**Students' Perceptions and Insights on the Role of AI in Education**

The rapid integration of Artificial Intelligence (AI) into education is fundamentally reshaping learning processes, teaching methodologies, and administrative systems. Understanding students’ perceptions is essential, as they are the primary stakeholders impacted by these technological advancements. Misinterpretations or resistance to AI could undermine educational innovation efforts. Capturing accurate insights ensures that AI applications meet real student needs rather than imposing unwanted change. Recognizing this necessity, the Faculty of Cybernetics, Statistics, and Economic Informatics conducted a focused research study. The goal was to critically assess how future digital professionals perceive AI's role, usefulness, and risks within the academic environment.

**Problem Statement**

There exists a critical lack of empirical data regarding how students perceive AI in educational contexts. Without a clear understanding of students' attitudes, knowledge levels, and emotional responses, educational institutions risk deploying AI technologies that may not be trusted, effectively used, or even accepted. Furthermore, a misalignment between AI tool development and the actual needs of learners can lead to inefficiencies, wasted resources, and growing mistrust. Bridging this gap requires focused research into students' firsthand perceptions to guide ethical, effective AI integration strategies in academia.

**Target Audience**

* **University Administration and Faculty:** To adapt curricula, teaching methods, and administrative services to better align with student expectations and readiness for AI.
* **EdTech Companies & AI Developers:** To design student-centered educational AI tools that foster engagement, accessibility, and trust.
* **Policymakers in Education and Technology:** To create frameworks, policies, and funding priorities that support AI adoption based on grounded student realities.
* **Academic Researchers and Think Tanks:** To expand research on digital transformation trends and the ethical considerations of AI in education.
* **Student Career Services:** To develop training programs that prepare students for AI-driven academic and professional environments.

**Research Questions**

1. What is the students’ level of knowledge about AI, and which sources do they most commonly use to learn about it?
2. What are the dominant attitudes toward AI’s societal effects (dehumanization, job replacement, problem solving, AI ruling society)?
3. How do students perceive the economic impacts of AI (cost, economic crisis, economic growth, job loss)?
4. What emotions do students associate with AI (Curiosity, Fear, Indifference, Trust)?
5. Which sectors do students believe AI will impact most significantly?
6. Do students believe AI leads to job loss or global economic growth?
7. What are students’ perceptions of AI usefulness in education?
8. What are the perceived main advantages of AI in teaching, learning, and evaluation?
9. What is the main disadvantage students foresee with AI in education?
10. Is there any correlation between students' perceived AI knowledge and perceived AI usefulness?

**Background Study**

The application of Artificial Intelligence (AI) in education dates back to the 1960s with early intelligent tutoring systems like SCHOLAR. Globally, AI is now deeply embedded in adaptive learning, personalized education, and administrative automation. In Romania, adoption accelerated post-2010, particularly in technical universities and economic faculties, reflecting a national push towards digital transformation. AI is reshaping education by enabling real-time feedback, personalized lesson delivery, and efficient administrative workflows.

However, challenges persist: concerns about AI-driven dehumanization, fears of mass job displacement, and over-reliance on automated systems that could fail without human oversight. These challenges emphasize the urgent necessity for ethical AI deployment strategies. Solutions must be grounded in the actual perceptions of users—specifically students—to ensure acceptance, sustainability, and alignment with educational values. Without these safeguards, AI risks exacerbating inequality, undermining trust, and alienating its intended beneficiaries.

**Methodology**

**Data Collection**

An online survey was distributed through targeted social media groups. The target population included second- and third-year undergraduate students at the Faculty of Cybernetics, Statistics, and Economic Informatics. A total of **91 students** completed the survey.

**Data Cleaning**

Qualitative responses such as "Strongly Agree" and "Neutral" were systematically recoded into numerical scales (1–5) in Excel for statistical consistency. All variables were standardized: Likert scales and categorical encodings were aligned to ensure valid cross-comparisons across responses.

**Data Analysis**

Data analysis was performed using Excel. Pivot tables were employed to summarize and structure the categorical data. Percentage calculations were applied to normalize different group sizes. Various visualizations were used to present findings, including column charts, 100% stacked bar charts, donut charts, funnel charts, and scatter plots, ensuring multifaceted insight extraction.

**Dashboard Development**

A comprehensive Excel Dashboard was built to present the analyzed data visually. It was enhanced with logical slicers and well-structured layouts, progressing from students' knowledge to sources, societal attitudes, economic impacts, and demographics. Color coding followed a professional palette for clear, intuitive interpretation, supporting coherent narrative storytelling.

**Results and Discussion**

**Students' Level of Knowledge About AI and Common Sources**

Analysis shows that most students self-rated their AI knowledge between 5 and 8, indicating moderate familiarity. The bar chart confirms concentration in mid-to-high awareness levels. Regarding information sources, the stacked column chart highlights that **44%** of students predominantly use the **Internet**, while scientific books and papers are underutilized (19%), and social media contributes 24%. Discussions with family and friends had the least impact at 11%, confirming that informal knowledge exchange is minimal.

**Attitudes Toward AI’s Societal Effects**

Students’ societal perceptions of AI reveal nuanced views. A stacked bar chart demonstrates that **66%** either fully or partially agreed that AI contributes positively to problem-solving in fields like education and medicine. However, significant anxiety persists: **35%** of students partially agreed that robots will replace human jobs, indicating latent fears regarding employment security. Fear of AI ruling society remains low, with most students remaining neutral or strongly disagreeing.

**Perceived Economic Impacts of AI**

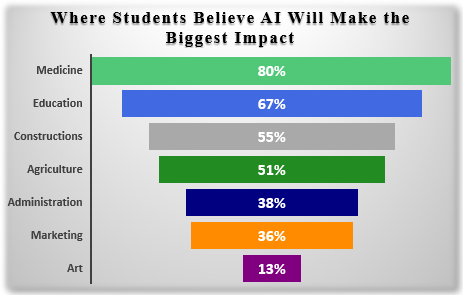
Economic perceptions show optimism toward AI. The stacked bar chart reveals that **36%** of students fully agreed that AI would drive global economic growth. Conversely, fears of AI causing an economic crisis were relatively minor, with the majority either neutral or disagreeing. Job loss concerns are present but moderate, with 31% partially agreeing. Overall, students view AI as a positive force economically, but with cautious attention to labor market disruption.

**Emotional Responses Toward AI**

Analysis of emotional responses indicates positive sentiment dominates. Curiosity and trust emerged as the most common feelings toward AI, with minimal expressions of fear or indifference among respondents. This reflects a generally receptive student mindset towards AI technologies, suggesting that properly implemented AI initiatives are likely to be welcomed rather than resisted within educational settings.

**Areas Where Students Believe AI Will Have Biggest Impact**

The funnel chart analysis clearly identifies **Medicine (80%)**, **Education (67%)**, and **Constructions (55%)** as the sectors where students expect the most significant AI impact. Agriculture follows closely at 51%. Interest in administrative and marketing fields is moderate, while artistic domains showed the least anticipated AI influence (only 13%). This confirms that students associate AI more with practical, technical sectors than creative industries.



**Belief in AI Leading to Job Loss or Economic Growth**

The 100% stacked bar chart shows that **Statistics & Forecasting students** are the most concerned about job loss, with **53%** partially agreeing. Economic Cybernetics and Informatics students demonstrated less concern comparatively. Despite job loss fears, a strong optimism persists across all majors regarding AI’s potential to drive economic growth, with minimal disagreement recorded, confirming students’ balanced but forward-looking attitude toward AI's macroeconomic effects.

**Perceived Usefulness of AI in Education**

Bar chart analysis of perceived AI usefulness (Scale 1–10) shows that **23%** of students rated AI’s educational usefulness at **the maximum score of 10**. Most ratings concentrated between 7 and 10, indicating that students recognize the high potential of AI to enhance educational processes, suggesting readiness to embrace AI-enhanced academic tools and platforms.

**Perceived Advantages in Teaching, Learning, Evaluation**

Donut charts illustrate perceived AI advantages:

* **Teaching:** 43% favored **AI Assistants** for helping teachers manage classes and questions.
* **Learning:** 53% selected **Universal Access**, emphasizing AI’s role in inclusive education.
* **Evaluation:** 49% preferred **Constant Feedback** through AI tools for continuous academic improvement. The findings highlight that students prioritize AI’s supportive and accessibility-enhancing features across all educational dimensions.

**Perceived Disadvantages of AI in Education**

The donut chart for disadvantages reveals that **37%** of students cited **loss of student-teacher bond** as the primary risk of AI integration. Other concerns included internet addiction and reduced interactions. These concerns emphasize the critical need for AI solutions that maintain human relationships within educational environments, ensuring technology complements rather than replaces human engagement.

**Correlation Between Knowledge and Usefulness Perceptions**

The scatter plot analysis between AI Knowledge Rating and Utility Grade identifies a **positive linear correlation**. Students with higher self-rated AI knowledge also reported perceiving greater usefulness of AI in education. This suggests that educational interventions aimed at improving AI literacy could directly enhance positive attitudes toward AI adoption in learning environments.

**Conclusion and Recommendations**

**Conclusion**

This study critically analyzed the perceptions and insights of Cybernetics students regarding AI in education. Findings revealed moderate to high levels of AI awareness, with the Internet as the dominant learning source. Students recognize AI's potential to solve societal problems and boost economic growth but simultaneously harbor concerns about job loss and reduced human interaction. Educational usefulness of AI was rated highly, particularly in enabling universal access, automating feedback, and assisting teachers. A positive correlation exists between AI knowledge and perceived usefulness, underscoring the importance of improving AI literacy. Overall, students exhibit cautious optimism, willing to embrace AI if ethical and relational considerations are maintained.

**Recommendations**

* **Enhance AI Literacy:** Universities should integrate comprehensive AI education programs to elevate students’ understanding, directly increasing acceptance and perceived usefulness.
* **Preserve Human Interaction:** AI deployment must prioritize maintaining student-teacher relationships, incorporating hybrid models that balance technology with human engagement.
* **Design Student-Centered AI Tools:** EdTech developers should focus on creating AI systems that are inclusive, accessible, and responsive to diverse student needs.
* **Policy and Ethical Frameworks:** Policymakers should mandate ethical AI use guidelines in education, ensuring transparency, data privacy, and human oversight.
* **Continuous Student Feedback:** Institutions must establish mechanisms to routinely collect student perceptions on AI tools to adjust strategies proactively and maintain trust.