Kosovo Educational Research Journal

Volume 6, Issue 1, 108-121.
ISSN: 2710-0871
https://kerjournal.com/

The Relationship Between Students' Use of Generative Artificial Intelligence Tools and Their Academic Success[1]

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Abstract: Many productive artificial intelligence tools have been released in recent years, and new tools continue to be developed. These tools have accelerated and facilitated people's access to information. At the same time, people can quickly create jobs at the level they want, according to their commands. Employees in almost all sectors have started to benefit from these tools. According to the research in the literature, students are the audience that adapts the fastest to technological changes. Considering this situation, university students can use productive artificial intelligence tools for various purposes, such as doing homework, preparing presentations, and as a resource while studying.

The main purpose of this research is to determine whether there is a significant relationship between the frequency and habit of using these tools and the academic success of students using productive artificial intelligence tools.

This research was conducted in the academic year 2024-2025 among the active students of Yalova University, Faculties of Engineering, Fine Arts and Yalova Vocational School. The data were collected using the uncontrolled quota sampling method, missing/conflicting data were eliminated and as a result 178 survey data were analysed. This study is a "basic" type according to Karasar's classification of research types and levels and is a quantitative research that includes the level of relational description (determination of details).

The study found that female students used generative AI tools to support academic processes more than male students, and that female students used 'visual creation or editing' tools such as Canva and Capcut more than male students. It was found that as students got older, they used 'analysis processes, voice/audio production, textual' AI tools significantly more. It was found that students with a GPA between 3.50-4.0 used generative AI tools of the type 'Visual Creation/Creation' significantly more than all groups with lower GPAs. It was found that students with a GPA between 2-2.49 used Generative Artificial Intelligence tools of the type "Translation" significantly more than other groups. It was found that students with a GPA between 2-3.49 used generative AI tools more often than students with a GPA of 3.5 and above. It was found that students with a GPA between 2-2.99 found generative AI tools easier to use than students with a GPA of 3.5 and above. Students with a GPA of less than 2 were found to use generative AI tools significantly more for "decision making" than students with a GPA of 2-2.99.

Keywords: Generative artificial intelligence tools, Computer literacy, Academic success.

To cite this article: Aktaş, T. **(2025). The Relationship Between Students' Use of Generative Artificial Intelligence Tools and Their Academic Success.** Kosovo Educational Research Journal, 6(1), 108-121.

[1] This article is based on a paper that was presented at the BRIDGE 2024 conference.

https://kerjournal.com ISSN: 2710-0871

INTRODUCTION

The rapid development of technology, particularly in the field of computers and communications, has brought us into the "**information age**". In this era, success is directly related to the ability to access information, use the right resources, and effectively analyse and apply the data obtaine(Uça Güneş, 2016).

Many recent academic studies have shown that technological advances have brought about a profound and multifaceted transformation of human life. Studies emphasise that each technological innovation has a radical impact on the way people live, the way they work, the structures of work and their daily routines((Bayburt & Eğin, 2021), (Stern & Goverover, 2018), (Cloete, 2017), (Uça Güneş, 2016)). The emphasis is on technology as both a major factor in social change and as the end product of social change(Beck, 2000).

It is not expected that every person will be positively or negatively affected by technology to the same extent. A person's individual characteristics will determine the extent and direction of the effect. However, we cannot think of a person in isolation from the society in which he or she lives. It is argued that the structure of society is at least as important as the individual characteristics of a person. The social acceptance of technologies, the social values and structures of communities affect this speed. In other words, the way a technology is adopted may differ according to cultural, religious and social contexts, leading to different applications and outcomes between countries. This situation shows that the impact of technology is not determined by inventors or "universal laws" alone. This does not mean, however, that new inventions are completely neutral or merely a passive product of existing social structures. On the contrary, the concept of "co-production" comes to the fore in understanding how technology transforms the world: The dynamic interaction between the potential of technology and the way society perceives, adapts and reinterprets it determines the outcome (Facer, 2011).

Literature reviews have shown that advances in computing technologies have led to significant positive and negative developments for people, society and organisations. Focusing on the positive developments, they are particularly evident in the following areas((Brown vd.,2012), (Mathis, Jackson ve Valentine, 2015), (Robbins, DeCenzo ve Coulter, 2015)):

- Instant access to information
- Speed-up of data processing and generation of information
- Complex analysis capability
- Ability for rapid reporting and interpretation of results

In addition, research in the literature shows that technology initiates a process of "**creative destruction**" by replacing traditional practices, established procedures and established products/services with more innovative and disruptive alternatives (Acemoğlu & Robinson, 2015).

In addition, research in the literature shows that technology triggers a process of "**creative change**". Undoubtedly, the process of technology adoption by society can be systematically explained by technology acceptance models. A review of the studies in the literature shows that individuals or organisations that adapt quickly to newly developing technologies show more efficient and effective performance in their business and academic lives. This situation indicates that technology adoption is not only related to individual usage habits, but also to its indirect effects on productivity and success" by replacing traditional practices, established procedures and established products/services with more innovative and disruptive alternatives((Kasap & Say, 2023) (Efiloğlu Kurt, 2015), (Özkan & Yeşilırmak, 2020), (Turan & Çolakoğlu, 2008), (Özcan & Günlük, 2021), (Cheung & Vogel, 2013), (Bozkurt, 2020)).

Countries are designing their education systems to produce skilled people who can raise their level of development and have a greater say in the global marketplace. To this end, they are developing a range of policies to improve the quality of education. New education models aim to produce students who use information and communication technologies effectively and efficiently. They are aware that this is the only way to have a workforce that can stand out in global competition. To this end, a number of technological investments have been made in the education sector in Turkey. As part of the Fatih project, smart boards have been introduced in classrooms, internet access has been provided to all schools,

technical equipment such as tablets has been made available to teachers, many local governments have given computers/tablets to students at certain levels, and online resources have been made available to students(Int1, Int2, Int3). How accurate this vision is can be understood by looking at the studies in the educational literature. The common finding of many studies conducted on students in recent years is that students who can use digital tools effectively are more successful in their classes than their peers who do not use these technologies or use them to a limited extent((Gerçek, Köseoğlu, Yılmaz, & Soran, 2006)), (Teyfur, 2010), (Kamacı & Durukan, 2012), (Özbek & Ak, 2020), (Çilengir & İzmirli, 2023) (Can, Sülün, Böçkün, & Duman, 2023)). The methods and results of some studies are summarised in the table below.

Table 1: Comparative Research Findings on Student Achievement and Technology Use

Researcher(s)	Method	Sample	Main results
Kusumo et al. (2024)	Relational description (detail detection)	200	It was found that the grades of those using the technology had a raising effect of 0.45 degrees for each unit..
Simoes et al. (2022)	Relational description (detail detection)	286	It has been concluded that computer usage skills increase academic success.
Veselkova (2024)	Relational description (detail detection) Period of 4 years	5008	Students using computers were found to be moderately more successful than other sututdents in reading lessons.
Başkurt (2016)	Relational description (detail detection)	345	It has been found that the GPAs of students who use information technologies for information gathering, research, testing and communication are significantly higher than those who use them for games and entertainment..

Developments in technology have brought the concept of artificial intelligence into our lives in recent years. In particular, the introduction of natural language-based generative artificial intelligence tools at the service of end users has led societies, organisations and individuals to focus on the concept of artificial intelligence. Difficult tasks can be completed more easily and in less time thanks to these tools. Productive artificial intelligence tools have begun to be used in many fields, from design to literature, from health to automotive, from coding to translation, from tourism to finance(Aktaş, 2024). Many studies have found that the younger generation adapts to technological change more easily than the middle and older generations. The main audience of the younger generation that researches and produces information is university students. They can learn new information, prepare content and present assignments using artificial intelligence tools((Çakmak & Demirkol, 2017), (Akata, Dikdak, & Kırbaş, 2015)). A review of the literature on student success using artificial intelligence (AI) reveals strikingly positive and negative results.

Table 2: Summary of Impact of AI Tools on Academic Success

Researcher(s)	Method	Sample	Positive Result	Negative Result
Bastani et al. (2024)	Relational description (detail detection)	1000	Improvement in academic performance in the short term	In the long run, the students' ability to learn independently was negatively affected.
Wecks et al. (2024)	Relational description (detail detection)	572	Useful for general learning and participation in the classroom	Students with high learning potential who use artificial intelligence tools are less successful in exams than other students.
Ju (2023)	Relational description (detail detection)	32	The quality of summarisation operations has improved.	Writing success using artificial intelligence tools fell by 25.1% and reading success fell by 12%.
Chan ve Hu (2023)	Relational description (detail detection)	399	Effective use of personalised learning support, writing, brainstorming and research analysis	Increased reliability of information and ethical concerns

A review of the literature shows that there are still few studies that show the effects of generative AI (GAI) tools on student success. More research should be conducted to contribute to the literature and to find out what the positive and negative effects are.

Aim:

https://kerjournal.com ISSN: 2710-0871

The aim of this research is to determine whether the use, types and purposes of GAI tools by Yalova University students vary significantly according to their general achievement, average grades and demographic variables.

Population and Sample:

The research universe consists of students from the Engineering and Fine Arts faculties of Yalova Vocational School, who are active during the 2024–25 academic year at Yalova University. A random sample selection method was used to select approximately 200 students. Data was collected from this group using a survey form developed by the researcher. Students who provided contradictory answers and those who completed the form incompletely, which would affect the research, were excluded. Ultimately, the data from 176 students was analysed.

Method:

According to Karasar's classification of research types and levels, this study is a 'basic' type and is quantitative research that includes the level of relational description (detail detection) (Karasar, 2018).

Conclusions:

The first part of the findings presents demographic information, including details such as the age, gender and level of education of the sample group.

Table 3: Demographic Information

	Groups	*f*	%	$\%_{stc}$
Gender	Male (M)	72	40,9	40,9
	Female (F)	104	59,1	100,0
	Total	176	100,0	
Age	Ages 19 and under	59	33,5	33,5
	Ages 20 and above	117	66,5	100,0
	Total	176	100,0	
Educational Status	Associate degree student	86	48,9	48,9
	Undergraduate Student	90	51,1	100,0
	Total	176	100,0	
Computer Ownership	Doesn't have a computer	19	10,8	10,8
	Having a computer	157	89,2	100,0
	Total	176	100,0	
Monthly Spending Amount	Under 200 Euro	105	59,7	59,7
	200 Euro and above	71	40,3	100,0
	Total	176	100,0	
Grade Point Average (GPA)	Less than 2	19	10,8	10,8
	Between 2.00 and 2.49.	37	21,0	31,8
	Between 2.50 and 2.99	77	43,8	75,6
	Between 3.00 and 3.49	29	16,5	92,0
	3.50 and above	14	8,0	100,0
	Total	176	100,0	

The demographic distribution of the student group is; 40.9% male, 59.1% female, 33.5% 19 years of age and under, 66.5% 20 years of age and over, 48.9% associate degree students, 51.1% undergraduate students. While 10.8% of students do not have a computer, 89.2% do. Meanwhile, 59.7% of students have monthly expenditure of less than €200, while 40.3% have monthly expenditure of €200 or more. While 10.8% of students have a GPA below 2.00, 21% have a GPA between 2.00 and 2.49, 43.8% have a GPA between 2.50 and 2.99, 16.5% have a GPA between 3.00 and 3.49, and 8% have a GPA of 3.50 or above.

Table 4: Distribution of Generative Artificial Intelligence (GAI) Tools by Usage Purposes

	Groups	f	%	%stc
What purposes do students use GAI tools for?	To improve knowledge	19	10,8	10,8
	Contribute to personal development.	59	33,5	44,3
	To get support with academic processes.	41	23,3	67,6
	To simplify daily operations.	42	23,9	91,5
	For inspiration in creative projects.	15	8,5	100,0
	Total	176	100,0	

Students were asked what purpose they use GAI tools for most frequently. When the responses were analysed, it was found that 10.8% of students used them to improve their knowledge, 33.5% to aid their personal development, 23.3% for support with academic processes, 23.9% to simplify their daily tasks, and 8.5% for inspiration with creative projects.

Table 5: Students' Opinions on the Use of GAI Tools

		I totally disagree.	I disagree	I'm undecide	I agree	I totally agree	Total
I can easily use GAI tools.	f	1	5	28	85	57	176
	%	0,6	2,8	15,9	48,3	32,4	100
I'm happy to explore GAI tools.	f	2	7	17	72	78	176
	%	1,1	4,0	9,7	40,9	44,3	100
I use GAI tools comfortably in various aspects of my life.	f	4	4	20	77	71	176
	%	2,3	2,3	11,4	43,8	40,3	100
GAI tools speed up my decision-making processes.	f	2	7	24	69	74	176
	%	1,1	4,0	13,6	39,2	42,0	100
I use GAI tools almost every day.	f	11	24	35	62	44	176
	%	6,3	13,6	19,9	35,2	25,0	100

81% of students said that GAI tools are easy to use and 85.2% said that they are happy to discover these tools. Furthermore, 84.1% of students said that they feel comfortable using the tools, 81.2% said that the tools speed up their decision-making processes, and 60.2% said that they use the tools almost daily.

Table 6: Types of GAI Tools Used by Students

		None	Rarely	Often	Continually	Total
Drafting Tools (ChatGPT, Gemini, Windows Copilot etc.)	f	20	67	61	28	176
	%	11,4	38,1	34,7	15,9	100
Translation (DeepL, Google Translate etc.)	f	38	52	55	31	176
	%	21,6	29,5	31,3	17,6	100
Creating or Editing Images (Canva, Capcut etc.)	f	36	73	47	20	176
	%	20,5	41,5	26,7	11,4	100
Analysis Processes (MAXQDA, Tableau GPT, MonkeyLearn etc.)	f	115	35	15	11	176
	%	65,3	19,9	8,5	6,3	100
Voice-over and sound production (ElevenLabs, CapCut, etc.).	f	89	63	18	6	176
	%	50,6	35,8	10,2	3,4	100
Text-based (ChatGPT, Gemini, Windows Copilot, Siri etc.)	f	21	45	74	36	176
	%	11,9	25,6	42,0	20,5	100

38.1% of students said they rarely use tools such as ChatGPT, Gemini and Windows Copilot to create drafts, while 34.7% said they often do. It was revealed that 29.5% of students rarely use GAI tools for translation purposes, while 31.3% use them frequently and 17.6% use them constantly. It was found that 41.5% of students rarely used GAI tools for creating and editing visuals, while 26.7% used them

frequently. The study found that 19.9% of students rarely used generative artificial intelligence tools for analysis, 8.5% used them frequently, and 65.3% never used them. The study found that 35.8% of students rarely used GAI tools for voice-overs and sound production, 10.2% used them frequently, and 50.6% never used these tools. It was found that 42% of students frequently used GAI tools for their text-based operations and 20.5% used them constantly.

This section includes analyses of students' reasons for using generative artificial intelligence tools, the types of tools they use, and their opinions on their use, according to demographic variables.

Table 7: A t-test Analysis According to Gender Variable

Category	Groups	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* Test		
						t	*Sd*	*p*
Creating or Editing Images (Canva, Capcut etc.)	M	72	2,0833	,8841	,1042	-2,513	174	,013
	F	104	2,4327	,9218	,0903			
I can easily use GAI tools.	M	72	4,2500	,8999	,1060	2,214	174	,028
	F	104	3,9808	,7102	,0696			

A t-test analysis was conducted according to gender. It was found that the use of artificial intelligence tools, such as those for visual creation and editing, differed significantly according to gender. Female students(2.4327) were found to use such tools significantly more than male students (2.0833).

A t-test analysis was conducted to determine whether there were significant differences in the responses of male and female students to the statement "I can easily use artificial intelligence tools". The analysis revealed that male students (4.2500) were significantly more likely to agree with this statement than female students (3.9808).

The chi-square test revealed that the purpose of using GAI tools differed significantly according to gender ($p<.05$). Cross tables were examined to gain a better understanding of this difference.

Table 8: Intended Use of GAI Tools by Gender — Chi-Square Test Results

Purposes of Using GAI Tools	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18,423[a]	4	,001
Likelihood Ratio	19,546	4	,001
Linear-by-Linear Association	8,353	1	,004
N of Valid Cases	176		

Examining the table above reveals that female students (33.66%) are significantly more likely than male students (9.72%) to use GAI tools to make their daily work easier. Approximately 32% of male students use it to get support with academic processes, compared to 17% of female students. While approximately 16.7% of male students use it to improve their knowledge, this figure drops to 6.7% for female students.

Table 9: Cross-Table of Usage Purposes of GAI Tools by Gender

		Gender				Total
		Male		Fmale		
		f	%	f	%	
Aim	To improve knowledge	12	16,67	7	6,73	19
	Contribute to personal development.	25	34,72	34	32,69	59
	To get support with academic processes.	23	31,95	18	17,31	41
	To simplify daily operations.	7	9,72	35	33,66	42
	For inspiration in creative projects.	5	6,94	10	9,61	15
Total		72		104		176

Table 10: T-test Analysis According to the Age Variable

Category	Groups	N	x̄	ss	Sh x̄	t - test t	Sd	p
Drafting Tools (ChatGPT, Gemini, Windows Copilot etc.)	Ages 19 and under	59	2,2712	,8676	,1129	-3,021	174	,003
	Ages 20 and above	117	2,6923	,8755	,0809			
Analysis Processes (MAXQDA, Tableau GPT, MonkeyLearn etc.)	Ages 19 and under	59	1,3051	,6229	,0811	-2,704	174	,008
	Ages 20 and above	117	1,6838	,9795	,0905			
Voice-over and sound production (ElevenLabs, CapCut, etc.).	Ages 19 and under	59	1,4746	,6527	,0849	-2,274	174	,024
	Ages 20 and above	117	1,7607	,8474	,0783			
Text-based (ChatGPT, Gemini, Windows Copilot, Siri etc.)	Ages 19 and under	59	2,4915	,9167	,1193	-2,249	174	,026
	Ages 20 and above	117	2,8205	9155	,0846			
I can easily use GAI tools.	Ages 19 and under	59	3,8814	,8322	,1083	-2,498	174	,013
	Ages 20 and above	117	4,1966	,7683	,0710			
GAI tools speed up my decision-making processes.	Ages 19 and under	59	3,9492	,9900	,1288	-2,371	174	,019
	Ages 20 and above	117	4,2821	,8183	,0756			

T-tests were conducted on the use, purpose and types of GAI tools used by students, categorised by age. It was found that the group aged 20 and over created significantly more drafts and performed voice-over and audio production operations and text-based operations more frequently than the group aged under 20. The tools were also found to be easy to use and to allow for faster decision-making.

Table 11: T-test Analysis According to Educational Status Variable

Category	Groups	N	x̄	ss	Sh x̄	t - test t	Sd	p
I can easily use GAI tools	Associate degree student	86	4,2791	,7616	,0821	3,118	174	,002
	Undergraduate Student	90	3,9111	,8023	,0845			
I use GAI tools comfortably in various aspects of my life.	Associate degree student	86	4,3488	,7156	,0771	2,566	174	,011
	Undergraduate Student	90	4,0111	,9999	,1054			
GAI tools speed up my decision-making processes.	Associate degree student	86	4,3140	,7860	,0847	2,109	174	,036
	Undergraduate Student	90	4,0333	,9651	,1017			

T-tests were conducted on students' use of GAI tools according to their educational status. It was found that associate degree students use GAI tools more easily than undergraduate students, use them in various aspects of their lives, speed up decision-making processes. To better understand the purpose of using GAI beyond its average scores, a chi-squared test was conducted and the results were presented in a cross-table.

Table 12: Results of the Chi-Square Test for Using GAI Tools According to Educational Status

Aim	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41,544[a]	4	,000
Likelihood Ratio	45,086	4	,000
Linear-by-Linear Association	8,849	1	,003
N of Valid Cases	176		

When you examine the table below reveals that associate degree students (40.70%) use GAI tools for academic support more frequently than undergraduate students (6.67%). Undergraduate students (37.77%) are found to use GAI tools much more frequently than associate degree students (9.30%) to facilitate their daily transactions.

Table 13: Cross-Table Showing the Purposes of Using GAI Tools According to Educational Status

		Educational Status				
		Associate degree		Undergraduate		Total
		f	%	f	%	
Aim	To improve knowledge	12	13,95	7	7,78	19
	Contribute to personal development.	27	31,40	32	35,56	59
	To get support with academic processes.	35	40,70	6	6,67	41
	To simplify daily operations.	8	9,30	34	37,77	42
	For inspiration in creative projects.	4	4,65	11	12,22	15
Total		86		90		176

Table 14: T-test Analysis According to the Personal Computer Ownership Variable

Category	Groups	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* - test		
						t	*Sd*	*p*
Drafting Tools (ChatGPT, Gemini, Windows Copilot etc.)	Doesn't have a computer	19	2,1053	,7374	,1691	-2,334	174	,021
	Having a computer	157	2,6051	,8969	,0715			
I can easily use GAI tools	Doesn't have a computer	19	3,5263	,7723	,1771	-3,342	174	,001
	Having a computer	157	4,1592	,7804	,0622			

A t-test was conducted to analyze the types of GAI tools used by students and the purposes for which they were used, depending on whether students owned a computer. The results showed that students who owned a computer found GAI tools easier to use and used them for more drafting tasks.

Table 15: T-test Analysis According to the Variable 'Monthly Expenditure Amount'

Category	Groups	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* Testi		
						t	*Sd*	*p*
Drafting Tools (ChatGPT, Gemini, Windows Copilot etc.)	Under 200 Euro	105	2,4095	,8285	,0808	-2,600	174	,010
	200 Euro and above	71	2,7606	,9481	,1125			
Text-based (ChatGPT, Gemini, Windows Copilot, Siri etc.)	Under 200 Euro	105	2,5619	,8979	,0876	-2,626	174	,009
	200 Euro and above	71	2,9296	,9308	,1104			

A t-test was conducted on students' use of generative artificial intelligence tools, the purpose for which they were used, and the amount they spent each month. The results showed that students with a monthly expenditure of €200 or more used significantly more drafting and text-based tools.

This section includes analyses of the use of GAI tools by students, categorised by their "General Weighted Grade Point Average" (GPA).

Table 16: Purpose of Use of GAI Tools According to GPA Variable Chi-square Test

GAI tools speed up my decision-making processes.	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,729[a]	16	,019
Likelihood Ratio	28,455	16	,028
Linear-by-Linear Association	,592	1	,442
N of Valid Cases	176		

When the chi-squared test was performed, it was determined that there was a significant difference between the groups at a 95% confidence level ($p < .05$). To see which groups and items were affected by this significant change, the data were compared in a cross table.

Table 17: Cross-Tabulation of GPA Variable and Intended Use of GAI Tools

https://kerjournal.com ISSN: 2710-0871

What purposes do students use GAI tools for?	GPA										
	Less than 2		Between 2.00 and 2.49		Between 2.50 and 2.99		Between 3.00 and 3.49		3.50 and above		Total
	f	%	f	%	f	%	f	%	f	%	
To improve knowledge	1	5,26	6	16,22	7	9,09	5	17,24	0	0,00	19
Contribute to personal development.	5	26,32	17	45,95	24	31,17	8	27,59	5	35,71	59
To get support with academic processes.	6	31,58	9	24,32	14	18,18	9	31,03	3	21,43	41
To simplify daily operations.	3	15,79	4	10,81	27	35,06	6	20,69	2	14,29	42
For inspiration in creative projects.	4	21,05	1	2,70	5	6,49	1	3,45	4	28,57	15
Total	19		37		77		29		14		176

It has been determined that no students with a GPA of 3.50 or above stated that they used GAI tools to improve their knowledge. Instead, it was mostly students with a grade between 2.00 and 3.49 who used them for this purpose. Approximately 46% of students with a GPA between 2.00 and 2.49 used GAI tools to improve their knowledge, while this figure dropped to approximately 36% for those with a GPA of 3.50 or above. This rate dropped to approximately 25% for students with a GPA below 2.00 or between 3.00 and 3.49. It was found that GAI tools were most commonly used by students with a GPA below 2.00 (31.58%) and those with a GPA between 3.00 and 3.49 (31.03%) to receive academic support. This rate was found to drop to 18% among students with a GPA of 2.50–2.99. GTI tools are primarily used by students with a GPA between 2.50 and 2.99 (35.06%) to assist with daily tasks. The usage rate is at most 15% among student groups with a GPA below 2.5 or above 3.49. It was found that GAI tools were most commonly used by students with a GPA 3.50 and above (28.57%) for inspiration for creative projects, followed by those with a GPA below 2.00 (21.05%). The rate no more than 6.5% among students with a GPA between 2.00 and 3.49.

Table 18: Use of GAI Tools According to GPA Variable (E3) – Chi-Square Test Result

I use GAI tools comfortably in various aspects of my life.(E3)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32,895[a]	16	,008
Likelihood Ratio	33,227	16	,007
Linear-by-Linear Association	,220	1	,639
N of Valid Cases	176		

It was determined that the statement 'I feel comfortable using GAI tools' differed significantly between the groups at a 95% confidence level (<.05). To see which groups and items this significant change occurred in, the data were compared in a cross table.

Table 17: Chi-square Test for the Statement "I am comfortable using GAI Tools" According to the GPA Variable

'I feel comfortable using GAI tools'	GPA										
	Less than 2		Between 2.00 and 2.49		Between 2.50 and 2.99		Between 3.00 and 3.49		3.50 and above		Total
	f	%	f	%	f	%	f	%	f	%	
I totally disagree.	1	5,26	1	2,70	0	0,00	2	6,90	0	0,00	4
I disagree.	1	5,26	0	0,00	1	1,30	0	0,00	2	14,29	4
I'm undecide	4	21,05	2	5,41	10	12,99	1	3,45	3	21,43	20
I agree	10	52,63	15	40,54	30	38,96	14	48,28	8	57,14	77
I totally agree	3	15,79	19	51,35	36	46,75	12	41,38	1	7,14	71
Total	19		37		77		29		14		176

It was found that around 55% of students with a GPA of 3.50 or above, around 68% of students with a GPA below 2.00, and over 85% of students with a GPA between 2.00 and 3.49 agreed with the statement, 'I am comfortable using AI tools in various aspects of my life.

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Table 18: **Use of GAI Tools According to GPA Variable (E6) – Chi-Square Test Result**

GAI tools speed up my decision-making processes. (E6)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27,708[a]	16	,034
Likelihood Ratio	26,455	16	,048
Linear-by-Linear Association	,165	1	,685
N of Valid Cases	176		

It was determined that the statement "GAI tools speed up my decision-making processes" differed significantly between the groups at a 95% confidence level (<.05). To see which groups and items this significant change occurred in, the data were compared in a cross table

Table 19: Chi-square Test for the Statement "GAI Tools Speed Up My Decision Making Process Based on GPA Variable""

GAI tools speed up my decision-making processes	GPA										
	Less than 2		Between 2.00 and 2.49		Between 2.50 and 2.99		Between 3.00 and 3.49		3.50 and above		Total
	f	%	f	%	f	%	f	%	f	%	f
I totally disagree.	1	5,26	1	2,70	0	0,00	0	0,00	0	0,00	2
I disagree.	3	15,79	0	0,00	2	2,60	0	0,00	2	14,29	7
I'm undecide	2	10,53	6	16,22	10	12,99	2	6,90	4	28,57	24
I agree	8	42,11	12	32,43	29	37,67	14	48,28	6	42,86	69
I totally agree	5	26,32	18	48,65	36	46,75	13	44,83	2	14,29	74
Total	19		37		77		29		14		176

Approximately 57% of students with a GPA of 3.50 or above and 68% of students with a GPA below 2 agreed with the statement 'GAI tools speed up my decision-making processes', whereas this figure was found to exceed 80% among students with a GPA between 2.00 and 3.49.

Table 20: Analysis of Variance (ANOVA) of Types of Use of GAI Tools According to GPA Variable.

f, x̄ ve *ss* Values					ANOVA Results					
Category	Groups	*N*	x̄	*ss*	Var. K.	*KT*	*Sd*	*KO*	*F*	*p*
Drafting Tools (ChatGPT, Gemini, Windows Copilot etc.)					Between G.	9,958	4	2,490		
					Within G.	129,581	171	,758	3,285	,013
					Total	139,540	175			
					Tukey: The group with GPAs between 2.00 and 2.49 (.8035) and the group with GPAs between 2.50 and 2.99 (.8869).					

A one-way analysis of variance (ANOVA) was conducted at a 95% confidence level to determine whether the types of use of GAI tools changed according to the GPA variable. The frequency with which drafting tools were used differed significantly between the groups. These differences were detected using the Tukey test, a descriptive statistical technique.

Table 21: Cross-table of GPA variable and use of drafting tools.

Drafting Tools (ChatGPT, Gemini, Windows Copilot etc.)	GPA										
	Less than 2		Between 2.00 and 2.49		Between 2.50 and 2.99		Between 3.00 and 3.49		3.50 and above		Total
	f	%	f	%	f	%	f	%	f	%	f
None	6	31,59	2	5,40	5	6,50	5	17,23	2	14,29	20
Rarely	6	31,58	19	51,35	26	33,77	8	27,59	8	57,14	67
Often	7	36,83	11	29,73	28	36,36	12	41,38	3	21,43	61
Continually	0	0,00	5	13,52	18	23,37	4	13,80	1	7,14	28
Total	19		37		77		29		14		176

It was found that students with a GPA between 2.50 and 2.99 used more outlining tools than those with a GPA between 2.00 and 2.49. Cross-tabulation matching was performed to detect more detail. It

revealed that 23.38% of students with GPAs in the 2.50–2.99 range reported constant use of drafting and editing tools, whereas the highest rate in other groups was around 13%.

Discussion and Conclusions

It has been found that nearly 90% of the students have computers, which is a significant percentage. To provide equal opportunities for those who do not have computers, the authorities should place a few well-equipped computers in the free study rooms.

It has been determined that students primarily use GAI tools to aid their personal development, streamline their daily tasks, and receive support with academic processes.

It has been found that more than 80% of students find GAI tools comfortable and easy to use, that using them makes them happy and speeds up the decision-making process. It has also been found that more than 60% of students use such tools almost every day. It is thought that young people who can adapt quickly to technological developments will be able to quickly keep up with developments in this field in the near future.

It was found that students generally use GAI tools for “drafting,” “translation operations,” “visual creation and editing,” and “text-based” operations. It was also found that more than half of the students never used analysis, voice-over, or audio production tools. Very few mid-level programs use AI tools specifically for analysis operations. Most analysis programs perform statistical operations. However, AI tools can be used to perform analyses that go beyond human capabilities in text analysis, especially in qualitative research. It is expected that students will use these analysis tools more frequently as more AI-powered analysis applications become available.

It has been found that female students use visual creation and editing tools more frequently. They also use GAI tools to simplify their daily tasks. Male students, on the other hand, find GAI tools "easy" to use and use them more to develop their knowledge and get support in academic processes.

It has been determined that students aged 20 and over use a greater variety of artificial intelligence tools than those under 20. This may be related to the subjects they study rather than their age. in the second year of vocational courses, as well as in the third and fourth years of undergraduate courses, project courses are increasing. Therefore, these tools may be used more to help with homework.

It has been determined that students with an associate degree find GAI tools easier and more comfortable to use than undergraduate students. These students also stated that GAI tools accelerate their decision-making processes. This suggests that associate degree students have more trust in GAI tools when it comes to decision-making.

It was found that associate degree students used GAI tools more frequently for academic support, while undergraduate students used GAI tools more frequently to facilitate their daily operations.It has been determined that students with computers find it easier to use GAI tools than those without. This is to be expected.

In the study, the use rates of GAI were similar among students with GPAs below 2 and students with GPAs of 3.50 and above. While this is an interesting result, further investigation into the motivations behind their use is recommended.

It has been determined that students with a GPA higher than 3.49 use GAI tools more frequently to aid their personal development and to find inspiration for their creative projects.

It has been determined that students with a GPA between 3.00 and 3.49 use GAI tools primarily to support their academic work and personal development.

It has been determined that students with a GPA between 2.50 and 2.99 use GAI tools to facilitate their daily work and aid their personal development.

It was determined that those with a GPA between 2.00 and 2.49 tend to use GAI tools to contribute to their personal development.

It has been determined that students with a GPA lower than 2 use GAI tools primarily to receive support with academic processes and to aid their personal development.

It has been found that students generally feel comfortable using GAI tools. However, students with a GPA between 2.00 and 3.49 are found to be more comfortable than those with a GPA below 2.00 or above 3.49.

It has been determined that students significantly stated that their decision-making processes accelerated by using GAI tools. Those with a GPA above 3.49 and below 2.00 were less likely to agree with this statement than the group with other grades.

It has been determined that students with a GPA above 3.49 use drafting tools less frequently than other groups of students. Notably, the group most similar to this group has a GPA below 2.

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