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The Mediating Role of Entrepreneurial Teacher Behavioursin The Relationship between Learning School and Collective Teacher Culture

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This quantitative study aims to examine the relationships among *learning school*, *collective teacher culture*, and *entrepreneurial teacher behaviors*, focusing on the mediating role of entrepreneurial teacher behaviorsin the relationship between learning school and collective teacher culture. The research sample consisted of 439 teachers working in schools affiliated with the Kırşehir Provincial Directorate of National Education in Türkiye, selected through convenience sampling. Data were analyzed using descriptive statistics, correlation analysis, structural equation modeling (SEM), and bootstrapping techniques. The findings revealed that entrepreneurial teacher behaviors have a partial mediating effect in the relationship between learning school and collective teacher culture. Furthermore, it was found that being a learning school has a positive and significant effect on both entrepreneurial teacher behaviors and collective teacher culture, while entrepreneurial teacher behaviors also positively and significantly influence collective teacher culture. These results indicate that schools characterized by a learning-oriented structure foster an environment that encourages teachers to exhibit proactive, innovative, and collaborative behaviors, thereby strengthening collective teacher culture. The study contributes to the literature by emphasizing the dynamic role of entrepreneurial teacher behaviors as a bridge connecting organizational learning and collective efficacy in educational settings. The findings provide theoretical and practical implications for policymakers, school leaders, and teacher education programs seeking to build sustainable learning organizations and promote collaborative professional cultures through entrepreneurial competencies.

Introduction

Learning is a fundamental element for not only individuals but also societies, organizations, and entire systems to keep pace with change and develop sustainably. In the information age, where change is accelerating and existing knowledge is rapidly outdated and replaced by new knowledge, learning has become the key to the capacity to adapt, innovate and develop forward-looking strategies. As Argyris and Schön (1978) emphasize, coping with

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complex problems can only be achieved through a continuous process of restructuring, which is only possible through learning. In this context, learning is not a passive result of change, but an active force that drives change and sustains development. Not only individuals and states but also organizations need intensive learning. In the face of a continuous and increasingly strong competitive environment, rapid changes in science and technology, and increasingly uncertain environmental conditions, organizations have entered into new inquiries into development. In the context of these searches, organizations have made an effort to become "learning organizations" and are working on continuous learning to increase their power and performance (Acar, 2022; Öneren, 2008; Turan, 2011). Learning organizations are organizations that try to keep up with change through organizational learning. The concept of learning organization emerged in 1990 with Peter Senge's book "Fifth Discipline", which focused on the fact that organizational responsibilities should be primarily education and learning (Bakan, 2011; Hawamdeh& Jaradat, 2012). The concept has been defined as a new form of organizational learning since its emergence (Caldwell, 2012). This term, which means that the organization stays at the forefront by constantly renewing itself and producing knowledge, is based on collaborative learning (Kızıloğlu, 2023). This approach not only enhances individual competencies within the organization but also fosters a culture of continuous improvement and adaptability in the face of change. Learning organizations refer to structures that constantly observe their environment, show sensitivity to environmental changes and find solutions to problems through organizational learning for successful change. These organizations know that they need to adapt to change and their environment to ensure their continuity and development, and accept this learning as a necessity (Banoğlu& Peker, 2012; Güner, 2018; Uysal, 2021). This perspective highlights that continuous learning is not merely a supportive element but a strategic requirement for long-term organizational sustainability and innovation. With this structure, positive change, increase in work efficiency and quality, original and creative approach to problems, vision and value creation, and quality of development processes are ensured in organizations (Bozkaya, 2023). Such outcomes highlight the transformative power of learning-oriented structures in enabling organizations to evolve strategically and maintain a competitive edge in dynamic environments. In order to become a learning organization, culture, value and philosophy structure should not be neglected as well as knowledge, and the knowledge and experience obtained should be used for the development and future of the organization (Kızıloğlu, 2023; Tuna, 2014). This indicates that transformation into a true learning organization requires a holistic approach, where both tangible knowledge and intangible cultural elements are aligned toward shared growth and vision.

Schools are looking for ways to gain competitive power and increase their effectiveness and efficiency in the competitive environment imposed by today's society. In this context, it is important that they adapt to the changes in their environment. The only way for this is for schools to abandon the traditional education approach and transform into learning organizations (Jokıć et al., 2012). In a learning school the general aim is to support the success of the institution with all its stakeholders and to reveal the targeted purpose in a complete, efficient and high-quality manner through cooperation and division of labor within the institution. The fact that schools are the institutions where change and innovations occur most rapidly, the continuous self-renewal of educational stakeholders in schools and the lack of stagnation in learning help the learning school to realize its goals effectively and efficiently (Uğur, 2019). In learning schools, there is an understanding of a system that does not have a memorization-oriented education approach as in classical educational institutions, improves itself with innovations, and teaches learning with a collaborative organizational culture (Baştuğ, 2022). In learning schools, it is aimed to create an education system and product that

produces, questions, researches and is open to developments. In a learning school, it is ensured that the individual pushes the boundaries to ensure his/her own development, learns to learn and keeps up with the developments with the structure and working discipline of the institution to which he/she is affiliated. Learning schools not only load students with knowledge but also enable them to develop important competencies (Hoy & Miskel, 2020). In learning schools, there is an understanding that all children can be successful in learning. No distinction is made between students (Uysal, 2021). This inclusive perspective fosters equity in education, empowering every student with equal opportunities to reach their full potential regardless of their background or abilities.

Learning schools, which are characterized as learning laboratories, are institutions where all changes and developments in education are reflected. Teachers have a great responsibility in these institutions (Yiğit, 2013). It can be said that teachers' quality and performance is the most important factor for schools to exhibit learning organization characteristics. In this regard, it is essential for teachers to possess organizational learning skills and competencies. In other words, teachers will affect the capacity and performance of schools to be learning schools with their skills and competencies. In schools that succeed in becoming a learning organization at the desired level, various skills and competencies of teachers will also develop. It is thought that these skills and competencies include collective competence and entrepreneurship, which are among the 21st century skills. It can be said that the organizational learning potential and performance of the school will reflect positively on teachers' collective efficacy and entrepreneurship skills, in other words, it will develop teachers. Because in learning organizations where employees continuously develop their capacities and question how to learn better (Senge, 1990), it can be argued that both collectivity-the result of joint action (TDK, 2025)-and entrepreneurship-innovation-driven, proactive behaviors (Valenciano et al., 2019)-are positively influenced and enhanced.During the literature review, it was recognized that research on the learning school variable, a key factor in the change and development of schools, and the factors influencing this variable, is crucial. However, no studies examining the relationships between learning school, collective teacher culture, and entrepreneurial teacher behaviors were found. This was the starting point and motivating factor for this study. This study fills an important gap by examining how learning school structure is related to collective teacher culture and entrepreneurial teacher behaviors in educational institutions and the mediating role of entrepreneurial behaviors in this relationship. The research can make meaningful contributions in terms of strengthening school culture, developing innovative approaches of teachers and increasing institutional learning. The findings may provide guidance for school administrators, teachers, education policy makers and education faculties, thus, contributing to the development of more effective, collaborative, and entrepreneurial school environments. In this respect, the study has widespread impact on both theoretical and practical levels and addresses a topic worthy of further research.

Learning school (LS) and entrepreneurial teacher behaviors (ETB)

With the development of science and technology, changes have led to the emergence of 21st century skills. These changes have separated production types from each other over time and developments in the 21st century have gained more speed compared to other periods. As a result of this situation, the information society has been replaced by a "super smart society" (Şentürk, 2021). In the 21st century, a series of high-level skills such as successfully solving problems, generating and transferring knowledge, actively using technology, producing and processing data, have started to be expected from young

generations instead of characteristics such as preserving traditions, exhibiting civic awareness and contributing to mass production (Uçak & Erdem, 2020). Depending on this expectation, entrepreneurship has also taken its place among 21st century skills (Taş &Köksoy, 2019). Entrepreneurship is now recognized as a way of life and a culture (Selanik Ay & Acar, 2016). Entrepreneurial behavior, which is generally characterized by innovation, proactivity and risk-taking behaviors, is expressed as employees discovering and evaluating opportunities for the development of their organizations at the individual level (Dess & Lumpkin, 2005; Jong et al., 2015).

It has been suggested that the degree to which schools meet the needs and expectations of society depends on the entrepreneurial behavior of teachers (Borasi& Finnigan, 2010). Teachers' entrepreneurial behavior is thought to be acting like an entrepreneur while on the job (Neto et al., 2018). It is also argued that teachers act as entrepreneurs in many areas while fulfilling their duties (Van Dam et al., 2010). It was determined that teachers' entrepreneurial behaviors consisted of innovation, recognizing opportunities, taking risks, taking initiative, planning and managing a project, and seeking external resources (Ho, 2018). It is understood that all these skills and responsibilities can contribute to the development of organizations.

Learning schools encourage employees to be entrepreneurial and risk-taking and provide a safe ground for these skills (Jokıć et al., 2012; Töremen, 2001). In other words, it also contributes to the development of entrepreneurial skills in teachers. On the other hand, it can also be argued that the development of teachers' entrepreneurial skills will positively affect the learning school potential and performance. As a matter of fact, entrepreneurial behavior includes three responsibilities *(including opportunity recognition, taking initiative, and risk management)* that will positively affect the organization and, accordingly, the learning capacity of the organization (Van Dam, 2010). Within the framework of all this information, it is possible to say that teachers' exhibiting entrepreneurial behaviors will improve the capacity of the school to be a learning organization and that teachers' entrepreneurship will develop in a school that exhibits the characteristics of a learning organization. In this framework, the first hypothesis of this study is as follows:

(H1) Being a learning school positively affects entrepreneurial teacher.

Learning school and collective teacher culture (CTC)

The concept of a learning organization begins with individual learning, expands through group learning, and culminates in an organizational learning process (Sağlam, 2020). In this framework, *collectivity* and the *collective competencies* of individuals are essential prerequisites for becoming a true learning organization. Collective efficacy—linked to enhanced teacher development, stronger commitment, and higher student achievement (Bandura, 2000; Cansoy, Parlar&Polatcan, 2020; Eells, 2011; Karacabey, Bellibaş& Adams, 2022) is more evident in schools where teachers act collaboratively (Levine & Marcus, 2007; Ross, Hogaboam-Gray, & Gray, 2004). This sense of efficacy contributes to the development of a *collective teacher culture*.

Such a culture is inherently tied to a school's capacity to function as a learning organization, as it is built upon strong collaboration and shared professional competence (Skaalvik&Skaalvik, 2021). Organizational learning, at its core, involves achieving success through collective effort (Uysal, 2021). One of the defining features of learning schools is the collaborative innovation process shared among stakeholders. Teachers, administrators, and staff learn from one another and apply shared experiences to keep the institution current and effective (Bilir, 2014). Learning in these environments occurs through social interaction,

teamwork, and cooperative learning—clear indicators of collectivity (Eren, 2010; Kızıloğlu, 2023; Tan, 2014; Tunç, 2010). Therefore, learning schools not only foster but are also characterized by a strong *collective teacher culture*, and being a learning school is likely to enhance collective culture within the institution. Accordingly, the second hypothesis of this study suggests the following:

(H2) Being a learning school positively affects collective teacher culture.

Entrepreneurial teacher behaviors and collective teacher culture

Entrepreneurship is not only an economic skill but also a social one (Akar &Üstüner, 2017; Akpınar, 2011). As a social phenomenon, it requires individuals to address both their own problems and those of their environment (Çavdar et al., 2018). Entrepreneurial qualities are categorized as social, behavioral, and personal traits (Eroğlu & Dündar, 2018). Among these, traits such as communication, motivating teams, participating in social activities, taking and sharing responsibility, and being socially engaged are closely linked to *collectivity*, which refers to outcomes generated by people coming together (TDK, 2024). In the context of teacher entrepreneurship, competencies such as social motivation, innovativeness, collaborativeness, proactivity, opportunity orientation, job awareness, knowledge, selflessness, resourcefulness, risk tolerance, visionary thinking, and personal development focus are emphasized (Keyhani& Kim, 2021). Notably, *collaborativeness*—defined as encouraging both peer and student collaboration within the school and wider community—reflects the essence of collectivity. Based on this, a clear relationship between entrepreneurship and collectivity can be inferred. In this context, the third and fourth hypotheses of this study propose that:

(H3) Entrepreneurial teacher behaviors positively affect collective teacher culture.

(H4) Entrepreneurial teacher behaviors have a mediating role in the effect of being learning school on collective teacher culture.

Aim of the Research

This study's aim is to reveal whether learning school directly and positively affects both entrepreneurial teacher behaviors and collective teacher culture, whether entrepreneurial teacher behaviors directly and positively affect collective teacher culture, and whether entrepreneurial teacher behaviors have a mediating role in the effect of being learning school on collective teacher culture. To achieve this, the following questions were addressed during the research.

(1) Does being a learning school significantly predict collective teacher culture?
(2) Does being a learning school significantly predict entrepreneurial teacher behaviors?
(3) Do entrepreneurial teacher behaviors significantly predict collective teacher culture?
(4) Do entrepreneurial teacher behaviors play a mediating role in the relationship between being a learning school and collective teacher culture?

The theoretical model of this study is built on the direct effect of being a learning school on the perception of collective teacher culture and the indirect effect mediated by entrepreneurial teacher behavior (Figure 1).

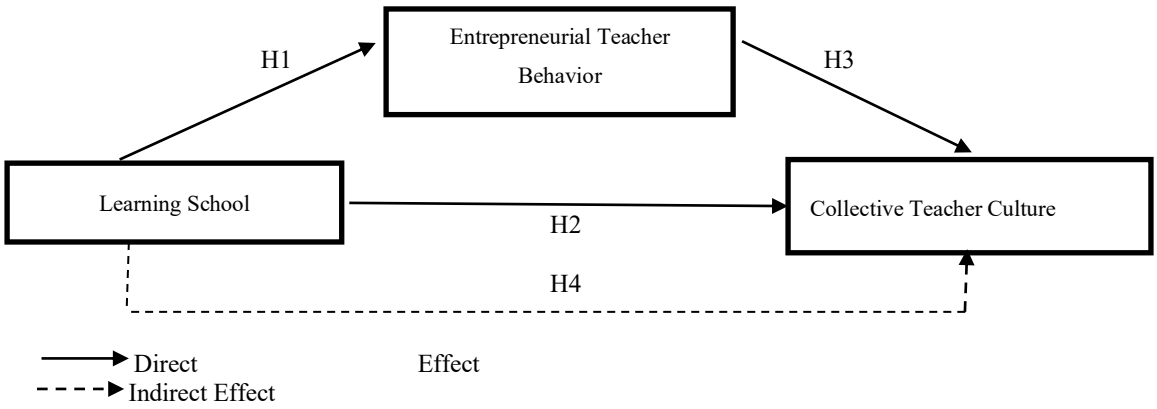

Figure 1.The theoretical model.

Research design

In this research, to investigate the relationship between learning school, collective teacher culture, and entrepreneurial teacher behaviors, a cross-sectional survey method, a type of descriptive survey model, was employed. The cross-sectional survey model depicts a past or present situation as it is, with research data collected at a single point in time (Büyüköztürk, Çakmak, Akgün, Karadeniz ve Demirel, 2012). As a matter of fact, it can be said that this study represents an example of the "Cross-Sectional Survey Method" since the data in the study were collected at a single time. Additionally, the study aimed to determine whether entrepreneurial teacher behaviors mediate the relationship between learning school and collective teacher culture.

Sample

The sample of the study consists of 439 teachers selected by convenience sampling method from the universe of 3,984 teachers working in schools affiliated to Kırşehir Provincial Directorate of National Education. With this sampling method, the researcher tries to collect data by including the people he/she can reach in the sample (Tutar & Erdem, 2022). Cochran's (1977) sample calculation formula was used to determine the number of the sample considered to represent the universe; thus, 439 people were determined to represent the universe. Sample's descriptive characteristics are shown in Table 1.

Table 1. Sample's descriptive characteristics.

Variables	f	%	Variables	f	%
Gender			***School Type***		
Male	108	24.6	Preschool	23	5.2
Female	331	75.4	Primary school	170	38.7
			Secondary school	92	21.0
			High school	154	35.1
Marital Status			***Term of Employment in the School****(Years)*	211	48.1
Single	102	23.2	0-5	64	14.6
Married	337	76.8	6-10	121	27.6
			11-15	24	5.5
			16-20	7	1.6
			21-25	12	2.7
			26 and more		

Education Status			***Total Working Time****(Years)*		
College	10	2.3	0-5	30	6.8
Undergraduate	306	69.7	6-10	63	14.4
Master's education with thesis	42	9.6	11-15	91	20.7
			16-20	110	25.1
Master's education			21-25	79	18.0
without thesis	72	16.4	26 and more	66	15.0
Doctorate	9	2.1			
Professional Status					
Tenured	410	93.4			
Contracted	13	3.0			
Charged	10	2.3			
Other	6	1.4			
TOTAL	439				

When Table 1 is reviewed, 24.6% of the participants are male and 75.4% are female; 23.2% are single, and 76.8% are married. In the education status the highest rate belongs to undergraduate with 69.7% and the lowest rate belongs to doctorate graduate with 2.1 %. In the case of professional status, the highest rate belongs to the permanent category with 93.4% and the lowest rate belongs to the other category with 1.4%. In the type of school, the highest rate belongs to primary school with 38.7% and the lowest rate belongs to preschool with 5.2%. In the term of employment in the school the highest rate belongs to the category "0-5 years" with 48.1% and the lowest rate belongs to the category "21-25 years" with 1.6%. Finally, in case or total working time the highest rate belongs to the "16-20 years" category with 25.1% and the lowest rate belongs to the "0-5 years" category with 6.8%.

Data collection instruments

Personal information form: It is a form prepared by the researchers to determine the descriptive characteristics of the participants.

Learning school scale (LSS): It is a scale consisting of four factors (no reverse coded items) to measure teachers' perceptions of learning schools (developed by Uğurlu et al. 2014). The factors of the scale are named as team learning (e.g., "Teachers in our school believe in the need to work as a team."), mental models (e.g., "Every teacher in our school is accepted as an equal and respected individual."), shared vision (e.g., "The vision of our school includes openness to adapt to change."), and personal mastery (e.g., "I try to renew myself by following information related to my field.").The total variance explained by the scale was 63.76% and the reliability value was .92.

Collective teacher culture scale (CTC): It is a scale consisting of two factors, developed by Skaalvik and Skaalvik (2021) and adapted into Turkish by Bellibaş et al. (2022). It was determined that the two factors (teacher collaboration and common understanding among teachers) represented a total variance explanation rate of 65%. The factor loadings of the scale ranged between .57 and .85. The construct reliability values for the dimensions of the scale were .90 and the average explained variance values were .56.

The entrepreneurial teacher behavior scale (ETB): The scale was developed by Van Dam et al. (2010) and adapted into Turkish by Akkaya and Çetin (2021). The ETB consists of 13 items that measure three factors: recognizing opportunities (e.g., 'I closely follow new developments in the field of education'), taking initiative (e.g., 'I actually implement the plans

I make'), and taking risks (e.g., 'I allocate time for projects that require me to take risks'). Akkaya and Çetin (2021) tested the scale's construct validity through exploratory factor analysis (EFA).It was found that the KMO sampling suitability coefficient of the scale was .872 (>.80) and the result of the Barlett Sphericity test was significant ($x2$ =2477.347; p <.001) and the scale explained 61.986% of the variance.

Data collection

This study was conducted within the framework of the 1995 Declaration of Helsinki and the ethical rules set by the APA. In this context, during the data collection process, first of all, the application permission was obtained. After obtaining the necessary ethics committee permission for the research, an online questionnaire form including scales and personal information questions was designed. The data collection process lasted approximately five months (May-September 2024). The final data set was completed by reaching a total of 439 teachers. Thus, the requirement of at least 200 participants for SEM as stated by Forza and Filippini (1998) and Hair, Black, Babin and Anderson (2014) was met.

Data analysis

The data obtained within the framework of the research were analyzed using SPSS 23 and AMOS 24 software. For categorical variables, frequency distributions (including counts and percentages) were utilized, while for numerical variables, descriptive statistics such as mean and standard deviation were employed. Additionally, Structural Equation Modeling (SEM) was performed via AMOS 24 to examine the structural associations among the study variables. SEM is typically used to test whether hypothesized relational models align with the empirical data. Prior to conducting the analysis, it is essential to establish a solid theoretical foundation for the proposed model (Şimşek, 2007). This study explored the direct impact of being a learning-oriented school on collective teacher culture and entrepreneurial teacher behaviors, as well as the indirect effect on collective teacher culture mediated by entrepreneurial teacher behaviors. Furthermore, a bootstrapping procedure (with 5000 resamples and a 95% confidence interval) was applied to assess the mediating role (Fritz & MacKinnon, 2007).

Results

Preliminary analyses

Before testing the hypothesized model, the data set was reviewed through some preliminary analyses (i.e. skewness and kurtosis characteristics, descriptive statistics). In testing normality, the skewness and kurtosis values of the main variables of the model were reviewed. Accordingly, the variables of learning organization (*skewness=1*.232, *kurtosis*=-*1*.319), collective teacher culture (*skewness*=-.155, *kurtosis*=-.142) and entrepreneurial teacher behaviors (*skewness*=-.100, *kurtosis*=.264) were accepted to be normally distributed since they were between ±1.5 for skewness and ± 1.5 for kurtosis (Tabachnick & Fidell, 2013).

Table 2. Croncbach's alphas, correlations and descriptive statistics among the variables. *(N=439)*

	α	X̄	sd	LSS	CTC	ETB
LSS	.48	2.61	.563	1		
CTC	.923	3.58	.565	.386**	1	
ETB	.874	3.66	.516	.237**	.205**	1

Note(s): LSS: Learning School, CTC: Collective Teacher Culture, ETB: The Entrepreneurial Teacher Behavior, SD: Standard Deviation, ** p<.01.

As seen in Table 2, mean scores were 2.61 for learning school, 3.58 for collective teacher culture, 3.66 for entrepreneurial teacher behaviors (see Table 2). Additionally, bivariate correlations were statistically significantly positive relationships between learning school and collective teacher culture (r=.386, p <.01), learning school and entrepreneurial teacher behaviors (r=.237, p <.01), and collective teacher culture and entrepreneurial teacher behaviors (r=.205, p <.01). In addition, the relationships between all main variables are positive and significant at .01 level.

Measurement model

After the preliminary analyses, a measurement model was evaluated that encompassed four latent variables (learning school, collective teacher culture, entrepreneurial teacher behaviors) and nine observed variables (team learning, mental models, shared vision, personal mastery, teacher collaboration, common understanding among teachers, recognizing opportunities, taking initiative, taking risks). After the measurement, the results showed that the fit index values of the scales ($\chi^2_{(24,\ N=439)}$ = 90.145, χ^2/df = 3.756, SRMR = .0673, RMSEA= .079, CFI = .941, NFI = .922, TLI = .912 and IFI = .942] were within the desired limits and thus the model fit for the LSS, CTC and ETB scales were found to be within acceptable limits (Bagozzi & Yi, 1988; Kline, 2011; Marsh et al., 2006; Schermelleh-Engel et al., 2003). Browne and Cudeck (1992) and Büyüköztürk et al. (2004) state that a cut-off value of 0.08 for RMSEA is acceptable. As a matter of fact, it is seen that the RMSEA value is within the acceptable agreement limit in this study. Also, it was observed that the Cronbach's Alpha of all three scales were above the minimum acceptable value of .70 (Pallant, 2005). Factor loadings range between .531 and .943 and are significant for all indicators. Therefore, it is seen that each indicator effectively represents the respective variable. In this framework, the results confirm that all three scales are valid and reliable (Table 2).

Structural model

SEM analysis was conducted to test the hypotheses. Accordingly, first it was examined whether entrepreneurial teacher behaviors full mediate the possible effect of being a learning school on the perception of collective teacher culture. While testing the structural model, gender was added to the model as a control variable. The results showed that the model goodness-of-fit indices for this study are at acceptable fit level ($\chi^2_{(32,\ N=439)}$ = 150.233; χ^2/df = 3.774; CFI = .905; NFI = .887; IFI = .906; SRMR = .0971; RMSEA= . 079; AIC = 199.690 and ECVI = .456].To reveal the best model, the model in which entrepreneurial teacher behaviors is a partial mediator was examined. In other words, a direct path between learning school and collective teacher culture was added to the model. The analyses revealed that the goodness of fit indices of the model in which entrepreneurial teacher behaviors was partially mediated were at an acceptable level [$\chi^2_{(24,\ N=439)}$ = 107.308, χ^2/df = 3.462; RMSEA= .075; SRMR= .0616; CFI = .939; NFI = .917; TLI = .911; IFI = .940; AIC = 175.308 and ECVI = 0.400]. Also, all path coefficients of both models were found to be significant.

Additionally, all path coefficients in both models were found to be significant. The results of the chi-square difference test, conducted for the model with either full or partial mediation of entrepreneurial teacher behaviors, indicate that the added direct path between being a learning school and collective teacher culture significantly contributes to the model ($\Delta x^2 = 42.925$, df = 1, p <.001). In addition, the AIC and ECVI values of the partial mediation model were found to be smaller than the AIC and ECVI values of the full mediation model. As a result, the model in which entrepreneurial teacher behaviors have a partial mediating role between being a learning school and collective teacher culture was preferred. The path coefficients of this model are given in Figure 2.

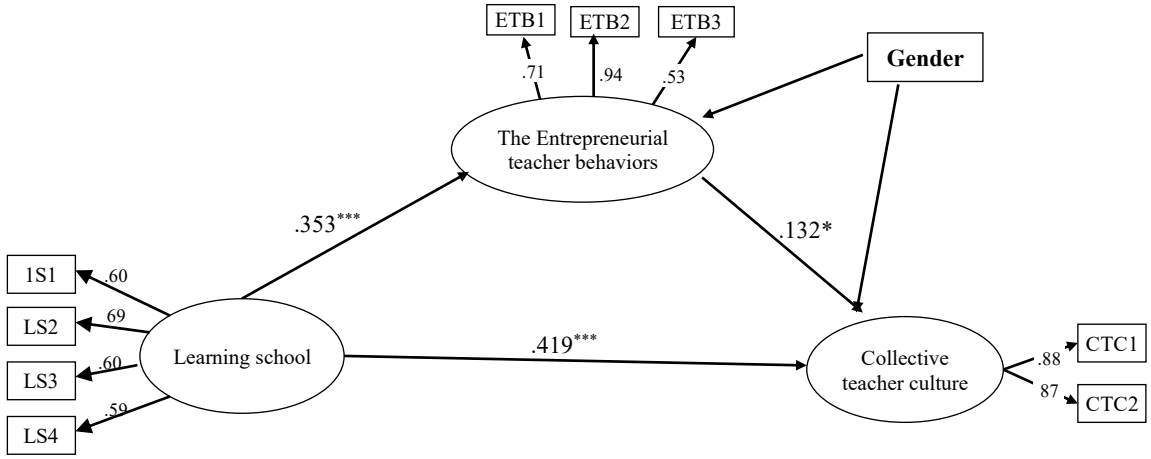

Figure 2.SEM for the partial mediation model with control variable.

Bootstrapping regression analysis

Bootstrapping regression analysis was used to test the mediating role of entrepreneurial teacher behaviors in the relationship between perceptions of learning school and collective teacher culture. All standardized direct, indirect, and total effects are presented in Table 3.

Table 3.Bootstrappinganalysis of thepartial model.

Standardized Direct Effects			St. Est.	S.E.	p
LSS --> ETB			.353	.083	***
LSS --> CTC			0.419	0.100	***
ETB --> CTC			0.132	0.065	0.020
Standardized Total effects	St. Est.	Lower	Upper	S.E.	
LSS --> CTC	0.465	0.336	0.576	0.061	***
Indirect effects					
LSS--> ETB--> CTC	0.046	0.002	0.098	0.024	0.041

Note(s). *p <*0.05*; ***p <0.01; LSS: Learning School, ETB: Entrepreneurial Teacher Behavior, CTC: Collective Teacher Culture.

The results presented in Table 3 show that being a learning school directly affects entrepreneurial teacher behaviors (β = .353, p <.001). Hypothesis 1 (H1) of the study is supported with this finding. Being a learning school was also found to directly affect collective teacher culture (β = .419, p <.001). This finding supports the second hypothesis

(H2) of the study. It was also found that entrepreneurial teacher behaviors directly affect collective teacher culture (β = .132, p <.05). This finding supports the third hypothesis (H3). The standardized total effect in path relationships showed that being a learning school has an effect on collective teacher culture (β = 0.465, p <.001). Moreover, the indirect effect of entrepreneurial teacher behaviors between being a learning school and collective teacher culture was also significant (β = 0.046, p <.05). This finding supports the fourth hypothesis (H4) of the study. Considering all these results, it can be concluded that entrepreneurial teacher behaviors play a partial mediating role in the relationship between being a learning school and collective teacher culture.

Discussion

Teachers' entrepreneurial behaviors are crucial both for their personal development and for schools to reach their goals. These behaviors involve going beyond basic duties, taking initiative, and generating innovative ideas to improve school functioning (Demircioğlu & Chowdhury, 2020). Learning schools foster such behaviors by encouraging risk-taking and offering a supportive environment (Jokić et al., 2012; Töremen, 2001). As structures where continuous improvement, collaboration, and innovation are central (Senge, 1990), learning organizations are likely to enhance teachers' entrepreneurial skills and promote more frequent entrepreneurial actions. In addition, the fact that one of the important features of learning schools is to adopt an innovation process based on collaboration among stakeholders (Bilir, 2014) and that collaboration has been found to be among the competencies, characteristics and behaviors of teacher entrepreneurship (Keyhani& Kim, 2020) supports the results that there is a statistically positive relationship between being a learning school and entrepreneurial teacher behaviors and that being a learning organization directly and positively affects entrepreneurial teacher behaviors.

Collective efficacy, defined as the shared belief among members to achieve organizational goals (Kocaekşi, 2005), plays a vital role in learning schools. Teachers' collective efforts—especially through team learning—are essential for school success, as organizational learning cannot occur without it (Basım, Şeşen& Çetin, 2009). Team learning, the core of learning organizations (Al-Abri & Al-Hashmi, 2007), reflects collective thinking (Senge, 1990), while cooperation forms the basis of relationships in such schools (Özden, 2008). A strong collective teacher culture enhances job satisfaction, belonging, and autonomy (Skaalvik&Skaalvik, 2021), positively impacting school effectiveness and organizational learning. Since learning schools aim to foster student development through effective learning environments (Hoy & Miskel, 2020), and collective efficacy involves teachers working together to support student behavior (Goddard et al., 2004), these two variables-being a learning school and collective teacher culture-are naturally aligned and positively related. All this information and these explanations support the results that there is a statistically positive relationship between being a learning school and collective teacher culture and that being a learning organization directly and positively affects collective teacher culture.

In addition to these findings, it is important to emphasize that collective teacher culture does not develop organically but is shaped by intentional leadership actions. Educational leaders who foster psychological safety, professional collaboration, and open dialogue among staff significantly influence the strength and cohesion of this culture (Leithwood et al., 2020; DuFour & Fullan, 2013). Moreover, organizational routines such as joint planning, peer observation, and reflective meetings contribute to reinforcing shared values and beliefs that characterize high-functioning learning schools (Harris, 2014; Moolenaar, 2012).

Keyhani and Kim (2021) examined the literature on teacher entrepreneurship and identified the competencies, characteristics, and behaviors associated with it. These include social motivation, innovativeness, collaborativeness, proactivity, opportunity orientation, job awareness, knowledge, selflessness, resourcefulness, risk tolerance, being visionary, and a personal development orientation. Among these, *collaborativeness* is defined as teachers encouraging both their own collaboration and their students' collaboration with each other and the wider community. Considering that cooperation involves multiple people coming together to accomplish a task, this behavior also reflects *collectivity* (TDK, 2025). According to Eroğlu and Dündar (2018), the qualities of an entrepreneurial individual can be classified as social, behavioral, and personal. In this context, traits such as effective communication, motivating work groups, participating in social and cultural activities, taking responsibility, and sharing authority and responsibilities (as social qualities), along with being social (as a personal trait), are also closely related to collectivity. All these information and explanations support the results that entrepreneurial teacher behaviors directly and positively affect collective teacher culture, and that entrepreneurial teacher behaviors have a mediating role in the effect of being a learning school on collective teacher culture.

These findings reinforce the growing view that entrepreneurial teacher behaviors are not isolated individual traits but organizationally embedded dispositions influenced by leadership, vision, and culture. The relationship between these behaviors and collective teacher culture thus reflects a broader shift toward distributed professionalism, where educators function as co-constructors of school improvement processes (Louis et al., 2010).

In the literature review, research results that can be associated with the positive relationship between LSS, ETB, and CTC and that are thought to support this result were found. Accordingly, studies revealing that there are positive relationships between the learning school and the management of differences (Doğan et al., 2015), instructional supervision of teachers (Esen & Albez, 2022), learning-centered leadership (Ertürk, 2022), shared leadership behaviors of school administrators (Ertürk &Nartgün, 2019). determined. There were also studies that revealed positive relationships between collective teacher efficacy and effective school (Uğurlu et al., 2018; Yüner& Özdemir, 2020), collective efficacy belief (Bandura, 1997; Goddard, 2001), academic climate (Chong et al., 2010), school culture (Özdemir et al., 2018), organizational socialization and collaborative culture in schools (Türkoğlu et al., 2021). There is also a study that concluded that there is a relationship between entrepreneurial teacher behaviors and lifelong learning culture in schools (Atik, 2023).

Research limitations and suggestions

One limitation of this study is its **cross-sectional design**, which only reveals the strength of relationships between variables. Future **longitudinal studies** may address this issue. Additionally, the **quantitative nature** of the research limits deeper insights that a **mixed-method design** might uncover, offering a more comprehensive understanding. The **sample** is another limitation, as the study was conducted in **a single province** using **convenience sampling**, which may restrict generalizability and overlook diverse perspectives. Future research can overcome this by using different sampling methods and ensuring **greater diversity**. Despite these limitations, the study significantly contributes to the literature by demonstrating that being a learning school**positively affects** both entrepreneurial teacher behaviors and collective teacher culture, and that entrepreneurial teacher behaviors**partially mediate** this relationship.

Future research should aim to test the conceptual framework in diverse educational systems to assess cross-cultural validity. Replicating this model in high-autonomy versus high-accountability systems may provide insight into how structural conditions affect the mediation role of entrepreneurial behaviors. In addition, qualitative studies such as case studies or ethnographies could explore how teachers perceive the interaction between learning school features and their own professional identity. This would enrich the findings with narrative depth and contextual nuance. Other recommendations related to the study can be listed as follows.

- Considering that being a learning school has a positive effect on entrepreneurial teacher behaviors and collective teacher culture, teachers' attitudes towards learning schools and the capacity and competencies of schools to be learning schools should be improved. This can be achieved by organizing awareness trainings, creating in-school learning communities, encouraging participatory school management, building a school culture that supports continuous improvement, and developing observation and feedback systems.
- Considering that entrepreneurial teacher behaviors have a positive effect on collective teacher culture, teachers' attitudes and skills towards entrepreneurship should be improved. For this, teachers should be provided with managerial support and a strong learning and sharing environment, in-service training opportunities should be created, and they should be given the opportunity to develop projects and ideas. Teachers' interaction with role models should be increased.
- SEM studies can be conducted to show the effect of being a learning school on different variables. In addition, relational survey studies that reveal the relationship between being a learning school and different variables can also be conducted.
- SEM research reported in this study can be repeated with different measurement tools.

Conclusion

This quantitative study tested four hypotheses: (H1) being a learning school positively affects entrepreneurial teacher behaviors; (H2) it also positively affects collective teacher culture; (H3) entrepreneurial teacher behaviors positively influence collective teacher culture; and (H4) these behaviors mediate the relationship between being a learning school and collective teacher culture. All hypotheses were confirmed. As the first study to validate these links, it highlights the need for a holistic approach that strengthens schools' learning organization capacities, promotes entrepreneurial behavior in teachers, and fosters a collective culture-ultimately enhancing educational quality and student achievement.

These findings validate a multi-dimensional conceptual model in which learning organization features interact with individual agency and collective norms. In doing so, this study expands the theoretical understanding of how structural and cultural dynamics intertwine in the shaping of professional behaviors. By demonstrating the mediating role of entrepreneurial teacher behavior, the research contributes to the refinement of models linking school culture, leadership, and innovation capacity.

Furthermore, the study adds a significant layer of insight to the discourse on teacher professionalism. It suggests that fostering innovation at the classroom level requires systemic support embedded within organizational routines and cultural values.

This highlights the importance of reconceptualizing professional development not as isolated

training, but as an ongoing organizational process supported by collaborative culture and visionary leadership. Such a perspective is particularly relevant for international education systems seeking to balance centralized accountability with school-level innovation.

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