and cyber-attacks).

3) Privacy and data governance (e.g., align e-DIPLOMA's system with relevant standards and widely adopted protocols for data management and governance).

4) Transparency regarding the methodology of data collection, analysis, and outcome production by AI and communication of all these to end-users.

5) Diversity, non-discrimination, and fairness (including concerns regarding accessibility, inclusivity of users and universal design that accommodates a wide array of individual preferences and approaches).

6) Societal and environmental well-being (including an assessment of the wider societal impact of the e-DIPLOMA system's use beyond the individual end-users, or the ecological impact of deploying and maintaining a system such as the one developed by the e-DIPLOMA system).

7) Accountability (for instance addressing concerns such as how to carry out risk or impact assessment of the system that adequately considers its effect on users, stakeholders, and the broader society in which it operates, or how to respond to major risks that might occur in the running of the system)

The e-DIPLOMA Consortium respects the fundamental principle of research integrity described in the **European Code of Conduct for Research Integrity.** It implies compliance with the following fundamental principles:

- Reliability in ensuring the quality of research reflected in the design, the methodology, the analysis, and the use of resources.

- Honesty in developing, undertaking, reviewing, reporting, and communicating research in a transparent and fair way.

- Respect for colleagues, research participants, society, ecosystems, cultural heritage, and the environment.

- Accountability for the research from idea to publication, for its management and organisation, for training, supervision, and mentoring, and for its wider impacts.

The Ethics Plan ensures that persons carrying out research tasks follow the good research practices and refrain from the research integrity violations described in this Code. It does not change the other obligations under e-DIPLOMA's Grant Agreement or obligations under applicable international, EU or national law, all of which still apply.

The e-DIPLOMA research is compatible with **EU and international law** and meets the data protection requirements set out in the European regulations, specifically in the treatment of data regarding its international transfer. According to this text, all the processing of personal data will be lawful as all research subjects will provide their given consent for the purposes established in this report and that will be detailed in each consent form.

Furthermore, and according to Article19(1) Regulation (EU) No 2021/695, the e-DIPLOMA project complies with 'ethical principles and relevant national, Union, and international legislation, including the **Charter of Fundamental Rights of the European Union** and the **European Convention on Human Rights** and its Supplementary Protocols'. The e-DIPLOMA Consortium pays a special attention to 'the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and the need to ensure high levels of human health protection'.

Also, the newly proposed regulation by the Commission, the AI Act, and any additions/amendments that may occur will also be one of the guiding principles for the consortium.

5. Ethics Plan

5.1   Purpose of the Ethics Plan

The EP is a strategic document containing the procedures to be followed by all the project participants that are included in the consortium and associate partners. The objective of ethical guidelines is to ensure that all partners work in an ethically acceptable way with respect to involving participants in any of its actions in the project. This plan specifies how the Consortium will maintain security, privacy, and confidentiality norms, as well as common values of autonomy, independence, beneficence, non-maleficence, and justice will be respected. Furthermore, it will advise all partners in the consortium, both EU and non-EU, on how to work with participants, respecting the combined ethical standards of the consortium members, as well as the national regulations.

The present document discusses ethical issues (in the form of a Risk Assessment) and the safeguards placed related to the following topics: **1) Human Participation, 2) Protection of Personal Data and 3) Artificial Intelligence**. On top of that, some additional general safeguards are also discussed that will further ensure that when it comes to ethics, all the applicable regulations and guidelines are followed throughout the project. Those include some general procedures, consideration of the gender perspective in the project, the assignment of an external ethics advisor and an internal Ethics Committee, as well as an ethics self-assessment; all of which will be discussed in the following pages.

The EP and other project materials discussing ethical guidelines are available in English. Each partner organization is responsible for ensuring that all involved people are aware and understand the guidelines (i.e., if required they will have to translate the content into the national languages).

It is mandatory that each member organisation will apply the ethical standards and guidelines of Horizon Europe, at the onset of the e-DIPLOMA project.

5.2   Procedures on ethical issues and self-assessment

The procedures described in this Ethics Plan (EP) are implemented in order to protect participants' best interests and ensure their security without increasing their vulnerability.

The project sets up rules to guarantee that all research activities address security, ethics, and individuals' liberties. The project will enable mechanisms to avoid any intentional or unintentional use of information that can bring any harm to any participant or being misused in other contexts.

All partners performing research will act according to national and European legislation, and in line with national

data protection provisions and the European data protection rules. They will also be required to follow agreed rules for the recruitment of participants, the implementation of activities, recording, analysis, and storage of data collected in the project. The guidelines on these issues are applied by all partners and periodically reviewed by the external ethics advisor of the project (see below). Each partner is responsible for compliance in their country and must be able to justify it and prove it to the ethical committee as well as observe national and EU legislation.

5.2.1 Gender perspective

According to the Grant Agreement, the beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action and, where applicable, in line with the gender equality plan. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at the supervisory and managerial levels.

Gender equality: e-DIPLOMA will promote gender equality at two levels:

1) in terms of human resources of the research teams that will implement the project. e-DIPLOMA will integrate a sex/gendered perspective both in the construction of the consortium and the Advisory board and Steering Committee as well as in the development of the project.

2) e-DIPLOMA will observe the EU's Gender Equality Strategy 2020-2025 to avoid differences and inequalities in project activities.

3) e-DIPLOMA will take into consideration gender balance and diversity during the recruitment of external participants for the project's activities, e.g. workshops and surveys.

The Gender Equality Strategy places emphasis on the role of Artificial Intelligence (AI) as an area of strategic importance in which 'women have to be part of its development as researchers, programmers and users'. According to the European Institute for Gender Equality, a lack of gender diversity in the science and technology workforce leads to risks of gender bias in AI.

To address these risks, project deliverables and data collection will be robust and transparent to mitigate and prevent contributing to gender biases. The structural design of the e-DIPLOMA project adheres to the requirements of the Commission's White Paper on AI, as well as the newly proposed AI Act. We will take measures to ensure that the use of AI systems in e-DIPLOMA support equal opportunities, and that are legal, trustworthy, and ethical.

Specifically, within the development of AI tools in e-Diploma, the following safeguards will be put into place:

Diverse Data Collection: We will ensure diverse and representative data that includes a balanced representation of gender identities, also ensuring that the data covers various age groups, ethnicities, and socioeconomic backgrounds.

Data Pre-processing: We will cleanse and pre-process the data to identify and mitigate any biases that may already exist. Use techniques like data anonymization and aggregation to protect individuals' privacy.

Diversity in Development Teams: e-DIPLOMA promotes diversity within development and research teams. A diverse team is more likely to consider a wider range of perspectives and potential biases during the development process.

Bias Detection and Mitigation: We will implement bias detection and mitigation techniques during data processing and model training and set up regular audits of the AI systems for biases and take corrective actions when bias is detected.

Fairness Metrics: We will define fairness metrics that specifically consider gender balance and equity. These metrics can help you assess the performance of your AI system and make necessary adjustments.

Inclusive Training Data: We will use inclusive and balanced training data to ensure that the AI system understands and respects gender diversity. Avoid reinforcing stereotypes through training data.

Ethical AI Principles: We will adhere to ethical AI principles and guidelines, such as those outlined in documents like the AI Ethics Guidelines by organizations like the IEEE and ACM and the AI Act.

Transparency: We will be transparent about the data sources, training processes, and decision-making criteria of your AI systems. This transparency can help build trust and accountability.

Furthermore, the promotion of STEM education in women will be treated in different parts of the project, including the prototypes. e-DIPLOMA's actions are intended to have a strong impact on improving educational availability and accessibility in STEM studies. This project will be a vital intervention to promote gender equality in STEM, considering the under-representation of women in this study field.

5.2.2 External Ethics Advisor (EEA)

An additional way in which the project is planning to remedy those ethical quandaries is through the involvement of the External Ethics Advisor, Dr. Jahna Otterbacher, who will monitor and guide all actions to ensure compliance with all ethical requirements. The appointment of an EEA was a commitment in the Ethics Summary Report we received for the project to be funded. The EEA must prepare a report by month 3 of the project and then, a report per year. These reports must describe and evaluate the actions that the consortium is developing to handle the ethical problems that this project faces, especially in the implementation of AI.

Role and responsibilities of the External Ethics Advisor:

- Secure the "best interests" of the general public and civil society

- Attend face-to-face meetings including plenary meetings if it required by project partners

- Be part of the Ethics Management Structure

- Collaborate with the partner responsible of the Ethics Work Package to elaborate an ethics checklist to act as an aide memoir and modified to apply specifically to the project in hand (article 19 Horizon Europe Framework Programme and Rules for Participation Regulation)

- Prepare Ethics screening reports and ethics review reports (M3, M12, M24, M36)

- Facilitate the contact with sister projects in ethic issues (vii) Ethics advice should incorporate the assurance that EU/national laws are complied with, as well as international 'soft laws,' and widely accepted ethics codes and guidelines

- Reflection on the experiences and outcomes of the project, in terms of meeting ethics requirements, should be compiled and subsequent reports summarizing the lessons learned delivered to the Commission

- Respect the principle of proportionality. Any recommendation/response/measure should be proportional to the good that can be achieved and the harm that may be caused

- Be aware of the responsibility for the quality of the advice. Adequate safeguards, such as indemnity insurance have to be considered and implemented, if necessary.

Dr. Jahna Otterbacher will act also as a member of the Ethics Committee that the project has established in the Consortium Agreement. This Ethics Committee is also composed by:

- Dr. Inmaculada Remolar, as the project leader

- Kleovoulos Stylianou, as the representative of CSI, the partner in charge of WP7

- Dr. Vladislav Slavov, as member of the Advisory Board, specialist on the Ethics related to AI.

This Committee will also analyze the incidental and unexpected findings that could arise in the project and will define the disclosure policy in case of unexpected findings.

5.2.3 Unexpected Findings Protocol

When an unexpected finding arises, it's important to acknowledge its presence and significance. This involves recognizing that the finding is not aligned with the initial expectations or assumptions. In that case, partners shall

promptly inform the Project Steering Committee, ensuring all other partners are duly informed and subsequent actions are carried out in accordance with the established protocol. Hence, the e-diploma project established a protocol to manage unexpected findings that involved several key steps to consider:

- Recognize and list unexpected findings: Understand and document the nature, significance, and contextual information of the identified unexpected findings.

- Manage unexpected findings by categorizing and evaluating them: Categorize the unexpected findings based on impact and evaluate their relevance, potential risks, and ethical implications.

- Communicate unexpected findings: Communicate the unexpected findings clearly and transparently to all relevant stakeholders, including users, customers, and regulators.

- Take corrective action: Based on the analysis and insights gained, assess the need, and modify the project plan as required, ensuring it aligns with the revised.

- Monitor and Evaluate: Continuously monitor the situation and evaluate the effectiveness of the modifications made in response to unexpected findings.

- Document the process: Document the investigation and any actions taken to address the unexpected findings, including any changes made to the project's objectives, policies, and procedures.

By following the protocol e-diploma ensures ethical and responsible research conduct by addressing unexpected discoveries and enhances the overall integrity of the project and contributes to the trustworthiness and transparency of the research outcomes.

5.2.4 Ethics self-assessment

Based on European Commission's guidance for ethics self-assessment it is significant to have information on the participants' specific vulnerable characteristics, the research has to be relevant to both source and host communities, and its objectives must not be harmful or prejudicial to participants. Ethics self-assessment of research requires when there are incidental findings that might compromise the security or integrity of the interviewee or a person in their surroundings, we should report to the corresponding authorities.

The e-DIPLOMA project will carry out periodic evaluation meetings to ensure that ethical issues are followed by all partners in the research. If ethical issues arise unexpectedly during the research process, the Ethics Committee would contact the Commission/Agency immediately to receive appropriate help and guidance.

5.3   Risk assessment

In addition to the Data Management Plan that has been delivered in M6 of the Project, there are areas such as the inclusion of human participants (possibly minors), the use of sensitive and/or personal data and the use of Artificial Intelligence, that may need further attention in terms of ethics standards especially when it comes to Human Participants' use of Data and Artificial Intelligence. Therefore, to manage this risk, the consortium is called to answer the following questions:

Human Participants:

- Does this activity include people unable to give informed consent? If yes, please, clearly justify their participation or benefit to them.

- Does this activity include minors? If yes, please, clearly justify their participation or benefit to them.

- Are they potentially vulnerable individuals or groups? If yes, please, clearly justify their participation or benefit to them.

- From the techniques and methods used, are there any that may expose participants to risk? If yes, please, clearly explain how you will mitigate that risk.

To safeguard human participants, the following actions will be taken by e-Diploma:

1. Obtaining informed consent from participants.

2. Protecting the anonymity and confidentiality of participants.

3. Avoiding deceptive practices when designing our research.

4. Providing participants with the right to withdraw from our research at any time.

Data Management:

- Will you re-use any existing data and what will you re-use it for? State the reasons if re-use of any existing data has been considered but discarded.

- What types and formats of data will the project generate or re-use?

- What is the purpose of the data generation or re-use and its relation to the objectives of the project?

- What is the expected size of the data that you intend to generate or re-use?

- What is the origin/provenance of the data, either generated or re-used?

- To whom might your data be useful ('data utility'), outside your project?

The above will be safeguarded by the principles and rules set out in our Data Management Plan

Artificial Intelligence:

- Does this activity involve the development, deployment and/or use of Artificial Intelligence? (If yes, detail whether that could raise ethical concerns related to human rights and values and detail how this will be addressed)

- Are there formal processes to check for and correct bias or errors in AI?

- Is this system designed in a way to avoid bias in both input data and algorithm design?

- Are users aware they are interacting with an AI system?

- Are users able to understand why the system made its decisions & the system's limitations, abilities risks and benefits?

- Does this system reduce the safety and wellbeing of the individuals, society, and the environment?

- Does this system ensure human oversight (capability for human intervention in every decision cycle of the system) and does not undermine human autonomy?

- Are there mechanisms in place so the AI can record its decisions and the reason?

Towards this, a robust **AI Governance framework** will be put into place which will consist of the following safeguards:

- Ethical Frameworks: Establishing ethical principles and guidelines for AI development, including principles like fairness, transparency, accountability, and non-discrimination (see section 5.2.1 above)

- Regulatory Frameworks: Respecting legal and regulatory frameworks that govern AI systems' use in various sectors, including data protection laws, liability regulations, and industry-specific guidelines.

- Data Governance: Ensuring that data used to train and operate AI systems is collected, stored, and processed in a secure and privacy-compliant manner. This includes data anonymization, consent management, and data access controls.

- Algorithmic Transparency: Promoting transparency in AI algorithms and models so that developers and users can understand how AI systems make decisions. This involves model explainability and interpretability.

- Accountability and Responsibility: Defining roles and responsibilities of different stakeholders involved in AI development and deployment, including developers, organizations, and regulatory bodies.

- Bias Mitigation: Implementing strategies and tools to detect and mitigate biases in AI systems to ensure fairness and avoid discrimination.

- AI Safety: Ensuring that AI systems are designed with safety in mind to prevent accidents, misuse, and unintended consequences.

- Cybersecurity: Implementing robust cybersecurity measures to protect AI systems from attacks and unauthorized access.

All data will be stored anonymously on secure servers that has restricted, password protected access and data encryption. An identification number will be assigned to each participant. The storage and transferring of across borders, and from institution to institution, will adhere to national, institutional and EU policies, such as the FAIR Data Management guidelines, concerning the safe storage and transfer of data. The use of data for analyses will not breach confidentiality.

5.4 Main ethical issues of the e-DIPLOMA project & Risk Mitigation Plan

5.4.1 Safeguards for Human Participation

- **Minors:** A critical issue in the project is the inclusion of minors because the project will focus on tertiary educational stage, therefore students over 16 years of age could be included as study subjects. In such case, the consent of participating in the project will be obtained from the parents/legally authorized representative and it will be ensured that they have sufficient information to enable them to provide this on behalf and in the best interests of the children.

- **Consent (D9.1 - Annex 1, 2):** Whenever possible, the assent of the participants will be obtained in addition to the consent of the parents/legal representatives and dissent will be respected. The models of the consent form will be design according to both European and national level because research activities will be developed in different countries. They will be submitted as deliverable before the start of the relevant activities and always under the supervision of the internal Ethical Advisor of the Advisory Board and the external Ethical Advisor, that will be included on month 1 of the project.

- **Side effects (D9.1 - Annex 3):** In addition, the informed consent will contain the description of the possible risks / benefits derived from the intervention (direct/indirect), the place where the experiments will be carried out and if the experiments produce side effects (for example, dizziness or nausea in virtual reality) they will be detailed. If necessary, the sample will be limited and people who may suffer from pathologies that are affected by their exposure to possible side effects, if any, will be excluded.

- **Anonymity:** Researchers will guarantee the anonymity of the interviewed people throughout all the process and keep completely anonymous any information that interviewees wish to hide for reasons of personal safety or privacy. The procedures the partners will implement for the collection, storage, protection, retention, and destruction of data comply with national and EU legislation. It is unconditional, cannot be regarded as a business transaction, and it has no obligation for the parties to provide any further services in the research.

- **The project is committed** to ensure that the general benefits of its activities will warrant the involvement and efforts of their participant individuals, limiting any disturbance to them, especially in terms of protecting the identity and integrity of the participants. The project will be based on deliberative co-creation of activities and representatives of all interested stakeholders will be involved in these field activities.

- **Do no harm**: The project will enable mechanisms to avoid any intentional or unintentional use of data that can bring any harm to any participant or being misused in other contexts. All partners performing research will act

according to national and European legislation, and in line with national data protection provisions and the European data protection rules. They will be required to follow agreed rules for the recruitment of participants, the implementation of activities, recording, analysis, and storage of data collected in the project.

- **Will:** Any survey, interview or workshop participation will happen on a voluntary basis with sufficient information to all parties. The information on the rights of interviewees and participants to workshops will be given verbally before the research activity starts. Agreement will be reached with organisations that provide information through documents or interviews, on the disclosure of that information and the protection of confidentiality.

5.4.2 Safeguards for Data usage

Data collection and interviews/surveys/forms

The ethical aspects of data collection and research on them have been carefully considered. The project will enable mechanisms to avoid any intentional or unintentional use of information that can bring any harm to any participant or be misused in other contexts. These mechanisms will be included in more detail in the later versions of the EP. All partners performing research will act according to national and European legislation, and in line with national data protection provisions and European data protection rules. They will also be required to follow agreed rules for the recruitment of participants, the implementation of activities, recording, analysis, and storage of data collected in the project. These mechanisms, procedures and rules will be added to the EP throughout the duration of the project.

The Data Management Plan (DMP) will be developed in the first phase of the e-DIPLOMA project (M6) and will specify the methodology, procedures and measures to be performed throughout the investigation and analysis phases, including how and with whom these data will potentially be exchanged (accessibility) and made open for public exploitation and re- use in order to ensure the widest use of project results by different stakeholders in society (data utility) and finally, the ambition for preserving them in a medium long-term perspective (sustainability).

Regarding data collection in the e-DIPLOMA project the following recommendations are to be attended to:

- The researchers of all partners will ensure that there are no misunderstandings because of the language or terminology used, it is recommended that all the relevant material that the participants will have access to are translated in the official language(s) of each partner country.

- A document with information about the research and the researchers will be provided to participants, so they can decide informed if they want to participate in the research.

- Interviews can be recorded with digital voice recorders or smartphone applications (in the latter case, with a careful handling of sending and sharing the recordings via online channels). After transcription all voice records must be destroyed.

- We do not collect names, addresses, or specific locations and exact dates unless essential.

- We keep completely anonymous any information that participants wish to hide for reasons of personal safety or privacy.

- Signatures will be collected only according to Horizon Europe stipulations.

- Pseudonymisation implies data treatment while is recorded and transcript: data masking, using pseudonyms, substituting places and territories that can identify the person interviewed.

- Each interview will be recorded and stored with a number code.

- Data will be stored securely and governed by the Data Controller by each participating entity

The Regulation (EU) 2016/679, General Data Protection Regulation (GDPR), will be considered in every phase.

Regarding the Open Science approach, e-DIPLOMA will be aligned with the Horizon Europe initiatives about Open Science that include Open Access, Open Data and Citizen Science. Educational, Social and Technological research used in this project will generate a great quantity of data and results that will not only be useful for the success of this project but for the development of other projects or initiatives that will allow Europe to be a pioneer in the area. Although, the protection of the participant rights is the core of the project, it also will contain the actions that will

allow the consortium to promote the Open Science paradigm, so e-DIPLOMA will be aligned with the Horizon Europe initiatives about Open Science that include Open Access, Open Data and Citizen Science. Therefore, after a strict data processing that will be detailed in the DMP, data will be deposited in open repositories to allow its use, both for researchers and for citizens.

It is worth repeating that consent forms will be distributed according to the relevant protocols and GDPR, the participants' anonymity will be maintained, fairness and non-discrimination is being taken into consideration and there is also the external ethics advisor, who will always be reviewing the consortium's activities before the execution of controversial tasks.

The most important ethical principles are confidentiality, professional secrecy, and personal integrity which need to be secured by all members who are involved in the realization of the project. Furthermore, it is also important to keep proportionality, balance, and equity among participants.

5.4.3 Safeguards for use of Artificial Intelligence

The e-DIPLOMA project not only uses Artificial Intelligence, Augmented Reality/Virtual Reality, Artificial Intelligence (Machine Learning/Deep Learning), Interactive Technologies, chatbots, and gamification in a newly designed e-learning platform that also aims to use it in the context of education. This opens exposure to a different type of ethical dilemmas for which the following remedies will be followed:

- Detailed risk assessment accompanied by a risk mitigation plan. These must cover the development, deployment, and post deployment phases. This will be developed during the later stages of the project as the actual realization of the tasks arises.

- Awareness among the consortium on the law's guidelines and regulations regarding AI on a European, National, and institutional level, according to D7.1 "Legal and Ethical Considerations".

- Information sheets/Template Informed consent forms (D9.1 - Annex 1, 2)

- Virtual Reality side effects information form (D9.1 - Annex 3)

- For serious and/or complex cases: Algorithmic impact assessment/human right assessment. These must cover the development, deployment, and post deployment phases.

- Copies of ethics approvals.

Special attention will also be given to profiling. The subjects will be informed in advance based on what criteria have been selected, the aims, content, and progress of the project thus far, and will be informed of any possible risks that may come with their participation. The upcoming DMP will provide further details on that, and the present document will be updated throughout the lifetime of the project. In order to mitigate those risks, annexes 1, 2 and 3 of the D9.1 H - Requirement No. 1 include informed consent forms that the participants will have to read and sign informing them of their rights and possible risks.

AI assessment and risk mitigation plan

A report that evaluates the ethical risks related to AI will be developed and the measures set in place to prevent/mitigate any potential negative personal/social/environmental impacts during the research, deployment, and post-deployment phase will be described. This would be deliverable D7.6 and will be delivered on M8.

6. Conclusion

In e-DIPLOMA project ethics and data management are of high importance for quality assurance, therefore this strategic document, the Ethics Plan (EP) aims to describe all the fundamental ethical issues relevant to the project and present all the procedures to be followed by all Consortium partners working in the project.

The Consortium carries out the project actions in compliance with ethical principles and applicable international, EU, and national laws, and has also developed its own guidelines, procedures and measures aiming to support the protection of ethical aspects of research.

The Ethics Plan is a living document that will be updated as the project progresses over time and the actions to be carried out are specified.

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