Trust in AI-based Educational Technology

Dear Students,

We invite you to participate in our study.

The study aims to evaluate students' perceptions of Artificial Intelligence-based educational technology.

The survey will take about 10 minutes and will involve you answering questions related to the integration of Artificial Intelligence (AI) technologies in your educational experience. Please answer these as thoroughly as possible, as they contribute to scientific knowledge. However, there are no right or wrong answers. Following your first impression is usually the best.

Your answers and user data will be kept confidential and used for research purposes only.

Project Number: HREC 017-2023

Principal Investigator of the project: Prof. Tanja Käser.

If you have any questions about the participant information sheet or the consent form, please ask the researchers before you decide to participate. Here (Information Sheet), you can find more information about the study.

Thank you for your participation in this study!

Feel free to contact us if you have any questions or concerns: tanya.nazaretsky@epfl.ch

Sincerely,

Dr. Tanya Nazaretsky, tanya.nazaretsky@epfl.ch
Paola Mejia Domenzain, paola.mejia@epfl.ch
Vinitra Swamy, vinitra.swamy@epfl.ch
Dr. Jibril Frej, jibril.frej@epfl.ch
Prof. Dr. Tanja Käser, tanja.kaeser@epfl.ch

Informed Consent Form

Participant's declaration

- I declare that I have been informed orally and in writing about the objectives and the course of the project.
- I am taking part in this study voluntarily and accept the contents of the information sheet I have been given about the above-mentioned project. I have had sufficient time to make my decision.
- I understand that my personal data or samples are protected and will be encrypted and anonymized in the course of the project.
- I consent to the anonymization of my personal data during the project and can, therefore, no longer revoke my consent.
- I am aware that insurance has been obtained to cover any damage I may suffer as a result of the project.
- I am aware that the obligations mentioned in the participant information sheet must be complied with throughout the project.

☐ I agree to participate in this study. I confirm that I am at least 18 years old. I understand the purpose and nature of this study and I agree that my data will be used for scientific purposes.

The definition of AI

As you understand it, which of the following represents the description of Artificial Intelligence? Please mark all appropriate answers.

- ☐ Autonomous robots that are capable of adapting and improving their performance over time
- ☐ A replica of human intelligence and cognitive functions
- ☐ Algorithms for making decisions based on big data without being explicitly programmed for the specific task
- ☐ Machines that may one day surpass human intelligence and transform all aspects of our everyday lives

(optional) Please try to name a few applications of AI in education (e.g., virtual reality simulations)

_____
_____
_____
_____

(optional) Please try to name a few applications of AI beyond the field of education (e.g., self-driving cars)

_____
_____
_____

Potential benefits of using AI in education

Below are some opinions that students have in the field of adopting AI-based tools for learning. The sentences address **the potential benefits** of using AI in education. Read each sentence carefully and decide how much it characterizes your opinion and feeling. Choose the option that reflects your position.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PB1) AI can assist me in improving my responses (e.g., answers to open-ended questions, writing essays, etc.) by suggesting personalized feedback in real-time.	○	○	○	○	○
PB2) AI can assist me in self-learning by adjusting automatically individualized learning tasks adapted to my personal needs and level of knowledge.	○	○	○	○	○
PB3) AI (e.g., ChatGPT) can serve me as learning pals or teaching assistants.	○	○	○	○	○
PB4) AI can help teachers diagnose my strengths and difficulties, so teachers can assign individualized learning tasks adapted to my personal needs and level of knowledge.	○	○	○	○	○
PB5) AI can assist me with managing my learning activities (e.g., identifying if I'm on track with my tasks, offering task prioritization, optimizing time management, etc.)	○	○	○	○	○
PB6) AI can assist me in preparing for exams by identifying my knowledge gaps and providing relevant learning materials (e.g., explanations, tasks, etc.)	○	○	○	○	○
PB7) AI can support learning simulations and augmented reality environments for learning (e.g., flight simulator).	○	○	○	○	○

(optional) In your opinion, are there other benefits of using AI in the field of education not mentioned above?

_____
_____
_____

Potential issues in using AI in education

Below are some opinions that students have in the field of adopting AI-based tools for learning. The sentences address **the potential obstacles** related to using AI in education.
Read each sentence carefully and decide how much it characterizes your opinion and feeling. Choose the option that reflects your position.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PO1) AI developers lack educational experience.	○	○	○	○	○
PO2) AI algorithms do not understand social, emotional, and motivational factors that are very important in learning and teaching.	○	○	○	○	○
PO3) AI algorithms do not know my personal learning history outside the system.	○	○	○	○	○
PO4) AI-based tools' decision-making and reasoning processes are not transparent.	○	○	○	○	○
PO5) The origins, collection methods, and limitations of the data utilized by AI are not clear (e.g., who created the dataset, how the data was collected, etc.)	○	○	○	○	○
PO6) It's unclear who holds accountability for decisions made by AI.	○	○	○	○	○
PO7) The intentions and funding sources of AI-based technology providers are not transparent.	○	○	○	○	○
PO8) It's unclear when and what type of data AI gathers about me.	○	○	○	○	○
PO9) The use of data raises risks to my privacy (e.g., data breaches, surveillance and profiling, etc.)	○	○	○	○	○
PO10) The use of data raises ethical issues (e.g., possible biases, lack of diversity, mistakes, etc.)	○	○	○	○	○

(optional) In your opinion, are there other reasons for not trusting AI in the field of education not mentioned above?

_____
_____
_____

Working alongside AI to improve learning

Read each sentence carefully and decide how much it characterizes your opinion and feeling. Choose the option that reflects your position.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PR1) I believe I will be successful in using AI-based tools to personalize my learning when and if they are available.	○	○	○	○	○
PR2) I will use AI-based tools for personalizing my learning when and if they are available.	○	○	○	○	○
PR3) I am sure that using AI-based tools for personalizing my learning will require me to change my learning habits significantly.	○	○	○	○	○
PR4) I am sure that using AI-based tools for personalizing my learning will require me to gain new skills (e.g., awareness of and dealing with possible AI mistakes and biases, critical and ethical consuming of AI insights, etc.)	○	○	○	○	○
PT1) As AI-based tools for personalized learning become more prevalent, I will trust them more.	○	○	○	○	○
PT2) The more I know how an AI-based tool makes decisions (e.g., the steps involved in machine learning and the practices and challenges that each step entails, etc.), the more I can trust it.	○	○	○	○	○
PT3) The more data is available for AI-based tools, the more I can trust its insights.	○	○	○	○	○
PT4) The more autonomy AI-based tools provide me/my teacher to check/overwrite its automated decisions, the more I can trust them.	○	○	○	○	○
PT5) I rely on the recommendation of an AI-based tool at least as much as I trust a recommendation from a fellow learner.	○	○	○	○	○
PT6) I rely on the recommendation of an AI-based tool at least as much as I trust a recommendation from my teacher.	○	○	○	○	○

(optional) Do you have any additional comments/thoughts? _____

General information about your background.

Age

_____

Gender

Female ◯   Male ◯   Not-binary ◯   Other ◯

Years of using AI-based technology for learning

_____

Course

_____

Study section

_____

Thank you for your time!