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Research Article

Examining the Relationship Between Teachers' Artificial Intelligence Awareness Levels and Decision-Making Styles

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Abstract
As digital transformation accelerates in education, integrating innovative technologies into pedagogical processes requires teachers to possess both high technological awareness and effective professional decision-making capabilities. The primary objective of this study is to examine the relationship between the artificial intelligence (AI) awareness levels and decision-making styles of teachers working in Samsun, Turkey, and to determine whether these variables differ significantly across various demographic characteristics. Designed as a correlational survey within a quantitative research framework, the study group comprised 156 teachers (104 females, 50 males) employed across different school levels during the 2026–2027 academic year, selected via convenience sampling. Data were gathered face-to-face using a Personal Information Form, the 51-item Artificial Intelligence Awareness Scale, and the 39-item Decision-Making Scale. Data analysis involved descriptive statistics, independent samples *t*-tests, one-way ANOVA, and Pearson correlation analysis. The findings revealed a positive but negligible (very weak) relationship between teachers' overall AI awareness levels and their decision-making skills ($r = .163$, $p < .05$). While general AI awareness and decision-making skills did not differ significantly based on gender, age, professional seniority, or school level, notable differences emerged in specific sub-dimensions. Teachers with postgraduate education scored significantly higher in the Cognitive Factors and Information and Goal sub-dimensions. Furthermore, teachers in foreign language and verbal branches exhibited greater competency in target setting, and those in public and private schools demonstrated superior decision-making skills compared to instructors in short-term course centers. These results indicate that high theoretical AI awareness has not yet fully translated into pedagogical decision-support practices in classrooms. To bridge this gap, professional development programs should move beyond theoretical instruction to provide applied workshops that actively integrate AI tools into data-driven teaching and classroom management decisions.

Keywords: AI Awareness, Artificial Intelligence, Decision-Making Style, Teacher

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1. INTRODUCTION

Rapidly developing artificial intelligence technologies in recent years have led to radical transformations in areas such as evaluating student performance, designing individualized learning environments, and supporting administrative decisions in the field of education. This transformation requires teachers not only to be individuals who transfer knowledge but also to be professionals who can integrate technology into pedagogical decision-making processes and think based on data.

Planning education and training processes, adapting curricula to student needs, and selecting measurement and evaluation methods require teachers to constantly produce multi-layered decisions in their professional practices. Today, although artificial intelligence technologies have the potential to make these decision-making steps in education more systematic by offering data analytics, there are various gaps

and problems in practice. In particular, the lack of sufficient awareness among teachers about using artificial intelligence-supported systems as a pedagogical "decision support tool" limits the effective integration of these technologies into educational environments. The inability to benefit from artificial intelligence at the targeted level in the stages of making educational programs flexible, designing individualized learning materials, and planning teaching processes stems from the fact that teachers have not yet been able to fully position these innovative tools in their decision-making mechanisms.

In this context, it is of great importance to examine the relationship between teachers' artificial intelligence awareness levels and their decision-making skills during the digital transformation process. Although there are studies in the literature examining the place of artificial intelligence in education and teachers' general attitudes towards technology, research directly examining the effect of artificial intelligence awareness on decision-making styles is quite limited. The findings to be obtained from this study are expected to fill the current gap in this field by providing evidence-based concrete data for the development of educational policies, the updating of teacher training programs in accordance with the digital age, and the Ministry of National Education's (MEB) in-service training and artificial intelligence integration planning.

In line with the specified requirements, the general purpose of this research is to examine the relationship between the artificial intelligence awareness levels and decision-making skills of teachers working in Samsun province. To achieve this main purpose, answers to the following questions were sought within the scope of the research: What are the levels of teachers' artificial intelligence awareness and decision-making skills?. Do teachers' artificial intelligence awareness and decision-making skills show a statistically significant difference according to the variables of gender, age, educational status, branch, professional seniority, type of institution worked, school level, and school type?.

Is there a statistically significant relationship between teachers' artificial intelligence awareness levels and decision-making skills?. The historical roots of artificial intelligence and autonomous machine systems date back much earlier than their modern definitions, to Al-Jazari, who lived in the 12th century and is considered the pioneer of cybernetics and robotics. Al-Jazari endowed machines with the ability to perform specific tasks autonomously with the water clocks, combination locks, programmable humanoid automata, and mechanical systems he designed. These early engineering marvels he developed are considered the first concrete examples of feedback (cybernetic) control systems that form the basis of the 'smart machine' idea and artificial intelligence algorithms today. These first autonomous steps in the historical process show that humanity's vision of producing machines that act human-like and apply certain decisions has existed for centuries. McCarthy, the inventor of the concept in the modern sense, defines artificial intelligence as "the science and engineering of making intelligent machines, especially intelligent computer programs"; whereas today, Russell and Norvig (2020) express artificial intelligence as the whole of "rational agent model" systems that try to produce the most appropriate result in the light of available data in order to achieve specific goals. In an educational context, artificial intelligence makes teaching processes more efficient, with a focus on computability in both administrative processes and teaching activities.

The decision-making process, which is a structural component of the teaching profession, requires constant decision-making in multi-layered processes such as adapting the curriculum, sequencing activities, and classroom management. While Simon (1960) handles decision-making as a process consisting of intelligence, design, and choice stages, Scott and Bruce (1995) classified individual decision-making processes into five styles: rational, intuitive, dependent, avoidant, and spontaneous. Today, artificial intelligence technologies offer significant support to decision-making processes by transforming Simon's model into a data-driven structure. Studies in the literature show that although teachers see artificial intelligence as a supportive tool in cognitive decision processes, they find it inadequate in pedagogical decisions that require empathy and an affective dimension (Bulut, 2026). As a matter of fact, no matter how advanced algorithmic systems are in terms of access to data and processing power, they cannot fully encompass the contextual and normative dimensions of decision processes (Erdem, 2026). In addition, it is observed that artificial intelligence applications are not yet successful enough in handling abstract concepts, making interpretations, and coping with uncertain situations (Çatal, 2026). The fact that algorithms lack human-specific qualities such as creative and innovative thinking and intuition clearly reveals the need for human contextual knowledge and experience in decision-making processes (İnce et al., 2021). For all these reasons, artificial intelligence is positioned not as an independent proxy that replaces humans in decision-making processes (Fidan, 2024), but as a decision supporter that works in interaction

with them and leaves the ultimate responsibility to humans (Karabulut, 2025). These theoretical limitations put forward explain why teachers consider artificial intelligence not as a fully autonomous system in pedagogical decision-making mechanisms, but only as a cognitive assistant. Although there are studies examining teachers' attitudes towards technology in the literature, research directly addressing the relationship between artificial intelligence awareness and decision-making processes is still very new. Based on this gap, this research aims to examine the adaptation processes of teachers to the competencies brought by the digital age around the axis of professional decision-making mechanisms.

2. METHODOLOGY

The research is a descriptive study according to the way the subject is handled. It is designed as deductive research in terms of methodology, quantitative according to the variable type, basic according to the purpose of the research, prospective according to the time frame in which the collected data will be used, cross-sectional according to the required time, and scale-using according to the data collection tool. The study aims to examine the relationship between teachers' artificial intelligence awareness levels and decision-making skills. The dependent variables of the research are teachers' artificial intelligence awareness and decision-making skills. The independent variables are the gender, age, professional seniority, and school level of the teachers. For this purpose, it was attempted to describe the variation of the data obtained from the two applied scales among themselves and in terms of various independent (demographic) variables. Evaluated from this perspective, the research was designed within the scope of descriptive research included in survey-type research.

2.1. Research Design

This study was structured using a correlational survey design within a quantitative research approach. Correlational research models aim to determine the existence and/or degree of co-occurrence between two or more variables without manipulating the research environment (Gay et al., 2006). In this context, teachers' artificial intelligence awareness levels and professional decision-making skills served as the dependent variables, while demographic and professional characteristics (such as gender, age, educational level, subject branch, professional seniority, institution type, and school level) were examined as independent variables.

2.2. Participants

The study population of the research consists of teachers working in Samsun province during the 2026–2027 academic year. The sample consists of 156 teachers (104 female, 50 male) who were reached through a convenience sampling method from the study population and participated voluntarily. The convenience sampling method is a non-random sampling type that allows the researcher to collect data from the most easily accessible individuals within the framework of limitations such as time, cost, and accessibility. This method is generally used in cases where it is not practically, administratively, and economically possible to reach the entire population or create a random sample. In this research as well, considering the high cost, limited time frame, and application (permission) difficulties required to reach all schools and teachers in Samsun province, the convenience sampling method was preferred in order to accelerate the data collection process and to reach voluntary participants in schools that the researcher could easily access (Büyüköztürk et al., 2018).

2.3. Research Instruments

A data collection tool consisting of three parts was used in the research. While the demographic data of the participants were collected with the "Personal Information Form" prepared by the researcher, the main variables of the research were measured through two different scales whose features are given below:

Artificial Intelligence Awareness Scale (AIAS): The scale developed by Ferikoğlu and Akgün (2022) to measure teachers' awareness of artificial intelligence was used. This five-point Likert-type scale consists of

4 sub-dimensions: Application Knowledge, Belief-Attitude, Ability to Associate, and Theoretical Knowledge, and a total of 51 items. While the internal consistency coefficient (Cronbach's alpha) in the original study of the scale was .92, it was determined to be .944 within the scope of this research. In the analyses conducted, it was observed that the ratio of the total variance explained by the scale was above the acceptable level, and its construct validity was statistically confirmed. Representative sample items from the scale include:

- "Artificial intelligence technologies process data to extract meanings and recommendations"
- "Artificial intelligence systems are used to provide interactive educational experiences specially planned according to students' individual needs."

Decision-Making Scale: The 39-item (9-point Likert type) measurement tool developed by Scott and Bruce (1995) to determine teachers' professional decision-making tendencies and adapted to Turkish by Yalın and Aydın (2025) was used. Within the scope of this research, the overall internal consistency coefficient (Cronbach's alpha) of the scale was calculated as .915. When the explained variance values are examined, it is determined that the ability of the items to measure professional decision-making skills is quite strong; it is confirmed that the scale exhibits high validity and reliability over the current research population. Representative sample items from the scale include:

- "Before making an important decision, it is essential for me to make use of information related to the topic I will decide on"
- "Before making an important decision, it is essential for me to analyze whether the consequences of my decision will affect other people."

Both the Artificial Intelligence Awareness Scale (51 items) and the Decision-Making Scale (39 items) consist entirely of positively worded statements; thus, no reverse-coded items were present in either measurement instrument, and all items were scored directly for analysis.

2.4. Procedures

Data collection was administered face-to-face (paper-and-pencil method) during an 8-week period spanning March and April in the spring semester of the 2026–2027 academic year among teachers employed in Samsun province. Prior to field administration, formal ethical approval was secured from the Ondokuz Mayıs University Social and Human Sciences Research Ethics Committee (Decision dated 27.03.2026, No. 2026-328). Written and verbal instructions regarding the purpose of the study were provided, and informed consent was obtained from all participants. Anonymity and voluntary participation were strictly maintained, with participants informed that the data would be processed exclusively for scientific evaluation. The completion of the questionnaire battery required approximately 15–20 minutes per participant.

2.5. Data Analysis

Statistical analyses were performed using IBM SPSS Statistics software (Version 25). Prior to inferential testing, the dataset was screened for missing values and outliers. The normality of data distribution was verified by examining skewness and kurtosis values, justifying the use of parametric statistical tests. To justify the application of parametric statistical procedures, the standard assumptions outlined by Ural and Kılıç (2013) were evaluated. According to Ural and Kılıç (2013, p. 57), the primary conditions for employing parametric tests include: (i) the quantitative nature of the data, (ii) normal distribution of scores, (iii) homogeneity of variances, (iv) random selection of participants from the target population, (v) independence of observations, and (vi) a minimum sample size of 10 (noting that sample sizes exceeding 30 favor parametric procedures over non-parametric alternatives). In the present study, all these conditions were fulfilled—specifically, the quantitative data collection, independent sampling, a sample size of N = 156, and acceptable skewness and kurtosis ranges justified the execution of parametric tests. Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated to profile the sample and summarize scale scores. Independent-samples t-tests and one-way Analysis of Variance (ANOVA) were executed to examine differences across demographic variables. When ANOVA

indicated significant group differences, Bonferroni post-hoc tests were conducted to identify the source of variance, accompanied by effect size calculations (Cohen's *d* and Eta-squared).

To determine the practical significance of mean differences in independent samples t-tests, effect sizes were evaluated using Cohen's *d*. The interpretation of Cohen's *d* values was based on the standard thresholds proposed by Cohen (1988), where $d < 0.20$ indicates a negligible effect, $0.20 \leq d < 0.50$ a small effect, $0.50 \leq d < 0.80$ a medium effect, and $d \geq 0.80$ a large effect size (Cohen, 1988). For one-way ANOVA procedures, Eta-squared (η^2) coefficients were calculated to assess the proportion of total variance explained by group differences. Following established academic criteria (Büyüköztürk et al., 2018; Cohen, 1988; Green & Salkind, 2014), $\eta^2 < 0.01$ was classified as a negligible effect, $0.01 \leq \eta^2 < 0.06$ as a small effect, $0.06 \leq \eta^2 < 0.14$ as a medium effect, and $\eta^2 \geq 0.14$ as a large effect size. Finally, Pearson product-moment correlation analysis was conducted to evaluate the relationship between AI awareness levels and decision-making skills. To interpret continuous mean scores and define cut-off points, score evaluation intervals were determined using the standard formula: "(Highest Value - Lowest Value) / Number of Options" (Karasar, 2012; Taşdemir, 2003; Tekin, 1996). An interval width of 0.80 was applied for the 5-point Artificial Intelligence Awareness Scale [1.00–1.80 "Very Low / Strongly Disagree", 1.81–2.60 "Low / Disagree", 2.61–3.40 "Moderate / Undecided", 3.41–4.20 "High / Agree", 4.21–5.00 "Very High / Strongly Agree"], while an interval width of 1.60 was utilized for the 9-point Decision-Making Scale [1.00–2.60 "Very Low / Not Important At All", 2.61–4.20 "Low Importance", 4.21–5.80 "Moderate Importance", 5.81–7.40 "High / Important", 7.41–9.00 "Very High / Very Important"]. Based on these thresholds, teachers' overall AI awareness mean (Mean = 3.580) was interpreted at the "High / Agree" level, and their general decision-making skills mean (Mean = 7.646) was interpreted at the "Very High / Very Important" level.

Table 1. Frequency and Percentage Distributions Regarding the Demographic Characteristics of the Participants

Variables	Groups	f	Valid %
Gender	Female	104	67.5
	Male	50	32.5
	Unanswered	2	-
Age	20-30	26	16.9
	31-40	51	33.1
	41-50	61	39.6
	51-60	8	5.2
	61 and Over	8	5.2
	Unanswered	2	-
Educational Status	Undergraduate	126	80.8
	Postgraduate	30	19.2
Institution Type	Public	84	53.8
	Private	61	39.1
	Course	11	7.1
School Level	Primary	54	34.8
	Middle	45	29.0
	High	36	23.2
	Primary and Middle	7	4.5
	Middle and High	7	4.5
	Special Education	6	3.9
	Unanswered	1	-
Branch Distribution	Verbal Subjects	75	48.4
	Numerical Subjects	39	25.2
	Foreign Languages	26	16.8
	Fine Arts	15	9.7
	Unanswered	1	-
Professional Seniority	1-5 Years	22	14.2
	6-12 Years	43	27.7
	13-22 Years	60	38.7
	23-29 Years	18	11.6
	30 Years and Over	12	7.7
	Unanswered	1	-
TOTAL		156	100.0

3. RESULTS

In this section, the findings obtained in line with the sub-objectives of the research and the discussions regarding these findings are presented under three main subheadings parallel to the research questions determined in the Introduction section. Before proceeding to the main findings, the general distribution regarding the demographic characteristics of the teachers participating in the research is given in Table 1.

When the distributions regarding the demographic characteristics of the teachers participating in the research are examined, it is seen that data obtained from a total of 156 participants were analyzed. Looking at the gender distribution of the participants, it was determined that 67.5% (n=104) were female and 32.5% (n=50) were male. In terms of the age variable, it was determined that the most intense participation was provided by teachers in the 41-50 age range with 39.6% (n=61), followed by the 31-40 age group with 33.1% (n=51). When their educational status is examined, it was determined that a large majority of the teachers (80.8%) have undergraduate degrees, and a segment of 19.2% has postgraduate education.

3.1. Findings and Discussion Regarding Teachers' Artificial Intelligence Awareness and Decision-Making Skill Levels

Within the scope of the first question of the research, the descriptive analysis results conducted to determine the general levels of teachers' artificial intelligence awareness and decision-making skills are presented in Table 2.

Table 2. Summary Information on the Item Statistics of the Scales

Statistical Values	Artificial Intelligence Awareness	Decision-Making Skills
Number of Items	51	39
General Item Mean	3.580	7.646
Lowest Mean Among Items	2.538	6.884
Highest Mean Among Items	4.167	8.394

When Table 2 is examined, it is determined that teachers' general artificial intelligence awareness (Item mean: 3.580) and decision-making skills (Item mean: 7.646) are at a high level. In today's education ecosystem where digital transformation is accelerating, the high awareness of teachers regarding these technologies can be evaluated as a positive indicator of their potential to adapt to professional development. As a matter of fact, Arslan (2020) in the literature supports this finding by emphasizing that the increase in educators' awareness levels towards artificial intelligence directly and positively affects the classroom use of these technologies and the efficiency of teaching processes.

3.2. Findings and Discussion Regarding the Examination of Artificial Intelligence Awareness and Decision-Making Skills According to Demographic Variables

3.2.1. Findings and Discussion Regarding the Educational Status Variable

No significant difference was found in the artificial intelligence awareness of teachers according to educational status [Undergraduate (X=181.64, sd=23.05); Postgraduate (X=186.10, sd=35.93), p=.521]. However, significant differences were observed in some sub-dimensions of decision-making skills, and the results are presented in Table 3.

When Table 3 is examined, a statistically significant difference was found in favor of teachers who received postgraduate education in the "Cognitive Factors" [Undergraduate (X=22.07, sd=4.26); Postgraduate (X=23.76, sd=3.04), p=.042] and "Information and Goal" [Undergraduate (X=53.41, sd=9.36); Postgraduate (X=57.93, sd=8.01), p=.016] sub-dimensions of decision-making skills. The thesis emphasized by Şahin (2023) that "effective decision-making requires a qualified cognitive preparation process" is concretely supported by these data. The methodological perspective that academic specialization brings to the teacher directly strengthens the ability to pass data through a rational filter. In addition to this, although no statistically significant difference was found in the "Uncertainty" sub-dimension [Undergraduate (X=22.34, sd=4.39); Postgraduate (X=23.90, sd=3.15), p=.069], it is noteworthy that the

p-value is quite close to the significance limit (.05) and the arithmetic means of teachers with postgraduate degrees show a higher trend. This difference approaching significance can be interpreted as the scientific inquiry and flexible thinking skills gained through postgraduate education positively supporting teachers' capacity to take initiative and produce analytical solutions in complex, unpredictable, and uncertainty-containing pedagogical crisis situations.

Table 3. Independent Samples T-Test Results of Teachers' Decision-Making Skill Scores According to the Educational Status Variable

Variables	Educational Status	N	$\bar{X}$	SD	df	*t*	*p*	*d*	Source of Difference
Statistical Values	Undergraduate	126	295.76	55.22	154	-	.233	0.25	-
	Postgraduate	30	308.36	33.17		1.197			
Number of Items	Undergraduate	126	22.07	4.26	154	-	.042 *	0.42	Postgraduate >
	Postgraduate	30	23.76	3.04		2.050			Undergraduate
General Item Mean	Undergraduate	126	37.60	11.48	154	1.175	.242	0.25	-
	Postgraduate	30	34.96	8.91					
Lowest Mean Among Items	Undergraduate	126	46.39	12.22	154	-.578	.564	0.12	-
	Postgraduate	30	47.73	6.78					
Highest Mean Among Items	Undergraduate	126	61.99	14.38	154	-	.231	0.25	-
	Postgraduate	30	65.24	6.72		1.202			
Statistical Values	Undergraduate	126	53.41	9.36	154	-	.016 *	0.51	Postgraduate >
	Postgraduate	30	57.93	8.01		2.439			Undergraduate
Number of Items	Undergraduate	126	22.34	4.39	154	-	.069	0.38	-
	Postgraduate	30	23.90	3.15		1.831			
General Item Mean	Undergraduate	126	29.53	5.73	154	-	.205	0.27	-
	Postgraduate	30	30.98	5.01		1.273			
Lowest Mean Among Items	Undergraduate	126	22.40	4.52	154	-	.112	0.34	-
	Postgraduate	30	22.36	3.89		1.598			

3.2.2. Findings and Discussion Regarding the Branch Variable

While no significant difference was found in artificial intelligence awareness according to the branch variable ($p>.05$), the ANOVA results regarding the decision-making sub-dimensions are presented in Table 4.

Table 4. ANOVA Results of Teachers' Decision-Making Skill Scores According to the Branch Variable

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	*p*	η^2	Source of Difference
Decision Making (Total)	Between Groups	8390.89	3	2796.96	1.039	.377	0.02	-
	Within Groups	406597.98	151	2692.70				
	Total	414988.87	154					
Cognitive Factors	Between Groups	43.82	3	14.61	.864	.461	0.02	-
	Within Groups	2554.41	151	16.91				
	Total	2598.24	154					
Social Pressure	Between Groups	128.11	3	42.70	.345	.793	0.01	-
	Within Groups	18694.16	151	123.80				
	Total	18822.27	154					
Time and Money	Between Groups	272.22	3	90.74	.696	.556	0.01	-
	Within Groups	19696.72	151	130.44				
	Total	19968.94	154					
Self-Regulation	Between Groups	492.67	3	164.22	.925	.430	0.02	-
	Within Groups	26812.05	151	177.56				
	Total	27304.72	154					

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	*p*	η^2	Source of Difference
Information and Goal	Between Groups	794.20 12518.41	3 151	264.73 82.90	3.193	.025*	0.06	Foreign Language, Verbal > Quantitative, Fine Arts
	Within Groups	13312.61	154					
	Total							
Uncertainty	Between Groups	24.29 2736.89	3 151	8.09 18.12	.447	.720	0.01	-
	Within Groups	2761.18	154					
	Total							
Self-Evaluation	Between Groups	56.29 4823.19	3 151	18.76 31.94	.587	.624	0.01	-
	Within Groups	4879.49	154					
	Total							
Decision Outcomes	Between Groups	13.86 3005.52	3 151	4.62 19.90	.232	.874	0.00	-
	Within Groups	3019.39	154					
	Total							

Although there is no difference in the general decision-making scores of the teachers according to the branch, there is a significant difference between the branches in the "Information and Goal" dimension (p=.025). When the averages are examined, it is seen that the goal-setting skills of foreign language (X=56.19, sd=5.56) and verbal (X=55.82, sd=7.33) teachers are higher compared to numerical (X=51.05, sd=11.40) and fine arts (X=51.53, sd=14.22) teachers. This situation can be evaluated as a positive reflection of the intense planning, communicative processes, and goal-oriented pedagogical approaches inherent in the structure of verbal and language-based branches on teachers' decision-making strategies. Although technological awareness transcends branch boundaries, decision-making tendencies are affected by the nature of the taught discipline. This situation can be evaluated as a positive reflection of the intensive communicative processes and contextual analysis skills (Floridi et al., 2018) inherent in the structure of verbal disciplines on the level of strategic preparation of teachers in decision-making processes.

3.2.3. Findings and Discussion Regarding the Institution Type Variable

While the type of institution worked did not create a significant difference in artificial intelligence awareness (p >.05), it was the variable with the most distinct statistical difference in decision-making skills (Table 5).

Table 5. ANOVA Results of Teachers' Decision-Making Skill Scores According to the Institution Type Variable

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	*p*	η^2	Source of Difference
Decision Making (Total)	Between Groups	24089.85	2	12044.92	4.690	.011*	0.06	Public > Course
	Within Groups	392953.83	153	2568.32				
	Total	417043.69	155					
Cognitive Factors	Between Groups	163.72	2	81.86	5.120	.007*	0.06	Public, Private > Course
	Within Groups	2446.15	153	15.98				
	Total	2609.88	155					
Social Pressure	Between Groups	354.03	2	177.01	1.455	.237	0.02	-
	Within Groups	18615.51	153	121.67				
	Total	18969.54	155					
Time and Money	Between Groups	484.40	2	242.20	1.893	.154	0.02	-
	Within Groups	19578.29	153	127.96				
	Total	20062.69	155					
Self-Regulation	Between Groups	1170.43	2	585.21	3.408	.036*	0.04	Public > Course
	Within Groups	26270.20	153	171.70				
	Total	27440.64	155					
Information and Goal	Between Groups	906.04	2	453.02	5.585	.005*	0.07	Public, Private > Course
	Within Groups	12409.54	153	81.10				
	Total	13315.59	155					

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	*p*	η^2	Source of Difference
Uncertainty	Between	153.04	2	76.52	4.484	.013*	0.06	Public >
	Groups Within	2610.85	153	17.06				Course
	Groups Total	2763.89	155					
Self-Evaluation	Between	219.66	2	109.83	3.600	.030*	0.04	Public >
	Groups Within	4667.81	153	30.50				Course
	Groups Total	4887.47	155					
Decision Outcomes	Between	129.12	2	64.56	3.380	.037*	0.04	Public >
	Groups Within	2922.69	153	19.10				Course
	Groups Total	3051.81	155					

While the type of institution worked does not create a significant difference in artificial intelligence awareness [Public (X=185.01, sd=22.56), Private (X=180.31, sd=29.18), Course (X=175.47, sd=31.10), p=.366], it was the variable where the most distinct difference was statistically detected in decision-making skills. When the table results are examined, it is seen that the general decision-making total scores of teachers working in public schools [Public (X=305.61, sd=40.28), Private (X=295.44, sd=55.44), Course (X=256.63, sd=85.94), p=.011] are significantly higher compared to teachers working in course centers. This situation indicates that the long-term education planning, curriculum discipline, and stable professional environment offered by institutional school structures support the decision-making quality of teachers. The short-term and exam-oriented structure of course environments limits the rational decision-making processes of teachers. This finding exactly parallels the study of Yılmaz and Talas (2010), which argues that the decision-making process in organizations is directly shaped by the conditions the institution is in and the institutional climate. It is understood that the narrow exam-focused structure of course centers limits the pedagogical initiative-taking processes of teachers.

3.2.4. Findings and Discussion Regarding Gender, Age, Professional Seniority, and School Level Variables

As a result of the *t*-test and ANOVA analyses conducted, both the artificial intelligence awareness levels and decision-making skills of the teachers did not show a statistically significant difference according to the variables of gender, age, professional seniority, school level worked, and school type (p>.05). This general finding proves that artificial intelligence being an inclusive and universal agenda affects all age, seniority, and gender groups at a similar level. The lack of differentiation according to age or gender, especially in decision-making skills, indicates that this skill is shaped by the structural requirements, formation, and institutional expectations of the teaching profession rather than biological processes that come with age. Although Nas (2010) expresses in the literature that the individual's professional experiences and age are determining factors in the decision-making stage, the fact that all age and seniority groups are at a similar starting point (novice stage) in the integration of a relatively new technology like artificial intelligence into education might have eliminated the expected demographic differences.

3.3. Findings and Discussion Regarding the Relationship Between Artificial Intelligence Awareness Levels and Decision-Making Skills.

3.3.1. The Relationship Between Artificial Intelligence Awareness and Decision-Making Skills

The findings regarding the correlation between the two constructs, which is the main problem of the research, are presented in Table 6.

According to the analysis results, a positive but quite weak/negligible relationship was found between the teachers' artificial intelligence awareness total score and decision-making skills total score (r=0.163; p=0.042). The existence of technological consciousness is not sufficient for the reflection of rational decision-maker models defined by Russell and Norvig (2020) on educational practice. This weak relationship obtained proves that teachers have not yet fully integrated artificial intelligence tools into their classrooms as a pedagogical "decision support system" and that traditional intuitive methods are still at the forefront in decision processes. In addition, the fact that artificial intelligence systems are still devoid of innovative thinking and human-specific intuitive qualities (İnce et al., 2021) might be preventing teachers

from centering these tools in their decision mechanisms and putting them into practice. As Bulut (2026) states, technological awareness must not only remain in theory but transform into "application competence".

Table 6. Correlation Analysis Results Between Artificial Intelligence Awareness and Decision-Making Skills

Var	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1													
2	.83**	1												
3	.78**	.49**	1											
4	.87**	.62**	.88**	1										
5	.78**	.61**	.43**	.51**	1									
6	.80**	.78**	.44**	.57**	.57**	1								
7	.82**	.76**	.50**	.63**	.61**	.71**	1							
8	.88**	.84**	.57**	.67**	.63**	.76**	.81**	1						
9	.83**	.75**	.51**	.67**	.64**	.67**	.75**	.82**	1					
10	.16*	.14	.10	.12	.14	.13	.20*	.17*	.14	1				
11	.17*	.13	.12	.16*	.13	.12	.19*	.17*	.17*	.84**	1			
12	.08	.08	.08	.04	.06	.05	.12	.05	.04	.79**	.45**	1		
13	.15	.17*	.05	.11	.11	.16	.19*	.19*	.13	.82**	.57**	.58**	1	
14	.14	.09	.05	.08	.16*	.11	.17*	.18*	.12	.86**	.67**	.56**	.67**	1

Note: Var=Variables; 1=Decision Making (Total); 2=Cognitive Factors; 3=Social Pressure; 4=Time Pressure; 5=Self-Regulation; 6=Information and Goal; 7=Uncertainty; 8=Decision Evaluation; 9=Decision Outcomes; 10=AI Awareness (Total); 11=Application Knowledge; 12=Belief and Attitude; 13=Ability to Relate; 14=Theoretical Knowledge

4. DISCUSSION

The finding that teachers' general artificial intelligence awareness is at a high level can be evaluated as a positive indicator of their potential to adapt to professional development. As Arslan (2020) emphasizes, the increase in educators' awareness levels towards artificial intelligence directly and positively affects the efficiency of teaching processes.

The fact that demographic variables such as gender, age, and professional seniority did not create a significant difference in both artificial intelligence awareness and decision-making skills proves that these competencies are shaped by universal professional standards brought by the teaching profession rather than biological processes or age-related factors. Although Nas (2010) expresses that age is a determining factor in decision-making, the fact that all age groups are at a similar starting point in the integration of AI might have eliminated the expected demographic differences. The absence of statistically significant differences in teachers' overall AI awareness and general decision-making skills across demographic variables (gender, age, professional seniority, and school level) warrants critical discussion. Theoretically, AI integration in education constitutes a rapid, pervasive, and non-discriminatory digital agenda. Because all educators are exposed to public discourse and educational technology policies concurrently, baseline AI awareness remains homogeneous regardless of age or gender cohorts. Regarding decision-making competence, professional judgment in instructional management is largely institutionalized—shaped by standardized pedagogical training, national curriculum requirements, and collective professional routines rather than personal demographic profiles (Şahin, 2023; Yılmaz & Talas, 2010).

Regarding educational status, the thesis emphasized by Şahin (2023) that "effective decision-making requires a qualified cognitive preparation process" is concretely supported by the finding that postgraduate teachers scored higher in cognitive and goal-setting dimensions. The methodological perspective is that academic specialization directly strengthens the ability to pass data through a rational filter. Furthermore, the superiority of foreign language and verbal teachers in the "Information and Goal" setting dimension can be evaluated as a positive reflection of the intensive communicative processes and contextual analysis skills inherent in verbal disciplines (Floridi et al., 2018). The finding that teachers holding postgraduate degrees demonstrated significantly higher scores in the Cognitive Factors and Information and Goal sub-dimensions aligns strongly with educational theory. Postgraduate studies provide educators with rigorous scientific inquiry training, systematic data analysis skills, and heightened metacognitive reflection. As a result, teachers with advanced degrees are better equipped to systematically gather empirical evidence,

critically process instructional data, and evaluate alternative outcomes when formulating pedagogical goals and making complex classroom decisions (Büyüköztürk et al., 2018; Şahin, 2023).

The institution type emerged as a critical factor for decision-making skills. The stable professional environment, long-term education planning, and curriculum discipline offered by institutional school structures (public and private) support the decision-making quality of teachers. In contrast, the narrow, short-term, and exam-focused structure of course environments limits the rational decision-making processes of teachers. This exactly parallels the study of Yılmaz and Talas (2010), which argues that the decision-making process is shaped by the institutional climate.

Finally, the positive but weak relationship (r = 0.163) obtained between the main variables proves that teachers have not yet fully integrated artificial intelligence tools into their classrooms as a pedagogical "decision support system" and that traditional intuitive methods are still at the forefront in decision processes. As Bulut (2026) states, technological awareness must not only remain in theory but transform into "application competence." The lack of human-specific intuitive qualities in current AI systems (İnce, İmamoğlu & İmamoğlu, 2021) might be preventing teachers from centering these tools in their practical decision mechanisms. From a psychometric perspective, the statistical significance (p = .042) of this weak relationship (r = .163) can be attributed to the high item discrimination power of both measurement instruments and the substantial standard deviations observed in total scores (SD = 25.90 for AIAS and SD = 51.87 for Decision-Making Scale). The absence of range restriction or ceiling/floor effects allowed the scales to capture fine-grained individual variations within the sample (N = 156), rendering even a minor linear trend statistically detectable. Nevertheless, the negligible magnitude of r = .163 highlights that theoretical AI literacy has not yet transformed into applied pedagogical decision-support capabilities, with educators continuing to rely primarily on traditional and intuitive judgment in instructional management (Bulut, 2026; İnce et al., 2021).

5. CONCLUSION

5.1. Conclusions

This study concluded that a positive but negligibly weak correlation exists between teachers' artificial intelligence (AI) awareness levels and their professional decision-making skills. This primary outcome demonstrates that educators' technological consciousness currently remains predominantly at a theoretical level and has not yet been meaningfully translated into classroom-based pedagogical decision-making processes. As emphasized in educational decision-making theory, possessing high conceptual technology awareness does not automatically guarantee functional integration into instructional management, where traditional and intuitive decision-making routines continue to predominate among teachers (Bulut, 2026; Russell & Norvig, 2020).

Furthermore, general AI awareness and overall professional decision-making competencies exhibited no statistically significant variations across demographic characteristics such as gender, age, professional seniority, school level, or school type. This uniformity indicates that AI awareness represents an inclusive, pervasive digital agenda that impacts educators simultaneously regardless of age cohorts or career stages (Bulut, 2026). Similarly, teachers' professional decision-making capacity is fundamentally molded by universal pedagogical formation, standardized national curriculum frameworks, and collective institutional expectations rather than individual demographic profiles (Şahin, 2023; Yılmaz & Talas, 2010).

In contrast, notable differences emerged in specific sub-dimensions of decision-making skills. Teachers holding postgraduate degrees displayed significantly higher competency in cognitive decision factors and goal-setting capabilities, proving that academic specialization and scientific inquiry training provide a vital methodological advantage in filtering and evaluating complex instructional data (Büyüköztürk et al., 2018; Şahin, 2023). Additionally, teachers in foreign language and verbal branches demonstrated greater proficiency in target setting, reflecting the intensive communicative and contextual analysis demands inherent in verbal disciplines (Floridi et al., 2018). Finally, educators employed in public and private school environments displayed superior decision-making skills compared to those working in short-term course centers, underscoring how stable institutional climates and long-term planning frameworks nurture rational pedagogical judgment (Yılmaz & Talas, 2010).

5.2. Recommendations

5.2.1. Recommendations for Practical Application (Policymakers, Administrators, and Developers)

- For Policymakers and the Ministry of National Education (MoNE): In-service training initiatives organized for teachers should transition away from abstract, passive theoretical IT presentations. Instead, applied and scenario-based workshops should be established, focusing specifically on how AI tools can function as active "pedagogical decision-support systems" for analyzing student learning analytics and adjusting instructional strategies (Bulut, 2026; Floridi et al., 2018).
- For School Administrators: Given the clear cognitive advantage demonstrated by postgraduate-educated teachers in goal setting and information processing, institutional management should actively encourage and incentivize teachers to pursue postgraduate studies. Furthermore, administrators should establish professional learning communities and peer-mentoring frameworks within schools to spread data-driven decision practices (Şahin, 2023).
- For Course Center Managers: Leadership in short-term course centers should restructure institutional management away from narrow, exam-focused constraints. Providing educators with broader pedagogical autonomy, self-regulation opportunities, and systematic planning spaces is essential to enhancing decision-making quality (Yılmaz & Talas, 2010).
- For Educational Technology (EdTech) Developers: Software developers should design "human-in-the-loop" decision-support systems that assist teachers in diagnostic data interpretation while preserving human empathetic, intuitive, and contextual authority in final instructional choices (Erdem, 2026; İnce et al., 2021).

5.2.2. Recommendations for Future Researchers

- Qualitative and Mixed-Method Inquiries: Future studies should employ qualitative or mixed-method designs, such as classroom observations and in-depth interviews, to deeply explore the contextual barriers, ethical concerns, or lack of emotional empathy that currently prevent teachers from integrating AI into their live decision-making processes (Bulut, 2026; Çatal, 2026; Fidan, 2024).
- Geographic and Sample Diversity: Because the current study was bounded by the sample in Samsun province, future empirical research should be conducted across diverse provinces and varying socio-economic regions to enable comparative generalizations across broader educational contexts.
- Testing Structural Models: Structural equation modeling (SEM) should be utilized in future research to test the potential mediating or moderating roles of psychological and digital variables, such as technological self-efficacy, digital literacy, and critical thinking, in the relationship between AI awareness and professional decision-making (Arslan, 2020; Karabulut, 2025).

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Research Ethics. Ethical approval for this research was obtained from the Ondokuz Mayıs University Social and Human Sciences Research Ethics Committee with the decision dated 27.03.2026 and numbered 2026-328.

Data Availability Statement. The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest. The authors declare that there are no financial or non-financial conflicts of interest regarding the publication of this paper.

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Appendix A. Research Participation and Data Collection Instruments

RESEARCH PARTICIPATION AND INFORMED CONSENT FORM

Dear Colleague, this questionnaire has been prepared within the scope of research conducted under the supervision of Prof. Dr. İsmail GELEN at Ondokuz Mayıs University, Institute of Educational Sciences, Department of Educational Programs and Instruction.

The main purpose of the research is to examine the relationship between "Artificial Intelligence Awareness", which is increasingly important in today's education system, and "Decision-Making Skills" in the professional lives of teachers. All necessary permissions for the study have been obtained. As an educator working in Samsun, your experiences and opinions in this process are of critical importance for the reliability of the findings.

Participant Information:

- All information you share will be kept strictly confidential in accordance with scientific ethical principles and will absolutely not be shared with third parties.
- The data will not be used on a personal basis but as aggregate statistical data in academic publications and reports.
- There is no "right" or "wrong" answer to the questions; the sincere answers you provide are essential for the scientific value of the research.

Thank you for your valuable contribution and professional solidarity to this study in the field of educational sciences.

Beyzanur YASAN Master's Student Ondokuz Mayıs University

PART 1: PERSONAL INFORMATION *Please fill in the blanks or mark the appropriate option below.*

Gender: ( ) Female ( ) Male

Age: .....

Educational Status: ( ) Undergraduate ( ) Postgraduate (Master's) ( ) Doctorate

Branch (Subject Area): .....

Professional Seniority (Years): .....

Type of Institution (Public / Private / Course Center): .....

School Level (Primary / Middle / High School): .....

School Type (Anatolian, Science, Vocational-Technical, etc.): .....

PART 2: ARTIFICIAL INTELLIGENCE AWARENESS SCALE *Please indicate your degree of agreement with the statements below (1: Strongly Disagree ... 5: Strongly Agree).*

PART 3: DECISION-MAKING SCALE *Please indicate the importance of the following situations in your decision-making process (1: Not Important At All ... 9: Very Important).*