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Relationship between teachers' curriculum literacy and their adaptation to curriculum changes

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ABSTRACT

This study investigates the relationship between teachers' curriculum literacy and their level of adaptation to curriculum changes. A correlational survey model, one of the quantitative research methods, was employed. The sample consisted of 390 teachers working in public schools in the central districts of Van, Türkiye. Data were collected using the Curriculum Literacy Scale developed by Bolat and the Adaptation to Curriculum Changes Scale developed by Karsantık and Yağcı. The results indicated a moderate, positive, and statistically significant correlation between curriculum literacy and adaptation to curriculum changes. Regression analysis further revealed that curriculum literacy significantly predicted teachers' level of adaptation to change, explaining approximately 21% of the variance. In terms of demographic variables, significant differences in curriculum literacy and its reading dimension were found according to teachers' years of professional experience, while no differences were observed based on age, gender, educational background, or teaching level. For adaptation to curriculum changes, age and experience were associated with significant differences in the dimensions of impact of change, feedback, and overall adaptation. Additionally, gender-based differences emerged in the dimensions of impact of change and awareness of change. These findings highlight the critical role of curriculum literacy in promoting teachers' ability to cope with and respond effectively to curricular reforms. Enhancing curriculum literacy may therefore serve as a key lever for supporting teacher development and ensuring successful implementation of curriculum innovations.

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Introduction

Education is one of the principal drivers of social development and is a constantly evolving field shaped by the changing needs of individuals and societies. At the core of this transformation lies the curriculum, a foundational component of the education system that defines the purpose, content, processes, and evaluation of educational activities. Beyond guiding academic instruction, curricula also play a pivotal role in supporting individuals' social integration and the transmission of cultural values (Demirel, 2024).

In the teaching process, often conceptualized as the facilitation of learning—understanding "how" learning occurs becomes central. This necessitates attention to teaching strategies, pedagogical roles, and presentational skills (Demirel, 2024; Schiro, 2013). However, the efficacy of a curriculum largely depends on teachers' understanding and enactment of its content. As highlighted by OECD (2019), teachers' awareness, engagement, and implementation capacities directly influence the success of curricular reforms.

Sustainable education frameworks by organizations such as UNESCO (2016) stress the necessity of aligning curricular innovations with teachers' needs and expectations. As educational environments become more dynamic, teachers are increasingly required to engage in professional development to adapt to these shifts (Robinson et al., 2021). These changes are not only pedagogical or technological but also ideological, requiring teachers to reconsider and reconstruct their professional identities.

Given the pace of change in today's globalized and digitally influenced world, curricula must continually evolve to remain relevant. Educational reforms, aimed at improving quality and addressing contemporary challenges, demand that teachers be agile and responsive (Fullan, 2016). Yet, successful implementation of such reforms is contingent not only on individual teacher competencies but also on institutional support mechanisms and collaborative change processes (Darling-Hammond, 2015; Fullan, 2016).

In this regard, curriculum literacy has gained prominence as a foundational teacher competency. Curriculum literacy refers to teachers' ability to read, interpret, analyze, and implement curriculum documents in coherent and contextually meaningful ways (Bolat, 2017; Keskin & Korkmaz, 2021; Pinar, 2012; Shulman, 1986). It encompasses understanding learning outcomes, aligning instructional activities with curricular goals, and adapting content to students' needs. From a pedagogical perspective, teachers with high curriculum literacy engage in what Shulman (1986) conceptualizes as "curricular reasoning," integrating knowledge of subject matter, pedagogy, and curriculum into informed instructional decisions.

Theoretically, curriculum literacy is closely connected to teachers' adaptation to curriculum change. According to Fullan's (2016) Change Theory, meaningful educational reform requires teachers to understand the purpose and principles of change. Teachers with limited curriculum knowledge often experience confusion, resistance, or superficial compliance, whereas those with a strong understanding of curriculum frameworks are more capable of navigating uncertainty, interpreting reform documents accurately, and integrating new expectations into practice. Similarly, sensemaking theory (Spillane et al., 2002) argues that teachers interpret reforms through the lens of their prior knowledge. When curriculum literacy is weak, sensemaking becomes fragmented or misguided. Conversely, teachers with strong curriculum literacy interpret change initiatives more accurately and engage with reforms more productively.

Adapting to curriculum change requires more than the acquisition of new content or methods; it demands a professional mindset open to continuous learning (Hargreaves, 2000). While curriculum sets the direction for education, the teacher's role in interpreting and delivering it profoundly shapes classroom learning (Pinar, 2012). Empirical research shows that the effectiveness of educational programs is tightly linked to the teacher's understanding of the curriculum and its alignment with student needs (Hattie, 2009; OECD, 2019).

International studies such as the TALIS report (OECD, 2018) further confirm that professional development opportunities directly enhance teachers' willingness and ability to implement innovative approaches. In parallel, UNESCO (2016) emphasizes that aligning educational reforms with sustainable development goals requires targeted support for teachers' professional growth. Teachers must thus navigate a delicate balance between their existing knowledge and emerging curricular demands (Tyler, 1949).

For reforms to be impactful, curricula must be innovative, adaptable, and continually updated (Fullan, 2016). In this regard, teachers' curriculum literacy is essential in bridging the gap between policy and practice (Bolat, 2017; Kahramanoğlu, 2019; Keskin & Korkmaz, 2021). Curriculum literacy encompasses the ability to read, interpret, and implement curricular frameworks and is widely regarded as a prerequisite for adopting contemporary teaching practices (Bolat, 2017; Keskin & Korkmaz, 2021; Shulman, 1986).

Globally, countries have implemented diverse strategies based on their unique sociopolitical contexts. For instance, Finland introduced a project-based, thematic curriculum in 2016 to foster 21st-century competencies such as critical thinking and collaboration (Sahlberg, 2018). Singapore's "SkillsFuture" initiative emphasizes the integration of academic and practical competencies to address labor market needs (OECD, 2016), while the U.S. introduced Common Core State Standards to raise literacy and numeracy levels, albeit with varying implementation success across states (Gewertz, 2018).

In recent years, a growing body of research in Türkiye has examined teachers' curriculum literacy, generally reporting that teachers and teacher candidates perceive themselves at moderate to high levels in reading and implementing curriculum documents (e.g., Aslan & Gürlen, 2019; Demir & Toraman, 2021; Erdem & Eğmir, 2018; Şahin & Tekkol, 2023). Other studies have focused on how curriculum literacy relates to leadership behaviors or school-level variables, such as learning-centered leadership or program evaluation practices (Klakan-Çelik & Sezgin, 2022; Tuncer & Berkant, 2012). Parallel to this, a separate line of research has investigated teachers' adaptation to curriculum changes, showing generally positive but variable adaptation levels across age, seniority, and school type (Babur, 2024; Fırat-Durdukoca et al., 2023; Karsantık & Yağcı, 2022).

However, these two strands of literature have largely developed in isolation. Most studies on curriculum literacy have concentrated on describing literacy levels and their relationships with demographic characteristics, while research on adaptation to curriculum change has tended to emphasize teachers' attitudes, concerns, or perceptions of reform processes. To date, there is limited empirical evidence directly examining how teachers' curriculum literacy is associated with their ability to adapt to curriculum changes, particularly by using validated measurement tools for both constructs in the same model. Moreover, few quantitative studies have explored the predictive power of curriculum literacy for adaptation to change in the context of recent large-scale reforms in Türkiye, such as the 2018 curriculum updates (Ministry of National Education [MoNE], 2018) and

the 2023 Education Vision (MoNE, 2019).

This gap is critical because curriculum literacy is conceptually positioned as a bridge between policy and practice: teachers who can accurately read, interpret, and reconstruct curriculum documents are expected to navigate change processes more effectively, whereas limited literacy may contribute to resistance, superficial compliance, or mis-implementation of reforms (Bolat, 2017; Fullan, 2016; Schleicher, 2018). Empirically documenting the strength and direction of the relationship between curriculum literacy and adaptation to change can therefore provide evidence-based answers to a central practical question: Do more curriculum-literate teachers actually adapt better to ongoing reforms?

Accordingly, this study aims to address a specific gap in the literature by examining, within a large sample of in-service teachers in Türkiye, (a) their levels of curriculum literacy and adaptation to curriculum changes, (b) how these levels differ according to key demographic variables, and—most importantly—(c) whether curriculum literacy significantly predicts teachers' adaptation to curriculum changes. By integrating two previously separate research lines, the study seeks to contribute to the literature in three ways: first, by offering current descriptive data on both constructs in the context of ongoing curricular reforms; second, by providing empirical evidence on the magnitude of the relationship between curriculum literacy and adaptation; and third, by informing policy makers and practitioners about the extent to which strengthening curriculum literacy can be used as a lever to enhance teachers' readiness for and engagement with curriculum innovations. In this sense, the findings are expected to guide the design of professional development programs and support systems aimed at improving both curriculum literacy and effective adaptation to change.

Building on this problem and gap in the literature, the present study addresses the following research questions:

1. What is the level of teachers' curriculum literacy and adaptation to changes in curriculum?
2. Do teachers' curriculum literacy and adaptation levels to changes in curriculum differ according to gender, age, length of service, educational status and teaching level?
3. Is there a significant relationship between teachers' curriculum literacy and their level of adaptation to changes in curriculum?
4. Does teachers' curriculum literacy significantly predict their level of adaptation to change in curriculum?

Method

Research Design

This study employed a predictive correlational research design, which is a specific type of quantitative correlational method used to examine the extent to which one or more predictor variables account for variance in a criterion (outcome) variable. In the present study, teachers' curriculum literacy was treated as the predictor variable, whereas their level of adaptation to curriculum changes was considered the criterion (outcome) variable. This design was chosen to investigate not only the relationship between teachers' curriculum literacy and their adaptation to curriculum changes but also the extent to which curriculum literacy predicts adaptation.

In predictive correlational research, data are typically collected using standardized measurement tools such as surveys, scales, or observation forms. The collected data are then subjected to statistical procedures—including correlation and regression analyses—to determine the strength and nature of the relationships among variables (Creswell, 2014; Fraenkel et al., 2012). Given that the primary aim of the present study is to determine the extent to which curriculum literacy predicts adaptation to curriculum changes, the predictive correlational design was deemed appropriate.

Population and Sample

The universe of this study consists of teachers working in the central districts of Van province, Türkiye. According to the official records of the District National Education Directorates of İpekyolu, Tuşba, and Edremit—the central districts of Van—the total number of teachers was 11,299 at the time of data collection.

In this research, schools located in the aforementioned districts were treated as clusters, and a proportionate cluster sampling strategy was employed to select the study sample. Proportionate cluster sampling is particularly suitable for large and geographically dispersed populations because it allows clusters to be selected in proportion to their size across different strata (e.g., districts or school levels) (Gay et al., 2012). In the first stage of the sampling process, all schools in the central districts were listed and stratified by district and school level, where applicable. In the second stage, schools were randomly selected from each stratum in proportion to the number of teachers they employed, and all teachers in the selected schools were invited to participate (McMillan & Schumacher, 2010). In this study, schools were used as the sampling units (clusters), whereas the teachers working in those schools served as the observation units (Büyüköztürk et al., 2020).

Table 1

Frequency and Percentage Distribution of Participants' Demographic Characteristics

Variables	Groups	n	%
Age	20-29	93	23.90
	30-39	233	59.89
	40+	63	16.19
	Total	389	100
Gender	Female	187	47.95
	Male	203	52.05
	Total	390	100
Length of Service	1-5 years	124	31.79
	6-10 years	155	39.74
	11-15 years	65	16.67
	16+ years	46	11.79
	Total	390	100
Teaching Level	Kindergarten	17	4.35
	Primary school	96	24.61
	Middle school	182	46.66
	High school	95	24.35
	Total	390	100
Educational Status	Undergraduate	321	82.73
	Postgraduate	67	17.26
	Total	388	100

In total, 20 schools were included in the sample as clusters, comprising nine schools from İpekyolu,

6 from Tuşba, and 5 from Edremit. Through this proportionate cluster sampling strategy, the study reached a total of 390 teachers. The adequacy of this sample size was calculated using the G*Power software based on Cohen's (1992) recommendations. For a large effect size (0.30), a significance level of $\alpha = 0.05$, and a statistical power of 0.95, a minimum sample size of 111 participants was deemed sufficient for meaningful statistical analyses. Therefore, the obtained sample size of 390 teachers, drawn from [N] schools out of a total population of 11,299 teachers, is considered appropriate and robust. The detailed distribution of participants by demographic variables is presented in Table 1.

The demographic profile of the participants reveals that a majority (59.89%) were between the ages of 30–39. Slightly more than half of the participants were male (52.05%), and 39.74% had 6–10 years of teaching experience. Nearly half of the teachers (46.66%) worked at the middle school level. In terms of educational attainment, 82.73% held an undergraduate degree.

Data Collection Tools

In this study, two standardized instruments were used to collect data: The *Curriculum Literacy Scale* developed by Bolat (2017), and the *Adaptation to Curriculum Changes Scale* developed by Karsantık and Yağcı (2022).

Curriculum Literacy Scale

The Curriculum Literacy Scale, developed by Bolat (2017), was used to assess teachers' literacy levels regarding curriculum-related knowledge and practices. The scale consists of two subdimensions: Reading (15 items) and Writing (14 items), totaling 29 items. Items are rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The original Cronbach's alpha coefficients reported by Bolat were .88 for *Reading*, .91 for *Writing*, and .94 for the total scale. In this study, the internal consistency values were calculated as .89 for *Reading*, .92 for *Writing*, and .94 for the entire scale, which indicate a high level of reliability in line with the criteria suggested by Tavşancıl (2006) and Nunnally (1978).

Adaptation to Curriculum Changes Scale

The Adaptation to Curriculum Changes Scale was developed by Karsantık and Yağcı (2022) to measure teachers' levels of adaptation to curriculum reforms and their attitudes toward such changes. The scale contains 29 items distributed across seven subdimensions: *Collaboration*, *Managing Change*, *Impact of Change*, *Concern about Change*, *Information Acquisition*, *Feedback*, and *Change Awareness*. It also uses a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Notably, items in the Concern about Change and Change Awareness subdimensions are negatively worded.

Exploratory and Confirmatory Factor Analyses confirmed the seven-factor structure of the scale, accounting for 68.68% of the total variance. Fit indices from the confirmatory analysis (e.g., χ^2/df, RMSEA, CFI, NNFI) showed good to acceptable model fit. In the current study, Cronbach's alpha coefficients ranged from .70 to .89 across the subdimensions and were .89 for the overall scale, indicating acceptable to high internal consistency (Nunnally, 1978).

Data Collection

Permission for data collection was first obtained from the Ethics Committee (Atatürk University

Social and Human Sciences Research and Publication Ethics Board; dated 26.11.2024, No: 2400399820/10/31) and subsequently from the Provincial Directorate of National Education to collect data from teachers. During school visits for data collection, the school administration was contacted first, and then attempts were made to reach the teachers. All participating teachers provided informed consent; the informed consent form was signed by both the teachers and the researcher, with one copy given to the teacher and one retained by the researcher.

Data Analysis

The statistical analyses of the study were conducted using the SPSS 23 software package. Prior to conducting inferential tests, the normality of the data was assessed for both total scale scores and their subdimensions. To test for normal distribution, skewness and kurtosis coefficients, as well as measures of central tendency, were calculated.

For the Curriculum Literacy Scale, skewness and kurtosis values ranged from –0.274 to 0.503, while for the Adaptation to Curriculum Changes Scale, these values ranged from –0.930 to 0.935 across all subdimensions. According to Pallant (2016), skewness and kurtosis values between –2 and +2 indicate an acceptable level of normality. Therefore, it was concluded that the data met the assumptions for parametric testing.

Descriptive statistics such as frequency, arithmetic mean, and standard deviation were calculated to summarize the data. Independent samples t-tests were conducted to examine whether there were significant differences in teachers' curriculum literacy and adaptation levels based on gender, type of institution, and educational status. One-way analysis of variance (ANOVA) was used to analyze differences based on years of service and teaching level. The significance level was set at 0.05.

In addition, the relationship between teachers' curriculum literacy and their adaptation to curriculum changes was examined using Pearson product-moment correlation analysis. To determine the predictive power of curriculum literacy on adaptation to change, regression analysis was also conducted.

Findings

Findings Regarding Teachers' Curriculum Literacy Scores

Descriptive statistics related to teachers' scores on the Curriculum Literacy Scale and its subdimensions are presented in Table 2.

Table 2

Descriptive Statistics of Teachers' Scores on the Curriculum Literacy Scale

Dimensions	n	M	SD
Reading	390	4.11	.66
Writing	390	3.94	.72
Curriculum Literacy	390	4.03	.65

As shown in Table 2, teachers scored highest in the *Reading* dimension (M = 4.11), followed by the overall curriculum literacy score (M = 4.03), and then the *Writing* dimension (M = 3.94). These results indicate that teachers generally perceive themselves as having a high level of curriculum literacy, particularly in terms of understanding and interpreting curriculum documents.

Findings Regarding Teachers' Curriculum Literacy Scores by Age

To determine whether teachers' curriculum literacy levels differed by age group, a one-way ANOVA was conducted. The results are presented in Table 3.

Table 3

ANOVA Results of Teachers' Curriculum Literacy Scale Scores by Age Group

Dimensions	Age	n	M	SD	df	F	p
Reading	20-29	93	4.07	.57	389	.89	.40
	30-39	233	4.10	.70			
	40 and above	64	4.21	.58			
	Total	390	4.11	.65			
Writing	20-29	93	3.92	.65	389	.12	.88
	30-39	233	3.94	.75			
	40 and above	64	3.98	.71			
	Total	390	3.94	.72			
Curriculum Literacy	20-29	93	4.00	.58	389	.46	.62
	30-39	233	4.02	.68			
	40 and above	64	4.10	.61			
	Total	390	4.03	.65			

The ANOVA results indicated that there were no statistically significant differences in teachers' curriculum literacy scores—neither in the total scale nor in its subdimensions—based on age group ($p > .05$). Although mean scores slightly increased with age, these differences were not significant. This suggests that teachers' curriculum literacy levels are relatively consistent across different age categories.

Findings Regarding Teachers' Curriculum Literacy Scores by Gender

To examine whether teachers' curriculum literacy scores differed according to gender, an independent samples t-test was conducted. The results are presented in Table 4.

Table 4

Independent Samples t-Test Results for Curriculum Literacy Scores by Gender

Dimensions	Gender	n	M	SD	t	df	p
Reading	Female	187	4.07	.62	-1.01	388	.31
	Male	203	4.14	.68			
Writing	Female	187	3.92	.70	-.54	388	.59
	Male	203	3.96	.74			
Curriculum Literacy	Female	187	4.00	.62	-.81	388	.41
	Male	203	4.05	.67			

As shown in Table 4, no statistically significant differences were found in curriculum literacy scores or its subdimensions between male and female teachers ($p > .05$). Although male teachers had slightly higher mean scores across all dimensions, these differences were not statistically meaningful, indicating that gender does not have a significant effect on curriculum literacy levels.

Findings Regarding Teachers' Curriculum Literacy Scores by Professional Experience

To examine whether teachers' curriculum literacy scores differed according to their professional

experience, a one-way ANOVA was conducted. The results are presented in Table 5.

Table 5

ANOVA Results for Curriculum Literacy Scores by Professional Experience

Dimensions	Professional Experience	n	M	SD	df	F	p	Difference
Reading	1-5 years (1)	124	3.96	.64	389	4.50	.00*	4>1
	6-10 years (2)	155	4.16	.69				4>2
	11-15 years (3)	65	4.08	.62				4>3
	16 and above (4)	46	4.34	.53				
	Total	390	4.11	.65				
Writing	1-5 years	124	3.85	.74	389	2.45	.06	
	6-10 years	155	4.00	.70				
	11-15 years	65	3.83	.71				
	16 and above	46	4.11	.71				
	Total	390	3.94	.72				
Curriculum Literacy	1-5 years	124	3.91	.66	389	3.60	.01*	4>1
	6-10 years	155	4.09	.65				4>2
	11-15 years	65	3.96	.63				4>3
	16 and above	46	4.23	.59				
	Total	390	4.03	.65				

Note. Cohen's d values were calculated for post hoc comparisons with the reference group G4. According to Cohen (1988), d = 0.20 indicates a small effect, 0.50 medium, and 0.80 large.

The ANOVA results indicated significant differences in the *Reading* subdimension and overall *Curriculum Literacy* scores based on teachers' length of service. Post hoc comparisons revealed that teachers with 16 or more years of experience scored significantly higher than those in other service groups. Cohen's *d* values indicated medium to large effect sizes for comparisons between the 16+ years group and less experienced teachers, particularly in the *Reading* dimension ($d = 0.62$) and total literacy score ($d = 0.50$). No significant difference was found in the *Writing* dimension.

Findings Regarding Teachers' Curriculum Literacy Scores by Educational Status

To examine whether teachers' curriculum literacy scores differed according to educational status, an independent samples t-test was conducted. The results are presented in Table 6.

Table 6

Independent Samples t-Test Results for Curriculum Literacy Scores by Educational Status

Dimensions	Educational Status	n	M	SD	t	df	p
Reading	Undergraduate	321	4.08	.65	-1.66	386	.09
	Postgraduate	67	4.23	.64			
Writing	Undergraduate	321	3.91	.72	-1.68	386	.09
	Postgraduate	67	4.07	.70			
Curriculum Literacy	Undergraduate	321	4.00	.65	-1.77	386	.07
	Postgraduate	67	4.15	.64			

As seen in Table 6, there were no statistically significant differences in curriculum literacy scores between teachers with undergraduate and postgraduate degrees ($p > .05$). Although the postgraduate group had slightly higher mean scores, the differences did not reach statistical significance.

Findings Regarding Teachers' Curriculum Literacy Scores by Teaching Level

To examine whether teachers' curriculum literacy scores differed according to their teaching level, a one-way ANOVA was conducted. The results are presented in Table 7.

Table 7

ANOVA Results for Curriculum Literacy Scores by Teaching Level

Dimensions	Teaching Level	n	M	SD	df	F	p
Reading	Kindergarten	17	3.99	.59	389	.98	.40
	Primary school	96	4.17	.64			
	Middle school	182	4.06	.64			
	High school	95	4.16	.69			
	Total	390	4.11	.65			
Writing	Kindergarten	17	3.90	.57	389	.54	.65
	Primary school	96	3.97	.77			
	Middle school	182	3.89	.72			
	High school	95	4.00	.70			
	Total	390	3.94	.72			
Curriculum Literacy	Kindergarten	17	3.95	.56	389	.79	.49
	Primary school	96	4.07	.67			
	Middle school	182	3.98	.65			
	High school	95	4.09	.63			
	Total	390	4.03	.65			

As seen in Table 7, no statistically significant differences were found in teachers' curriculum literacy scores across different teaching levels ($p > .05$). Although slight variations in mean scores were observed—particularly in the reading dimension—these differences were not meaningful, suggesting that curriculum literacy is relatively stable regardless of teaching level.

Findings Regarding Teachers' Scores on the Adaptation to Curriculum Changes Scale

To identify the levels of teachers' adaptation to curriculum changes, descriptive statistics were calculated. The results are presented in Table 8.

Table 8

Descriptive Statistics for Teachers' Scores on the Adaptation to Curriculum Changes Scale

Dimensions	n	M	SD
Collaboration	390	4.02	.73
Managing change	390	3.92	.67
Impact of change	390	3.39	.86
Concern about change	390	2.97	.90
Information acquisition	390	4.24	.80
Feedback	390	3.49	.92
Change awareness	390	3.95	.89
Overall adaptation to change	390	3.71	.50

As shown in Table 7, teachers' overall level of adaptation to curriculum changes was relatively high (M = 3.71, SD = 0.50). Among the subdimensions, the highest mean scores were observed in *Information Acquisition* (M = 4.24) and *Collaboration* (M = 4.02), while the lowest scores were found in *Concern About Change* (M = 2.97) and *Impact of Change* (M = 3.39). These results suggest that while

teachers generally engage in collaboration and information-seeking behaviors during change processes, they may feel uncertain about the effects of curriculum changes or experience moderate levels of concern.

Findings Regarding Teachers' Adaptation to Curriculum Changes Scores by Age

To examine whether teachers' adaptation to curriculum changes differed by age, a one-way ANOVA was conducted. The results are presented in Table 9.

Table 9

ANOVA Results for Adaptation to Curriculum Changes Scores by Age

Dimensions	Age	n	M	SD	df	F	p	Difference
Collaboration	20-29 (1)	93	3.96	.76	389	.99	.37	
	30-39 (2)	233	4.02	.73				
	40 and above (3)	64	4.12	.69				
	Total	390	4.02	.73				
Managing change	20-29	93	3.88	.60	389	.41	.66	
	30-39	233	3.94	.70				
	40 and above	64	3.96	.66				
	Total	390	3.93	.67				
Impact of change	20-29	93	3.27	.77	389	4.34	.01*	3>1
	30-39	233	3.36	.91				3>2
	40 and above	64	3.67	.80				
	Total	390	3.39	.87				
Concern about change	20-29	93	2.95	.95	389	.17	.83	
	30-39	233	2.96	.86				
	40 and above	64	3.03	.99				
	Total	390	2.97	.90				
Information acquisition	20-29	93	4.12	.90	389	1.72	.18	
	30-39	233	4.27	.7				
	40 and above	64	4.35	.71				
	Total	390	4.25	.81				
Feedback	20-29	93	3.35	.98	389	3.17	.04*	3>1
	30-39	233	3.49	.92				3>2
	40 and above	64	3.72	.82				
	Total	390	3.49	.93				
Change awareness	20-29	93	4.03	.86	389	.45	.63	
	30-39	233	3.94	.90				
	40 and above	64	3.90	.91				
	Total	390	3.95	.89				
Overall adaptation to change	20-29	93	3.65	.48	389	3.22	.04*	3>1
	30-39	233	3.71	.50				3>2
	40 and above	64	3.85	.55				
	Total	390	3.72	.51				

As shown in Table 9, there were statistically significant differences in the *Impact of Change*, *Feedback*, and *Overall Adaptation to Change* dimensions based on teachers' age ($p < .05$). In all three cases, teachers aged 40 and above had the highest mean scores, suggesting that more experienced teachers perceive themselves as more adaptable to curriculum change.

The effect sizes of the significant differences were calculated as $d = 0.35$ for *Impact of Change* and $d =$

0.33 for *Feedback*, both indicating small to medium effects according to Cohen's (1988) criteria.

Findings Regarding Teachers' Adaptation to Curriculum Changes Scores by Gender

The results of the t-test conducted to determine whether teachers' scores on the Adaptation to Curriculum Changes Scale and its dimensions differed according to the gender variable are presented in Table 10.

Table 10

T-test Results for Teachers' Scores on the Adaptation to Curriculum Changes Scale by Gender

Dimensions	Gender	n	M	SD	t	df	p
Collaboration	Female	187	4.02	.72	-.08	388	.92
	Male	203	4.02	.74			
Managing change	Female	187	3.91	.66	-.38	388	.69
	Male	203	3.94	.67			
Impact of change	Female	187	3.30	.84	-2.00	388	.04*
	Male	203	3.47	.88			
Concern about change	Female	187	2.90	.88	-1.41	388	.15
	Male	203	3.03	.91			
Information acquisition	Female	187	4.24	.79	.06	388	.95
	Male	203	4.24	.81			
Feedback	Female	187	3.44	.90	-1.04	388	.29
	Male	203	3.53	.95			
Change awareness	Female	187	4.09	.70	3.07	388	.00*
	Male	203	3.81	1.01			
Overall adaptation to change	Female	187	3.69	.45	-.86	388	.39
	Male	203	3.73	.55			

Table 10 showed that there were statistically significant differences between male and female teachers in two dimensions of the Adaptation to Curriculum Changes Scale. Male teachers scored significantly higher than female teachers in the *Impact of Change* dimension ($t(388) = -2.00$, $p = .04$, $d = .20$), while female teachers scored significantly higher than male teachers in the *Change Awareness* dimension ($t(388) = 3.07$, $p = .00$, $d = .32$). These results reflect a very small effect in the *Impact of Change* dimension and a small-to-medium effect in the *Change Awareness* dimension.

Findings Regarding Teachers' Adaptation to Curriculum Changes Scores by Professional Experience

The results of the ANOVA conducted to determine whether teachers' adaptation to curriculum changes differ according to their professional experience are presented in Table 11.

Table 11

ANOVA on Teachers' Adaptation to Curriculum Changes Scale Scores According to the Professional Experience

Dimensions	Professional Experience	n	M	SD	df	F	p	Difference
Collaboration	1-5 years (1)	124	3.95	.71	389	2.59	.05	
	6-10 years (2)	155	4.02	.76				
	11-15 years (3)	65	3.96	.71				
	16 and above (4)	46	4.29	.63				
	Total	390	4.02	.73				
Managing change	1-5 years	124	3.85	.64	389	2.02	.11	
	6-10 years	155	3.95	.67				
	11-15 years	65	3.86	.74				
	16 and above	46	4.12	.59				
	Total	390	3.92	.67				
Impact of change	1-5 years	124	3.31	.80	389	2.81	.03*	4>1
	6-10 years	155	3.37	.94				4>3
	11-15 years	65	3.34	.75				4>2
	16 and above	46	3.73	.86				
	Total	390	3.39	.86				
Concern about change	1-5 years	124	2.96	.91	389	.65	.58	
	6-10 years	155	2.97	.91				
	11-15 years	65	2.87	.78				
	16 and above	46	3.11	.99				
	Total	390	2.97	.90				
Information acquisition	1-5 years	124	4.13	.84	389	2.57	.05	
	6-10 years	155	4.25	.85				
	11-15 years	65	4.26	.73				
	16 and above	46	4.51	.53				
	Total	390	4.24	.80				
Feedback	1-5 years	124	3.35	.93	389	2.85	.03*	4>1
	6-10 years	155	3.57	.92				4>3
	11-15 years	65	3.36	.93				4>2
	16 and above	46	3.74	.85				
	Total	390	3.49	.92				
Change awareness	1-5 years	124	4.01	.88	389	.69	.55	
	6-10 years	155	3.87	.90				
	11-15 years	65	3.97	.84				
	16 and above	46	4.00	.93				
	Total	390	3.95	.89				
Overall adaptation to change	1-5 years	124	3.65	.45	389	5.13	.00*	4>1
	6-10 years	155	3.71	.50				4>3
	11-15 years	65	3.65	.49				4>2
	16 and above	46	3.97	.58				
	Total	390	3.71	.50				

According to the analysis results, significant differences were found in teachers' adaptation to curriculum changes based on their years of service. In the "Impact of Change" dimension, teachers with 16 or more years of service had a higher mean score (M = 3.73) than the other groups, with a statistically significant difference (F = 2.81, p = .03). Similarly, in the "Feedback" dimension, teachers with 16 or more years of service (M = 3.74) scored the highest, and this difference was also

statistically significant ($F = 2.85$, $p = .03$). Furthermore, teachers with 16 or more years of service had a higher overall adaptation to change score ($M = 3.97$) compared to the other groups, with a significant difference ($F = 5.13$, $p = .00$). The effect sizes of the significant differences were calculated as 0.51 (medium) for the "Impact of Change" dimension, 0.43 (medium) for the "Feedback" dimension, and 0.66 (medium-high) for the "Overall Adaptation to Change" score. These results indicate that teachers with 16 years or more of service exhibit a significant difference in these dimensions compared to those with 1-5 years of service, with medium-level effects.

Findings Regarding Teachers' Adaptation to Curriculum Changes Scores by Educational Status

The results of the t-test conducted to determine whether teachers' scores on the Adaptation to Curriculum Changes Scale and its dimensions differed according to their educational status are presented in Table 12.

Table 12

T-test Results for Teachers' Scores on the Adaptation to Curriculum Changes Scale Scores According to Educational Status

Dimensions	Educational Status	n	M	SD	t	df	p
Collaboration	Undergraduate	321	4.04	.73	.99	386	.31
	Postgraduate	67	3.94	.73			
Managing change	Undergraduate	321	3.93	.66	.50	386	.61
	Postgraduate	67	3.89	.72			
Impact of change	Undergraduate	321	3.40	.86	.41	386	.67
	Postgraduate	67	3.35	.87			
Concern about change	Undergraduate	321	2.93	.91	-1.73	386	.08
	Postgraduate	67	3.14	.84			
Information acquisition	Undergraduate	321	4.23	.81	-.39	386	.69
	Postgraduate	67	4.27	.77			
Feedback	Undergraduate	321	3.48	.91	-.22	386	.82
	Postgraduate	67	3.51	.97			
Change awareness	Undergraduate	321	3.96	.88	.68	386	.49
	Postgraduate	67	3.88	.92			
Overall adaptation to change	Undergraduate	321	3.72	.50	.20	386	.83
	Postgraduate	67	3.70	.51			

According to the t-test results, there were no statistically significant differences in the adaptation to curriculum changes based on teachers' educational status ($p > .05$). This indicates that undergraduate and postgraduate teachers displayed similar levels of adaptation across all dimensions of the scale.

Findings Regarding Teachers' Adaptation to Curriculum Changes Scores by Teaching Level

The results of the ANOVA conducted to determine whether teachers' adaptation to the curriculum changes differ according to the teaching level are presented in Table 13.

Table 13

ANOVA Results of Teachers' Adaptation to Curriculum Changes Scale Scores According to the Teaching Level

Dimensions	Teaching Level	n	M	SD	df	F	p
Collaboration	Kindergarten	17	3.97	.88			
	Primary school	96	4.07	.68			
	Middle school	182	3.95	.72	389	1.21	.30
	High school	95	4.11	.75			
	Total	390	4.02	.73			
Managing change	Kindergarten	17	3.84	.81			
	Primary school	96	3.97	.62			
	Middle school	182	3.89	.64	389	.40	.75
	High school	95	3.95	.73			
	Total	390	3.92	.67			
Impact of change	Kindergarten	17	3.18	.88			
	Primary school	96	3.55	.90			
	Middle school	182	3.36	.86	389	1.76	.15
	High school	95	3.31	.82			
	Total	390	3.39	.86			
Concern about change	Kindergarten	17	2.94	.95			
	Primary school	96	2.95	.94			
	Middle school	182	2.99	.88	389	.07	.97
	High school	95	2.95	.90			
	Total	390	2.97	.90			
Information acquisition	Kindergarten	17	4.07	1.09			
	Primary school	96	4.36	.73			
	Middle school	182	4.21	.79	389	1.06	.36
	High school	95	4.22	.83			
	Total	390	4.24	.80			
Feedback	Kindergarten	17	3.37	.99			
	Primary school	96	3.60	1.02			
	Middle school	182	3.39	.89	389	1.42	.23
	High school	95	3.57	.86			
	Total	390	3.49	.92			
Change awareness	Kindergarten	17	3.74	.62			
	Primary school	96	3.96	.97			
	Middle school	182	4.03	.81	389	1.71	.16
	High school	95	3.80	.97			
	Total	390	3.95	.89			
Overall adaptation to change	Kindergarten	17	3.59	.69			
	Primary school	96	3.78	.47			
	Middle school	182	3.69	.50	389	.93	.42
	High school	95	3.71	.50			
	Total	390	3.71	.50			

According to the ANOVA results, no statistically significant differences were found in teachers' adaptation to curriculum changes based on their teaching level ($p > .05$). These findings suggest that teachers' adaptation levels are similar regardless of whether they work at the kindergarten, primary, middle, or high school level.

Findings Regarding the Relationship Between Teachers' Curriculum Literacy and Adaptation to Curriculum Changes

The results of the Pearson correlation analysis conducted to examine the relationship between teachers' scores on the Curriculum Literacy Scale and the Adaptation to Curriculum Changes Scale are presented in Table 14.

Table 14

Pearson Correlation Analysis Results between Curriculum Literacy and Adaptation to Curriculum Changes

		Adaptation to Curriculum Changes
	n	r
Curriculum Literacy	390	.457 **

Note. **p < 0.01

According to the results of the Pearson correlation analysis, a positive, moderate, and statistically significant relationship was found between teachers' curriculum literacy and their adaptation to curriculum changes (r = .457, p < .01). This indicates that as teachers' curriculum literacy increases, their level of adaptation to curriculum changes also tends to increase.

Findings Regarding the Predictive Power of Curriculum Literacy for Adaptation to Curriculum Changes

The results of the simple linear regression analysis conducted to examine the predictive power of teachers' curriculum literacy scores on their adaptation to curriculum changes are presented in Table 15.

Table 15

Regression Analysis Results for the Predictive Power of Curriculum Literacy on Adaptation to Curriculum Changes

Model	B	SE	β	R^2	p
Constant	1,838	.218			.00
Curriculum Literacy	.590	.058	.457	.209	.00

The results of the regression analysis revealed that curriculum literacy significantly predicted teachers' adaptation to curriculum changes (R^2 = .209, p < .01). The model explained approximately 21% of the variance in adaptation scores. The direction of the relationship was positive and statistically significant (β = .457, p < .01), indicating that higher levels of curriculum literacy are associated with higher levels of adaptation to curriculum changes.

Discussion and Conclusion

This study aimed to examine teachers' curriculum literacy and their adaptation to curriculum changes in relation to demographic variables such as age, gender, educational status, teaching level, and years of professional experience. The findings revealed that teachers' overall curriculum literacy levels are generally high. Similar results were found in the studies conducted by Erdem and Eğmir (2018), Demir and Toraman (2021), and Şahin and Tekkol (2022), indicating a consistent pattern in the literature. This suggests that the ongoing reforms and innovations in the education system in Türkiye have contributed to the development of teachers' curriculum awareness and literacy.

In terms of the age variable, no significant difference was observed in curriculum literacy levels, aligning with the findings of Erdem and Eğmir (2018) and Girgin (2023). However, Sarıca (2021) found that teachers aged 51 and above scored higher, which may be attributed to their accumulated experience with curricular reforms. This could indicate that frequent curriculum changes in Türkiye have created a broad base of awareness across age groups, leading to a homogenizing effect in literacy levels.

Regarding gender, the findings showed no statistically significant differences in curriculum literacy levels, consistent with the results of Erdem and Eğmir (2018) and Kalkan-Çelik and Sezgin (2022). However, Girgin (2023) and Kahramanoğlu (2019) reported a significant difference in favor of female teachers. These mixed results suggest that gender may influence certain dimensions of curriculum engagement in specific contexts but does not consistently impact overall literacy levels.

When examined by length of service, significant differences emerged, particularly in the "reading" dimension, where teachers with 16 or more years of experience outperformed their peers. This is supported by Sarıca (2021), who reported higher scores for teachers with 21 years or more of professional experience. The findings imply that exposure to multiple reform processes over time enhances teachers' understanding of curriculum structure and implementation. However, Girgin (2023), Demir and Toraman (2021), and Aslan and Gürlen (2019) found no significant differences, pointing to possible variations in research design or sample characteristics.

With respect to educational status, no significant differences were detected in this study, echoing the findings of Girgin (2023). However, Demir and Toraman (2021) found a significant difference in favor of teachers holding thesis-based master's and doctoral degrees. This contrast may suggest that while advanced academic training can enrich curriculum knowledge, its practical impact may vary depending on contextual and institutional factors.

In terms of teaching level, no significant differences in curriculum literacy or adaptation levels were found, similar to the findings of Demir and Toraman (2021) and Kalkan-Çelik and Sezgin (2022). Nevertheless, adaptation to curriculum change was observed to be generally high. This aligns with Karsantık and Yağcı (2020), and Fırat-Durdukoca et al. (2023) who reported that teachers exhibit a high capacity to adapt. Studies such as Leithwood and Jantzi (2006) emphasized that leadership styles play a crucial role in supporting this adaptability, and this study's findings support that openness to change is common among Turkish teachers. The influence of the Ministry of National Education's policies and the characteristics of younger, tech-savvy teachers may further enhance this adaptability.

When adaptation to change was examined in terms of age and professional experience, the results showed that teachers aged 40 and above with more than 16 years of service demonstrated significantly higher levels of adaptation, particularly in the "impact of change," "feedback," and overall adaptation dimensions. This is supported by Day and Gu (2007) and Karsantık and Yağcı (2022), who emphasized that experienced teachers tend to respond more positively to reform processes, especially when supported by inclusive leadership (Leithwood & Jantzi, 2006). However, Fırat-Durdukoca et al. (2023) reported no significant differences in adaptation levels based on seniority, indicating the need for further study in this area.

Regarding gender differences in adaptation, while no significant differences were found in general adaptation levels, male teachers scored higher in the "impact of change" dimension, whereas female teachers scored higher in "change awareness." These findings correspond partially with Avalos

(2011) and Teo (2011), who noted that female teachers value collaboration and professional learning, while male teachers show greater confidence in technology integration. This suggests that gender does not determine adaptation levels broadly, but may influence different dimensions of change perception and response.

No significant differences were found in adaptation based on educational status, confirming the findings of Karsantık (2021). Fullan (2016) and Hargreaves and Goodson (2006) argue that education level is not a direct determinant of change processes; rather, factors such as professional development participation and intrinsic motivation play a more decisive role. Similarly, teaching level did not yield significant differences in adaptation, although Karsantık (2021) noted a distinction in the "impact of change" dimension favoring primary school teachers. This highlights the importance of designing curriculum reforms holistically across teaching levels, as emphasized by Fullan (2016).

The correlation analysis revealed a positive, moderate, and statistically significant relationship between curriculum literacy and adaptation to change. Regression analysis confirmed that curriculum literacy significantly predicts adaptation, demonstrating that increasing curriculum knowledge directly contributes to better responsiveness in reform environments. These results emphasize the strategic value of fostering curriculum literacy as a foundation for professional resilience and adaptability.

Recommendations

This study was conducted with teachers working in public schools in the central districts of Van province during the 2024-2025 academic year, using the cluster sampling method. Based on the findings, the following recommendations are made for key stakeholders:

For Practitioners

- Prior to implementing curriculum changes, school leaders should organize informative meetings to explain the rationale, scope, and anticipated effects of these changes. Clear and early communication facilitates teacher readiness and acceptance.
- Experienced teachers (with 16 years or more of service), who showed higher adaptation levels, can mentor novice teachers to support their adjustment to curriculum changes.
- Although curriculum literacy levels are generally high, teachers should be provided with ongoing professional development—particularly focused on curriculum reading and interpretation skills—utilizing the expertise of veteran educators.
- In-service training should incorporate collaborative learning models and feedback mechanisms to build shared understanding and collective problem-solving capacities.

For Policy Makers

- Policies should ensure that all teachers, regardless of seniority or school type, have equal access to updated and relevant training opportunities that foster both curriculum literacy and change adaptation.
- Reward systems and recognition frameworks can be established to promote and sustain positive teacher engagement with ongoing reforms.

For Researchers

- Future research should explore the long-term relationship between curriculum literacy and adaptation, and examine how these variables manifest in practice through classroom observations and teacher narratives.
- Studies comparing adaptation processes across different school types, regions, and countries would help clarify how systemic, cultural, or institutional variables shape curriculum-related competencies.
- Further inquiry is needed into how school-level factors such as leadership styles, communication practices, and collaborative environments impact teachers' adaptation to curricular changes.

Declarations

Ethics statement: This study was approved by the Ethics Committee of Atatürk University Social and Human Sciences Ethics Committee. The ethics approval was granted on 26.11.2024 under the protocol number 10/31. All procedures involving human participants were conducted in accordance with institutional and national ethical standards, the Helsinki Declaration, and applicable regulations. Informed consent was obtained from all participants.

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