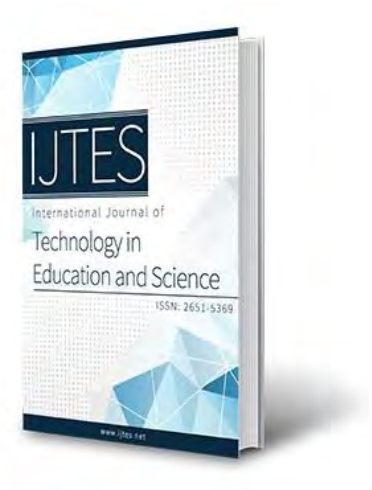

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The Role of Artificial Intelligence in Shaping High School Students' Motivation

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The Role of Artificial Intelligence in Shaping High School Students' Motivation

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Abstract

This study explores the integration of Artificial Intelligence (AI) in high school education, focusing on its implications for student motivation and learning through the framework of Self-Determination Theory. As AI technologies like ChatGPT4 become more prevalent in educational settings, their potential to enhance learning by catering to students' needs for competence is significant. However, this investigation also highlights the challenges associated with AI misuse, which can undermine students' autonomy and relatedness, leading to academic dishonesty and superficial learning. The research underscores the importance of balancing technological advancements with ethical engagement and intrinsic motivation. Through qualitative analysis, including interviews and thematic analysis of student and teacher feedback, the study reveals a nuanced picture of AI's role in education. It suggests that while AI offers considerable benefits, its integration requires careful consideration of ethical use, digital literacy, and the cultivation of intrinsic motivation. The findings advocate for educational policies and practices that not only leverage AI's potential to enrich learning experiences but also address the challenges posed by its misuse. This study contributes to the ongoing discourse on technology in education, emphasizing the need for a balanced approach to AI integration that supports ethical standards and promotes a meaningful educational experience.

Introduction

– I never think of the future. It comes soon enough.
Albert Einstein

Undoubtedly, Albert Einstein was a person to follow and admire and tomorrow is indeed happening too fast; however, being unprepared for the changes the world brings us might cause a threat of falling behind progress. The changes are largely believed to be fraught with danger, but, quoting another person of wisdom, Mark Twain, “the secret of getting ahead is getting started”. One of such changes, both intimidating and inevitable, Artificial Intelligence (AI) now stands at the forefront of educational innovation, promising to revolutionize the learning experience through personalized educational pathways and enhanced instructional methodologies. However, as with any other change, the integration of AI technologies in educational frameworks faces significant challenges.

This investigation attempts to investigate the phenomenon of improper AI technology usage and its impact on motivation in high school settings. By exploring both the educational and psychological consequences of this misuse, the study seeks to lay the groundwork for strategies that foster ethical engagement with technology, thereby safeguarding the integrity of digital learning environments (Dakakni & Safa, 2023).

The research involved the analysis of Ryan & Deci's Self-Determination Theory (SDT) to explore students' interactions and level of motivation for the employment of AI technology in learning. Ryan & Deci (2000) argue that students' psychological needs, such as autonomy, competence, and relatedness, influence their behavior. To collect the necessary data to connect the research results with existing theories, this research used focus group interviews with Azerbaijani high school students and teacher feedback on the students' written assignments. Thematic analysis was further utilized to extract significant themes and insights from the qualitative data, providing a comprehensive framework to understand the drivers behind AI tool misuse in educational contexts and the extent to which AI impacts students' motivation.

This study contributes to the broader discourse on technology and education, challenging stakeholders to consider the ethical dimensions of AI integration. By contextualizing AI tool misuse within the broader framework of digital ethics, it calls for a concerted effort to cultivate digital literacy and critical thinking skills among students. This approach not only aims to mitigate the risks associated with AI misuse but also to empower learners to harness the full potential of AI technologies responsibly. In doing so, the study underscores the need for educational institutions to adopt a holistic view of AI integration, one that balances technological innovation with ethical stewardship and psychological well-being.

Literature Review

The Integration of AI in Education

The last decade has witnessed an unprecedented integration of AI in educational settings, driven by technological advancements and the growing demand for personalized learning experiences. AI technologies, such as adaptive learning platforms and intelligent tutoring systems, offer the potential to tailor educational content to the unique needs of each learner, thus promising to revolutionize the educational landscape (Zawacki-Richter et al., 2019). These technologies not only facilitate personalized learning pathways but also aim to enhance the efficiency and effectiveness of educational practices. Despite the optimism surrounding AI in education, its integration also introduces several challenges, including concerns related to data privacy, ethical use of technology, and the potential for its misuse by learners. The ethical implications of deploying AI in educational contexts are multifaceted, encompassing issues of equity, transparency, and the potential reinforcement of existing educational disparities (O'Neil, 2016).

Understanding AI Misuse

The misuse of AI tools in educational settings is becoming an increasingly prominent issue, manifesting in a variety of behaviors that range from students leveraging AI to complete assignments without fully understanding

the material to exploiting AI functionalities in ways that breach academic integrity guidelines (Selwyn, 2019). This form of misuse not only diminishes the educational value of assignments but also poses significant challenges to the development of critical thinking and problem-solving skills, essential components of a comprehensive learning process. Giray et al. (2024) created a SWOT analysis to evaluate the application of ChatGPT to scientific research (see Figure 1).

Figure 1. SWOT Analysis of Using ChatGPT in Scientific Research

[Taken from Strengths, weaknesses, opportunities, and threats of using ChatGPT in scientific research (p.42), by L. Giray et al., 2024, *International Journal of Technology in Education (IJTE), 7*(1). Copyright 2024 by IJTE.]

This emerging trend of AI tool misuse in education raises profound questions about the impact of artificial intelligence on the traditional learning journey. When students rely on AI to navigate assignments, there is a risk that the depth of their engagement with the material declines, potentially stunting their intellectual growth and diminishing their ability to think critically and solve problems independently (Giray et al., 2024) and can "could lead to the oversimplification of the learning process" (Famaye et al., 2024, p. 177). Moreover, such reliance on AI tools can lead to a superficial understanding of subjects, where the emphasis shifts from mastering concepts to merely completing tasks, thus undermining the foundational goals of education (Daniel, 2020; Giray et al., 2024).

The complexities surrounding the misuse of AI tools in education are reflective of broader debates concerning the role of technology in learning environments. As AI becomes more embedded in educational practices, there is an urgent need for frameworks that not only address the technological and pedagogical aspects of AI integration but also consider the ethical implications of its use (Stahl et al., 2016). These frameworks should promote responsible use, ensuring that AI serves as a complement to traditional learning methods rather than a substitute that encourages shortcutting and academic dishonesty (Eynon, 2013). Famaye et al. (2024) argue that educational stakeholders should revisit assessment strategies and establish policies to fit current changes related to the integration of AI into an educational context.

Moreover, the dialogue on AI tool misuse intersects with discussions on digital literacy, suggesting that part of addressing misuse involves educating students on the ethical use of technology. This includes fostering an understanding of academic integrity in the digital age and developing critical appraisal skills to navigate the vast array of information and tools available online (Jones & Shao, 2011). By promoting a culture of ethical technology use, educators can help students leverage AI tools in ways that enhance learning while maintaining the integrity

of the educational process.

Ethical and Psychological Implications of AI Misuse

The increasing prevalence of AI tools in educational settings, while offering numerous benefits, also presents significant ethical and psychological challenges. Addressing this issue requires a concerted effort to integrate ethical considerations into the adoption and implementation of AI technologies in educational settings (see Daniel, 2020; Eynon, 2013; Famaye et al., 2024; Giray et al., 2024; Gokçearslan et al., 2024; Jones & Shao, 2011; Selwyn, 2019; Stahl et al., 2016; Yurt & Kasarci, 2024).

Ethically, the misuse of these technologies raises concerns about the fundamental integrity of the educational process, potentially compromising the core values of honesty, effort, and achievement that are essential to scholarly endeavors. This situation poses a dilemma for educators and institutions in upholding academic integrity and ensuring that students engage with learning materials authentically and responsibly (Bretag & Mahmud, 2016; Famaye et al., 2024). The psychological implications are equally significant, as reliance on AI for academic tasks may inhibit students' ability to develop critical autonomous learning skills. Moreover, the misuse of AI tools can contribute to a broader erosion of trust within the educational community, affecting not only student-teacher relationships but also the perception of the institution's credibility and the value of its credentials (Eaton, 2020). Psychologically, this reliance on technology for academic achievements can lead to a superficial understanding of complex concepts, undermining the depth and quality of learning experiences and potentially impacting students' self-efficacy and motivation (Famaye et al., 2024; Ryan & Deci, 2017).

Addressing these challenges necessitates a multifaceted approach that encompasses not only technological solutions to prevent misuse but also educational policies that emphasize ethical conduct and the development of digital literacy skills. Furthermore, fostering an educational culture that values intrinsic motivation and deep learning can counterbalance the temptations of technological shortcuts (Thomas & Brown, 2011). Integrating ethical considerations and psychological support into the curriculum can equip students with the critical thinking skills and ethical framework necessary to navigate the digital landscape responsibly (Stahl et al., 2016).

Self-Determination Theory

Self-Determination Theory (SDT) offers a comprehensive framework for understanding human motivation and behavior, especially in educational contexts. According to SDT (see Figure 2), individuals are inherently motivated to grow and achieve well-being through the fulfillment of their basic psychological needs: autonomy, the feeling of being in control of one’s own behaviors and goals; competence, the sense of mastery and effectiveness in dealing with the environment; and relatedness, the feeling of connection and belonging with others (Ryan & Deci, 2000). In educational settings, the extent to which these needs are supported or hindered can profoundly impact students' motivation, engagement, and their overall learning experience.

Research applying SDT in educational environments indicates that when students perceive their learning

environment as supportive of their autonomy, competence, and relatedness, they are more likely to exhibit intrinsic motivation, which fuels engagement and deep, meaningful learning (Niemiec & Ryan, 2009). Such environments encourage students to explore, take initiative, and engage with learning materials on a deeper level, including technology and AI tools, thereby facilitating a more enriching educational experience (Jang et al., 2009).

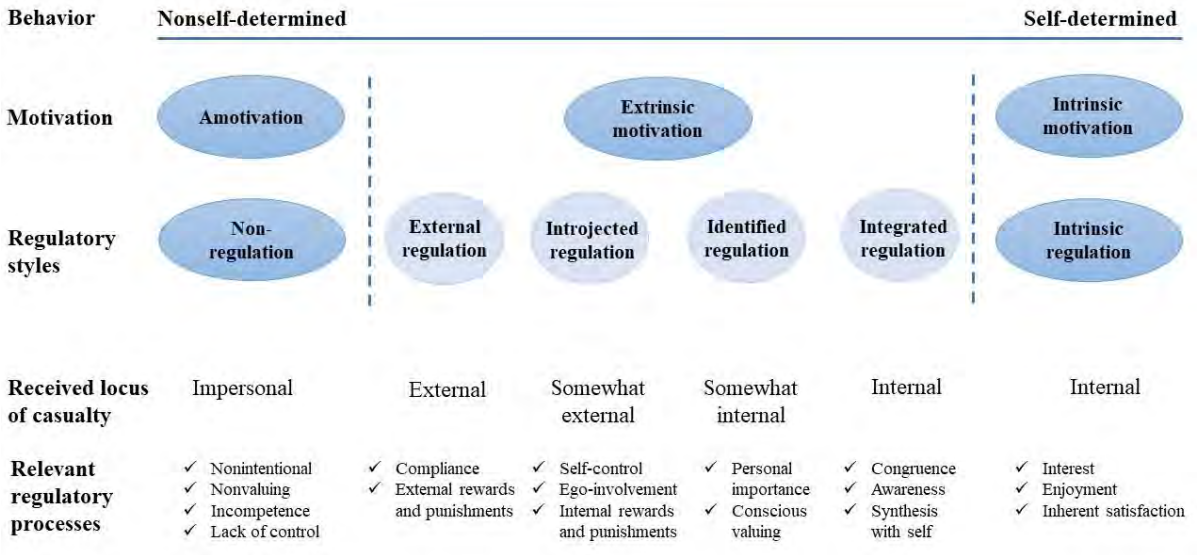

Figure 2. Self-Determination Theory

[Adapted from Self-Determination Theory and the facilitation of intrinsic motivation, social development, and well-being (p.72), by R. M. Ryan and E. L. Deci, 2000, *American Psychologist*. Copyright 2000 by the American Psychological Association.]

Conversely, educational contexts that neglect these basic needs, imposing excessive control, offering inadequate feedback, or failing to foster a sense of community and belonging, may inadvertently drive students towards extrinsic motivation. This form of motivation is characterized by external rewards or pressures, rather than intrinsic interest or satisfaction in the task itself (Deci et al., 1991). In such environments, students might resort to misusing AI tools as a means to achieve externally imposed goals, such as high grades, rather than for the sake of learning or intellectual curiosity. Cheon et al. (2012) see this misuse of AI tools as a shortcut to success, bypassing genuine understanding and mastery of subjects.

Furthermore, the misuse of AI in educational settings raises questions about the broader implications for students' development of critical thinking and problem-solving skills. Over-reliance on AI for tasks that students should ideally engage with directly may hinder their ability to think critically, solve complex problems independently, and ultimately, diminish their competence and autonomy in learning (Vansteenkiste et al., 2004).

Addressing the misuse of AI tools in education from an SDT perspective involves creating learning environments that genuinely support students' psychological needs. This includes providing autonomy-supportive teaching practices, opportunities for mastering skills, and fostering a sense of community and connection among students and educators. Such an approach not only encourages responsible use of AI tools but also promotes a more intrinsically motivated, engaged, and meaningful learning experience (Ryan & Deci, 2017).

Methodology

The investigation into the misuse of Artificial Intelligence (AI) tools within high school settings and the extent to which their impact on student motivation necessitates a methodological framework capable of capturing the depth and nuance of students' experiences and perceptions. Guided by the research questions that probe into the general experience with AI in learning, perceptions of AI in education, its influence on motivation and engagement, and the psychological well-being of students, this study adopts a qualitative research approach. This choice aligns with the complexities of exploring human interactions with evolving technologies, where quantitative measures may fall short of capturing the intricacies of personal experiences and perceptions (Creswell & Poth, 2016).

Dada Collection and Analysis

To ensure a comprehensive understanding, the study employed triangulation, integrating two primary sources of data: in-depth interviews and analysis of students' assignments and teachers' feedback. This methodological triangulation not only strengthened the findings by combining evidence from several sources that agreed with each other, but it also improved the analysis by giving a more complete picture of the thing being studied (Denzin, 2009; Patton, 1999).

A total of 18 questions, designed to cover a wide range of topics from the utilization of AI tools in educational tasks to their psychological impacts on students, guided the in-depth interviews. These questions are informed by both the literature review and the theoretical underpinnings of SDT, ensuring that the inquiry is rooted in established educational psychology frameworks (Ryan & Deci, 2000). The choice of questions reflects an intention to explore not only the functional aspects of AI tool use, but also the deeper motivational and psychological dimensions, aligning with the study's broader objective to understand the drivers behind AI tool misuse and its educational consequences.

The code-recode strategy, employed to analyze the data, further underscores the study's commitment to reliability. This iterative process, wherein data are initially coded and then recoded after a period, allowed for the refinement of themes, and ensured that the analysis remained closely tied to the data (O'Connor & Joffe, 2020). This strategy is particularly suited to the thematic analysis used in this study, facilitating the systematic extraction and examination of significant themes and insights from the qualitative data.

Thematic analysis, as the primary analytical tool, is adept at distilling complex data into coherent, meaningful patterns, making it particularly suitable for this investigation's qualitative nature (Braun & Clarke, 2006). It informed the navigation through the rich qualitative data gathered from interviews and written assignments, identifying themes that elucidate the multifaceted impacts of AI tool misuse on student motivation and learning. The inclusion of teacher feedback on students' assignments further strengthened the methodology's foundation, providing an additional lens to examine the educational dynamics at play. This feedback, analyzed alongside student interviews, provides a unique opportunity to triangulate perspectives, enriching the study's insights into how AI tools are reshaping educational interactions and outcomes.

Participants

In this study, the participant group consisted of high school students from a single educational institution in Azerbaijan, structured into two focus groups comprising 12 and 14 students, respectively. This composition was chosen to reflect a broad spectrum of experiences, backgrounds, genders, and ethnicities among students aged 14 to 16 years. The diversity within these focus groups was pivotal for capturing a wide range of perspectives on the use and impact of AI tools in their educational journey, ensuring the research encompassed varied student experiences with technology.

Convenience sampling, a non-probability sampling technique, selected participants based on their availability and willingness to participate (Etikan et al., 2016). This approach was deemed appropriate for the study due to its practicality and ease of access for participants within the school setting. Convenience sampling presents significant advantages in accessibility and feasibility, but it also carries inherent limitations such as potential biases and limited generalizability to the broader student population. These limitations were acknowledged and considered throughout the research process, with the understanding that the findings might not universally represent all high school students' experiences with AI tools.

To enrich the data collected from focus group interviews, the study also included an analysis of assignments and teachers' feedback across various subjects, including humanities, mathematics, and sciences. This additional data source allowed for a deeper understanding of how AI tools are being utilized in academic work and the perceptions of educators regarding their students' engagement with technology. The inclusion of teacher feedback provided a crucial counterpoint to student narratives, offering a more holistic view of AI's role in the educational experience.

Conducting research with minors necessitated stringent ethical considerations. Prior to data collection, comprehensive consent procedures were undertaken, which involved obtaining approval from the school's administrative body and securing informed consent from both the participating students and their parents or guardians. This process was guided by ethical principles outlined by the American Psychological Association (APA), emphasizing the importance of voluntary participation, confidentiality, and the right to withdraw without penalty (American Psychological Association, 2017). The careful attention to ethical standards ensured that the research upheld the highest integrity and respect for participants' rights and well-being.

Results and Discussion

The initial step of the data analysis involved the transcription of focus group interviews, utilizing the speech-to-text application Cockatoo. Given the complexity of capturing multiple voices and the potential for overlap, these automated transcriptions were carefully reviewed and corrected manually to ensure accuracy and completeness. This careful attention to detail in transcription ensured that the richness of participant discussions was preserved, providing a solid foundation for subsequent analysis.

Following transcription, the study employed MAXQDA, a qualitative data analysis software, to facilitate the

coding process. Open coding was performed on the interview transcripts, allowing for the preliminary categorization of data based on observed phenomena, themes, and patterns. Similarly, students' assignments and teachers' feedback were subjected to manual open coding, enabling the identification of initial themes related to AI tool usage, its perceived benefits and challenges, and its impact on the educational experience.

The triangulation of codes from both the transcripts and written materials allowed for the identification of axial codes, which further elucidated the relationships between initial categories (see Table 1). This step was crucial for constructing a more structured understanding of the data, leading to the identification of the core category that encapsulated the central phenomenon of the study. Re-coding was applied as a measure to enhance validity, ensuring that the categorization of data remained grounded in the empirical evidence collected.

Table 1. Open and Axial Codes

Open codes	**Axial codes**
1. AI Tool Usage	1. AI Integration in Education
2. Predominant Use of ChatGPT4	
3. Versatility of AI Applications	
4. Perceived Benefits of AI	2. Perceived Advantages of AI
5. AI-Induced Efficiency	
6. Stress Relief through AI	
7. Challenges in AI Interaction	3. Challenges and Limitations of AI
8. Impact on Learning Integrity	4. Impact on Academic Integrity and Learning Experience
9. Diminished Teacher Authority	
10. Learner Passivity and Creativity Decline	5. Changes in Student Behavior and Perception
11. Engagement and Motivation Decline	
12. False Confidence and Professionalism	
13. AI Addiction and Attention Span	6. Psychological Effects of AI Dependency
14. Future Educational Landscape	7. Educational Futures and AI
15. Proposed Solutions to AI Misuse	

The integration of AI tools has transformed educational processes, offering personalized learning pathways but also presenting challenges requiring adaptation. The perceived advantages of AI, such as improved efficiency and stress relief, highlight its potential to support educational goals and improved academic achievement (Famaye et al., 2024). However, challenges and limitations, including interaction difficulties and integrity concerns, underscore the complexity of AI's impact. The analysis also explores changes in student behavior and perception, the psychological effects of AI dependency, and speculations on the future educational landscape, all suggesting a subtle interaction between technology and education.

The findings from the focus group interviews and analysis of student work suggest that the use of AI in educational settings is multi-layered, echoing the complexities of human motivation as described by SDT. While AI tools like ChatGPT4 are celebrated for their efficiency and the diverse perspectives they offer, aiding students in meeting

their competence needs as per SDT, they also present significant challenges.

Students report an over-reliance on AI for critical thinking tasks, indicating a shift from intrinsic motivation to more extrinsic forms. These results are consistent with recent studies that address the misuse of AI technologies in relation to a decline in motivation for applying critical thinking skills (see Famaye et al., 2024; Giray et al., 2024; Gokçearslan et al., 2024). This reliance potently undermines their autonomy and relatedness, key components of SDT, as they navigate academic pressures. The data suggests that the misuse of AI could lead to a diminished authority of teachers and a concerning trend of academic dishonesty, aligning with concerns raised by authors such as Eaton (2020) regarding academic integrity in the digital age.

When integrating the findings with SDT, the spectrum of motivation types aligns with students' varied experiences with AI in education. The figure below outlines motivation from amotivation to intrinsic motivation, with intermediary levels of extrinsic motivation differentiated by their regulatory styles: external, introjected, identified, and integrated regulation (see Figure 3).

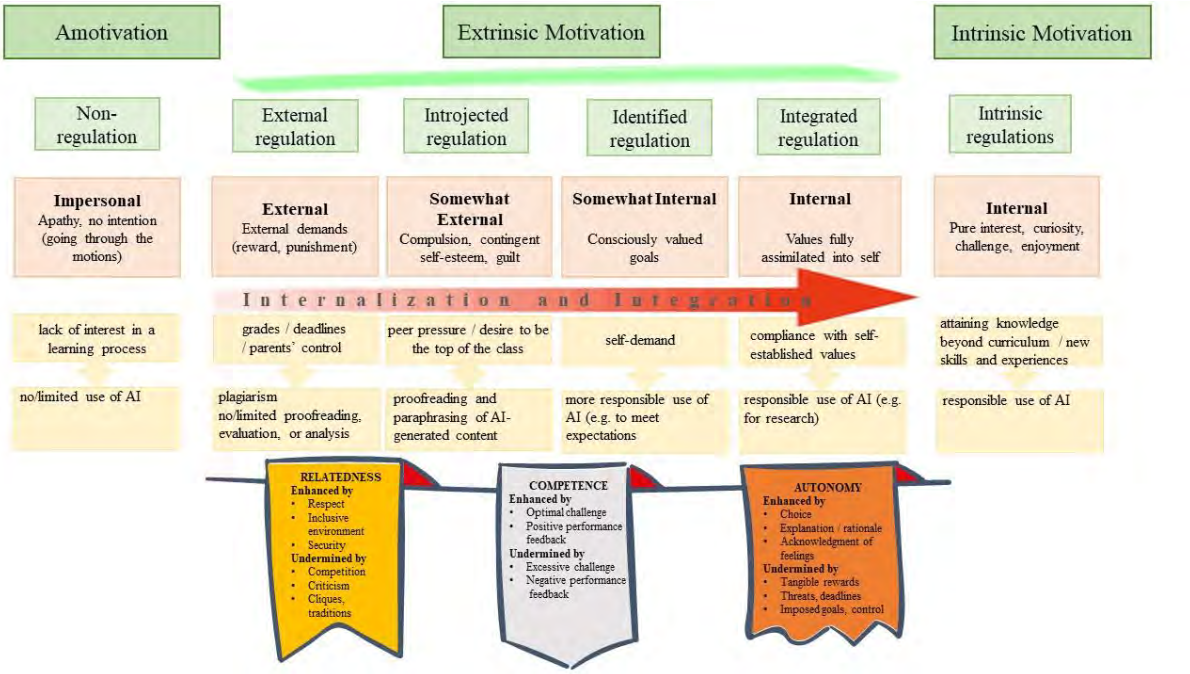

Figure 3. AI Through the Lense of Self-Determination Theory

- Amotivation: Reflects a lack of intention or desire to engage, which can be seen in students who show little interest in learning or in using AI as a tool for education. They may engage with AI minimally, if at all, and might exhibit signs of plagiarism without deep engagement in the learning process.
- Extrinsic Motivation:
    - External Regulation: Some students use AI to meet external demands, such as grades or deadlines, which can lead to superficial learning and academic dishonesty.
    - Introjected Regulation: Driven by internal pressures like guilt or a desire to maintain self-esteem, students might misuse AI to avoid falling behind peers, leading to a shallow

engagement with content.

- Identified Regulation: Students may recognize the value of AI tools and begin to use them more responsibly, such as for research or to meet learning objectives they value.
- Integrated Regulation: The most autonomous form of extrinsic motivation, where students' use of AI aligns with their values and they use AI tools responsibly, recognizing both their benefits and limitations.

- Intrinsic Motivation: Students who use AI out of pure interest, curiosity, or enjoyment, seeking to go beyond the curriculum and enrich their learning experience with AI, represent intrinsic motivation. These students are more likely to use AI ethically, engaging with it to expand their knowledge and skills rather than merely to complete tasks.

The data from student interviews and assignments reflects these motivational orientations. For example, the use of AI for quick answers without understanding reflects external regulation, while the adoption of AI for genuine learning and curiosity aligns with intrinsic motivation. The challenge lies in guiding students away from extrinsic motivators like grades or peer pressure and towards intrinsic motivators like curiosity and mastery of content.

The emerging theoretical framework for Educational Transformation through AI emphasizes the need for thoughtful integration of AI technologies, with a strong focus on maintaining ethical standards and fostering intrinsic motivation (see Figure 4). The creation of new up-to-date educational policies might help to avert the issues with lack of motivation, ethics, and academic integrity "to drive the proper integration and adoption of the AI Chatbot" (Famaye et al., 2024, p. 192). This framework suggests that future educational policies should reflect the principles of SDT by supporting student autonomy, competence, and relatedness, while simultaneously navigating the ethical and psychological challenges posed by AI integration, a point supported by the work of Ryan & Deci (2000). The creation of new up-to-date educational policies might help to avert the issues with lack of motivation, ethics, and academic integrity "to drive the proper integration and adoption of the AI Chatbot" (Famaye et al., 2024, p. 192).

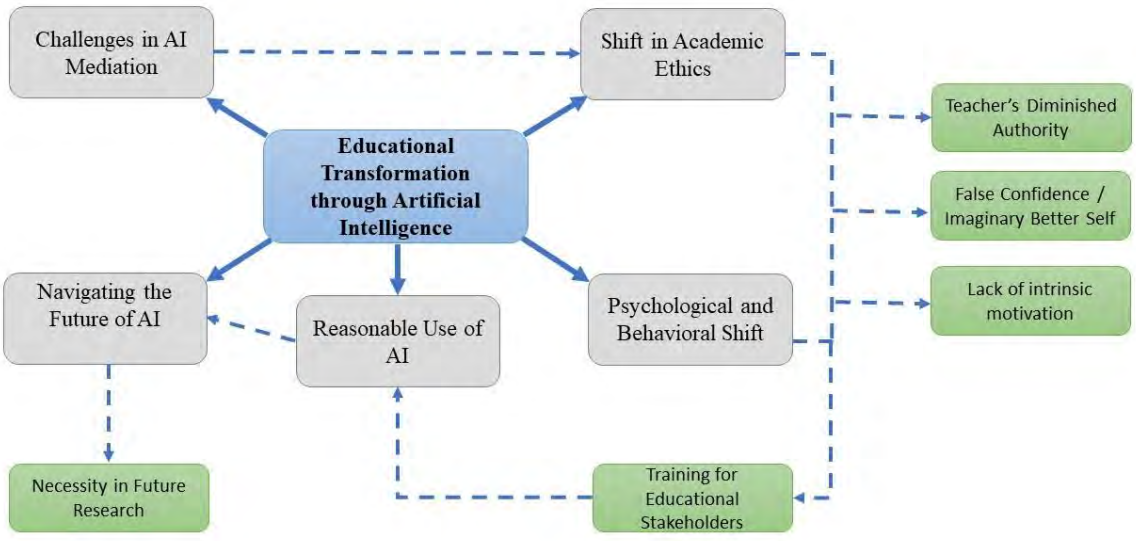

Figure 4. Theoretical Framework

One recurring theme from our discussions was the manifold benefits AI brings to the learning process. Participants noted that AI facilitates diverse opinions, solutions, and perspectives, offering answers that may not have been previously considered. Moreover, AI's ability to provide detailed explanations, step-by-step solutions, and quick responses streamlines tasks, thus alleviating stress and aiding in meeting deadlines. Its capacity to summarize lengthy texts, interpret visuals, and analyze data from various sources emerged as invaluable aids for students across disciplines. Particularly noteworthy was the example of using AI to elucidate historical cartoons, underscoring its versatility in conveying ideas across genres and registers. Furthermore, AI's proficiency in explaining mathematical equations and problems, as well as its capability to create images, enhances comprehension and fosters creativity in learning.

However, amidst these benefits, the discussions and analysis of students' written work and teachers' feedback also illuminated several challenges associated with the integration of AI in education. Participants highlighted the need for repeated requests to obtain accurate data and outdated or incomplete responses, which is also supported by Gokçearslan et al. (2024), as well as AI's limitations in understanding nuances such as humor, metaphors, and sarcasm. Concerns were raised regarding AI's propensity to generate non-existent references, fabricate information, and inadvertently promote cheating and plagiarism (Giray et al., 2024). Of particular concern was the observed shift in student perceptions of teachers, with some students viewing AI as more authoritative and reliable than their human counterparts. This erosion of the teacher's role in the classroom, coupled with a decline in student engagement and critical thinking, poses significant challenges to the educational experience.

The proliferation of AI tools has also raised apprehensions about their potential misuse and impact on learning. As was indicated by teachers' comments, there are rising concerns about the level of plagiarism, as well as the erosion of creativity and critical thinking skills among students who rely excessively on AI for answers (Giray et al., 2024; Gokçearslan et al., 2024; Famaye et al., 2024). Moreover, the ease with which students can bypass AI detectors and access pre-written materials exacerbates these issues, undermining the integrity of the learning process. The phenomenon of AI addiction emerged as a prevalent concern, with participants noting its detrimental effects on attention span, personal voice, and confidence levels. Furthermore, AI usage fosters a false sense of expertise that significantly hinders genuine learning and self-improvement.

The students' suggestions for more stringent plagiarism guidelines and improved AI literacy education are in harmony with the literature that advocates for a responsible approach to AI in education, such as the work of Selwyn (2019) and O'Neil (2016). These proposals highlight a collective call for an educational paradigm that not only embraces technological advancements but also upholds the integrity and psychological well-being of students as they prepare for a future where AI is an integral part of the learning process.

Conclusions and Recommendations

This study on the incorporation of AI in educational environments provides insight into the complex relationship between technical progress and human motivation, as viewed through the framework of SDT (Ryan & Deci, 2000). AI technologies like ChatGPT4 can greatly improve the educational experience by addressing students'

competency requirements. Nonetheless, it also emphasizes the difficulties caused by the inappropriate use of these technologies, which can weaken students' independence and connections, resulting in a dependence on AI for tasks requiring critical thinking. Excessive reliance on external sources may lead to academic dishonesty and promote superficial learning, reducing the educational significance of assignments and hindering intellectual development (Selwyn, 2019).

Educational institutions must balance the technological capabilities of AI with fostering ethical involvement and intrinsic motivation in students to overcome these issues. It is crucial to improve digital literacy by teaching students how to utilize AI tools and educating them about the ethical implications of their use. It is essential to establish thorough policies for the ethical application of AI in academic environments, outlining specific criteria for misuse and its consequences (Stahl et al., 2016). Integrating AI education into the curriculum can assist students in understanding the importance of AI as a tool for learning and creativity. This also creates a supportive learning environment that follows SDT principles by promoting student autonomy, competence, and relatedness. This involves offering chances for significant interaction with AI tools that improve learning and personal development.

This investigation recognizes its limits, such as the utilization of convenience sampling and the concentration on a solitary educational institution in Azerbaijan, which could impact the generalizability of the results. Future studies could improve by utilizing a more varied sampling technique and exploring a wider array of educational settings to increase the relevance of the findings. Furthermore, the swift advancement of AI technology requires continuous research to keep up with new breakthroughs and their impact on education (Etikan et al., 2016).

Integrating AI in schools necessitates a sophisticated approach focusing on ethical use, digital literacy, and promoting intrinsic drive, despite its numerous benefits. Educational institutions can utilize AI to enhance learning experiences while maintaining academic integrity and fostering critical thinking abilities (Braun & Clarke, 2006; Creswell & Poth, 2016). This balanced approach will be essential as we negotiate the future of education in an increasingly digital environment.

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