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RELEVANT ASSESSMENT AND PEDAGOGIES FOR INCLUSIVE DIGITAL EDUCATION

IO3 - APPENDIX 3

GUIDELINES FOR ETHICAL USE OF DATA IN EDUCATION

CONTENTS

1. INTRODUCTION / PURPOSE OF THE GUIDELINES

These guidelines have been prepared within the Erasmus+ RAPIDE project, which aims, inter alia, to support students and teachers in meaningful implementation of innovative pedagogies in an online environment by means of ethical use of learning analytics.

Learning analytics collects, analyses and reports data about learners, in order to optimize learning (Tzimas & Demetriadis, 2021). The use of educational data for learning analytics is related to legal and ethical considerations (Ifenthaler & Tracey, 2016), with various ethical issues applying regardless of the size of educational data sets (Tzimas & Demetriadis, 2021). A number of ethical issues are not related specifically to learning analytics, but to other domains as well (Timmis et al., 2016).

While numerous benefits of learning analytics have been recognized, when discussing the ethical aspects, some of the drawbacks of learning analytics relate to issues like surveillance and stereotypes (Wintrup, 2017). It should also be noted that educators and students have different perspectives (Tzimas & Demetriadis, 2021), and that students have their concerns related to privacy (Ifenthaler & Schumacher, 2016). Furthermore, there are different perspectives on ethical issues related to geographical contexts (Tzimas & Demetriadis, 2021).

A systematic literature review (Tzimas & Demetriadis, 2021) has identified the following key ethical concerns related to learning analytics:

- **Privacy:** privacy and data protection refer to how various stakeholders collect and process personal data (Ifenthaler & Schumacher, 2016)
- **Transparency:** enabling an informed consent on collecting and processing data, giving students the possibility of self-control and self-observation (Tzimas & Demetriadis, 2021); including information about who has access to data, what data are collected and visualized, processing principles, how long data and outcomes are to be stored (Pardo & Siemens, 2014)
- **Labeling:** even though success has different dimensions, data-driven education can be related to stereotyping and mistreating of students (Scholes, 2016)
- **Data ownership:** while raw data traces belong to the learner, processed data – in practice – no longer belongs to the learner (Tzimas & Demetriadis, 2021)
- **Algorithmic fairness:** data analysis can be harmful to students if there are errors (Tzimas & Demetriadis, 2021), either related to data misinterpretation or misleading patterns (Flynn, 2016)
- **Obligation to act:** educational stakeholders should act when data points to the need for action (Prinsloo & Slade, 2017), and institutions should use data purposefully to support the progress of their students (Tzimas & Demetriadis, 2021).

The following guidelines for the ethical use of learning analytics present a response to the identified key issues, proposing principles to be followed in order to avoid and minimize the risks related to unethical use of data. The guidelines take into account recent research, as well as relevant policy documents.

2. PRINCIPLES

In general, moral principles focus on what is right for individuals, as well as for society. They systematize correct and incorrect behavior. The principles presented in these guidelines are specifically focused on the relationship between data, data users and data owners. The principles are related to the key issues regarding data use in education, in particular in learning analytics. For the purpose of these guidelines, seven key principles have been identified. For each of the principles, a description is given, as well as related desirable behaviors.

2.1. PROFESSIONAL INTEGRITY AND ACCOUNTABILITY

This principle, in broad terms, refers to individuals taking responsibility for their own work. In the context of learning analytics, it refers primarily to teachers collecting and analyzing student data. However, it also refers to other users of learning analytics results, as well as decision-makers (e.g., institutional management), who play an essential role in strategic management of learning analytics.

In order to ensure professional integrity and accountability, the following is recommended:

2.1.1. Taking responsibility for the collection, management and analysis of educational data, ensuring adequate competence, time and resources.

2.1.2. Using valid, relevant, and appropriate methods and data, in line with the scientific approach.

2.1.3. Ensuring fair and equal treatment of all students, including vulnerable groups, in learning analytics processes.

2.1.4. Protecting intellectual property, contribution and authorship in matters related to learning analytics processes and results.

2.1.5. Avoiding and disclosing any form of potential conflict of interest.

2.1.6. Preventing and reporting any misuse of learning data and learning analytics practices, and any form of inadequate conduct.

2.1.7. Taking part in continuous professional development and keeping informed about the developments in learning analytics.

2.1.8. Acting in line with institutional policies and good practices of the profession.

2.2. DEFINITION/DETERMINATION OF (LEARNING ANALYTICS) DATA USE

This principle refers to clearly determining the goal of collecting and analyzing learning data, aligned with the ultimate objective of supporting student learning. In this respect, it is important to be mindful of conducting learning analytics in a student-centered way, to support student development and avoid negative labeling of students. Learning analytics need to support inclusion and equal opportunities, and not legitimize exclusion. It is also important to note that questions of misconduct may arise, related to inappropriate learning analytics practices.

In this perspective, the following is recommended:

2.2.1. Defining the purpose of learning analytics and its processes to support student development.

2.2.2. Identifying and mitigating risks for particular (vulnerable) categories of students.

2.2.3. Informing students about the learning analytics results and how to reflect/act on them for better academic performance/success.

2.2.4. Identifying potential misconduct in learning analytics and preventing/avoiding it.

2.2.5. Taking responsibility for own and/or someone else's misconduct and lodging complaints of misconduct(s).

2.3. INVOLVEMENT/INFORMING DATA SUBJECTS/STAKEHOLDERS

This principle refers to the transparent provision of information related to data, and corresponding intentions and processes (i.e. the collected learning data and techniques used to analyze them), which can be used by subjects for informed decision-making. Transparent provision of data is a prerequisite for obtaining informed and valid consent from subjects for the collection and analysis of their data. It should be noted that obtaining consent is not always straightforward, as it is not always a legal requirement.

In order to ensure involvement/informing data subjects/stakeholders, the following is recommended:

2.3.1. Providing open, transparent information about learning analytics' purpose, processes, data and their use (consequential activities).

2.3.2. Giving students insights into all the gathered data related to themselves, not only the final learning analytics results.

2.3.3. Providing the possibility for informed and voluntary consent to students.

2.3.4. Providing students with the possibility to choose whether to take part or not (opt-in or opt-out) in data collection and learning analytics.

2.3.5. Never sharing student data without their consent.

2.3.6. Making information about the procedures of lodging complaints regarding the misuse or misconduct related to learning analytics available to all students.

2.4. INTEGRITY OF DATA AND METHODS

This principle refers to understanding and mitigating (possible) limitations, errors or biases regarding data or methods. It includes communicating the possible impact of such issues on results, interpretations, conclusions etc.

In order to ensure the integrity of data and methods, the following is recommended:

2.4.1. Ensuring the quality and objectivity of data and learning analytics models, preserving the integrity (accuracy, completeness, consistency) of data.

2.4.2. Communicating learning analytics data sources, processing and transformation procedures, as well as limitations, known biases, and possible sources of error.

2.4.3. Protecting personal and confidential data, including all data that might harm students.

2.4.4. Correcting any reported errors promptly.

2.4.5. Considering and reporting any factors (e.g., technical, methodological, personal characteristics of students) that might affect the results of learning analytics.

2.4.6. Taking measures to ensure the fairness of algorithms, by using adequate data collection and modeling methodologies.

2.4.7. Validating and assessing the performance of models and algorithms used in learning analytics continuously, and considering criteria for their improvement.

2.5. DATA OWNERSHIP AND CONTROL

Data ownership encompasses the possession, control, and responsibility for data. In this respect, essential questions refer to *what* data are collected, and *who* is entitled to claim their possession, decides how analytics are created, used and shared, and has the responsibility for effective use of data.

In order to address data ownership and control, the following is recommended:

2.5.1. Defining the ownership of and access to learning data.

2.5.2. Providing students with the possibility to control how their data are used and shared.

2.5.3. Defining for how long data and learning analytics results will be stored.

2.5.4. Allowing students to reflect on and correct inaccurate or remove irrelevant data.

2.6. PRIVACY AND CONFIDENTIALITY

Privacy issues are related to how personal data are collected, and how they are processed by different stakeholders. Privacy refers to an individual's right to define access to their own data, and to the protection of learners' identities in order to prevent the abuse of data. Ensuring privacy and data protection is the basis for developing trust in learning analytics. An important aspect of privacy and data protection is anonymity, which relates to offering individuals the choice whether to reveal their identity and identifying information about themselves. However, it should be noted that it is not always possible to guarantee anonymity.

2.6.1. Specifying who has access to students' data (collected for the purpose of learning analytics).

2.6.2. Applying the General Data Protection Regulation or other relevant regulation regarding personal data protection.

2.6.3. Applying organizational and technical measures for the protection of data privacy and data confidentiality (authentication and authorisation).

2.6.4. Anonymising students' personal data.

2.7. DUTY TO ACT

This principle refers to the ethical responsibility of educational stakeholders to act when learning data and analytics point to the need for action, which is not always the case. Learning analytics should be used to inform students about their progress, provide targeted and timely support.

2.7.1. Informing students about their progress and providing adequate and timely support to enhance their learning and success.

2.7.2. Encourage the use of learning analytics results as motivation for students' engagement and change in order to succeed.

2.7.3. Fostering students' data literacy and training students to interpret the results of learning analytics critically.

2.7.4. Considering and making use of the predictive value of learning analytics and early alert systems to prevent unsuccessful outcomes.

2.7.5. Using the insights provided by learning analytics in the development and improvement of learning design.

2.7.6. Evaluating the contribution of learning analytics in the development and improvement of learning design.

3. RESPONSIBILITIES OF ORGANIZATIONS/INSTITUTIONS

Implementation of learning analytics, as well as its ethical perspective, does not depend exclusively on an individual (teacher). It is essential that such practices are supported and guided on the level of an organization/institution. The responsibilities of organizations/institutions related to the ethical use of data and learning analytics include:

1. Defining what data are collected and presented, why and how, and who is responsible for learning analytics in general, making sure that all of this is done in order to support educational improvements.

2. Promoting learning analytics as a tool that can contribute to students' success, ensuring equal opportunities and fair treatment of diverse groups of students (including vulnerable groups), and preventing potential adverse impacts.

3. Promoting understanding that learning analytics cannot give thorough insights into individuals' learning, as it may not consider all aspects of students' learning, nor personal circumstances.

4. Ensuring that students have appropriate autonomy in decision-making related to their learning, supported by learning analytics.

5. Providing the necessary resources for learning analytics (human, technical, financial) and its ethical use.

6. Equipping students and educators with data literacy skills, needed to take part in, conduct and make use of learning analytics.

7. Providing possibilities for professional development of teachers in the area of ethical use of learning analytics.

8. Identifying and mitigating potential risks related to the use of learning analytics.

9. Raising awareness of and using the potentials of learning analytics to contribute to equality and justice in education.

10. Integrating the ethical use of data and learning analytics into institutional strategic documents, procedures and goals.

11. Developing the organizational culture of ethical use of data and learning analytics, including by encouraging employees to work in line with these guidelines.

12. Promoting the sharing of good practices in the ethical use of data and learning analytics.

13. Appointing persons/committees in charge of the ethical use of data and learning analytics, including handling complaints.

14. Taking the responsibility and control of data and data processing.

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