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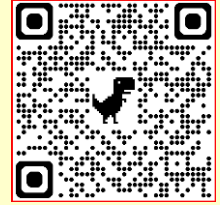
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Examining Teachers' Perceptions and Job Satisfaction Regarding the Use of Artificial Intelligence in Education

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ABSTRACT

The aim of this study is to examine the relationship between teachers' perceptions of the use of artificial intelligence in education and their professional satisfaction. For this purpose, the relationship between teachers' perceptions of the use of artificial intelligence in education and their professional satisfaction levels was examined, and whether the perception of artificial intelligence and professional satisfaction levels differed according to gender, years of service, and school type. The research, which was conducted in the relational screening model, was conducted on a total of 109 teachers, 39 males and 70 females, working in Konya province. In the study, "Demographic Information Form, "Teachers' Perception Scale for the Use of Artificial Intelligence in Education," and "Professional Satisfaction Scale" were used. SPSS statistical program was used in the analysis of the obtained data, and percentage and frequency analysis, arithmetic mean and standard deviation, independent sample t test, one-way analysis of variance, Mann Whitney U test and Pearson Multiplication of Moments Coefficient value were used. According to the results of the research, significant differences were determined in terms of professional satisfaction of teachers according to the type of school they work. In addition, a low level positive relationship was found between teachers' perceptions of the use of artificial intelligence in education and their job satisfaction. The findings of the research were interpreted with the relevant literature and suggestions were made.

Keywords: Artificial Intelligence, Professional Satisfaction, Teachers.

Introduction:

The concept of artificial intelligence was first introduced in a proposal letter by John McCarthy, Marvin L. Minsky, Nathaniel Rochester, and Claude E. Shannon at the Dortmund Conference in 1956. John McCarthy defined artificial intelligence as "the science and engineering of making intelligent machines" (McCarthy, 2007). Intelligence can be developed by working on a specific subject, learning, acquiring knowledge, gaining application-based skills, and analyzing an event or phenomenon (Kazu and Özdemir, 2009). The

ability to mimic the working principles of intelligence with software and hardware gave rise to the concept of artificial intelligence (Elmas, 2003). Artificial intelligence is a field of study that can mimic human intelligence through computers and produce products in different areas. It can also be defined as computer systems that can artificially produce the intelligent behaviors of entities in nature (Aydın, 2017; Balaban and Kartal, 2015). Furthermore, due to the ability of the artificial neural networks it contains to learn from existing data and generate solutions to previously unencountered problems, artificial intelligence technologies have become widely

used in many aspects of human life (Atasoy, 2012: 39; Yılmaz, 2012: 34).

The Use of Artificial Intelligence in Education

Technological developments, which began with the invention of electricity, made a major breakthrough with the invention of the computer. Later, technological developments continued with the invention of the internet and digitalization, and today these developments have evolved into the field of artificial intelligence. Artificial intelligence capabilities have come to the fore in many areas of life thanks to their ability to simplify life and access to information, save time by scanning many sources in a short time, and never forget anything. Remote education activities have been extensively incorporated into the education system, especially during the COVID-19 pandemic. It is believed that during this process, students and teachers frequently resorted to artificial intelligence technologies both to provide materials and resources and to make the learning process more appealing. Artificial intelligence technologies support teachers in the learning process, acting almost like an assistant. Teachers need to be knowledgeable and aware in order to incorporate these technologies into the education and training process (Çam et al., 2021).

When artificial intelligence in education is mentioned, the first thing that comes to mind is the use of "robot teachers" in education, but the situation is not as it seems. Today, artificial intelligence studies in education include knowledge-based, data-based, and logic-based applications. These applications include personalized education or dialogue education systems, exploratory education, data mining in education, student article analysis, intelligent agents, chatbots, education for children with special needs, child-robot interaction, AI-based assessment systems, and automatic test generation systems (Arslan, 2020). These systems are generally concerned with supporting learning. In addition, artificial intelligence also supports educational institutions from an administrative perspective. For example, course schedules, personnel schedules, exam management, cybersecurity, facility management and security are areas where artificial intelligence contributes directly to school administration and indirectly to teaching (Holmes et al., 2019).

Teachers and Their Role in Society

The teaching profession is defined in the National Education Basic Law No. 1739 dated 1973 as "Teaching is a specialized profession that undertakes the state's education, instruction, and related teaching duties." Teachers are the architects of future generations. Teachers have a two-way impact on students. On the one hand, they influence them academically by imparting knowledge and skills, while on the other hand, they influence students in various ways, sometimes positively and sometimes negatively, by setting an example with their behavior and arousing curiosity (Güçlü, 2000: 21). The most important input for economic growth and development is well-trained human resources, also known as human capital. It is the teacher who determines the quality of human capital and cultivates it (Şahin, 2011). Considering today's education, social structure, and technological developments, the influence of education and teachers is quite significant in ensuring that qualified individuals are equipped with contemporary and technological skills.

Job Satisfaction and Factors Affecting Job Satisfaction

Locke (1976) defines job satisfaction as "an individual's positive emotional state toward their job roles or the pleasure derived from work experiences." The concept of job satisfaction encompasses an individual's attitudes toward their job, the meaning of the job, and the harmony between their personal values and their profession. Job satisfaction is an important factor affecting overall life satisfaction.

As life satisfaction increases, people will be more productive in their jobs. If job satisfaction is thought to directly reflect performance, then ensuring it is beneficial for both organizations and individuals (Güneş, 2020).

Teachers loving their profession will enable them to do their jobs well, and doing their jobs well will generate a sense of success. The result of this sense of success is professional satisfaction. In this case, it can be seen that doing one's job well and professional satisfaction are two phenomena that feed into each other. Teachers' ability to fully perform their duties depends on their awareness of their roles and their perception of their profession. It is hoped that a teacher who is aware of the place they occupy in an individual's life and how they influence the course of that life will make every effort to ensure that this influence is as positive and beneficial as possible.

An individual's professional satisfaction can be influenced by their work environment, professional roles, job content, working conditions, material and moral rewards, relationships with colleagues, management style, and personal expectations. It can be assumed that the materials and methods used in the profession are also factors that affect professional satisfaction. Therefore, it can be considered that the inclusion of artificial intelligence in the education and training process affects teachers' professional satisfaction.

The importance of the research

In society, teachers are seen as architects who shape and educate people. The role of education and training in shaping young generations into contemporary individuals is of paramount importance. It is crucial for teachers to fulfill their duties to the fullest, to be well-equipped, self-improving, and open to innovation. Furthermore, it can be said that teachers who love their profession and have achieved professional satisfaction perform their duties in the best possible way. With rapidly developing and changing technology, it is essential for every contemporary individual to keep up with developments. This study is important in terms of providing teachers with ideas and guidance by examining whether the use of artificial intelligence in education has an effect on teachers' professional satisfaction, and in terms of encouraging teachers to understand artificial intelligence and use it in the right place.

The Research Purpose

The purpose of this study is to examine the relationship between teachers' perceptions of the use of artificial intelligence in education and their professional satisfaction. In line with this purpose, answers were sought to the following questions.

1. What are teachers' views on the use of artificial intelligence in education?
2. What are teachers' professional satisfaction levels?
3. Teachers' perceptions of the use of artificial intelligence in education, their professional satisfaction levels
 - a. Gender,
 - b. Years of service,
 - c. Type of school they work at,
4. Do they differ according to these variables?
5. What is the relationship between teachers' use of artificial intelligence and their professional satisfaction?

Methodology

Information regarding the research methodology is given below.

Research Model

In this study, a correlational survey model was adopted to examine the relationship between teachers' perceptions of the use of artificial

intelligence in education and their professional satisfaction. The correlational survey model uses to determine the relationships between variables and reveals the relationship or effect between two different quantitative variables through a correlation coefficient (Fraenkel et al., 2012).

Population and Sample

Table 1 below presents the demographic information of the participants in the study.

Table 1. Participants' Demographic Information (N=109)

Variable	Values	f	%
Gender	Male	39	35,8
	Female	70	64,2
Years of Service	10 years or less	7	6,4
	11 years and over	102	93,6
School Type	Elementary	52	47,7
	Middle School	20	18,3
	High School	37	33,9
Child	Yes	106	97,2
	No	3	2,8
Total		109	100

The research was conducted with a sample of 109 teachers working at the high school, middle school, and elementary school levels in Konya province during the 2024- 2025 academic year. Table 1 shows that 35.8% of the 109 teachers participating in the research were male and 64.2% were female. In terms of years of service, 6.4% of the participants had 10 years or less of service, while 93.6% had 11 years or more of service. 47.7% worked in elementary schools, 18.3% in middle schools, and 33.9% in high schools. 97.2% had children, while 2.8% did not.

Data collection tools

Two scales were used in the study. The first is the Teacher Perception Scale on the Use of Artificial Intelligence in Education, developed by Burhan Üzümlü, Elçiçek and Pesen (2024), which has sub-dimensions of ethical perception, learning perception, and teaching perception. The second is the Professional Satisfaction Scale developed by Kuzgun, et al. (1999). This scale has two factors: suitability for qualities and desire for development.

Data analysis

Percentages and frequencies were used in the analysis of demographic data. Arithmetic mean and standard deviation values were used to reveal teachers' views on artificial intelligence in education and their professional satisfaction. To determine whether there were differences based on gender and type of school, an independent samples t-test (gender) and one-way analysis of variance (type of school) were used. Since the data were not normally distributed according to years of service, the Mann Whitney U test, one of the non-parametric tests, was used. The Pearson Moment Product Moment Coefficient was examined to determine the relationship between teachers' professional satisfaction levels and their levels of artificial intelligence use in education.

Three evaluation criteria were determined for interpreting the data: low, medium, and high. In this context, the mean values were calculated for both scales consisting of 5- point Likert items. Values

between 1-2.33 were considered low, values between 2.36-3.66 were considered medium, and values between 3.67-5.00 were considered high. The SPSS statistical program was used in the analysis of the data, and the significance level was set at .05.

Findings

The data obtained in line with the sub-objectives of the study were analyzed and presented as findings in the form of headings.

Teachers' Opinions on the Use of Artificial Intelligence

In line with the sub-objectives of the study, teachers' views on the use of artificial intelligence in education were first investigated. In this context, the responses of 109 teachers were examined, and the findings are presented in Table 2.

Table 2. Teachers' views on the use of artificial intelligence in education

Factor	\bar{X}	Sd	Situation
Teaching Perception	3.93	.563	High
Perception of Learning	3.41	.793	Medium
Ethical Perception	2.41	.793	Medium
Scale Overall Average	3.39	.511	Medium

As Table 2 shows, teachers' views on the use of artificial intelligence in education are moderate. They are neither very enthusiastic nor completely opposed to using artificial intelligence in education. Those who recognize the potential benefits of artificial intelligence also have reservations about learning outcomes and, in particular, ethical issues, which brings the overall perception to a moderate level.

Teachers' Professional Satisfaction Levels

Another topic investigated in the study was teachers' professional satisfaction levels. The analysis results obtained from teachers in this context are presented in Table 3.

Table 3. Teachers' Professional Satisfaction Levels

Factor	\bar{X}	Sd	Situation
Fit with Qualities	3.80	.602	High
Desire for Development	3.68	.546	High
Overall Job Satisfaction Level	3.76	.560	High

According to Table 3, it is seen that teachers' overall professional satisfaction is high ($\bar{x} = 3.76$).

Teachers' Views on the Use of Artificial Intelligence in Education and Their Professional Satisfaction Levels by Gender

Teachers' perceptions of using artificial intelligence in education according to their gender and their professional satisfaction levels according to their gender were examined. The results of the examination are presented in Table 4.

Table 4. Teachers' Views on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction According to Gender

	Gender	N	\bar{X}	ss	t	p
Use of Artificial Intelligence	Male	39	3.44	.581	0.868	0.387
	Female	70	3.35	.469		
Job	Male	39	3.70	.631	0.779	0.438

Satisfaction Level	Female	70	3.79	.519		
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* p<.05

According to Table 4, no significant difference was found between genders for either variable. Accordingly, it can be said that teachers' gender has no effect on their perception of AI use and their level of job satisfaction.

Teachers' Opinions on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction According to Years of Service

Teachers' perceptions of using artificial intelligence in education according to their years of service and their professional satisfaction levels according to their years of service were examined. The results of the examination are presented in Table 5.

Table 5. Teachers' Opinions on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction According to Years of Service

	Years of Service	N	Rank Mean	Rank Sum	U	p
Use of	10 and	7	76.14	533.00	209.0	0.067

Artificial Intelligence	below					
	11 years and over	102	53.55	5,462.00		
Job Satisfaction Level	10 and below	7	56.64	466.50	275.50	0.313
	11 years and over	102	54.20	5528.50		

* p<.05

According to Table 5, no significant difference was found for either variable in terms of years of service. Accordingly, it can be said that the length of time teachers have been in service has no effect on their perception of AI use and their level of job satisfaction.

Teachers' Views on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction According to School Type

Teachers' perceptions of using artificial intelligence in education according to the type of school they work in and their professional satisfaction levels according to the type of school they work in were examined. The results of the examination are presented in Table 6.

Table 6. Teachers' Views on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction According to School Type

	School Type	N	\bar{X}	sd	Source of Variations	Sum of Square	df	Mean Square	F	p	Difference
Use of Artificial Intelligence	A-Elementary	52	3.39	.571	Between Groups	1,338	2	.669	2,633	.077	-
	B-Middle	20	3.18	.408	Within Groups	26,924	106	.254			
	C-High	37	3.50	.443	Total	28,262	108				
Job Satisfaction Level	A-Elementary	52	3.92	.574	Intergroup	2.755	2	1,377	4,680	.011*	A-B
	B-Middle	20	3.51	.431	Within the group	31,193	106	.294			
	C-High	37	3.68	.548	Total	33,948	108				

* p<.05

According to Table 6, it can be stated that the type of school where teachers work does not show a difference in terms of their perceptions of using artificial intelligence in education. In terms of job satisfaction, it is seen that the job satisfaction levels of those working in primary schools are higher than those working in secondary schools. There is no significant difference between the other groups.

The Relationship Between Teachers' Views on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction

The relationship between teachers' views on the use of artificial intelligence in education and their professional satisfaction levels was examined, and the results are presented in Table 7.

Table 7. Relationship Between Teachers' Views on the Use of Artificial Intelligence in Education and Their Levels of Job Satisfaction

		Use of Artificial Intelligence	Job Satisfaction Level
Use of Artificial Intelligence	Pearson Correlation	1	.250**
	Sig. (2-tailed)		.009
	N	109	109

Job Satisfaction Level	Pearson Correlation	.250**	1
	Sig. (2-tailed)	.009	
	N	109	109

**p<.01

As can be seen in Table 7, there is a positive and low-level relationship between teachers' views on the use of artificial intelligence in education and their levels of job satisfaction.

Results, Discussions and Recommendations

According to the findings of this study, which examined teachers' perceptions of the use of artificial intelligence in education and their levels of job satisfaction according to certain variables, it was concluded that teachers' perceptions of the use of artificial intelligence in education are generally moderate. It was observed that they are neither very enthusiastic nor completely opposed to the use of artificial intelligence in education. Those who recognize the benefits of artificial intelligence in teaching also have reservations about learning outcomes and, in particular, ethical issues, which bring the overall perception to a moderate level. No significant difference was found in the perception of artificial intelligence between female and male teachers based on the gender variable. Furthermore, according to the data, no significant difference was

observed in teachers' perceptions of artificial intelligence based on the type of school they work in or their years of service.

The results show that teachers' levels of job satisfaction are generally high. Furthermore, it was observed that teachers' professional satisfaction levels did not change according to the variables of gender and years of service. The results of the study also show that elementary school teachers have higher levels of professional satisfaction than middle school teachers. In addition to all these, a low-level positive relationship was found between teachers' perceptions of the use of artificial intelligence in education and their professional satisfaction levels.

Reviewing the literature in line with the findings of the study, according to research conducted by Acem et al. (2024), teachers' attitudes toward artificial intelligence were found to be high. When examined in terms of gender, female teachers' attitudes toward artificial intelligence were found to be higher than those of male teachers, and when examined in terms of age, teachers under the age of 40 were found to have higher attitudes toward artificial intelligence. In addition, it was concluded that teachers with 21 years or more of seniority have low attitudes toward artificial intelligence. Furthermore, according to this study, it was determined that middle school teachers have higher attitudes toward artificial intelligence than teachers at other levels. According to research conducted by Köse et al. (2023), 13.8% of teachers were unable to express an opinion when asked about the use of artificial intelligence in education. This result indicates that teachers have no opinion about the potential use of artificial intelligence in education. In general, teachers had a positive attitude towards the use of artificial intelligence in education. The most common responses were that 31% of teachers thought their work would be made easier by artificial intelligence and 24% thought students would learn more easily. Teachers' attitudes towards artificial intelligence have been examined in many other studies (Banaz and Maden, 2024; İçöz and İçöz, 2024; Seyrek et al., 2024; Tan et al., 2023) and various results have been obtained.

The study conducted by Koruklu et al. (2013) examined the factors affecting teachers' job satisfaction. A significant difference in job satisfaction was found according to age. It was determined that the job satisfaction levels of individuals aged 41 and above were higher than those aged 20-40. The study also found significant differences in job satisfaction based on the type of school where teachers worked. Teachers working in high schools that admit students through exams were found to have higher job satisfaction than teachers working in high schools that admit students without exams. Many studies have been conducted on teachers' professional satisfaction. Research in this field yielding various results on professional satisfaction (Gençay, 2007; Gülay, 2006; Günbayı & Toprak, 2010; Gürbüz, 2008; Şahin, 1999) can be examined.

Some recommendations were made in line with the findings obtained. Researchers can conduct more comprehensive and in-depth studies with a much larger sample size, at different educational levels, and with more diverse variables to compare the results. The question of whether teachers who use artificial intelligence in education have greater job satisfaction or whether teachers with greater job satisfaction use artificial intelligence more can be investigated. In today's age of information and communication, comprehensive training can be provided to eliminate the prejudices of our teachers, who are the architects of society, against artificial intelligence technologies. This can help them feel more innovative and competent in their profession, thereby increasing their levels of professional satisfaction.

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