

# Examination of curriculum literacy and pedagogical knowledge and skill levels of secondary school teachers

Hürrem Evli<sup>1</sup>  | Sanem Tabak<sup>2\*</sup> 

1 Ministry of National Education, Ordu, Türkiye | 2 Department of Educational Sciences, Faculty of Education, Ordu University, Ordu, Türkiye

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## ABSTRACT

The study aims to examine the relationship between secondary school teachers' perceptions of curriculum literacy and their pedagogical knowledge and skill levels. The study was designed using relational research, a quantitative research method. The study participants comprised 221 secondary school teachers working in Ordu province. When the study results were examined, it was determined that middle school teachers' curriculum literacy levels were above the average on the scale. Among the sub-dimensions of curriculum literacy, secondary school teachers had the highest level of perceived valuing of the curriculum and the lowest level of questioning it. Also, teachers' pedagogical knowledge and skill levels are generally above the midpoint of the scale. Among the pedagogical knowledge and skills sub-dimensions, teachers had the highest mean score in the student learning sub-dimension and the lowest in the instructional support sub-dimension. In the study, it was also determined that there was no significant difference between secondary school teachers' curriculum literacy levels and pedagogical knowledge and skills levels according to the variables of subject area and professional seniority. According to the research results, a significant positive relationship was found between secondary school teachers' curriculum literacy levels and their pedagogical knowledge and skills.

**KEYWORDS:** Curriculum literacy; Pedagogical knowledge and skills; Teachers' professional development

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## 1. Introduction

Teachers are one of the most fundamental elements of the education system. The success of the curriculum is directly related to how the teacher interprets, implements, and evaluates the curriculum. Innovations in curriculum require teachers to be not only curriculum implementers, but also critical thinkers and guides who can direct and encourage active student participation. These innovations require teachers to continuously evaluate and develop their pedagogical knowledge and skills, as well as their level of understanding of the curriculum. The curriculum guides the education and teaching processes. The curriculum determines the objectives of education, the content needed to achieve them, how to convey this content to students, and how to assess students' achievement of these objectives (Çetinkaya & Tabak, 2019). The curriculum is the resource that guides teachers in the education and teaching process. For this reason, teachers must have knowledge and competence in the content, subject matter, skills, and all elements aligned with the curriculum's

objectives (Posner, 1995). Because teachers organize their content and lessons within the framework of educational programs, they must understand the curriculum and implement it effectively for the curriculum to be effective. Effective curriculum implementation is possible only if teachers can interpret the curriculum well and clearly understand its components.

This area of professional knowledge, defined as curriculum literacy, was first defined by Shulman (1987) as "curriculum knowledge." Shulman (1987) defined the concept of curriculum knowledge as the teacher's awareness of all components of the curriculum planned for teaching their own subject or a specific area, knowledge of the variety of materials included in the curriculum, and the ability to use these materials appropriately for their students. Ariav (1988), on the other hand, considers the concept of "curriculum literacy" as an extension of curriculum knowledge; he expresses it as a pedagogical competence area ranging from a teacher's conscious analysis and selection of ready-made materials (basic level) to understanding the dynamics of more comprehensive curriculum development processes (advanced level). In the context of Turkey, the concept of curriculum literacy is defined by Keskin and Korkmaz (2017, p. 858) as "the ability to be knowledgeable about educational programs, interpret them, evaluate them with a critical eye, and adapt them to life conditions." MoNE (2017) lists the skills teachers need to be good curricular literates as: knowing the basic philosophical approach of the curriculum, being able to explain how learning takes place according to psychological theories, considering the compatibility between the program and the cultural and social environment in which it is implemented, relating the outcomes to basic and field-specific skills, and being able to prepare teaching methods and techniques to be used in the learning-teaching process in line with the outcomes in the curriculum, as well as assessment and evaluation techniques and lesson plans suitable for student characteristics.

Curriculum literacy has been addressed by researchers in different dimensions. Research conducted on this topic is presented in Table 1 (Aslan & Gürten, 2019; Bolat, 2017; Erdamar, 2020; Kahramanoğlu, 2019; Keskin, 2019; Yar Yıldırım, 2018).

**Table 1** *Research on the dimensions of curriculum literacy*

Research	The dimension of curriculum literacy
Aslan & Gürten, 2019	Curriculum knowledge, planning, implementation
Bolat, 2017	Goal, content, learning and teaching processes, assessment and evaluation
Erdamar, 2020	Teachers' knowledge of the curriculum and their ability to implement it
Kahramanoğlu, 2019	The foundations, elements, and structural characteristics of the curriculum
Keskin, 2019	Understanding the curriculum, implementing the curriculum, evaluating the curriculum, valuing the curriculum
Yar Yıldırım, 2018	Curriculum knowledge (purpose, philosophy, concepts), skills (curriculum preparation, implementation, guidance, monitoring, evaluation, management skills), and attitudes (assistance, support, meeting needs, explanation)

The study is based on Keskin's (2019) classification of the components of curriculum literacy mentioned above. The understanding the curriculum dimension is interpreted as knowing the factors included in the curriculum, such as the number of learning outcomes, the distribution of learning outcomes, and the duration of implementation. In other words, this dimension is defined as the

process of understanding the curriculum's content and structure. One of the most emphasized issues regarding curricula is that teachers must have sufficient knowledge about them. Erden (1998) states that the variables aimed at increasing student achievement are classroom and out-of-classroom activities carried out within the framework of the curriculum; he emphasizes that it is important for teachers to first understand the curriculum in order to plan and design these activities. The most important and comprehensive dimension of curriculum literacy, the implementation of the curriculum dimension, is defined as planning, interpreting, and adapting, from an interdisciplinary perspective, personal differences, determining materials, gains, and content (Keskin, 2019). In other words, the implementation of the curriculum dimension refers to the application of the curriculum in the classroom or real-world learning environments. The curriculum inquiry dimension is considered a process of critically examining the curriculum. Teachers who are proficient in curriculum literacy can take a more critical approach in their comments and evaluations of the curriculum. In this way, teachers' creativity develops, and the quality of learning environments can improve (Keskin, 2019). The dimension of valuing the curriculum contributes to curriculum development by reflecting on its role in education. This perspective, which can be summarized as teachers' acceptance of the curriculum, is based on the need for teachers to adopt a positive approach to the curriculum to better adapt it (Keskin, 2019).

The meaning of curriculum literacy can be expressed as knowing, recognizing, applying, and planning the implemented curriculum. For this reason, a curriculum-literate teacher is expected to analyze the curriculum thoroughly and apply it effectively to their students, thereby benefiting them (Güleş, 2022). In this context, the better the teacher's knowledge and skills, the more students' learning and the continuity of what they learn will increase proportionally (Karacaoğlu, 2008). In this regard, teachers should not only be content with knowledge and skills related to their own fields but also possess pedagogical knowledge and skills. Shulman (1986) was the first to emphasize that teachers must possess pedagogical content knowledge in addition to their subject-specific knowledge and professional knowledge. Shulman (1986) categorized the knowledge teachers should possess into instructional content knowledge, subject-specific knowledge, and pedagogical content knowledge, and defined pedagogical content knowledge as the knowledge of presenting and explaining topics that are continuously taught in a specific field in a way that is understandable to others, using the most useful expressions, examples, analogies, and definitions. Pedagogical knowledge is the ability to facilitate the learning of easy or difficult information for students of different ages and classes (Shulman, 1986). Shulman argues that teachers must possess knowledge of a subject area to explain it in ways students can understand, and that each teacher can convey the subject in different ways (Shulman, 1987).

Shulman (1986) states that the basic components of pedagogical content knowledge are the elements that represent the subject, demonstration knowledge, and understanding of students' learning difficulties. He emphasizes that teachers need to know that these components are interconnected and flexible. According to Shulman (1987), the fundamental types of knowledge that constitute teachers' expertise are classified as follows: (1) Subject Knowledge: Knowledge of the concepts and principles that constitute the subject area; (2) Curriculum Knowledge: Knowledge of the materials and curriculum required for the teacher; (3) Pedagogical Content Knowledge: The combination of content and pedagogy within the teacher's area of expertise; (4) General Pedagogical Knowledge: All knowledge related to subject knowledge and classroom organization and management; (5) Knowledge of students and student characteristics; (6) Knowledge of classroom environments; (7) Knowledge of the goals, values, and expected outcomes to be achieved in the

educational process. Pedagogical content knowledge is addressed in four dimensions: “Subject content knowledge,” “Knowledge of understanding students,” “Knowledge of teaching strategies,” and “Knowledge of curriculum” (Grossman, 1990; Shulman, 1987). Pedagogical content knowledge encompasses educators’ knowledge of how to teach a specific subject to a group of students, using multiple teaching strategies, presentation methods, and interpretation methods, while working within the cultural, social, and contextual constraints of the learning environment (Park & Oliver, 2008). Teachers who are proficient in pedagogical knowledge and skills prevent their students from learning incorrectly or incompletely through their instructional strategies and techniques, enable them to learn information that is considered difficult, raise their academic achievement, and help them reach their expected goals (Shulman, 1986).

In Turkey, the Ministry of National Education (MoNE) began work on teacher competencies in 1999 and established a “Teacher Competencies Commission” involving various stakeholders. The commission defined teacher competencies in three areas: “general cultural knowledge and skills,” “teaching and learning competencies,” and “subject-specific knowledge and skills,” which were implemented in 2002. Due to evolving conditions and shifts in the knowledge teachers need, the Ministry of National Education (MoNE) defined the “General Competencies for the Teaching Profession” framework in 2017. These competencies encompass the skills, attitudes, and knowledge that teachers need. The general competency areas of the teaching profession consist of professional skills, professional knowledge, attitudes, and values (MoNE, 2017). According to Gökçek and Yılmaz (2019), pedagogical knowledge and skills constitute a multidimensional structure that forms teacher competence. Pedagogical knowledge and skills encompass a multifaceted structure that includes content knowledge, pedagogical content knowledge, and general pedagogical knowledge, as well as skills such as interpretation, perception, and decision-making (König et al., 2015). Within this multidimensional structure, teachers should not be content with merely knowing the content of the lesson or subject; they should also know how best to convey it in line with students’ characteristics and manage the classroom. Pedagogical knowledge encompasses all interactions between students and teachers. Teachers with a high level of pedagogical knowledge and skills can prevent students from learning incorrectly or incompletely by using effective teaching strategies and techniques, ensure that topics considered difficult to learn are easily understood, and thereby improve their academic achievement (Shulman, 1986).

A review of the literature reveals studies examining teachers’ curriculum literacy levels. These studies were generally conducted with different sample groups and different variables. Most of the studies have addressed teachers’ curriculum literacy competencies and dimensions (Aslan, 2018; Berberoğlu, 2024; Çetinkaya & Tabak, 2019; Durak, 2024; Gürbüz, 2021; Keskin, 2019; Tanaş, 2023). Most of the studies are research conducted to determine the curriculum literacy levels of teachers, teacher candidates, and administrators. The studies also developed scales to assess teachers’ curriculum literacy levels and identified the dimensions of curriculum literacy through their findings (Aslan, 2018; Bolat, 2017; Erdamar, 2020; Kahramanoğlu, 2020; Keskin, 2019). Most studies on pedagogical knowledge and skills have been conducted with teacher candidates and physical education teachers (Doğangün, 2022; Işıkgöz et al., 2022; Penjiyev et al., 2024; Zümrütyaprak, 2024). There are a limited number of studies that examine curriculum literacy and pedagogical knowledge and skill levels together. Dilek (2020) examined the relationship between curriculum literacy and pedagogical knowledge and skills with 213 teacher candidates, while Dikmen (2023) examined the relationship between curriculum literacy, curriculum autonomy, and pedagogical knowledge and skill levels with 226 elementary and middle school teachers. A review of the literature reveals that few

studies have examined the relationship between middle school teachers' curriculum literacy levels and their pedagogical knowledge and skills in Turkey. Therefore, this study fills a gap in the literature. Beyond filling a gap in the literature, this study conceptualizes curriculum literacy not as an isolated skill but as a foundational component of the holistic structure of teachers' professional knowledge. As emphasized by Shulman (1987), curriculum knowledge and pedagogical skills are inextricably linked; the ability to decode and interpret the curriculum (literacy) facilitates the effective deployment of pedagogical strategies in the classroom.

The main objective of this study is to investigate whether there is a meaningful relationship between middle school teachers' curriculum literacy levels and their pedagogical knowledge and skill levels. In line with this main objective, the study sought answers to the following questions: (1) What is the level of middle school teachers' perceptions of curriculum literacy? (2) What is the level of middle school teachers' pedagogical knowledge and skills? (3) Do middle school teachers' perceptions of curriculum literacy vary according to their subject area and professional seniority? (4) Do middle school teachers' pedagogical knowledge and skill levels vary according to their subject area and professional seniority? (5) Is there a meaningful relationship between middle school teachers' levels of curriculum literacy and their pedagogical knowledge and skills?

## 2. Method

### 2.1. Research Design

To determine the relationship between middle school teachers' curriculum literacy and their pedagogical knowledge and skill levels, the study employed a correlational quantitative research design. Correlational studies aim to determine the existence and strength of relationships among two or more variables (Büyükoztürk et al., 2016). In the first and second sub-problems of the study, the curriculum literacy and pedagogical knowledge and skill levels of middle school teachers were determined; in addition, it was examined whether teachers' literacy levels and pedagogical knowledge and skill levels differed significantly according to the variables of professional seniority and branch. These sub-problems were conducted with a descriptive research design.

### 2.2. Participants and Procedure

The study population consists of middle school teachers actively working in public schools in Ordu province during the 2023–2024 academic year. When determining the sample from this study population, the number of teachers working in middle schools in the center of Ordu province was first obtained from the Ordu Provincial Directorate of National Education, and it was determined that 810 teachers were employed. Schools were selected from this study population using random sampling, and teachers working in these middle schools were included in the study. The number of teachers to be included in the study was determined by calculating the sample size using the tables developed by the Research Advisors (2006), which were developed using the sample size calculation formula by Krejcie and Morgan (1970, cited in Canbazoglu-Bilici, 2019). It was determined that 211 teachers needed to be reached within a 95% confidence interval for the research. Taking this into account, scale forms were distributed to 270 teachers in the study. However, teachers who did not want to participate in the study and those who provided incomplete or incorrect coding on the completed scales were excluded, and the study was conducted with 221 teachers. In the study, care was also taken to ensure that the sample included middle school teachers from as many subject areas as possible. The demographic characteristics of the teachers are presented in Table 2.

**Table 2** Demographic characteristics of teachers

Categories		N	%
Gender	Female	137	62
	Male	84	38
Professional Seniority	0–5 year	24	11
	6–10 year	52	24
	11–15 year	52	24
	16–20 year	38	16
	21 year and over	55	25
Subject areas	English	31	14
	Mathematics	30	13
	Religious Culture and Ethics	24	11
	Turkish	41	19
	Social Studies	27	7
	Science	23	10
	Other	45	5
Total		221	100

### 2.3. Data Collection Instruments

In the study, the “Personal Information Form” was used to collect personal information from the middle school teachers participating. The “Curriculum Literacy Perception Scale,” developed by Keskin and Korkmaz (2021), was used to assess the curriculum literacy levels of middle school teachers. The “Pedagogical Knowledge and Skills Scale” developed by Gökçek and Yılmaz (2019) was also employed. The “Personal Information Form” was developed by the researchers to obtain information about the gender, professional seniority, type of school, and subject area of the participating teachers.

The “Curriculum Literacy Perception Scale” developed by Keskin and Korkmaz (2021) consists of 38 items and has a four-dimensional structure. These dimensions are named as follows: recognizing the program, questioning the program, implementing the program, and valuing the program. The scale is a five-point Likert type. The Cronbach’s alpha for the measurements was .934. The “Pedagogical Knowledge and Skills Scale,” developed by Gökçek and Yılmaz (2019), is a five-point Likert-type measurement tool comprising six sub-dimensions (Student Learning, Teaching Support, Lesson Planning, Adaptation to Diversity, Importance and Interest, and Classroom Management) and 37 items. The Cronbach’s alpha internal consistency coefficients for the subdimensions of the scale range from 0.79 to 0.87, and the value for the entire scale is 0.94. Within the scope of the research,

Cronbach's alpha coefficients were calculated to assess the reliability of the measurement tools, and the results are presented in Table 3.

**Table 3 Reliability levels of the measurement tools used in the study**

Measurements	Cronbach's alpha internal consistency coefficient
Understanding the curriculum	.969
Implementing the curriculum	.970
Questioning the curriculum	.972
Valuing the curriculum	.973
Curriculum Literacy Levels	.968
Student Learning	.970
Lesson Planning	.970
Teaching Support	.970
Adapting to Diversity	.969
Classroom Management	.971
Importance and Interest	.970
Pedagogical Knowledge and Skills	.968

Upon examining Table 3, it was determined that both measurement tools used as data collection instruments in the study had high reliability.

## 2.4. Data Analysis

Ethical approvals were first obtained from the XXXX University Education Research Ethics Committee. Subsequently, permission to conduct the research was obtained from the relevant Provincial Directorate of National Education. Throughout the data collection process, the scales were administered to middle school teachers at the schools identified for the study, and the purpose of the research was explained to them. Teachers participating in the application process were selected voluntarily, and no personal identifying information was requested from them. The scales were administered face-to-face and online. Data were collected between January 2024 and April 2024. The Jamovi 2.3.28 program was used to analyze the data obtained from the study. In the study's data analysis, the data were first examined for normality; accordingly, the kurtosis and skewness coefficients were calculated (Table 4).

**Table 4 Data normality distribution analysis**

Measurements	Skewness	Kurtosis
Understanding the curriculum	-0.479	0.640
Implementing the curriculum	-0.508	1.77

Measurements	Skewness	Kurtosis
Questioning the curriculum	-1.32	3.40
Valuing the curriculum	-0.766	1.13
Curriculum Literacy Levels	-0.813	1.47
Student Learning	-1.000	2.44
Lesson Planning	-0.960	3.35
Teaching Support	-0.608	0.993
Adapting to Diversity	-0.521	0.393
Classroom Management	0.831	1.30
Importance and Interest	-1.040	2.49
Pedagogical Knowledge and Skills	-0.866	2.40

Table 4 shows that skewness values range from -1.32 to -0.479, while kurtosis values range from 0.393 to 3.40. According to Tabachnick and Fidell (2013), if skewness and kurtosis values are between -1.5 and +1.5, the data are approximately normally distributed. In this regard, the skewness and kurtosis values obtained in the study indicate a normal distribution. Within the scope of the study's first and second sub-problems, arithmetic means, and standard deviations were calculated to determine the literacy levels of middle school teachers' teaching programs and their pedagogical knowledge and skills. Within the scope of the study's third sub-problem, a one-way analysis of variance was conducted to examine whether middle school teachers' instructional program literacy levels and pedagogical knowledge and skill levels differed by the variables of professional seniority and branch. To determine whether the relationship between middle school teachers' curriculum literacy levels and their pedagogical knowledge and skill levels was significant, Pearson correlation coefficients were calculated for all subscales.

### 3. Findings

#### 3.1. Middle School Teachers' Curriculum Literacy Perception Levels

The first problem of the study examined middle school teachers' levels of perceived curriculum literacy. The findings of the analysis are presented in Table 5.

**Table 5 Middle school teachers' levels of curriculum literacy perception**

Scale sub-dimensions	N	$\bar{X}$	SS
Understanding the curriculum	221	4.13	0.530
Implementing the curriculum	221	4.29	0.513
Questioning the curriculum	221	4.30	0.583
Valuing the curriculum	221	3.95	0.625
<b>Curriculum Literacy Levels</b>	221	4.18	0.502

Table 5 shows that the curriculum literacy levels of middle school teachers participating in the study were relatively above the midpoint of the scale. The lowest average score among the curriculum literacy subdimensions was in the “questioning the curriculum” dimension, while the highest was in the “valuing the curriculum” dimension.

### 3.2. Middle School Teachers’ Levels of Pedagogical Knowledge and Skills

The second problem of the study examined the pedagogical knowledge and skill levels of middle school teachers. The results of the analysis are shown in Table 6.

**Table 6** *The pedagogical knowledge and skill levels of middle school teachers*

Scale sub-dimensions	N	$\bar{X}$	SS
Student Learning	221	4.40	0.52
Lesson Planning	221	4.32	0.53
Teaching Support	221	4.27	0.53
Adapting to Diversity	221	4.32	0.54
Classroom Management	221	4.30	0.61
Importance and Interest	221	4.36	0.58
<b>Pedagogical Knowledge and Skills</b>	221	4.33	0.50

Table 6 shows that teachers’ pedagogical knowledge and skill levels are generally above the midpoint of the scale. Among the sub-dimensions of middle school teachers’ pedagogical knowledge and skill levels, the “student learning” dimension has the highest average score, whereas the “teaching support” dimension has the lowest.

### 3.3. Middle School Teachers’ Curriculum Literacy Perception Levels According to Subject Area and Professional Seniority

The third sub-problem of the study examined whether middle school teachers’ perceptions of curriculum literacy differed by subject area and professional seniority. In line with this research problem, a one-way ANOVA was conducted to determine whether middle school teachers’ levels of curriculum literacy perception differed by subject area. The findings are presented in Table 7.

**Table 7** *An examination of middle school teachers’ curriculum literacy perception levels according to subject area variable*

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
Understanding the curriculum	English	31	4.08	0.534	1.361	0.239
	Mathematics	24	3.92	0.530		
	Religious Culture and Ethics	30	4.12	0.457		
	Turkish	41	4.18	0.618		
	Social Studies	23	4.12	0.428		

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
	Science	27	4.10	0.480		
	Other	45	4.29	0.544		
Implementing the curriculum	English	31	4.32	0.600	0.666	0.678
	Mathematics	24	4.16	0.526		
	Religious Culture and Ethics	30	4.27	0.471		
	Turkish	41	4.30	0.542		
	Social Studies	23	4.26	0.433		
	Science	27	4.26	0.486		
	Other	45	4.41	0.509		
	Valuing the curriculum	English	31	4.23		
Mathematics		24	4.16	0.593		
Religious Culture and Ethics		30	4.22	0.597		
Turkish		41	4.32	0.740		
Social Studies		23	4.36	0.490		
Science		27	4.33	0.576		
Other		45	4.44	0.503		
Questioning the curriculum		English	31	3.84	0.515	1.655
	Mathematics	24	3.68	0.707		
	Religious Culture and Ethics	30	3.96	0.665		
	Turkish	41	4.02	0.724		
	Social Studies	23	3.99	0.452		
	Science	27	3.92	0.565		
	Other	45	4.15	0.603		
	Curriculum Literacy Levels	English	31	4.14	0.489	
Mathematics		24	4.00	0.521		
Religious Culture and Ethics		30	4.16	0.466		

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
	Turkish	41	4.21	0.599		
	Social Studies	23	4.18	0.348		
	Science	27	4.16	0.459		
	Other	45	4.33	0.508		

Table 7 shows that there is no significant difference between middle school teachers' curriculum literacy perception levels and the subject area variable ( $p > .05$ ). The fact that teachers' curriculum literacy perception levels did not differ in relation to the subject area variable can be explained by the fact that the mean scores for curriculum literacy perception levels were close to each other across the scale and its subdimensions. To determine whether middle school teachers' perceptions of curriculum literacy differed significantly by professional seniority, a one-way ANOVA was conducted, and the results are presented in Table 8.

**Table 8** An examination of middle school teachers' curriculum literacy perception levels according to the variable of professional seniority

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p	Statistically significant difference
Understanding the curriculum	0–5 year	24	4.14	0.389	1.783	0.139	–
	6–10 year	52	4.02	0.499			
	11–15 year	52	4.24	0.483			
	16–20 year	38	4.04	0.604			
	21 year and over	55	4.21	0.582			
Implementing the curriculum	0–5 year	24	4.33	0.342	2.617	0.040*	11–15 year and 16–20 year
	6–10 year	52	4.24	0.534			
	11–15 year	52	4.47	0.478			
	16–20 year	38	4.14	0.546			
	21 year and over	55	4.28	0.536			
Valuing the curriculum	0–5 year	24	4.49	0.437	2.304	0.064	–
	6–10 year	52	4.19	0.639			
	11–15 year	52	4.41	0.459			
	16–20 year	38	4.20	0.586			
	21 year and over	55	4.30	0.660			

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p	Statistically significant difference
Questioning the curriculum	0–5 year	24	4.13	0.453	1.179	0.139	–
	6–10 year	52	3.91	0.565			
	11–15 year	52	4.00	0.583			
	16–20 year	38	3.76	0.709			
	21 year and over	55	4.03	0.703			
Curriculum Literacy Levels	0–5 year	24	4.25	0.332	2.040	0.095	–
	6–10 year	52	4.10	0.502			
	11–15 year	52	4.30	0.435			
	16–20 year	38	4.05	0.565			
	21 year and over	55	4.22	0.555			

Table 8 shows that there is no statistically significant difference in middle school teachers' perceptions of curriculum literacy levels according to their professional seniority in terms of the subdimensions of recognizing the curriculum, valuing the curriculum, and questioning the curriculum, as well as in their overall curriculum literacy levels ( $p > .05$ ). In addition, it was determined that there was a statistically significant difference in middle school teachers' curriculum literacy perception levels according to their professional seniority in the sub-context of implementing the curriculum ( $F = 2.617$ ;  $p < .05$ ). Looking at the results of the Games-Howell test conducted to determine the difference between the groups, the perception levels of teachers with 11 to 15 years of professional seniority regarding the implementation dimension of the curriculum show a significant difference compared to teachers with 16 to 20 years of professional seniority.

### 3.4. Middle School Teachers' Pedagogical Knowledge and Skill Levels According to Subject Area and Professional Seniority

In the fourth sub-problem of the study, it was examined whether middle school teachers' pedagogical knowledge and skill levels differed significantly across subject areas and levels of professional seniority. In line with this research problem, a one-way ANOVA was conducted to determine whether middle school teachers' pedagogical knowledge and skill levels differed significantly by subject area, and the findings are presented in Table 9.

**Table 9 Examination of middle school teachers' pedagogical knowledge and skill levels according to subject area variable**

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
Student Learning	English	31	4.31	0.525	0.669	0.675
	Mathematics	24	4.43	0.568		
	Religious Culture and Ethics	30	4.30	0.504		

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
	Turkish	41	4.43	0.449		
	Social Studies	23	4.34	0.439		
	Science	27	4.41	0.393		
	Other	45	4.52	0.664		
Lesson Planning	English	31	4.23	0.526	0.841	0.542
	Mathematics	24	4.29	0.477		
	Religious Culture and Ethics	30	4.20	0.522		
	Turkish	41	4.38	0.569		
	Social Studies	23	4.30	0.480		
	Science	27	4.32	0.381		
	Other	45	4.47	0.641		
Teaching Support	English	31	4.28	0.528	0.456	0.839
	Mathematics	24	4.28	0.495		
	Religious Culture and Ethics	30	4.15	0.627		
	Turkish	41	4.27	0.548		
	Social Studies	23	4.27	0.517		
	Science	27	4.26	0.331		
	Other	45	4.39	0.611		
Adapting to Diversity	English	31	4.26	0.530	1.138	0.347
	Mathematics	24	4.23	0.577		
	Religious Culture and Ethics	30	4.24	0.534		
	Turkish	41	4.38	0.568		
	Social Studies	23	4.18	0.555		
	Science	27	4.37	0.418		
	Other	45	4.47	0.571		
Classroom Management	English	31	4.23	0.640	1.049	0.400
	Mathematics	24	4.16	0.654		

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
	Religious Culture and Ethics	30	4.23	0.623		
	Turkish	41	4.36	0.680		
	Social Studies	23	4.18	0.627		
	Science	27	4.41	0.428		
	Other	45	4.42	0.571		
Importance and Interest	English	31	4.32	0.568	1.049	0.400
	Mathematics	24	4.31	0.575		
	Religious Culture and Ethics	30	4.31	0.533		
	Turkish	41	4.39	0.635		
	Social Studies	23	4.19	0.595		
	Science	27	4.31	0.463		
	Other	45	4.54	0.633		
Pedagogical Knowledge and Skills	English	31	4.27	0.511	0.831	0.549
	Mathematics	24	4.29	0.495		
	Religious Culture and Ethics	30	4.24	0.475		
	Turkish	41	4.37	0.529		
	Social Studies	23	4.25	0.475		
	Science	27	4.35	0.311		
	Other	45	4.47	0.587		

Table 9 shows that middle school teachers' pedagogical knowledge and skill levels do not reveal any significant differences according to the subject area variable ( $p > .05$ ). The fact that teachers' pedagogical knowledge and skill levels do not differ according to the subject area variable can be explained by the fact that the mean scores for pedagogical knowledge and skill levels are close to each other across the scale and its subdimensions. To determine whether there were any statistically significant differences in the pedagogical knowledge and skill levels of middle school teachers by professional seniority, a one-way ANOVA was conducted, and the results are presented in Table 10.

**Table 10** Examination of middle school teachers' pedagogical knowledge and skill levels according to the variable of professional seniority

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
Student Learning	0–5 year	24	4.43	0.549	0.339	0.851

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
	6–10 year	52	4.39	0.533		
	11–15 year	52	4.44	0.458		
	16–20 year	38	4.33	0.480		
	21 year and over	55	4.42	0.595		
Lesson Planning	0–5 year	24	4.43	0.448	0.843	0.501
	6–10 year	52	4.27	0.555		
	11–15 year	52	4.37	0.512		
	16–20 year	38	4.24	0.490		
	21 year and over	55	4.35	0.604		
Teaching Support	0–5 year	24	4.28	0.457	0.317	0.866
	6–10 year	52	4.28	0.549		
	11–15 year	52	4.34	0.504		
	16–20 year	38	4.23	0.458		
	21 year and over	55	4.26	0.645		
Adapting to Diversity	0–5 year	24	4.45	0.449	0.993	0.415
	6–10 year	52	4.24	0.601		
	11–15 year	52	4.39	0.498		
	16–20 year	38	4.28	0.507		
	21 year and over	55	4.32	0.591		
Classroom Management	0–5 year	24	4.30	0.410	0.609	0.657
	6–10 year	52	4.22	0.702		
	11–15 year	52	4.38	0.576		
	16–20 year	38	4.24	0.601		
	21 year and over	55	4.36	0.632		
Importance and Interest	0–5 year	24	4.36	0.508	0.915	0.459
	6–10 year	52	4.31	0.623		
	11–15 year	52	4.46	0.503		

Scale sub-dimensions	Categories	N	$\bar{X}$	ss	F	p
	16–20 year	38	4.26	0.527		
	21 year and over	55	4.39	0.682		
Pedagogical Knowledge and Skills	0–5 year	24	4.39	0.406	0.655	0.625
	6–10 year	52	4.29	0.537		
	11–15 year	52	4.40	0.453		
	16–20 year	38	4.27	0.450		
	21 year and over	55	4.35	0.582		

Table 10 shows that middle school teachers' pedagogical knowledge and skill levels do not differ significantly according to their professional seniority ( $p > .05$ ). The fact that teachers' pedagogical knowledge and skill levels do not differ according to the professional seniority variable can be explained by the fact that the mean scores for pedagogical knowledge and skill levels are close to each other across the scale and its subdimensions.

### 3.5. The Relationship Between Middle School Teachers' Curriculum Literacy Perception Levels and Their Pedagogical Knowledge and Skill Levels

The final sub-problem of the study, and in fact the core research question, examined whether there was a significant relationship between middle school teachers' perceptions of curriculum literacy and their levels of pedagogical knowledge and skills. In line with this research problem, a correlation analysis was performed, and Pearson's correlation coefficient was calculated; the findings are presented in Table 11.

**Table 11** *The relationship between middle school teachers' curriculum literacy perception levels and their pedagogical knowledge and skill levels*

		Understanding the curriculum	Implementing the curriculum	Valuing the curriculum	Questioning the curriculum	Curriculum Literacy Levels (Total)
Student Learning	<i>r</i>	.721	.699	.656	.605	.745
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221
Lesson Planning	<i>r</i>	.734	.722	.638	.598	.754
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221
Teaching Support	<i>r</i>	.735	.692	.630	.634	.750
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221

		Understanding the curriculum	Implementing the curriculum	Valuing the curriculum	Questioning the curriculum	Curriculum Literacy Levels (Total)
Adapting to Diversity	<i>r</i>	.775	.739	.658	.641	.787
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221
Classroom Management	<i>r</i>	.704	.672	.615	.582	.718
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221
Importance and Interest	<i>r</i>	.738	.709	.616	.589	.745
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221
<b>Pedagogical Knowledge and Skills (Total)</b>	<i>r</i>	.810	.778	.700	.670	.826
	<i>p</i>	<.001*	<.001*	<.001*	<.001*	<.001*
	<i>N</i>	221	221	221	221	221

Table 11 shows a highly significant positive correlation between middle school teachers' curriculum literacy perception levels and their pedagogical knowledge and skill levels ( $r = .826, p < .001$ ). When the relationships between these skills of middle school teachers are examined in the context of scales and their subscales, the level of pedagogical knowledge and skills is positively and moderately correlated with the curriculum implementation subscale ( $r = .699, p < .001$ ), curriculum valuing ( $r = .656, p < .001$ ), and curriculum questioning ( $r = .605, p < .001$ ) subdimensions, while a positive, moderately significant relationship was found with the curriculum recognition ( $r = .721, p < .001$ ) subdimension. The lesson planning sub-dimension showed a highly significant positive relationship with the curriculum recognition ( $r = .734, p < .001$ ) and curriculum implementation ( $r = .722, p < .001$ ) subdimensions, and a positive, moderately significant relationship with the sub-dimensions of valuing the curriculum ( $r = .638, p < .001$ ) and questioning the curriculum ( $r = .598, p < .001$ ). The teaching support sub-dimension showed a moderately significant positive relationship with program implementation ( $r = .692, p < .001$ ), curriculum appreciation ( $r = .630, p < .001$ ), and curriculum questioning ( $r = .634, p < .001$ ) subdimensions, while a positive, moderately significant relationship was found between the curriculum awareness ( $r = .735, p < .001$ ) subdimension. The adapting to diversity sub-dimension showed a highly significant positive relationship with the curriculum recognition ( $r = .775, p < .001$ ) and curriculum implementation ( $r = .739, p < .001$ ) sub-dimensions, and moderately significant relationship with curriculum appreciation ( $r = .658, p < .001$ ) and curriculum questioning ( $r = .641, p < .001$ ). The classroom management sub-dimension showed a positive, moderately significant relationship with curriculum literacy levels across all sub-dimensions. The importance and interest sub-dimension showed positive, moderately significant relationships with curriculum appreciation ( $r = .616, p < .001$ ) and curriculum questioning ( $r = .589, p < .001$ ), and positive, high-level statistically significant relationships in the context of curriculum recognition ( $r = .738, p < .001$ ) and curriculum implementation ( $r = .709, p < .001$ ).

## 4. Conclusion and Discussion

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Individuals' ability to adapt to their living conditions and meet their needs requires them to possess a range of skills in today's information society. Among these skills, literacy skills stand out as the most important, enabling individuals to think critically, analyze information, and use it effectively (Güneş, 2014). Teachers are the ones who lead the way in ensuring that students are educated to the desired level, adapt to their living conditions, and meet their needs. The curriculum is also designed to provide teachers with diverse perspectives. To make good use of the curriculum and effectively convey it to students, teachers need to be proficient in curriculum literacy. This study examines the relationship between middle school teachers' levels of curriculum literacy and their pedagogical knowledge and skills, and assesses whether differences exist across various variables.

The study revealed that middle school teachers have a relatively high level of curricular literacy. This finding can be explained by the fact that the participating teachers are proficient readers of the curriculum. According to Keskin (2019), a teacher who is well-versed in the curriculum is defined as someone who understands the structure of the curriculum, applies it effectively in the classroom, can critically evaluate the content, functionality, and relevance of the curriculum, and takes ownership of their professional responsibilities and fulfills them in the best possible way. When the studies were examined, it was concluded that teacher candidates and teachers had relatively high levels of curriculum literacy proficiency (Aslan, 2018; Aygün, 2019; Berberoğlu, 2023; Çetinkaya & Tabak, 2019; Dilek, 2020; Erdem & Eğmir, 2018; Gürbüz, 2021; Keskin, 2019; Süral & Dedeşali, 2018; Tanaş, 2023).

The research concluded that middle school teachers scored highest on the "valuing the curriculum" dimension and lowest on the "questioning the curriculum" dimension. The low score on the questioning of the curriculum dimension indicates that middle school teachers do not critically evaluate the curriculum and instead accept it without question. According to Keskin (2019), in the dimension of questioning the curriculum, a teacher should critically evaluate the curriculum and analyze its applicability and relevance. This study is consistent with the results of Keskin's (2019) study. In Keskin's (2019) study, the highest average was observed for valuing the curriculum, while the lowest was observed for questioning the curriculum. In Berberoğlu's (2023) study, the highest dimension was valuing the curriculum, followed by implementing and recognizing the curriculum, while the lowest was observed in the dimension of questioning the curriculum.

When examining middle school teachers' curriculum literacy levels according to professional seniority and subject area variables, no significant differences were found. Studies by Gürbüz (2021) and Kale (2022) also found no significant differences in teachers' curriculum literacy skills according to professional seniority and subject area variables. According to Özer and Gelen (2008), teacher candidates have higher levels of curriculum literacy than serving teachers. No significant differences were found in middle school teachers' curriculum literacy perception levels by professional seniority across the sub-dimensions of recognizing, valuing, and questioning the curriculum. The difference observed between teachers with 11–15 and 16–20 years of seniority in implementing the curriculum dimension suggests a multidimensional relationship between professional experience and pedagogical skills. In the Turkish context, it is reasonable to assume that teachers in different seniority groups have experienced different curriculum reforms and participated in in-service training programs that vary significantly in timing, content, and quality. Recognizing this as a limitation is important for a more cautious evaluation of the data.

In Tanaş's (2023) study, teachers' curriculum literacy levels differed significantly by seniority across the sub-dimensions of "curriculum content" and "learning-teaching process." This difference was found to be in favor of new teachers. In the study conducted by Demir and Toraman (2021), a significant difference in the knowledge sub-dimension between curriculum literacies was found across subject areas, while no differences were observed in the other sub-dimensions or the overall average. Aslan and Gürten's (2019) studies also show a difference in the subject area variable. Kahramanoğlu's (2019) study also supports the present study, as it found no statistical difference between curriculum literacy level and the professional seniority variable. Gürbüz's (2021) study found that Turkish and Turkish Language and Literature teachers had the highest level of curriculum literacy, as indicated by the subject-area variable. Çetinkaya and Tabak (2019), in their study of teacher candidates, found that teacher candidates preparing to become primary teachers were more knowledgeable about the curriculum than those preparing in mathematics and early childhood education.

It has been determined that middle school teachers generally possess pedagogical knowledge and skills above the scale average. This may mean that teachers not only have sufficient subject knowledge but also know how to convey this knowledge to students in the most effective way. According to Shulman (1987), teachers with sufficient pedagogical content knowledge are both proficient in the subject matter and know how to convey this content to students in the most appropriate way. A review of the studies (Bal & Karademir, 2013; Dikmen, 2023; Dilek, 2020; Doğangün, 2022; Güler, 2015; Işıkgöz et al., 2022; Wong et al., 2012; Zümrütyaprak, 2024) determined that teachers and teacher candidates consider themselves pedagogically competent. Işıkgöz et al. (2022) found that participants' pedagogical knowledge and skill levels were generally high. They demonstrated their pedagogical knowledge and skills most in the "student learning" dimension and least in the "teaching support" dimension. This is consistent with the results of the present study. Koca's (2019) study also concluded that the level of pedagogical knowledge and skills is generally high, with the highest skills in the "classroom management" dimension and the lowest in the "lesson planning" dimension. Middle school teachers' pedagogical knowledge and skill levels do not differ statistically with respect to professional seniority and subject area variables. The study conducted by Işıkgöz et al. (2022) also found no significant change in the pedagogical knowledge and skill levels of physical education teachers with respect to their professional seniority.

Based on the results of this study, there is a positive and significant relationship between middle school teachers' curriculum literacy levels and their pedagogical knowledge and skills. This result can be interpreted as meaning that teachers who are familiar with the curriculum, implement it effectively, and have positive attitudes towards it generally possess a high level of pedagogical knowledge and skills.

#### 4.1. Limitations and Future Directions

This research was conducted on middle school teachers. The findings show that teachers have a high level of awareness of curriculum literacy, but they fall short in questioning and critically evaluating the curriculum. This situation reveals that teachers are unable to sufficiently analyze the philosophical, social, and pedagogical foundations of the curriculum. Therefore, it is recommended that practical courses that question the fundamental bases of the curriculum and encourage critical thinking be added to teacher training programs. It is believed that a course specifically titled "Curriculum Literacy and Critical Thinking" would contribute to developing teacher candidates' ability to analyze, compare, and evaluate curricula from a critical perspective. Furthermore, offering

similar content within in-service training programs for current teachers could be effective in increasing curriculum literacy.

Based on the research findings, recommendations can be made to inform future studies. Similar studies can be conducted with larger samples and in different regions. The scope of the research can be expanded by including variables not covered in this study, such as the type of school graduated from, age, and department. Additionally, it is recommended that qualitative research be conducted on the relationship between teacher candidates' or teachers' curriculum literacy levels and their pedagogical knowledge and skills.

## 5. Declarations

### 5.1. Author Contributions (CRediT)

Author 1 (Hürrem Evli): Conceptualization; Methodology; Investigation; Data curation; Formal analysis; Writing—original draft; Writing—review & editing; Visualization.

Author 2 (Sanem Tabak): Conceptualization; Methodology; Validation; Supervision; Writing—review & editing.

### 5.2. Conflict of Interest

Our article titled "Examination of Curriculum Literacy and Pedagogical Knowledge and Skill Levels of Secondary School Teachers" has no financial conflict of interest with any institution, organization or person. There is also no conflict of interest between the authors.

### 5.3. Funding Statement

This research received no external funding.

### 5.4. Data Availability Statement

Due to ethical considerations and participant confidentiality, the quantitative data are not publicly available but may be obtained from the corresponding author upon reasonable request.

### 5.5. Ethics Approval

Ethical approval for this study was granted by the Ordu University Education Research Ethics Committee (Approval No: 2023-216; Approval Date: 07.12.2023). This study complies with all the rules specified in the Higher Education Institutions Scientific Research and Publication Ethics Guidelines. All participants were informed about the purpose and scope of the research, and confidentiality and anonymity of data were ensured. Written informed consent was obtained from all participants prior to data collection.

### 5.6. Use of Artificial Intelligence (AI) Tools

Only AI-powered tools were used in the language editing process of this article. No AI-powered tools were used in any other section of the article.

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## References

- Akçay, S. (2009). A study on primary education preservice science teacher knowledge in the subject area of biology. *Journal of Gazi Faculty of Education*, 29(3), 709–731.
- Ariav, T. (1988). Growth in teachers' curriculum knowledge through the process of curriculum analysis. *Journal of Curriculum and Supervision*, 6(3), 183–200.
- Aslan, S. (2018). *Ortaokul öğretmenlerinin program okuryazarlık düzeyleri* [Middle school teachers' curriculum literacy levels] (Thesis No: 516831) [Unpublished master's thesis]. Hacettepe University.
- Aslan, S., & Gürlen, E. (2019). Ortaokul öğretmenlerinin program okuryazarlık düzeyleri [Middle school teachers' curriculum literacy levels]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 20(1), 171–186. <https://doi.org/10.29299/kefad.2018.20.01.006>

- Atlı, K., Kara, Ö., & Mirzeoğlu, A. D. (2021). Investigating physical education teachers' perceptions about their curriculum literacy levels according to some variables. *Gazi Journal of Physical Education and Sports Sciences*, 26(2), 281–299.
- Aygün, H. E. (2019). The prediction of the teaching readiness level of prospective teachers in terms of curriculum literacy. *International Journal of Curriculum and Instructional Studies*, 9(2), 203–220. <https://doi.org/10.31704/ijocis.2019.009>
- Bal, M. S., & Karademir, N. (2013). Determining social science teachers' self-assessment levels with regard to their technological pedagogical content knowledge (TPCK). *Pamukkale University Journal of Education*, 34, 15–32.
- Berberoğlu, A. (2023). *Etken öğretmenlik ile öğretim programı okuryazarlığı arasındaki ilişkinin incelenmesi* [Examination of the relationship between effective teaching and curriculum literacy] (Thesis No: 831951) [Unpublished master's thesis]. Bolu Abant İzzet Baysal University.
- Bolat, Y. (2017). Concept of curriculum literacy and curriculum literacy scale. *International Periodical for the Languages, Literature, and History of Turkish or Turkic*, 12(18), 121–138. <https://doi.org/10.7827/TurkishStudies.12103>
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2016). *Bilimsel araştırma yöntemleri* [Scientific research methods] (22nd ed.). Pegem Akademi.
- Canbazoglu-Bilici, S. (2019). Örnekleme yöntemleri [Sampling methods]. In H. Özmen & O. Karamustafağlu (Eds.), *Eğitimde araştırma yöntemleri* [Research methods in education] (pp. 56–78). Pegem Akademi.
- Çetinkaya, S., & Tabak, S. (2019). Curriculum literacy efficiency of preservice teachers. *Ondokuz Mayıs University Journal of Faculty of Education*, 38(1), 296–309. <https://doi.org/10.7822/omuefd.535482>
- Demir, E., & Toraman, Ç. (2021). Teachers' levels of curriculum literacy. *Trakya Journal of Education*, 11(3), 1516–1528. <https://doi.org/10.24315/tred.858813>
- Dikmen, Ş. (2023). *Öğretmenlerin öğretim programı okuryazarlığı, program özerkliği, pedagojik bilgi ve beceri düzeyleri arasındaki ilişki* [The relationship between teachers' curriculum literacy, curriculum autonomy, pedagogical knowledge and skill levels] (Thesis No: 825423) [Unpublished master's thesis]. Aydın Adnan Menderes University.
- Dilek, Ç. (2020). *Öğretmen adaylarının program okuryazarlık düzeyleri ile pedagojik bilgi ve beceri düzeylerinin incelenmesi* [Examination of pre-service teachers' curriculum literacy levels and pedagogical knowledge and skill levels] (Thesis No: 641676) [Unpublished master's thesis]. Atatürk University.
- Doğangün, A. (2022). *Beden eğitimi öğretmenlerinin çeşitli değişkenlere göre pedagojik bilgi ve beceri düzeylerinin incelenmesi* [Examination of physical education teachers' pedagogical knowledge and skill levels according to various variables] (Thesis No: 782799) [Unpublished master's thesis]. Sinop University.
- Durak, G. (2024). *Öğretim programı okuryazarlığı ve öğretmen motivasyon ilişkisinin incelenmesi* [Examination of the relationship between curriculum literacy and teacher motivation] (Thesis No: 870802) [Unpublished master's thesis]. Mardin Artuklu University.
- Erdamar, F. S. (2020). *Sınıf öğretmenlerinin program okuryazarlık algıları ve ilkökul yöneticilerinin öğretmenlerin program okuryazarlık becerisine yönelik algılarının ilerlemeci felsefe bağlamında analizi* [Analysis of primary school teachers' curriculum literacy perceptions and school administrators' perceptions of teachers' curriculum literacy skills in the context of progressive philosophy] (Thesis No: 621287) [Unpublished doctoral dissertation]. Firat University.
- Erdem, C., & Eğinir, E. (2018). Prospective teachers' levels of curriculum literacy. *Afyon Kocatepe University Journal of Social Sciences*, 20(2), 123–138. <https://doi.org/10.32709/akusosbil.428727>
- Erden, M. (1998). *Öğretmenlik mesleğine giriş* [Introduction to the teaching profession]. Alkim Yayıncılık.
- Gökçek, T., & Yılmaz, A. (2019). The adaptation of the pedagogical knowledge and skills survey into Turkish: Validity and reliability study. *Turkish Journal of Education*, 8(1), 52–70. <https://doi.org/10.19128/turje.459678>
- Grossman, P. L. (1990). *The making of a teacher: Teacher knowledge and teacher education* [doğrulanmalı: "their education" → "teacher education"]. Teachers College Press.
- Güler, F. (2015). *Investigation of pre-service science teachers' perceptions related to pedagogical knowledge and pedagogical content knowledge* (Thesis No: 399926) [Unpublished master's thesis]. Middle East Technical University.
- Güleş, E. (2022). *İlkökul ve ortaokul öğretmenlerinin program okuryazarlıkları ve öğretim programına bağlılıklarının incelenmesi* [Examination of primary and middle school teachers' curriculum literacy and curriculum fidelity] (Thesis No: 715738) [Unpublished doctoral dissertation]. Nevşehir Hacı Bektaş Veli University.
- Güneş, F. (2014). The new developments in teaching of Turkish and constructivist approach. *Mustafa Kemal University Journal of Social Sciences Institute*, 6(11), 1–21.
- Gürbüz, Ş. (2021). *Öğretmenlerin öğretim programı okuryazarlık düzeyleri ve öğretim programına bağlılık durumları* [Teachers' curriculum literacy levels and curriculum fidelity status] (Thesis No: 682861) [Unpublished master's thesis]. Gazi University.

- Hudson, P. (2004). Toward identifying pedagogical knowledge for mentoring in primary science teaching. *Journal of Science Education and Technology*, 13, 215–225. <https://doi.org/10.1023/B:JOST.0000031260.27725.da>
- Işıkgöz, M. E., Esentaş Deveci, M., & Güzel Gürbüz, P. (2022). An analysis of pedagogical knowledge and skill levels of physical education teachers. *Dumlupınar University Graduate School of Education Journal*, 6(1), 62–79.
- Kahramanoğlu, R. (2019). A study on teachers' levels of curriculum literacy. *The Journal of International Social Research*, 12(65), 827–840. <https://doi.org/10.17719/jisr.2019.3495>
- Kale, S. (2022). Examination of teachers' program literacy levels and professional perceptions. *International Social Sciences Studies Journal*, 8(106), 4694–4705. <https://doi.org/10.29228/sss.67146>
- Karacaoğlu, Ö. C. (2008). The perceptions of teachers' sufficiency. *Van Yüzüncü Yıl University Journal of Education Faculty*, 5(1), 70–97.
- Keskin, A. (2019). *Öğretmenlerin öğretim programı okuryazarlık düzeylerine yönelik algılarının belirlenmesi [Determining teachers' perceptions of their curriculum literacy levels]* (Thesis No: 618850) [Unpublished doctoral dissertation]. Hacettepe University.
- Keskin, A., & Korkmaz, H. (2017, October). *The meaning teachers attribute to the concept of "curriculum literacy"* [Oral presentation]. 5th International Congress on Curriculum and Instruction, Muğla, Türkiye.
- Keskin, A., & Korkmaz, H. (2021). Development of teachers' curriculum literacy perception scale. *The Journal of Turkish Educational Sciences*, 19(2), 857–884. <https://doi.org/10.37217/tebd.917130>
- Koca, Ş. (2019, May). *Investigation of pedagogical knowledge and skills of primary school teachers towards music teaching* [Oral presentation]. 5th International Music and Dance Congress, Nevşehir, Türkiye.
- König, J., Blömeke, S., & Kaiser, G. (2015). Early career mathematics teachers' general pedagogical knowledge and skills: Do teacher education, teaching experience, and working conditions make a difference? *International Journal of Science and Mathematics Education*, 13(2), 331–350.
- Ministry of National Education [MoNE]. (2017). *General competencies for teaching profession*. Directorate General for Teacher Training and Development.
- Özer, B., & Gelen, İ. (2014). Having general adequacy of teaching profession: Evaluation of the views of teacher candidates and teachers about their level. *Mustafa Kemal University Journal of Social Sciences Institute*, 5(9), 39–55.
- Park, S., & Oliver, S. J. (2008). Revisiting the conceptualization of pedagogical content knowledge (PCK): PCK as a conceptual tool to understand teachers as professionals. *Research in Science Education*, 38, 261–284. <https://doi.org/10.1007/s11165-007-9049-6>
- Penjiyev, S., Battal, K. O., & Eynur, B. R. (2024). Dumlupınar University Faculty of Sports Sciences teacher candidate students' pedagogical knowledge and skill levels investigation. *Dumlupınar University Graduate School of Education Journal*, 8(2), 1–12.
- Posner, J. G. (1995). *Analyzing the curriculum*. McGraw-Hill.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15, 4–14.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57, 1–23.
- Süral, S., & Dedeşali, N. C. (2018). A study of curriculum literacy and information literacy levels of teacher candidates in department of social sciences education. *European Journal of Educational Research*, 7(2), 303–317. <https://doi.org/10.12973/eu-jer.7.2.303>
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.
- Tanaş, R., & Tuncer, M. (2024). Relationships between teachers' levels of curriculum literacy, learning-teaching process competencies, achievement objectives, and curriculum commitment. *Cumhuriyet International Journal of Education*, 13(2), 426–437. <https://doi.org/10.30703/cije.1326230>
- Tutuş, F. (2020). *İngilizce öğretmenlerinin program okuryazarlık düzeyleri ve İngilizce öğretimine yönelik görüşleri [English teachers' curriculum literacy levels and their views on English language teaching]* (Thesis No: 687258) [Unpublished master's thesis]. Fırat University.
- Wong, A. F., Chong, S., Choy, D., & Lim, K. M. (2012). Investigating changes in pedagogical knowledge and skills from pre-service to the initial year of teaching. *Educational Research for Policy and Practice*, 11(2), 105–117.
- Yar Yıldırım, V. (2018). *Okul yöneticilerinin program okuryazarlıklarına yönelik bir hizmet içi eğitim programının geliştirilmesi ve değerlendirilmesi [Development and evaluation of an in-service training program for school administrators' curriculum literacy]* (Thesis No: 483983) [Unpublished doctoral dissertation]. Gaziosmanpaşa University.
- Zümrütyaprak, S. (2024). *Beden eğitimi ve spor öğretmeni adaylarının öğretmenlik mesleğine yönelik hazırbulunuşlukları ile pedagojik bilgi ve beceri düzeyleri arasındaki ilişkinin incelenmesi [Examination of the relationship between physical education and sports teacher candidates' readiness for the teaching profession and their pedagogical knowledge and skill levels]* (Thesis No: 897120) [Unpublished master's thesis]. Sivas Cumhuriyet University.