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Analysis of High School Students' Attitudes Towards Artificial Intelligence and Optimisation Directions

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Abstract: The present research was grounded in the principles of the National Strategy in the Field of Artificial Intelligence (AI) 2024-2027 and in the need identified by the Ministry of Education and Research to assess teachers' attitudes towards the implementation of AI solutions (Cononenco, 2025), complementing these national efforts by investigating the way students report. As a result, the general objective of the research was to investigate the attitude of high school students towards AI in relation to a series of socio-demographic data (such as age, gender and profile followed in high school) in order to understand their characteristics and outline directions for optimisation. The results obtained by applying the ATTARI-12 scale (Stein et al., 2024) on a group of 214 students from high schools in Bucharest, processed using IBM SPSS Statistics 23, showed that there are statistically significant correlations between the attitude towards AI (at a general level and by components - cognitive, affective and behavioural) and age, gender and the specialisation profile in high school and that, at the same time, 42% of students have an open attitude towards AI. A more detailed analysis of the results revealed that male students have a more open attitude towards AI compared to female students, but also that students following the technological profile have the most open attitude towards AI, followed by those from the science-oriented profiles (who manifest an open but cautious attitude) and those from the humanities-oriented profiles (who have an attitude of reluctance and distrust). At the same time, the data showed that the attitude towards AI does not vary statistically significantly depending on the age of the subjects. The objective of the research was achieved, but since the number of subjects was reduced and they came from students from only a few high schools in Bucharest, the research represents a pilot study and has, as a limitation associated with this format, the fact that its conclusions cannot be extrapolated to the entire student population in Romania. However, these findings contribute to the development of practical steps to optimise students' attitudes towards AI, avoiding extremes and respecting ethical principles.

Keywords: high school students; artificial intelligence; cognitive component; affective component; behavioural component; steps to optimise students' attitude.

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1. Theoretical Approaches

The specialised literature abounds in studies and research on the impact of artificial intelligence in various fields, such as technical, health, economic, administrative, education, etc. – a fact that proves the multiple facets of its use.

Artificial intelligence is defined, at a general level, as a sub-discipline of computer science that aims to produce programmes that simulate human intelligence (APA, 2018) and represents the ability of a system to identify, interpret, make inferences and learn from data to achieve predetermined organisational and societal objectives (Mikalef & Gupta, 2021; Papagiannidis et al., 2025). Modern artificial intelligence systems have evolved to demonstrate problem-solving capabilities for tasks such as visual perception, speech recognition, planning, decision-making and translation between languages; applications based on artificial intelligence have become an integral part of human life, demonstrating that technology is becoming increasingly important (Ahmad et al., 2025).

Advances in artificial intelligence have led to the emergence of a growing number of educational applications based on it (European Parliament, 2025; Feyzulla, 2025; Peretyaha & Sirenko, 2025; Rodriguez-Hernandez, 2021) that can be used by students.

Course Hero is a platform dedicated to improving learning and academic efficiency by: organising relevant information about study materials, defining key concepts, and providing practical examples and instant answers to questions. The platform provides help with homework through personalised assistance and offers detailed explanations for a wide range of study materials (Ali, 2025; McFarland, 2025).

The Gradescope tool allows for the administration of assessments, providing feedback on how student performance is evolving. The application is based on a combination of machine learning and artificial intelligence to facilitate student grading and improve its accuracy (Ilahi, 2025; Shashikala, 2025; Barango-Tariah, H., 2025).

Carnegie Learning, an innovative provider of educational technology and curriculum solutions, relies on artificial intelligence and machine learning in its learning platforms for high school and college students (Ahmad et al., 2025). These platforms offer many unique solutions for the areas of mathematics, literacy, or world language learning (Tariq, 2025). The provider has won several educational awards, including “Best AI/Machine Learning Application” at the Tech Edvocate Awards (McFarland, 2025). It also offers Fast ForWord, which is reading and language software that helps students develop their cognitive skills (Alabadan, 2025).

Knowji is an audio-visual vocabulary application designed to help students learn foreign languages faster and track each student's progress, being able to predict when users are at risk of forgetting certain words (Gomes, 2025).

Cognii is an artificial intelligence platform for 12th grade and higher education students. It provides a virtual learning assistant that relies on conversational technology to help students formulate open-ended responses and improve their critical thinking skills. The platform provides individual guidance and real-time feedback, personalised for each student (Peretyaha & Sirenko, 2025; McFarland, 2025). One of the most well-known and widely used educational applications is Google Classroom, built to be used by both students and teachers, especially to help them save time, teach lessons more easily, and facilitate communication and collaboration with students both during and outside class (Siregar et al., 2025). It is estimated to be used by 20 million students and teachers in 190 countries (Google Classroom, 2025).

The use of artificial intelligence in schools involves numerous advantages in terms of individualising education according to the needs and interests of students, ensuring fast and interactive learning, real-time feedback, better predictive analysis and non-stop assistance for learners and teachers. As a result, it improves creativity, allows a personalised and efficient pace of study and, above all, special equipment based on artificial intelligence components can be used for students with special educational needs, supporting those with students with cognitive, sensory, physical or communication difficulties and facilitating their integration into the educational

environment (Varsik & Vosberg, 2024). Another advantage of using artificial intelligence in education refers to the fact that it can support teachers in carrying out lessons and assessments, providing detailed analysis of performance and suggesting methods for improving teaching (Peretyaha & Sirenko, 2025).

At the same time, the use of artificial intelligence can facilitate access to advanced educational resources (such as interactive simulations, e-learning platforms and personalised materials) and the development of students' skills regarding the use of technology in the everyday environment, as well as the accumulation of information to support a possible decision to choose a career in the technological field (Tudor, 2024). By integrating artificial intelligence into education, a more efficient, personalised and accessible learning environment can be created, which supports both students and teachers in the educational process. This integration not only helps students learn the content better but also contributes to the development of essential skills for the future – among these are critical thinking, problem-solving, and digital skills, which are becoming increasingly important in the context of the modern world. Artificial intelligence allows students to familiarise themselves with emerging technologies, thus preparing them for the challenges of future education and the labour market (Iordache, 2024).

Beyond the countless advantages of using artificial intelligence in schools, using accurate student data on current performance levels in various tasks and analysing gaps to develop new personalised learning models (Verma, 2025) may pose a risk in terms of ensuring data confidentiality. The advantages brought by the use of artificial intelligence are accompanied by risks perceived by researchers and institutions, who consider issues related to the ethics of using artificial intelligence by storing student data (Bologa, 2025). One solution would be for schools to analyse whether, in order to create personalised student learning tools, less information could be collected to achieve the same result, in accordance with the General Data Protection Regulation (GDPR) (Pop, 2024).

Along the same lines, the Council of the European Union formally adopted, in 2024, the Law on Artificial Intelligence – the first comprehensive set of rules for safe AI systems that respect fundamental human rights. The document explicitly recognises the benefits that artificial intelligence systems can have in educational processes; however, some of the facilities in education are classified as having a high risk, examples of which are admission, grading, proctoring and academic fraud detection systems (Bologa, 2025).

Cases in which students write papers, essays, and practical projects with the help of artificial intelligence are common, but teachers can detect fraudulent computer activities of students with the help of tools also based on artificial intelligence (Istrate, 2025).

At the international level, the attitude towards artificial intelligence is contradictory; there are schools and universities that have categorically banned its use and others that invite teachers to explore, together with pupils and students, the potential of this new tool for intellectual work activities, productivity, and growth of human creativity (Istrate, 2025).

In Romania, the ethical use of artificial intelligence in the field of education requires involvement at the level of students, teachers, school management and at the governmental level (Pop, 2024).

In order to implement an artificial intelligence system that functions optimally, it is necessary to establish policies and procedures at the school level, which include measures for the public procurement of reliable artificial intelligence systems, their human supervision, ensuring that the data stored about students' situations are relevant for the intended purpose (of individualising learning), adequate staff training, monitoring the functioning of the artificial intelligence system, and, if necessary, taking corrective measures (Iordache, 2024; Pop, 2024; Istrate, 2025).

At the government level, a series of national strategies have been adopted to effectively manage the implementation of artificial intelligence in digital education, taking into account the ethical framework for the use of artificial intelligence. Among these are the National Strategy in the Field of Artificial Intelligence 2024–2027 (through which the Ministry of Research, Innovation and

Digitalisation (2024) supports the development and implementation of artificial intelligence in Romania at all educational levels) and the “Educated Romania” Project, which provides the necessary infrastructure to facilitate the application of artificial intelligence in schools (Ministry of Education, 2024).

The idea of the present research, and implicitly its objective, originated from a thorough theoretical analysis, as well as from the practical need identified by the Ministry of Education and materialised through a European study conducted by the European Federation of Employers in Education, which evaluates the degree of openness and preparedness of educational institutions for the implementation of artificial intelligence solutions. It is addressed to teachers and directors of pre-university educational units, who have the opportunity to complete an anonymous questionnaire, available in English via an online link (Cononenco, 2025). Thus, the present research, through its objectives, complements the analysis of teachers' attitudes towards the use of artificial intelligence in education by assessing students' attitudes.

2. Research

2.1. Objectives

The general objective of the research is to investigate the attitude of high school students towards artificial intelligence (from the perspective of three components: cognitive, affective and behavioural), in relation to a series of socio-demographic data such as: age, gender and profile followed in high school - in order to understand the characteristics of the attitude and to identify the necessary directions for its optimisation.

2.2. Hypotheses

1. It is assumed that the attitude of high school students towards artificial intelligence correlates statistically significantly with a series of socio-demographic data such as gender, age, and the profile followed in high school.
2. It is anticipated that the attitude of high school students towards artificial intelligence varies statistically significantly depending on the age of the students.
3. If the attitude towards artificial intelligence involves statistically significant inter-individual differences, it will also differ depending on the gender of the students.
4. It is assumed that the attitude of high school students towards artificial intelligence varies statistically significantly according to the academic profile they follow in high school.

2.3. Research Subjects

The present research was conducted on 214 students from high schools in Bucharest with the following profiles: science-oriented (mathematics-computer science and natural sciences), humanities-oriented (philology and social sciences) and technological (electrical, mechanical and metrology). They were aged between 15 and 18 years ($M=16.38$, $SD=5.14$), in grades IX-XII, of which 99 were male and 115 were female. The sample was a convenience sample, using available subjects, and their only selection criterion was that they were high school students. The subjects participated voluntarily in the research, being informed about its theme and about the fact that the results would be anonymous and used only for research purposes. They completed a questionnaire distributed via a link to the Google Forms application and were invited to share it with other students, with the data collection process lasting one month.

2.4. Methods

The general objective of the research was investigated using the questionnaire-based survey method, in an online version.

The attitude towards artificial intelligence was measured using the ATTARI-12 scale, built by J. P. Stein, T. Messingschlager, T. Gnambs, F. Hutmacher & M. Appel (2024); the authors started building the scale from the concepts of A. Schepman & P. Rodway, (2020), and M. Joyce & J. Kirakowski (2015). The 12 items of the scale represent the three facets of attitude (cognitive,

affective and behavioural), the scale containing an equal number of items for each and reflecting equally the positive and negative attitude towards AI. Participants' responses were scored on a five-point Likert scale (1=totally disagree, 5=totally agree), with results reported both at a general level and by dimension.

ATTARI-12 was applied and validated on 600 participants from the USA, aged between 19 and 72 years. Following the factor analysis, it was found that the scale, at a general level, explains 79% of the attitude towards AI, having coefficients that show that it is a unidimensional scale, having very good internal consistency (Cronbach's $\alpha=0.93$) and also having convergent validity through the statistically significant positive correlation with the scale of attitudes towards specific AI applications (Gnambs & Appel, 2019) ($r=0.60$), which proves the psychometric characteristics of the ATTARI-12 scale (Maier et al., 2025).

For the present research, the internal consistency of the scale items was analysed by applying it to high school students in Bucharest, and the Cronbach's $\alpha = 0.73$ coefficient proved the reliability of the scale, allowing valid conclusions to be drawn.

2.5. Results

IBM SPSS Statistics v.23 was used to analyse and process the data for this research.

The first hypothesis of the research, which assumes that the attitude of high school students in Bucharest towards artificial intelligence correlates statistically significantly with a series of their socio-demographic data, was tested using the procedure for analysing the significance of the Pearson correlation coefficient (results presented in Table 1).

The attitude of high school students towards artificial intelligence correlated positively and strongly statistically significant ($p<0.01$) with gender ($r=0.57$), age ($r=0.58$) and with the profile followed in high school ($r=0.73$), which shows a medium and large association effect, according to Cohen's criteria (Popa, 2010), between variables ($0.32<r^2<0.53$). The components of students' attitudes towards AI (cognitive, affective, and behavioural) also correlated positively and strongly ($p < 0.05$) with gender, age, and the profile followed in high school, with correlation coefficients ranging from $r = 0.38$ to $r = 0.67$ and corresponding effect sizes ($r^2 = 0.14-0.44$), indicating medium to large associations between variables, according to Cohen (ibid.). At the same time, it is noted that there are statistically significant correlations ($p<0.05$) between students' attitudes towards artificial intelligence and its components, but these were not analysed as they do not address the objective of this research.

Table 1. Correlations between high school students' attitudes towards AI and their socio-demographic characteristics

Research variables	CC	AC	BC	G	A	PFHS
Attitude towards AI	0.87**	0.74**	0.81**	0.57**	0.58**	0.73**
Attitude towards AI – the cognitive component		0.81**	0.78**	0.61**	0.59**	0.51**
Attitude towards AI – the affective component			0.76**	0.41*	0.46**	0.38*
Attitude towards AI – the behavioural component				0.38*	0.62**	0.67**
Gender					0.12	0.17
Age						0.14
Profile followed in high school						

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Legend: Attitude towards AI – the cognitive component (CC); Attitude towards AI – affective component (AC); Attitude towards AI – the behavioural component (BC); Gender (G); Age (A); Profile followed in high school (PFHS).

Since the statistical processing of the results based on the Pearson correlation coefficient shows only association between the investigated variables, and the percentage data showed overall, 42% of students in Bucharest have an open attitude towards AI, in order to achieve a deeper approach, the analysis of the differences in students' attitudes towards artificial intelligence depending on socio-demographic variables was resorted to, aspects that will be addressed in the following hypotheses.

The second hypothesis, which predicted that the attitude of high school students towards artificial intelligence varies statistically significantly depending on age, was investigated using a one-way ANOVA statistical procedure - univariate analysis of variance (the results are presented in table 2).

The results showed that 15-year-old students had the lowest scores on the attitude towards artificial intelligence ($M=35.84$, $SD=9.21$), reflecting a reticent and distrustful attitude. They were followed by 16-year-olds ($M=36.81$, $SD=9.44$), then 17-year-olds ($M=37.28$, $SD=10.25$), revealing a cautious attitude, with the highest score was obtained by 18-year-olds ($M=38.16$, $SD=11.03$), having a more open attitude towards AI.

The differences identified between the four categories of students are not statistically significant. The F-test yielded a result of 14.08 ($df=3$) for a significance threshold of $p=0.07$, and the Levene test value ($F=5.21$, $p=0.04$) shows the lack of homogeneity of variance; as a result, reporting was done taking into account the post-hoc Tamhane values ($p=0.07$).

Table 2. Variation in high school students' attitudes towards AI by age

Age	Attitude towards AI							
	N	M	SD	Levene	p	df	F	p
15	45	35.84	9.21	5.21	0.04	214 Between groups = 3 In group = 211	14.08	0.07
16	58	36.81	9.44					
17	44	37.28	10.25					
18	67	38.16	11.03					

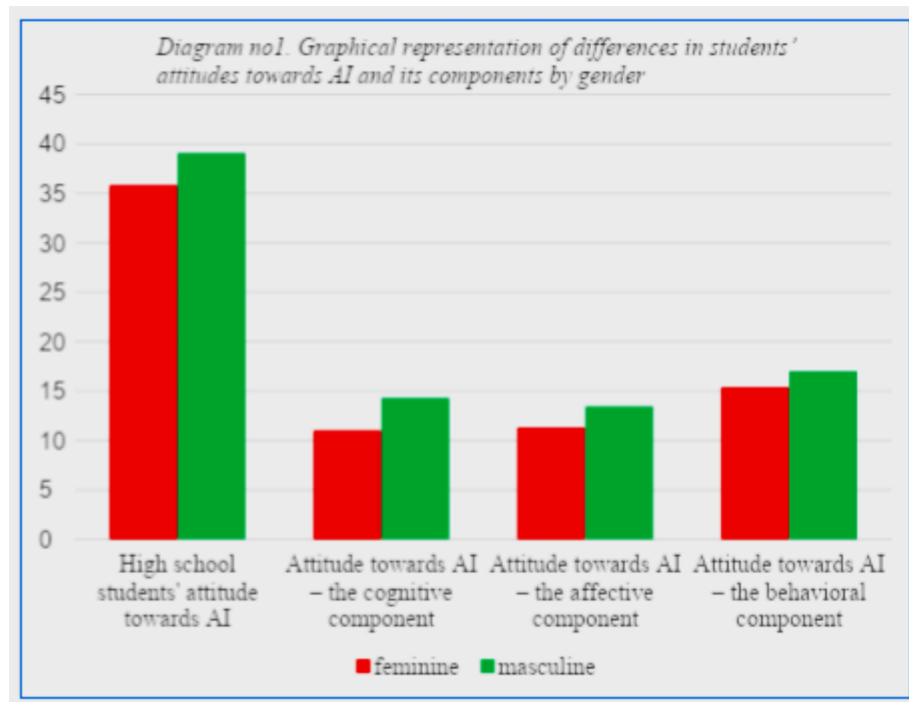
The data analysis showed that students aged between 15 and 18 exhibited differences in their attitudes towards AI, but these were not statistically significant and only indicated a trend of progressive openness towards AI with increasing age (the lowest score being for 15-year-old students and the highest for 18-year-olds). It is likely that, given the increase in the number of participants, the results will become statistically significant.

The third hypothesis of the research –namely, that if the attitude towards artificial intelligence involves statistically significant inter-individual differences, it will also differ depending on the gender of the students – was using an independent samples *t*-test (data presented in Tables 3 and 4 and Diagram 1)

The results showed statistically significant differences $t(212) = 3.44$, $p = .001$, between the averages obtained by students in their attitude towards AI (as a global score) according to gender and also that male students have a more open attitude towards AI ($M=39.11$; $SD=10.29$) than female students ($M=35.84$; $SD=9.18$).

Table 3. Descriptive data on differences in students' attitudes towards AI and its components by gender

	Gender	N	M	SD
High school students' attitude towards AI	feminine	115	35.84	9.18
	masculine	99	39.11	10.29
Attitude towards AI – the cognitive component	feminine	115	11.08	2.14
	masculine	99	14.31	3.52
Attitude towards AI – the affective component	feminine	115	11.33	2.58
	masculine	99	13.47	2.64
Attitude towards AI – the behavioral component	feminine	115	15.39	3.22
	masculine	99	17.02	3.87



Significant differences were also found between genders for the components of the attitude towards AI, as follows: in the cognitive component, $t(212) = 2.96$, $p = 0.05$, male students scored higher ($M = 14.31$, $SD = 3.52$) than female students ($M = 11.08$, $SD = 2.14$); in the affective component, $t(212) = 1.49$, $p = 0.007$, male students again obtained higher scores ($M = 13.47$, $SD = 2.64$) than female students ($M = 11.33$, $SD = 2.58$); and in the behavioural component, $t(212) = 2.78$, $p = .04$, the same pattern was observed, with male students ($M = 17.02$, $SD = 3.87$) scoring higher than female students ($M = 15.39$, $SD = 3.22$).

The analysis of mean differences, assuming homogeneity of variance (due to the Levene test values, $0.37 < F < 0.44$, $p > 0.05$), showed that all the differences between the means of the two categories were statistically significant ($p < 0.005$), the results being presented in Table 4.

Table 4. The significance of the difference between the averages obtained by the subjects, depending on gender, regarding the attitude towards AI and its components

	F	p	t	df	p
High school students' attitude towards AI	0.37	0.52	3.44	212	0.01
Attitude towards AI – the cognitive component	0.44	0.53	2.96	212	0.05
Attitude towards AI – the affective component	0.41	0.18	1.49	212	0.007
Attitude towards AI – the behavioral component	0.39	0.25	2.78	212	0.04

The results obtained in this research align with the concepts found in numerous specialised works, according to which male subjects have more positive attitudes and more advanced AI skills than female subjects (Beig and Qasim, 2023; Russo et al., 2025; Møgelvang et al., 2024); however, there are also studies that have not identified significant differences by gender (Le Minh, 2025).

Regarding this research, the novelty lies in the expansion of studies on the perception and integration of AI in activity, by gender, at the level of high school students and reflects their attitude towards AI and its components.

The fourth hypothesis of the research – which assumes that the attitude of high-school students towards artificial intelligence varies statistically significantly depending on the profile followed by them in high school – was analysed using a one-way ANOVA statistical procedure (unifactorial analysis of variance) (data presented in table no. 5 and figure no. 1).

The data obtained showed that the highest score of students in the attitude towards AI (practically, the most open attitude) were recorded among students following a technological profile in high school ($M=38.16$, $SD=11.23$), followed by those following a real profile ($M=35.72$, $SD=10.06$), while the lowest scores were obtained by students following a human profile ($M=31.45$, $SD= 9.17$).

Levene's test ($F = 18.75$, $p = .05$) indicated a lack of homogeneity of variances; consequently, the post-hoc Tamhane procedure was applied ($p = .05$), showing that the differences identified between the three profile categories were statistically significant, since the ANOVA yielded $F(2, 211) = 13.48$, $p = .05$.

Table 5. Variation in high-school students' attitudes towards AI depending on the profile followed in high school

The profile followed in high school	High school students' attitude towards AI							
	N	M	SD	Levene	p	df	F	p
Technological	62	38.16	11.23	18.75	0.05	214	13.48	0.05
Real	74	35.72	10.06			Between groups = 2		
Human	78	31.45	9.17			In group = 212		

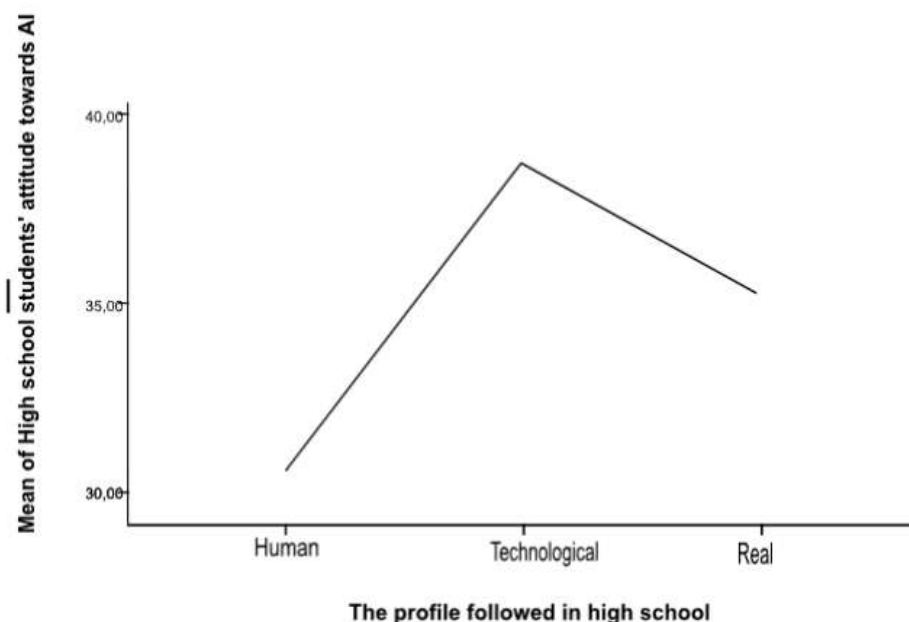


Figure 1. Graphical representation of the averages obtained by the subjects (students delimited by profile categories following high school) on the attitude towards AI

The results of this research confirm that the association between the attitude towards AI and the profile followed, as found in studies on students and faculty profiles, namely between the open attitude towards AI and the technological profile of the faculty (Gherheș, 2018), but also the association between students attending faculties with a real profile and the attitude characterised by an average openness, tending to perceive AI as a useful tool in their education, without major reluctance (Bochniarz et al., 2022; Karampelas, 2024). The association between the attitude of distrust or reluctance towards AI and the humanistic profile of the faculty followed by students who, although recognising the benefits of AI, manifest high levels of distrust related to the ethics and applicability of the use of AI (Gherheș, 2018; Slavov et al., 2023), is also maintained.

2.6. Conclusions

The present research started from a series of concepts from the international specialised literature on investigating the attitude of teachers and students towards AI (Varsik & Vosberg, 2024; Feyzulla, 2025; Peretyaha & Sirenko, 2025). The research also started from the principles promoted

by the National Strategy in the Field of Artificial Intelligence 2024–2027 and from the practical necessity, identified by the Ministry of Education and Research, which evaluates the degree of openness and preparation of educational units in the implementation of artificial intelligence solutions (Cononenco, 2025), completing these national analyses by investigating the attitude of students.

Therefore, the objective of this research aimed to investigate the attitude of high school students in Bucharest towards artificial intelligence (from the perspective of three components - cognitive, affective and behavioural), in relation to a series of socio-demographic data such as gender, age and profile followed in high school, with the aim of knowing the characteristics of the attitude and identifying the necessary directions for its optimisation.

The interpretation of the results revealed that the students displaying the most open attitude towards artificial intelligence were male and attended high-schools with technological or real profiles, whereas female students following a humanistic profile exhibited a more sceptical attitude towards AI. The results obtained contributed to the confirmation at the national level of the conclusions existing in other international studies that found associations between the male gender and open attitude towards AI (Beig & Qasim, 2023; Russo et al., 2025), although it should be noted that there are also studies that did not identify significant differences according to gender (Le Minh, 2025). At the same time, the results of this research show that the association between the profile followed and the attitude towards AI is also maintained among high school students, not only among college students - namely the open attitude of high school students following the technological profile (such as that of students as shown -Gherheș, 2018), a medium-open/cautious attitude among those with a real profile (Bochniarz et al., 2022; Karampelas, 2024) and an attitude of distrust among those with a human profile (Gherheș, 2018; Slavov et al., 2023).

The results regarding the variation of attitude towards AI by age are not statistically significant, they can at most represent trends that can be investigated in future studies; however, a direct association was noted between advancing age (from 15 to 18 years) and the progressive increase in students' openness towards AI.

In Romania, according to Microsoft studies (2025), more than two million teachers, students and parents use educational solutions based on artificial intelligence – a result which, compared to national demographic data, represents approximately 27% of their total (Edupedu, 2024; Institutul Național de Statistică, 2025). However, it should be emphasised that these data refer to the total percentage of the mentioned users, without providing the exact data on the percentage of students using artificial intelligence.

The present research brings, as a novelty, the investigation of students' attitude towards AI, expressed also as a percentage. Thus, it was found that 42% of the 214 high-school students in Bucharest who participated in the research indicated an open attitude towards AI. At the same time, the research completes the international picture regarding the percentage of students who manifest an open attitude towards AI.

International studies on the analysis of attitudes towards artificial intelligence show that 54% of students in six European countries (Austria, Germany, France, Spain, Italy and the United Kingdom) want to learn with the help of artificial intelligence (GoStudent, 2024). A global study from 2024 found that 86% of students use artificial intelligence in their school activities, (Campus Technology, 2024), most of which are from the United Kingdom – 92% (Freeman, 2025).

While European students show significant interest in integrating artificial intelligence into education, Romanian students are currently in a phase of trial and error, accommodation and continuous development of user competencies.

Based on the analysis of concepts in the specialised literature (Holmes et al., 2019; Touretzky et al., 2019; UNESCO, 2021; European Commission, 2022; Ministry of Education, 2024), a series of steps can be proposed for teachers to optimise students' attitudes towards artificial intelligence, focused on:

1. Understanding the context of artificial intelligence and correctly informing students and initiating open discussions about what artificial intelligence is, how it works and where it is already present in their lives; identifying dominant attitudes (enthusiasm, fear, scepticism, indifference) and combating myths about artificial intelligence (“it knows everything”, “it will replace us”, etc.).

2. Integrating artificial intelligence in a balanced way into educational activities, as a complementary tool and not as a substitute for tasks and their resolution.

3. Building a space for dialogue, ethical reflection, and responsibility in the use of AI by encouraging students: (1) to formulate answers to questions such as “Is it right to use artificial intelligence for homework?”; (2) to acknowledge the use of content generated with artificial intelligence and to mention and cite it appropriately; (3) to discuss the moral implications of using artificial intelligence – privacy, surveillance, and plagiarism.

4. Constantly assess students' attitudes about how they perceive and use artificial intelligence and develop critical thinking through discussions such as "What are the risks of relying too much on artificial intelligence?"

5. The teacher should be a model of rational use of artificial intelligence as an assistant in the teaching process, not as an absolute solution.

Through such steps, teachers will be able to participate in the formation of an informed, balanced and ethical attitude of students towards artificial intelligence, which will focus on developing students' critical thinking in its use, promoting responsible use and awareness of the impact of artificial intelligence in everyday life and education.

Effective management of students' attitudes towards artificial intelligence starts with understanding their current attitude, then continuing with the formation of attitudes based on complete and ethical information, to be in balance with technology. In this context, teachers have an essential role in developing this attitude through information, modelling by example, critical discussions and correct educational integration of artificial intelligence.

Beyond the countless advantages of using artificial intelligence in schools, the main disadvantages must also be taken into account, centred on ethical and confidentiality issues - especially regarding the collection and management of students' personal data (Bologa, 2025). Also, another disadvantage concerns the risk of developing dependence on technology (Rodriguez-Hernandez, 2021; Tudor, 2024; Ilahi, 2025) for solving problems, an aspect that would drastically reduce the human interaction and socialisation necessary for the psychological health of students and future adults.

In conclusion, the introduction of artificial intelligence in schools can bring significant benefits, however, it must be done carefully, considering issues such as ethical considerations, data privacy, accessibility, and the balance between technology and human interaction. It is important to find a balance between the use of technology and maintaining a healthy and inclusive educational environment (Tudor, 2024).

Although the general objective of the research has been achieved, a series of directions for future research are proposed, to increase the scientific quality of the analysis of high-school students' attitudes towards AI and the validity of extrapolating the conclusions to students in Romania, not just Bucharest. For example, it is useful to expand the number of subjects and fields in Romania from which high school students come, as well as to consider other variables that could be moderating factors, such as: character traits (Flores et al., 2024; Reig-Aleixandre et al., 2024;), openness (Glaveanu et al., 2023), tolerance to uncertainty (Ungureanu et al., 2023, 2025), psychological resilience (Prisăcaru et al., 2024, Prisăcaru, 2025), general attitude towards technology (Rodriguez-Hernandez et al., 2021), attitude of the social group, of parents (Dueñas et al., 2023), etc. - based on a series of studies that have shown that students' attitude towards various aspects of life is also mediated by these aspects.

The present research, through its assumed objective, complements with a new direction – that of analysing students' attitudes towards artificial intelligence and its implementation in

education – the pilot project for the use of artificial intelligence in schools launched by the Ministry of Education in 2025 to optimise teachers' activities and improve the learning process for students.

The ultimate goal of this research was that, beyond knowing students' attitudes towards artificial intelligence, to identify effective steps that can be taken by teachers to shape students' attitudes, so that they use artificial intelligence ethically for development and are prepared for the technological challenges of the future.

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