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A case study on the perception of artificial intelligence by gifted students in Turkey

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ABSTRACT

The research was conducted to explore the perceptions of gifted students towards artificial intelligence (AI) using a qualitative research method and a case study design. The study group comprised 25 students from the Selçuklu Science and Art Center during the 2023-2024 academic year, selected through affinity sampling method. Data was gathered through metaphoric forms and semi-structured interviews, and content analysis was employed for data analysis. The findings indicated that students primarily used the human metaphor when discussing AI. Themes derived from the metaphors included human similarity, potential threats of AI, and belief in the benefits of AI. Gifted students expressed concern about the potential risks of AI, while also highlighting its advantages in education. Additionally, the majority of students believed that schools would continue to operate within an AI-supported education system, although some students expressed the view that AI could make schools obsolete. According to the findings, gifted students have expressed a perception of AI as being advantageous as well as having potential risks. Consequently, the research suggests that it would be beneficial to offer specialized training to gifted students on the responsible utilization of AI within the realm of education.

Keywords: case study, student, gifted, AI

INTRODUCTION

The influence of artificial intelligence (AI) on various sectors of society is substantial. AI applications are increasingly impacting social media, finance, healthcare, and the automotive industry (Imran, 2023; Ting et al., 2019). The integration of AI with technologies such as robotics, mobile, cloud, and big data is fostering innovation, sparking a revolution in these domains (Wirtz et al., 2018). Nevertheless, as AI becomes more prevalent, governance challenges are likely to emerge in order to uphold constitutional democracy and ethical standards (Cath, 2018; Nemitz, 2018). In this regard, the rapid expansion of AI entails social risks that necessitate prudent management (Zou, 2024).

The emergence of AI has significantly influenced intellectual property protection, economic advancement, and societal development. In light of this, it is imperative to devise comprehensive approaches to effectively leverage the potential of AI (Cai et al., 2023). Deliberations aimed at establishing a 'good AI society' and delineating the obligations of diverse stakeholders in realizing this vision are pivotal in shaping the trajectory of AI development (Cath et al., 2017). Moreover, the global drive for sustainable AI progress underscores the significance of comprehending both the technical intricacies of AI and its societal ramifications (Ying et al., 2023).

The significance of education in understanding the societal implications of AI cannot be overstated. It is imperative for both educators and students to gain a comprehensive understanding of the potential impacts of AI, particularly as it becomes increasingly integrated into various facets of life, including education (Makarenko et al., 2024). The growing prevalence of AI has prompted considerable interest within the education sector due to its capacity to potentially transform the teaching and learning processes. The incorporation of AI into education has sparked new concepts and avenues for educational reform, precipitating changes in educational paradigms and giving rise to innovative products such as smart teaching and smart classrooms (Zhu, 2024).

Researchers have highlighted the possibilities offered by AI in education, emphasizing the potential for improved

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educational outcomes, enhanced knowledge retention, and personalized learning experiences (Chen et al., 2020; Hua, 2022; Jaiswal & Arun, 2021; Zawacki-Richter et al., 2019). On the other hand, as Satır (2023) outlines, the implementation of AI technologies tailored to individual needs has the potential to enhance student engagement and motivation. Additionally, the application of AI in education is seen as a means to automate administrative tasks, facilitate customized learning experiences, leverage smart data for teaching, and enhance student support (Hinojo-Lucena et al., 2019). Furthermore, scholars have identified AI as a catalyst for transforming social dynamics and introducing innovative teaching and learning methodologies across diverse educational settings (Kshirsagar et al., 2022).

According to Funes et al. (2024), research on the implementation of AI in educational settings indicates a positive reception from both educators and students. Moreover, it is noteworthy to highlight the significance of AI in the education of gifted individuals with special abilities. Ye (2023) asserts that the strategic incorporation of AI into the education of gifted students not only improves learning outcomes, but also fosters an inclusive environment that supports the development of each student's unique abilities. This integration is believed to play a vital role in overall societal advancement and the cultivation of specialized talents that align with evolving societal demands.

The use of AI in education enables teachers to provide personalized learning experiences tailored to individual student needs and skill levels (Murniviyanti & Supena, 2021). Educational institutions can use AI to create customized learning pathways that address the specific strengths and areas for development of students with special abilities (Rožman et al., 2022). Additionally, the use of AI in education has been linked to improvements in students' critical thinking and problem-solving abilities (Dai et al., 2023; Rapti, 2023). AI technologies also support the development of talent training techniques for students with special abilities through research and practice reforms (Bian et al., 2022).

The incorporation of AI into the field of education presents numerous potential benefits, yet it also presents substantial challenges (Eden et al., 2024). Challenges such as unequal access to educational resources, disparities in academic achievements, and diverse linguistic settings complicate the assimilation of AI into educational settings and establish a multifaceted framework for its deployment (Chisom et al., 2024). Regarding this matter, research conducted by Kim (2023) uncovered that numerous students harbor adverse perceptions and attitudes toward AI. In addition, Mosly (2024) emphasized concerns about prejudice, the digital divide, and other social issues that complicate the equitable use of AI in schools. On the other hand, Chukwubueze and Vinella (2024) argued that the complex nature of AI implementation and resistance to change in educational institutions can pose significant challenges. Concerns that AI may lead students to technology addiction have also been raised in research (Abgaryan et al., 2023; Alfarsi et al., 2021; Çetin & Yıldız Baklavacı, 2024).

Research suggests that ethical and moral considerations surrounding the integration of AI in education are gaining prominence (Canbay & Demircioğlu, 2021; Harry, 2023). Therefore, it is essential to explore the attitudes of education stakeholders towards AI to inform policy development in this domain. This includes soliciting the perspectives of gifted students, who possess exceptional abilities and can significantly impact the discourse on AI.

Table 1. Information on the study group

Variable		n	%
Gender	Female	12	48
	Male	13	52
Class	Fourth grade	9	36
	Seventh grade	6	24
	Ninth grade	10	40
School type	Public school	15	60
	Private school	10	40

It is imperative to comprehend the perspectives and dispositions of intellectually gifted students concerning AI to enhance the efficacy of programs and accommodations tailored for their exceptional abilities (Luria et al., 2016). Through a comprehensive understanding of gifted students' outlook on AI, educators and policymakers can adeptly bolster their scholastic and socio-emotional growth within AI-integrated educational settings (Kitsantas et al., 2017). Upon reviewing the literature, it is evident that there is a lack of studies focusing on the use of AI among gifted students. In this specific context, the study sought to explore the viewpoints of intellectually advanced students, who are poised to significantly shape the future landscape of AI. The research was designed to tackle the following sub-problems:

1. What are the metaphors developed by gifted students about AI?
2. What is gifted students' perspective on AI?
3. What role can AI play in education, according to gifted students?
4. According to gifted students, how can the school provide an AI-supported education?

METHOD

In this research, the case study design, a qualitative research method, was employed to investigate the viewpoints of gifted students on AI. Case studies were chosen for their ability to thoroughly examine a current phenomenon and to utilize multiple techniques in the data collection process (Crowe et al., 2011; Ekiz, 2017). The study fulfilled the criteria of a case study by conducting a metaphor study, semi-structured interviews, and a literature review to analyze AI, a contemporary phenomenon.

Study Group

The research study included students from the 4th, 7th, and 9th grades at the Selçuklu Science and Art Center in Turkey during the 2023-2024 academic year. The affinity sampling method was used to select the study group, as it allows for a targeted focus on the problem situation, facilitates analysis, and enables the conduct of group interviews (Baltacı, 2018). **Table 1** presents details about the study participants.

Table 2. Metaphors developed by gifted students about AI

Theme	Metaphors	N
AI similarity to human	Human (8), human brain (2), human intelligence, brain	12
Functionality and impacts of AI	Honey, fertilizer-free intelligence, Swiss army knife, computer, windmill, medicine, controlled library	7
AI's insensitivity and submissiveness	Child (2), obedient dog, dog	4
The specificity of AI's own intelligence	Brain cube, brain	2

Upon examination of **Table 1**, it is evident that the study group comprises 13 male and 12 female members. Furthermore, the distribution of students across grade levels is noteworthy, with 9 students in the fourth grade, 6 in the seventh grade, and 10 in the ninth grade. Additionally, it is interesting to note that 15 students were enrolled in public schools while 10 were enrolled in private schools.

Data Collection and Analysis

The research team developed a comprehensive data collection tool that aligns with the multifaceted nature of the case study, warranting the use of multiple methodologies. Firstly, the tool featured a metaphor prompt asking students to liken AI to something else and justify their comparison. Secondly, students were prompted to share their personal perspectives on AI. Thirdly, they were asked to articulate the potential role of AI in education. Lastly, students were tasked with outlining how their school could integrate AI into the educational framework. Additionally, the tool included inquiries pertaining to the participants' grade level, gender, and school affiliation.

The study collected data face-to-face by gathering 4th, 7th, and 9th-grade students in separate groups. The strategy followed the principle of voluntariness, and the school administration and the children's parents provided the necessary authorizations. The application lasted an average of 10 minutes in each group.

In the data analysis, the content analysis technique was employed. Eysenbach and Köhler (2002) outline this technique in four stages; coding the data, identifying codes and themes, organizing the codes and themes, and defining and interpreting the findings. Each researcher pre-coded the data, developed a codebook from the codes, and combined the categories and themes (**Appendix A** shows examples from the codebook). Efforts were made to ensure consistency among the coders throughout this process. The agreement between the coders was assessed using Cohen's kappa coefficient. The inter-coder agreement was determined to be .74 for the first sub-problem, .72 for the second sub-problem, .70 for the third sub-problem, and .78 for the fourth sub-problem. These results indicate a significant level of inter-coder agreement (Bilgen & Doğan, 2017).

The research employed triangulation (diversity) to confirm the data's validity and dependability. The implementation of triangulation included steps such as ensuring data diversity in the research, using an external auditor, implementing interventions to enhance harmony among coders, and directly soliciting the opinions of the participants (Başkale, 2016). Each student was assigned a unique identifier, such as S1, S2, S3, etc., to anonymize their contributions when presenting their opinions.

FINDINGS

This section presents the respective findings from the sub-problems.

Findings Related to the Metaphors Developed by Gifted Students About AI

The first sub-problem of the research sought to answer the question, "What are the metaphors developed by gifted students about AI?" **Table 2** provides the metaphors and themes developed by gifted students in this context.

Analysis of **Table 2** reveals that gifted students primarily use mostly human metaphors when discussing AI. In addition, it is noteworthy that human brain, child, and brain metaphors were used by two students. Also, when the distribution of the metaphors used by gifted students about AI according to the themes is analyzed, it is seen that the metaphors are mostly gathered in the theme of human similarity to AI. The themes of functionality and impacts of AI, AI's insensitivity and submissiveness, and the specificity of AI's own intelligence follow suit. The following list outlines the scope of these themes, as well as the students' opinions:

AI similarity to human

In this theme, there are views that AI is similar to the human brain or has human-like characteristics. Here's a list of some of these viewpoints:

- *AI is akin to human intelligence. AI preparation involves copying the human brain* (S3).
- *AI acts like a human brain. This is due to its high intelligence and ability to mimic human actions* (S7).
- *AI is like a brain. It constantly acquires new knowledge* (S12).
- *AI is like a human. This is due to its ability to mimic human speech, generate images independently, and perform numerous other tasks* (S18).
- *AI is like a human. Because it constantly tries to improve. It can damage the things around it* (S24).

Functionality and impacts of AI

This theme includes opinions on the practical functions of AI and its effects on human life. Some of the student opinions on this theme are, as follows:

- *AI is like honey. We can do everything with AI. For example, if we ask it to bring water, it brings it; if we ask it to clean the house, it cleans it. In other words, we make difficult tasks easier with AI* (S9).
- *AI is like a Swiss army knife. This is due to its universal applicability and versatility* (S11).

Table 3. Perspectives of gifted students on AI

Theme	Codes	Participants	N
Potential threats of AI	Becoming lazy	S1, S7, S8, S17, S18, S21	6
	Loss of control	S4, S6, S10, S13, S14, S18, S24	7
	Malicious usage	S1, S8, S9, S15, S20, S21	6
	The end of mankind	S21	1
Believing in the benefits of AI	Helpful and useful	S2, S12, S22, S23	4
	Man-made and under control	S3, S5, S10, S11, S16, S25	6
	Open to development	S13, S19	2

- *AI is like a computer. Through it, we can come true many things via it* (S16).
- *AI is like a windmill. This is due to its operational efficiency* (S20).
- *AI is like a controlled library. This is due to its ability to find the desired result by scanning unlimited resources* (S25).

AI's insensitivity and submissiveness

This theme includes opinions that AI is emotionless or completely under human control. Some of the students' opinions on this theme are, as follows:

- *AI is like an obedient dog. This is because AI complies with its owner's wishes and is fully under human control* (S5).
- *AI is like a child. This is due to the lack of emotion in their speech, and it is frank* (S14).
- *AI is like a dog. Because it can talk like people, produce photos by itself, and do many other things* (S19).

The specificity of AI's own intelligence

This theme encompasses opinions regarding the originality or uniqueness of AI. Student opinions on this theme are, as follows:

- *AI is like a brain cube. You can solve it as you experiment* (S13).
- *AI is like a brain. This is due to its ability to think independently* (S22).

Findings Regarding the Perspective of Gifted Students on AI

The second sub-problem of the research sought to answer the question, "What is gifted students' perspective on AI?" **Table 3** presents the themes and codes derived from the content analysis of the students' perspectives.

Analyzing of **Table 3** reveals that the themes of potential threats of ai and belief in the benefits of AI collectively represent the perspectives of gifted students on AI. In addition, based on the students' views, the frequency of the theme of potential threats of AI is 20 and the frequency of the theme of belief in the benefits of AI is 12. Notably, gifted students primarily used the codes of loss of control, becoming lazy, and malicious usage to explain their views on the potential threats of AI theme. It has been discovered that opinions regarding the topic of believing in the benefits of AI can be classified into three categories; helpful and useful, man-made and under control, and open to development. However, when analyzing the views of students on this matter, the most emphasized point is that AI must remain under human control and be used ethically. Additionally, students express concerns about AI potentially leading to the end of humanity and increasing laziness. We present some of the student views on this issue below.

- *I see AI as a threat; it may make people lazy in the future. If AI becomes autonomous in the future, then it becomes a big threat* (S1).
- *I do not see AI as a threat because its sources are in people's hands* (S5).
- *I see AI as a threat because it can take over the world and us* (S6).
- *AI is a threat because it makes people lazy* (S7).
- *Because AI is so intelligent, I see it as a threat. However, I do not see it as a threat because people do it* (S10).
- *Because AI is human-programmed and only exists on computers, I do not view it as a threat* (S11).
- *I see AI as a threat because it develops faster than necessary. However, I do not see it as a threat because of its usefulness in daily life* (S13).
- *Because robots can destroy humans, I see AI as a threat* (S20).
- *AI does not pose a threat to me because, when used properly, it is both necessary and convenient* (S23).
- *I do not see AI as a threat because the source access and development of AI are in the hands of people. As long as this continues and people have good intentions, AI is not a threat* (S25).

Findings Regarding the Perceptions of Gifted Students on the Role of AI in Education and Training

The third sub-problem of the study addressed the question, "What role can AI play in education, according to gifted students?" **Table 4** presents the codes and themes uncovered from the students' content analysis in this context.

Analyzing of **Table 4** reveals that 20 codes pertain to the potential benefits of ai, while 10 codes address the potential risks associated with AI's role in education and training gifted students. Analysis of the codes reveals that the most frequently mentioned themes relate to the potential benefits of AI, specifically facilitating access to information and facilitating learning. In the theme of potential risks of AI, laziness and a decrease in learning motivation are the most emphasized codes. Some of the participants' opinions on this issue are, as follows:

- *AI can hurt education. It may cause children to become addicted* (S2).
- *AI can have a positive impact on education. People find it more engaging and comprehend it more rapidly* (S3).

Table 4. Perceptions of gifted students on the role of AI in education and training

Theme	Codes	Participants	N
Potential benefits of AI	Facilitating access to information and learning	S1, S4, S5, S7, S9, S11, S12, S13, S15, S16, S18, S19, S21, S23, S24	15
	Making education more fun	S3, S24	2
	Providing personalized education	S11, S13, S25	3
Potential risks of AI	Addiction and distraction	S2, S8	2
	Laziness and reduced motivation to learn	S6, S10, S12, S14, S17, S20, S21, S22	8

Table 5. Gifted students' views on the status of the school in an AI supported education

Theme	Codes	Participants	N
Continuation of schools	The role and value of teachers	S1, S15, S16	3
	Need for socialization and interaction	S5, S21, S25	3
	Continuity of education and the importance of traditional institutions	S2, S3, S6, S7, S9, S10, S11, S20, S25	9
	Need for control and regulation	S13	1
	Improvement of the education system	S19, S22	2
The redundancy of schools	Facilitating access to information and the role of AI in knowledge transfer	S4, S8, S12, S14, S17, S18, S23, S24	8
	The emergence of new professions and the changing world of work	S14	1
	The effective role of technology in education and innovative methods	S23, S24	2
	Specialization of education and individual learning	S12	1

- *AI's use has a positive impact on education. This is due to their ability to complete our homework* (S10).
- *AI's use harms education. When children use AI for their homework, education becomes meaningless. I also have some of my homework done there* (S14).
- *AI's use has a positive impact on education. This is due to the ease with which students can conduct research using tools like ChatGPT* (S19).
- *AI's use hurts education. Because students become lazy* (S20).
- *AI can have a positive or negative impact on education. It can make it easier for students to access and understand information, which is positive. It can make people lazy, which is negative* (S21).
- *AI's use has a positive impact on education. In education, we can take lessons from real teachers on many platforms, or we can take lessons from a face-to-face robot. People may forget or give the wrong information. Since a robot designed with AI cannot go beyond the software, it is certain to give the correct information. It is impossible to observe situations such as forgetting, mixing, or falling sick. Therefore, I expect good development in education* (S23).
- *AI's use has a positive impact on education. Education and training become more qualified, and lessons become more fun* (S24).
- *AI's use has a positive impact on education. If we can converse with an AI robot like ChatGPT, pose questions, and receive satisfactory responses, then the integration of AI into the education system can enhance education by offering resource suggestions for the questions posed, such as coaching* (S25).

Findings Regarding the Views of Gifted Students on the Status of the School in an AI-Supported Education

The fourth sub-problem of the research aimed to provide an answer to the question, "According to gifted students, how can the school provide an AI-supported education?" **Table 5** presents the codes and themes derived from the students' opinions.

Examining **Table 5**, it is stated that 18 codes, derived from gifted students' perspectives on the status of schools in AI-supported education, pertain to the continuation of schools, while 12 codes address the redundancy of schools. The themes of continuation of schools, continuity of education and the importance of traditional institutions, facilitating access to information and the role of ai in knowledge transfer are the most prominent codes. On the other hand, the role and value of teachers, and the need for socialization and interaction are among the codes mentioned. On the other hand, it is noteworthy that in the theme of school redundancy, the participants expressed a negative opinion about the future of schools by considering the ease of access to information and the role of AI in knowledge transfer. Under this heading, the participants expressed opinions on the effective role of technology in education and innovative methods, the emergence of new professions and the changing business world, the specialization of education and individual learning codes, and stated that schools would become unnecessary. Under this heading, some gifted students' opinions are, as follows:

- *There will still be a need for schools. If AI does everything, there will be no need for humans. For this, schools should remain* (S2).
- *There will be no need to go to school. We send our questions to AI to learn the majority of the information; there may be no need for school* (S4).

- *The need for school will continue. People will continue to require a space for social interaction and education* (S5).
- *There will be no need to go to school. After a while, people will learn everything through technology* (S12).
- *The need for school will continue. People need to be under constant control* (S13).
- *There will be no need to go to school. In an environment where some professions will disappear and new professions will emerge, there will be no need for school* (S14).
- *The need for school will continue. However, the system will change and move to a higher point* (S19).
- *There may be no need for school, but people may become asocial because of it. As a result, there is a need for education* (S 21).
- *There will be no need to go to school. Because education platforms will multiply, there will be no need for schools* (S22).
- *The need for school will continue. Education will always be necessary for human development. Even though AI development has the potential to bring about significant changes in our world, we need to create an environment that facilitates education. Receiving education from home can lead to the loss of social skills. As a result, there will be a need for education* (S 25).

DISCUSSION

As a result of the research conducted to determine the perceptions of gifted students about AI, the high number of students who emphasized the human similarity of AI among the participants draws attention. This emphasis suggests that some students perceive AI as a tool that embodies living characteristics. This finding aligns with the results of other studies. Saçan et al. (2022) found that children primarily equated AI to living beings. In addition, Demir and Güraksın (2022), in their metaphor study on secondary school students, revealed that the participants emphasized the human aspect of AI the most. These findings can be accepted as an indication that the students in the aforementioned studies are aware that AI has a feature that incorporates human-specific features (Başcıllar et al., 2022; Ekrem & Daşikan, 2021; Shan et al., 2020; Zhai & Zhai, 2022). However, the study found that gifted students perceived more potential threats from their perspectives on AI. The study revealed that gifted students expressed issues such as loss of control and laziness. The literature identifies this situation as robot anxiety. Studies have revealed that people experience some concerns and fears as a result of communication with humanoid robots (Erebak & Turgut, 2020; Nomura et al., 2006). In this context, it is estimated that after the development of AI and robots, there may be an increase in concerns that some jobs performed by humans will be performed by robots and that humans will be unemployed (Akkaya et al., 2021; Chai et al., 2020). However, the study found that gifted students also highlighted the potential for malicious AI use. The study by Demir and Güraksin (2022) also highlights this situation. This finding reveals that the intention behind people's use of AI is of great importance. However, the study found that among the gifted students, some also expressed the belief that humans control AI. While humans currently control AI, researchers continue to investigate its future status (Naudé, 2020). In this context, the human-AI relationship can be considered a subject that will be intensively examined in the future.

When the study analyzed gifted students' perceptions of the potential benefits and risks of AI in education, it found that students primarily saw AI as useful for information access and learning facilitation. Additionally, the study revealed that some students relied on AI to complete their homework, leading to accusations of laziness. The literature also discusses this situation extensively. While studies emphasize the features of AI in terms of access to information and facilitating learning (Aldosari, 2020; Aşık et al., 2023; Fahimirad & Kotamjani, 2018; Horák & Turková, 2023), they also reveal that it carries potential risks such as laziness, distraction, and a decrease in student motivation, especially ethical issues (Bayraktar et al., 2023; Blease et al., 2019; Seo et al., 2021).

Finally, the discussion turned to the school's future in AI-supported education. The context revealed that the students held a variety of opinions. Consequently, the codes derived from the students' opinions primarily pertain to the continued existence of schools in the future. However, the research revealed a significant number of individuals who believe that schools will become unnecessary. Among those who expressed the belief that schools will persist in the future, a higher proportion emphasized the continuity of education and the enduring significance of traditional institutions. On the other hand, the ease of access to information and the role of AI in knowledge transfer were determinative in the view that the school would become unnecessary. In this regard, Çetin and Aktaş (2021) stated that shortly, AI will show more presence in daily life by undertaking many tasks fulfilled by humans, but AI can't take responsibility as a teacher or school principal. Given the current conditions, integrating AI technologies into the education system would be the most effective approach. AI technologies have the potential to improve educational practices by providing personalized learning opportunities, real-time feedback, and innovative teaching methods. In addition, AI applications such as intelligent tutoring systems and virtual assistants can provide teachers with more effective and personalized education (Popenici & Kerr, 2017). In order to ensure this, it is imperative to educate stakeholders, including teachers, students, parents, and policy makers, about the advantages and possible drawbacks of AI in the educational realm (Rapti, 2023).

Upon analysis, it was concluded that gifted students perceive AI as having both beneficial and potentially risky aspects. The students emphasized the human-like characteristics of AI, consistent with findings from other studies. However, they also expressed concerns about potential threats such as loss of control, laziness, and malicious use. This underscores the significance of human oversight of AI and ethical considerations. Furthermore, some students expressed apprehensions about the potential dysfunction of schools in the future, despite the advantages of AI in providing access to information. To mitigate these concerns, it is imperative to educate students about the responsible use of AI in the context of education.

This research is restricted to a specific population and the use of particular instruments for data collection. To determine gifted students' perceptions of AI, studies can be conducted on different groups using qualitative and quantitative data. Furthermore, it is necessary to conduct studies to eliminate negative perceptions of gifted students and improve their ability to use AI. Comprehensive studies on this topic can provide theoretical and practical insights into issues related to AI for the general population of gifted students.

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Declaration of interest: The authors declare that they have no competing interests.

Availability of data and materials: All data generated or analyzed during this study are available for sharing when appropriate request is directed to corresponding author.

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APPENDIX A

Table A1. Examples from the codebook

Sub-problem	Main code name	Short description	Time of use	Time not to be used	Sample quote
1st sub-problem	AI similarity to human	Students likening AI to a human characteristic	It is used when they explain AI with a human and human characteristic.	When AI is likened to non-human items	"AI is like a human being. It can talk like humans, produce photographs, and do many other things."
2nd sub-problem	Becoming lazy	AI restricts people's movements and actions	It is used when it is stated that AI makes people lazy.	When we talk about the effects of AI other than laziness	"I see AI as a threat because it makes people lazy."
3rd sub-problem	Facilitating access to information and learning	AI facilitates access to information and learning	It is used when referring to AI's ability to facilitate access to information and learning.	In cases other than the ability of AI to facilitate access to information and learning	"The utilization of artificial intelligence has a beneficial influence on the field of education. Students can conduct research more conveniently by using platforms like ChatGPT."
4th sub-problem	Continuity of education and the importance of traditional institutions	Maintaining the continuity of the school despite the use of AI systems in education	It is used when it is stated that AI does not pose a threat to the existence of the school.	Where AI poses a threat to the school	"The demand for schools will persist indefinitely. Education is an indispensable requirement for the advancement of human growth. While the advancement of AI has the potential to cause significant transformations in our society, we must provide a conducive educational environment. Educating individuals at home could potentially impair their social aptitude. Consequently, schools will be necessary."