

Transforming Higher Education: Psychological and Sociological Perspective (the use of artificial intelligence)

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Abstract

The present paper aims to analyse the growing importance of artificial intelligence (AI) in higher education and its impact on students from a psychological and sociological perspective. With the growth of technological tools and data analytics in education, AI offers new opportunities for personalising instruction and improving student outcomes. From a psychological perspective, relevant topics include how AI affects students' motivation, self-control, and learning strategies. The sociological perspective focuses on the transformation of social interactions between students and educators and on the limits of accessibility to higher education through digitalisation. The ethical and social challenges associated with using AI in education and its potential impact on access to higher education inequalities are also discussed. The article seeks to contribute to a deeper understanding of the transformation of higher education and highlight the need for a multidisciplinary approach to this complex topic.

Keywords: Artificial intelligence, Motivation, Learning Strategies, Mental hygiene, Ethical and Social challenges

1 Artificial Intelligence in Education: Opportunities and Challenges

The expansion of the Internet at the turn of the millennium enabled and accelerated the development of online education, e-learning, educational platforms, and learning content management systems based on the capabilities of artificial intelligence. The further

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development of artificial intelligence has enabled more sophisticated personalisation of teaching through educational applications based on the analysis of student behaviour and the prediction of their needs. For today's students and teachers, using augmented reality, interactive chatbots, big data analysis and other technologies in education is becoming a daily reality. Along with these opportunities, the risks and unintended consequences of using artificial intelligence in education are also revealed. These include issues related to ethics, security transparent use of data and social equality.

Artificial intelligence in higher education aims to optimise teaching processes and have a more effective form of interaction between students, teachers, and researchers. This goal can be achieved through personalised learning and assessment systems that provide individual feedback depending on the needs and aspirations of the student. The use of chatbots for a technical support system will reduce the administrative burden of educators and, at the same time, provide students with necessary information without delay. Artificial intelligence can be used to create simulations and virtual environments for hands-on learning. Virtual teachers and tutorials will support the flexibility of students' study schedules. And finally, artificial intelligence supports pedagogues when creating teaching materials and updating information. A prerequisite for the successful involvement of artificial intelligence in the teaching process is the consideration of ethical and security risks and preserving the quality of education and personal contact between students, teachers, and researchers.

The lack of personal interaction between students and teachers limits the essential aspects of the educational process, such as the possibility of discussing, mentoring, and individually supporting students. Decision-making and evaluation through artificial intelligence systems carry the risk of decisions based on prejudice, i.e., decisions promoting inequality and discrimination. Legitimate concerns about participants' privacy in the educational process relate to ensuring security in the collection, storage, and processing of data. The unintended consequences of incorporating technology into teaching range from the potential for misuse of technology by students to the unfair use of technology by educators to the disruption of the teaching and assessment process when the technology fails. They can also be found in the very essence of artificial intelligence: evaluations based on algorithms that can be complicated to understand may lack legitimacy. Finally, implementing artificial intelligence in education introduces economic costs and requirements on the initiative of education participants in the continuous acquisition and development of knowledge and skills necessary to effectively use technology.

1.1 A Sociological Perspective

Sociology deals with the social, cultural and political impacts of implementing technological innovations in the daily life of an individual actor and the entire society. Concerning its subject, it emphasises the topics of social inequality (social structures and stratification), work and unemployment (changes in the structure of the labour market, working conditions,

organisation of work due to robotisation and automation), cultural changes (changes in cultural patterns, patterns of communication as a reaction on the involvement of new technologies), social interaction and social ties, politics and participation of individual interest groups in decision-making, the impact of artificial intelligence on science, research and knowledge production (Broussard, 2018; Brynjolfsson, McAfee, 2014; Eubanks, 2018; Ford, 2015; Zuboff, 2019 etc.).

The issue of social impacts of artificial intelligence expands the knowledge developed within digital sociology, which covers a wider spectrum of social aspects of technology implementation and focuses on the study of interactions between society, social groups, and digital technologies in terms of their impact on social structures, relationships, culture, and identity (Orton-Johnson, Prior, 2013; Lindgren, 2018).

Although many studies address artificial intelligence's impact on society and its structure, relationships and elements, the sociology of artificial intelligence has not yet established itself as a separate scientific discipline. One of the reasons is possibly the multidimensional nature of artificial intelligence, which combines technical but also ethical, social, and cultural aspects, as well as economic and legislative aspects.

The sociological perspective of the use of technological innovations in teaching or in higher education emphasises the issue of the influence of technology on social interactions and dynamics and social equality. On the one hand, the personalisation of teaching makes it possible to consider students' individual needs and work with their diversity regarding aspirations, interests, values, norms, and cultural background. Additionally, the use of current technologies contributes to reducing barriers in access to education; study materials can be made available to anyone, anywhere, anytime through online course platforms and other flexible learning models. With new technologies, new tools for data analysis, investigation of social phenomena and development of methodological approaches also appear. Virtual community spaces can create bases for discussion, collaboration, and idea sharing among students, educators, and researchers.

On the other hand, there is a significant risk of biases embedded in AI algorithms and applications that can promote inequality and discrimination in access to education (Eubanks, 2018). Students with limited technological literacy, without access to technology or sufficient technological knowledge and skills, may be disadvantaged or excluded from the educational process. The risk also lies in the spread of new forms of non-substance addictions to technologies, which reflect negatively on the mental, psychological, and social levels. They are associated with increased stress and anxiety, problems with concentration and sleep, depression, and reduced self-esteem. Detachment from reality, offline social interactions and the social environment is linked to alienation due to limited opportunities to develop communication and social skills in general. Also unresolved are personal data protection issues and student privacy regarding data collection and use.

A sociological perspective could contribute to the formation of ethical and social norms in the field of artificial intelligence in education and everyday life in general.

1.2 Psychological Context

Artificial intelligence can provide personalised learning experiences that meet the learner's individual needs. Learning effectiveness increases when students see that they are learning exactly what they need to learn. Personalising learning materials and approaches to learning can help students feel more engaged and motivated. Motivation to learn is also enhanced by the virtual collaboration between students that AI can create. Group projects and online discussions can mediate an environment where students collaborate, share ideas and support each other. Support secures a greater desire to continue learning and pursue a learning goal. Using gaming elements and competitions can also motivate students in their learning. Here, artificial intelligence plays a vital role in creating interactive games. Interactive games encourage student engagement and reward them for achieving goals. If an environment is created to simulate various social and communication situations, students can develop skills such as teamwork, presentation, negotiation, etc. In this way they can gain valuable experience. With the ability to analyze large amounts of data, which AI can help with, students can identify patterns and relations in the data, which allows them to generate new ideas and innovative approaches and evaluate and combine them, which can lead to new and unconventional ideas, developing creativity.

Students create their personal goals and plans in the learning process. In this way, they can have a clear direction, motivating them to succeed. By setting personalised goals that the AI can create and remind students of, they can see their progress and how far they have come since they started learning. This also gives them positive feedback, which itself is a motivator in learning. Tracking progress with AI can also help identify areas where they need to improve. Artificial intelligence can provide immediate feedback to students on assignments and tests, allowing them to understand their mistakes more quickly. Feedback helps students better understand their strengths and areas they need to improve. Immediate feedback motivates them to develop further by providing advice, inspiration and ideas on improving and moving on.

During the learning process, large amounts of data can be generated with the help of artificial intelligence. Analysing this data helps identify patterns and trends in student performance, allowing for the creation of more effective teaching strategies. By analysing students' preferred learning styles and proficiency levels, AI creates personalised learning plans based on this information. This allows students to focus on their needs and improve their learning efficiency. Adaptive learning systems can analyze student performance and, based on this, suggest appropriate assignments and materials for further study. Adaptive tests adapt to the level and ability of the student. Tests can be designed to target specific areas in which the student needs to improve and provide immediate feedback (Kaplan, 2021).

In education, college students can utilise the help of virtual assistants who are equipped with artificial intelligence. These assistants can provide quick answers to questions, offer study materials, and help plan and organise assignments and exams or otherwise analyse their

requirements and problems. Virtual assistants can be available twenty-four hours a day, seven days a week and can be programmed to provide accurate and relevant information. Digital libraries where students have online access are also an essential source of information.

2 Artificial Intelligence from a Mental Hygiene Perspective

Self-control, the ability to plan or organise your time, plays a vital role in studying. Artificial intelligence can help students create and organise their time and study plans. With the help of various apps and tools for task and time management, students can keep track of their assignments and deadlines and do their work more efficiently. This can also prevent procrastination behaviour, which is very common among young people. In higher education, procrastination leads to academic failure and sometimes dropping out of education. In this context, drawing attention to mental hygiene and well-being is easy. Artificial intelligence can give students tools and techniques to manage stress and maintain balance. Apps for meditation and relaxation, chatbots for mental health support and other similar tools can help students manage stress and improve their overall well-being.

3 Conclusion

However, seeing AI as a supporting tool in the educational process is important. Regarding motivation, it is essential to realise that motivation is a complex and individualistic matter. Some students may use AI as a tool to motivate them, while others may prefer other approaches. It can be a valuable tool for setting the right learning strategies, for developing creativity etc. However, it should be borne in mind that it does not replace the role of the teacher, direct personal interaction with the teacher or with classmates, nor interpersonal social interaction and practice, nor does it replace the human support that is frequently needed to encourage the student. Therefore, other motivating factors and methods, such as personal interaction with teachers and classmates, must supplement AI. Remembering that AI is not a substitute for personal responsibility and discipline is also important. It is a tool that can provide support and assistance. The ultimate success in learning depends on the student alone and their ability to motivate herself, organize her time, and have a healthy lifestyle. Finding the right balance when using AI in education is necessary to achieve the best possible outcome for students.

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