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# **REPORT 3. ARTIFICIAL INTELLIGENCE IN EDUCATION: BARRIERS TO IMPLEMENTATION, FEAR OF REPLACEMENT, IMPACT ON STUDENT STRESS**

## INTRODUCTION

One of the key questions for the future transformation of education is how exactly Artificial Intelligence will shape the educational landscape and way that we teach and study. Various dimensions of AI's effects on education are currently actively discussed. Thus, it is assumed that AI may change the role of universities, since it stimulates the emergence of alternative educational institutions and significantly increase competition on the educational market. For professors, fundamental changes are also discussed, forecasts range from moderate – suggesting that AI will take over routine work and serve as a valuable assistant of professors – to more radical predictions such as replacement of professors by AI-driven teaching. Overall, despite the active interest in the topic, there is still a lot that remains unclear, which needs to be studied and implemented in the practical work of education. To cover gaps and address open questions, we have examined different aspects of the relationship between education and Artificial Intelligence.

- “AI supports the learner-centric approach: are business schools ready for change?”
- “Fear of Educators Replacement by AI: Students Perspective in the Management Education Settings”.
- “The Role of AI in Reducing Students’ Stress Through Gamification.”

Based on these studies, we have developed recommendations for the process of implementing AI in education; for overcoming the fear of replacing professors by AI; for reducing student stress using AI in the educational process.



## RESEARCH FOR PRACTICE. AI IN EDUCATION

*“AI supports the learner-centric approach: are business schools ready for change?”* First, we considered how to introduce AI into education in the most effective way. In this study we have considered the introduction of AI in education as a form of company transformation and organisational change. In this vein, we apply principles of change management, namely the framework proposed by J. Kotter. So far, we proposed apply basic principals of Kotter's model: establishing a sense of urgency; forming a powerful guiding coalition; creating a vision; under communicating the vision by a factor of ten; remove obstacles; producing still more change; changes in the corporation's culture. This framework helps to effectively introduce AI in education and overcome existing barriers.

*“Fear of Educators Replacement by Ai: Students Perspective in the Management Education Settings.”* In this study we partly continued the topic of the previous study (barriers and limitations of AI introduction into education), since a significant barrier to technological innovation (including AI) is the fear that employees will be replaced by technology. Considering this, we examined at whether there is any real foundation for the fear professors to- we analysed how students perceive the potential replacement of professors by artificial intelligence. The results showed that most students believe that AI cannot replace professors in creative work and overall human innovativeness. In this vein, major result is that as long as professors continue to be creative, they have little to fear from AI replacing them.

*“The Role of AI in Reducing Students' Stress Through Gamification.”* We looked at an approach to the responsible use of technology. We explored the understudied topic of how AI affects student stress directly and indirectly by fostering gamification.



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## RECOMMENDATIONS

### Recommendations for the process of implementing AI in education

- Define the reasons for adopting AI at university. According to the first principle of model proposed by Kotter, fostering faculty commitment towards AI-driven changes and communicate about how faculty can benefit from AI-driven changes can create a sense of urgency for transformation.
- Form a powerful guiding coalition. When implementing AI in education, an essential step is to create a strong team that will drive transformation. It is well known that leaders play the major role in the success of organisational changes. When adopting AI, leadership team can effectively promote both the need and the benefits of change.
- Create a vision. Creating a strong vision is the next step of AI implementation as well as establishing goals, objectives, and trajectory of AI implementation in education.
- Built effective communication. It is important to create communication channels through which it is possible to get feedback, to answer stakeholders' questions, to understand their concerns, to understand how stakeholders can contribute to the process of implementing AI in education.
- Remove Obstacles. As always, change involves many barriers and limitations. These include the lack of resources, the need to acquire new competences, and, among others, the resistance of stakeholders. Overcoming the resistance of stakeholders requires effective communication, a deep understanding of the root causes, and the implementation of effective support systems. Additionally, implementing training system for the faculty to develop the essential skills is crucial for success of AI-driven transformation.
- Apply strategic planning. Organisations equipped with strategic planning and clear goals, achieve performance, since priorities are established, and stakeholders gain understanding of the organisation's strategy.

Additionally, the effective tactic is quick wins. Small successes will serve as a motivator for all stakeholders.

- Produce more change. The transformation of an organisation, especially related to technological innovation, requires constant development. AI-driven transformation is characterised by its dynamic nature. Thus, constant monitoring of technology development and updating of strategies and tools is an integral part of introducing AI into education.
- Anchoring changes in the corporation's culture. Corporate culture serves as a valuable resource for organisations seeking to implement changes. One of the most common reasons for resistance to change is the failure to integrate it into the company's corporate culture. Therefore, when introducing AI into education, it is crucial for this innovation to become an integral part of the university's corporate culture and to be integrated into the university's operations at all levels.

### **Recommendations to overcome the fear of replacing professors by AI**

- Remain innovative and creative. In the course of the research, we found that despite the positive attitude of students towards AI and even their intention to adopt AI-driven teaching, mostly students perceive that AI cannot replace the creativity of professors. Overall, by applying creativity in content, format, assessment methods, and other dimensions of teaching, university professors can be sure that they keep their role without fear of being replaced by AI.
- Emphasize the role of professors and AI in the educational process. It is important to demonstrate that AI is an assistant, a tool for reducing the routine tasks of professors, while the professor remains a key player in the educational process.
- Demonstrate the value of human qualities. It is essential to highlight that AI cannot replace the uniquely human qualities that enrich the educational process, such as empathy, charisma, and emotional intelligence. Underling this fact will reduce faculty fear to be replaced by AI.

- Show the best practices. Demonstrating the best practices of implementing AI in the educational process can be a good motivator for processors to implement AI in their courses.
- Provide psychological and emotional support. Support is a crucial factor when implementing any innovation. It is essential for the university community to feel that the university values its people and is genuinely invested in their growth and well-being.

### **Recommendations for reducing student stress using AI in the educational process**

- Implement AI to reduce student stress. AI reduces stress by simplifying the use of technology and reducing technological uncertainty and complexity
- Reduce student stress by leveraging AI to enhance gamification and create a more engaging learning experience. With AI, it becomes much easier to incorporate games that align with the objectives of the study program, the students' goals, and the intended learning outcomes (ILO). As a result, AI facilitates the adoption of gamification in education and foster positive and creative dimensions of technology. Also, through the implementation of gamification, AI creates a more comfortable environment and reduces cognitive overload.

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