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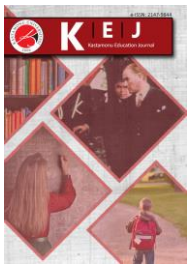

| Research Article / Araştırma Makalesi |

The Effect of Preschool Teachers' Engagement in Collaborative Professional Practices on Pedagogical Practices

Okul Öncesi Öğretmenlerinin İşbirlikçi Mesleki Uygulamalara Katılımının Pedagojik Uygulamalara Etkisi

Mehmet SAĞLAM[1], **Osman Tayyar ÇELİK**[2], **Yunus TUNÇ**[3]

Keywords

1. Preschool education,
2. Collaborative professional learning,
3. Pedagogical practices,

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1. Okul öncesi eğitim
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Abstract

Purpose: Preschool teachers are crucial in meeting children's needs and supporting their learning and development. This study explored the link between preschool teachers' engagement in collaborative professional practices and their pedagogical practices to meet children's needs.

Design/Methodology/Approach: This research used survey data from 1546 preschool teachers in Turkey who took part in the TALIS Starting Strong Survey 2018 by the Organization for Economic Co-operation and Development. Descriptive statistics and structural equation modeling were used for data analysis.

Findings: The findings indicated that preschool teachers' engagement in collaborative professional practices positively predicted their pedagogical practices regarding children's needs. Furthermore, engagement in collaborative professional practices accounted for approximately 7% of the variance in pedagogical practice.

Highlights: These results provide compelling evidence for the positive impact of teachers' collaborative professional learning on their pedagogical practices, which in turn can contribute to children's learning and development in preschool education. Collaborative professional practices in preschool education effectively support children's learning and development.

Öz

Çalışmanın amacı: Okul öncesi eğitimde çocukların ihtiyaçlarına cevap verebilecek, öğrenme ve gelişimini destekleyecek uygulamalarda öğretmen anahtar bir role sahiptir. Bu araştırmada okul öncesi öğretmenlerinin işbirlikçi mesleki uygulamalara katılımları ile öğretmenlerin çocukların ihtiyacına uygun pedagojik uygulamaları arasındaki ilişkiyi belirlemek amaçlanmıştır.

Materyal ve Yöntem: Araştırmada, Ekonomik İş Birliği ve Kalkınma Örgütü tarafından gerçekleştirilen TALIS Güçlü Başlangıç Araştırması 2018'e Türkiye'den katılan okul öncesi öğretmeni anket verileri kullanılmıştır. TALIS Güçlü Başlangıç Araştırmasına Türkiye'den 1605 öğretmen katılırken bu araştırmada veri analizleri kayıp ve hatalı verilerin çıkarılması sonucu 1546 öğretmen verisi üzerinden yürütülmüştür. Verilerin analizinde betimsel istatistiklerden ve yapısal eşitlik modellemesinden (YEM) yararlanılmıştır.

Bulgular: Araştırma sonucunda okul öncesi öğretmenlerinin işbirlikçi mesleki uygulamalara katılımının çocukların ihtiyacına uygun pedagojik uygulamalarını pozitif yönde anlamlı şekilde yordadığı belirlenmiştir. Ayrıca işbirlikçi mesleki uygulamalara katılımın pedagojik uygulamalardaki varyansın yaklaşık %7'sini açıklayabildiği tespit edilmiştir.

Önemli Vurgular: Araştırma sonuçları öğretmenlerin işbirlikçi mesleki öğrenmelerinin pedagojik uygulamalarına pozitif yönlü etkisine yönelik kanıtlar sunmaktadır. Bu sonuçlar öğretmenlerin mesleki gelişimlerinin okul öncesi eğitimde süreç kalitesine etkisi bağlamında tartışılmıştır.

[1] İnönü University, Faculty of Health Sciences, Department of Child Development, Malatya, TURKEY; https://orcid.org/0000-0003-1784-4472
[2] İnönü University, Faculty of Health Sciences, Department of Child Development, Malatya, TURKEY; https://orcid.org/0000-0003-3951-7261
[3] **Corresponded Author,** Iğdır University, Vocational School of Health Services, Department of Child Development, Iğdır, TURKEY; https://orcid.org/0000-0003-0762-9728

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INTRODUCTION

There are general assumptions and empirical research results that preschool education has a significant impact on children's cognitive and social-emotional development and learning (Bakken et al., 2017; Pianta et al., 1997). Quality preschool education supports children's social and economic development and educational life, as well as their development and learning. A quality preschool education is generally characterized by structural features such as student-teacher ratio and organizational form, and environmental features such as teacher quality, material and process quality of preschool educational institutions (Vermeer et al., 2016). Structural arrangements and environmental improvements in preschool education are mostly aimed at improving the quality of education and training process and indirectly supporting student learning and development.

As in other school levels, teachers play a key role in preschool education. Considering the interaction time of teachers with children during the day, it can be said that teachers have more influence on children's learning and development in preschool education compared to other school levels. Teachers contribute significantly to the quality of the process by arranging the learning environment, guiding children's behavior, and providing rich experiences for them. A key element of process quality is teachers' adaptive pedagogical practices in the classroom. Adaptive pedagogical practices include activity-based practices designed according to individual needs, aiming to provide children with various skills and competencies beyond transferring knowledge in preschool education.

Pedagogical adaptations aimed at providing learning experiences for individual needs also have a significant impact on children's learning and development. Therefore, revealing the individual, organizational, and environmental factors that affect teachers' adaptive pedagogical practices can guide practitioners and policymakers in the arrangements to be made. In this context, this research aims to reveal the extent to which teachers' engagement in collaborative professional practices predicts their adaptive pedagogical practices based on the Turkey data of the TALIS Starting Strong Survey 2018.

Conceptual Framework

Adaptive pedagogical practices

Process quality is a key factor for children's learning, well-being, and development in different areas of preschool education. The two main indicators of process quality in preschool education are structural features and quality interactions with children (Melthuis et al., 2016). Structural features refer to features that can be measured directly, such as student-teacher ratio, number of staff, and teachers' leadership characteristics (educational level, age, etc.). Interactions within the school are generally the relationships between teachers and children, teachers and parents and children with each other (Barros et al., 2016; OECD, 2020). All these relationships affect the physical, social, cognitive, and emotional development of children and improve the quality of preschool education (Erdoğan & Canbeldek, 2015; Karlıdağ & Gönen, 2018).

Children's interactions with teachers play materials, and peers in school are mostly through planned processes. Teachers have an important role, especially in managing, organizing, and directing interactions in the classroom. Teacher-child interactions consist of emotional climate, behavior management, and instructional and pedagogical quality components (OECD, 2018). As an indicator of process quality, pedagogical practices include developmental and educational activities in the classroom and the methods, techniques, and strategies in these activities.

Pedagogical practices are one of the important factors affecting process quality. While pedagogy means changing behavior or the work of teaching, pedagogical practices in preschool have a wide scope that includes activities to provide children with knowledge, skills, and behavior. Teachers' pedagogical understanding and practices make a difference in children's experiences (Stephen, 2010). Teachers' child-centred pedagogical approach, requires the inclusion of activities for individual needs. An important concept discussed in recent years within the scope of a student-centered teaching approach is pedagogical adaptations. Pedagogical adaptation, which is discussed under the headings of inclusive education, differentiated instruction, instructional adaptation, and individualization of instruction in the literature, is to make appropriate changes in the teaching processes, methods and materials, and learning environment in order to ensure the active participation of all students in the teaching process (Sandall et al., 2016).

Pedagogical adaptations for the needs in the classroom may include activities according to student interests, developmental levels, and cultural differences (OECD, 2019). Broader adaptations require that the curriculum be designed according to individual needs. Adaptations designed by teachers consciously introduce children to academic language, literacy, arithmetic, mathematics, and science (Melthuis et al., 2016). Eventually, such adaptations become a motivational factor for children and ensure their active participation in the process. Adaptive pedagogical practices in preschool education are extremely important in closing the gap between the child's actual developmental area and the potential developmental area (Vaughn & Parsons, 2013). There are studies emphasizing the positive impact of adaptive practices on children's achievement in preschool classrooms (Mavidou & Kakana, 2019). In addition, the research of Wulschleger et al. (2022) reveals that professional development practices for preschool teachers can support adaptive teaching at macro and micro levels. Consequently, it can be said that adaptations to the needs will directly affect children's learning and development. Thus, it becomes important to determine what factors affect teachers' pedagogical adaptations. The results of this research will shed light on the effect of collaborative learning on pedagogical adaptations.

Collaborative professional learning

Teachers' professional development has become the focus of researchers in recent years and has also begun to be addressed in educational policy documents to increase teacher quality (Çelik et al., 2021). It is possible to divide the professional development of teachers into three main periods. These are pre-service training, initial training, and in-service training. Pre-service training is the period in which teacher candidates acquire theoretical knowledge and receive a teaching certificate by completing the curriculum. Initial training refers to the adaptation and preparatory training given within the framework of the orientation program for new teachers. In-service training, on the other hand, includes formal training and informal learning processes organized centrally or locally while teachers pursue their profession.

There are increasing criticisms that formal in-service training for teachers cannot be transferred to classroom practices and, therefore, are ineffective (Uştu et al., 2016). Thus, it is argued that especially informal learning practices such as mentoring, coaching and collaborative learning activities within the school are more effective in teacher learning and reflection of these learnings on pedagogical practices (Lefstein et al., 2020). Moreover, collaborative professional learning activities can also act as a barrier to the feeling of isolation that results from teachers fulfilling their roles behind closed doors.

Collaborative professional learning refers to the informal learning process through knowledge sharing in joint activities and discussions with colleagues (OECD, 2020). Collaborative learning is a learning process that is context-sensitive, reflected in school practices, and includes social interactions between teachers. Since professional learning is primarily for learning and practice, collaborative learning allows teachers to evaluate and make inferences about their practices (Nolan & Molla, 2018). Collaborative professional learning can take place in the school setting or different places with families and teachers. In their research, Markussen-Brown et al. (2017) revealed the positive effects of in-service training about language and literacy, including studies conducted in both center and family-based environments, on teacher knowledge, as well as on structural empowerment and process quality in preschool education institutions. In an experimental study conducted by Sonmez et al. (2019), it was reported that professional development programs to increase teachers' competencies in inclusive education positively affect teachers' self-efficacy and knowledge.

Collaborative professional learning in preschool education institutions may include teachers giving feedback on practices, exchanging ideas on children's well-being and learning (OECD, 2020), classroom observations, joint evaluation of new practices, and developing joint projects with other teachers. Learning opportunities embedded in such processes provide a supportive environment for teachers (Camburn & Han, 2017). Collaborative professional practices can not only help teachers learn but also affect their pedagogical practices and, therefore, children's well-being, and cognitive, social, and emotional development. Durksen et al. (2017) revealed in their research that collaborative practices create a motivational structure for teachers. Colmer (2017) revealed in his research that collaborative practices in preschool education strengthen teacher communication by promoting positive professional relationships. Garner et al. (2021) found that preschool teachers' participation in collaborative professional learning workshops improved their appreciation of other teachers' professional practices and values, while Irvine and Price (2014) found that collaborative practices support reforms and practice changes in preschool education. Although policy recommendations are presented in international reports on creating conditions to support collaborative professional learning among preschool teachers (OECD, 2020), studies on the reflection of such professional learning in classroom practices are limited. In this context, there is a need for research-based evidence on the impact of engagement in professional development activities, and in particular in collaborative professional learning, on structural processes and educational processes.

TALIS Starting Strong 2018

TALIS Starting Strong 2018 is the data development project initiated by the Organization for Economic Co-operation and Development (OECD) in 2013 to improve early childhood and care practices. It is based on the OECD's Teaching and Learning International Survey (TALIS) in primary and secondary education (OECD, 2019). TALIS Starting Strong Survey is the first international large-scale survey to determine the quality of preschool education and the qualifications and practices of teachers and leaders. TALIS Starting Strong aims to identify opportunities for improvement and develop policy recommendations by focusing on the process quality, strengths, and weaknesses of preschool education in different countries (Nilsen et al., 2020). Nine countries (Turkey, Israel, Chile, Norway, Denmark, Germany, Korea, Iceland, and Japan) participated in the TALIS Starting Strong Survey. The teachers and school leaders of the participating countries were asked questions about their practices in the school, the general characteristics of the preschool educational institution, and their individual characteristics (OECD, 2020).

TALIS Starting Strong Survey focuses on key processes that improve child development, well-being, and learning and pedagogical practices related to staff-child or child-child interactions (Sim et al., 2019). In the TALIS conceptual framework, teachers' engagement in professional development activities is considered as a variable that affects the process quality. However, questions remain as to which professional development activities have what kind of impact (Egert et al., 2018; Markussen-Brown et al., 2017).

The research results on the effect of teachers' engagement in professional development activities on the quality of preschool education processes can guide practices and policies in the field. Improvements in the structural processes in preschool education and the quality of interaction between school stakeholders will affect children's learning, development, and well-being. Based on this idea, it was aimed to determine the effect of teachers' engagement in collaborative professional practices on their pedagogical adaptations in this study.

METHOD

Based on the TALIS Starting Strong Survey 2018 data, this research, which aims to determine the effect of teachers' engagement in collaborative professional practices on their pedagogical adaptations, is a correlational study. Correlational studies are divided into two. These are exploratory and predictive correlational studies (Fraenkel & Wallen, 2006). This research was designed as predictive correlational research. In predictive correlational studies, one of the variables is tried to be predicted from the other. Among the research variables, collaborative professional practices were considered as the predictive variable, while pedagogical adaptations were considered as the predicted variable. In the research, the relationship between the variables was examined by structural equation modeling (SEM). The model is presented in Figure 1.

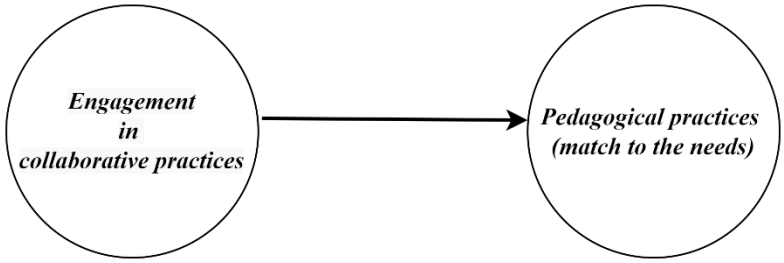


Figure 1. Research model

The model includes engagement in collaborative professional practices as an independent variable, and teachers' pedagogical adaptations are included as the dependent variable. Both variables are included in the model as latent variables together with the observed variables.

Participants and Procedure

Nine countries participated in the TALIS Starting Strong Survey 2018. The data were obtained from the questionnaires applied to the teachers and school leaders participating in this research. The sample design was adapted from the TALIS sample design template. While sampling, early childhood education institutions serving 0-3 age and ISCED 02 level were determined first, and in the next step, 8 participants, including school principals, were randomly selected from each institution. The data were collected only from institutions at the ISCED 02 level in Turkey. In Turkey, ISCED 02 consists of kindergartens, nursery classes, and practice classes (OECD, 2019).

In Turkey, 354 public preschool education institutions were included in the TALIS Starting Strong Survey sample, but as a result of removing the unsuitable ones, 340 were included. 1605 teachers working in these preschool education institutions constitute the sample of TALIS Starting Strong 2018. These data, openly available on the OECD website (see https://www.oecd.org/education/school/oecdtalisstartingstrongdata.htm), were downloaded and saved on a computer, and missing and erroneous data were examined. In this research, 59 participants with missing and erroneous data were excluded from the analysis, and the analyses were carried out on the data of 1546 participant teachers.

Data Collection Tools

"Staff Pedagogical Practices (match to the needs)" and "Engagement in Collaborative Professional Practices" scales were used as data collection tools in the research. Both scales were developed within the TALIS Starting Strong Survey 2018 (OECD, 2018).

The “Staff Pedagogical Practices (match to the needs)” scale is for measuring teachers' in-class pedagogical adaptation practices. The response options for the 4-point Likert scale are never or almost never (1), occasionally (2), frequently (3), always or almost always (4). There are 5 items in total on the scale and: "I set daily goals for the children", "I give different activities to suit different children's level of development", "I adapt my activities to differences in children's cultural background." are sample items (OECD, 2019). As a result of the validity and reliability analyses, the Omega value was found to be .82, CFI=.95, TLI=.91, RMSA=.069 for the ISCED 02 level in the Turkey sample.

The “Engagement in Collaborative Professional Practices” scale is for measuring engagement in collaborative professional practices. The response options for the 5-point Likert scale are never (1), less than monthly (2), monthly (3), weekly (4), and daily (5). There are 7 items in total on the scale. “Engage in discussions about approaches to children’s development, well-being and learning”, “Exchange learning or pedagogical materials with colleagues”, “Work with other to discuss the evaluation of children’s development and well-being” are sample items (OECD, 2019). As a result of the validity and reliability analyses, the Omega value was found to be .90, CFI=.97, TLI=.96, RMSA=.043 for the ISCED 02 level in the Turkey sample.

Data Analysis

Data analysis in the research was carried out in three steps. Firstly, the data of the Turkey sample were taken from the OECD official website and examined, and missing and erroneous data were removed from the data file. In the second step of the data analysis, the suitability of the data for multilevel analysis was examined for normality assumptions. As a result of the analysis, it was determined that the skewness and kurtosis values of the scales varied between (-.60, -.90) and (-.27, 1.17), respectively. Within the scope of multivariate normality, Mardia's critical ratio (c.r.) and multivariate normality coefficient were calculated. As

a result of the calculation, the critical ratio value (53.60) and the Mardia coefficient (57.90) were found. These values do not meet the reference values specified in the literature (Bayram, 2016; Yuan et al., 2005). Since the multivariate normality assumptions were not met, the Bootstrap method, which can be used in cases where the normality assumptions were not met, was used. Finally, in the third step of the data analysis, analyses for descriptive statistics and structural equation modeling were carried out and presented in tables.

FINDINGS

The relationship between research variables, mean scores, standard deviation, maximum and minimum scores are presented in Table 1.

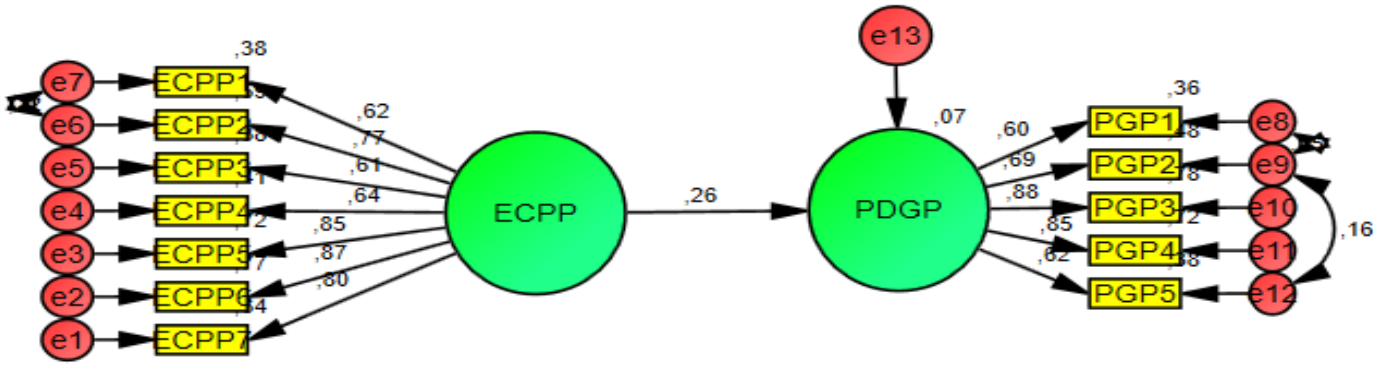
Table 1. Descriptive statistics

Variable	N	Min.	Max.	$\bar{x}$	sd	ECPP
Engagement in collaborative professional practices	1546	7	35	25.54	6.68	
Pedagogical practices (match to the needs)	1546	5	20	17.16	2.68	.27**

*Correlation is significant at the 0.01; ECPP (Engagement in collaborative professional practices)

As seen in Table 1, considering the maximum and minimum scores obtained from the scales, it can be said that preschool teachers' engagement in collaborative professional practices ($\bar{x}$=25.54) and pedagogical practices for children's needs ($\bar{x}$=17.16) are high. When the relationships between the variables are examined, it is seen that there is a moderate (r=.27) significant relationship between preschool teachers' engagement in collaborative professional practices and their pedagogical practices for the needs. Thus, it can be said that as teachers' engagement in collaborative professional practices increases, the frequency of making pedagogical adaptations for the needs increases.

SEM analysis was carried out in order to determine the effect of preschool teachers' engagement in collaborative professional practices on their inclusion of appropriate pedagogical practices. The path coefficient and path diagram obtained as a result of the analysis are presented in Figure 2.



ECPP: Engagement in collaborative professional practices; PDGP: Pedagogical practices (match to the needs)

Figure 2. Model of the relationship between engagement in collaborative professional practice and pedagogical practice

In order to evaluate the model fit as a result of the SEM analysis, the goodness of fit values were examined. The goodness of fit values of the model were found as CFI=.97, AGFI=95, TLI=.96, RMSA=056. Considering the reference value ranges specified in the literature (Byrne, 2010; Karagöz, 2016), it can be said that the model has a perfect fit. The estimation results of the model are presented in Table 2.

Table 2. The estimation results of the model

Relationships between variables	B	β	S.E.	C.R.(t)	p
ECPP---->PDGP	.102	.262	.011	8.901	.00

Considering the results of the path analysis, it is seen that the engagement of preschool teachers in collaborative professional practices positively and significantly predicts their pedagogical adaptation practices, and the path is significant (β=.262, t=8.901, p<.001). This result can also be interpreted as the change in preschool teachers' adaptive pedagogical practices is related to the frequency of their engagement in collaborative professional practices. Thus, in order to determine how much of the change in pedagogical practices can be explained by engagement in collaborative professional practices, the coefficient of determination (R2) was calculated and found .07. As a result, this situation can be interpreted as the frequency of engagement of preschool teachers in collaborative professional practices can explain 7% of the variance in their pedagogical practices for children's needs.

CONCLUSION, RECOMMENDATIONS and SUGGESTIONS

Recent studies have focused on the quality of preschool education and its impact on children's learning and development (Sheridan, 2017). This interest in the quality of preschool education is one of the positive effects of preschool education on children's creativity (Can Yaşar & Aral, 2010), academic success (OECD, 2010), and social and emotional development (Aslanargun & Tapan, 2011). Therefore, it is important to determine the factors affecting the quality of the educational process in order to obtain the desired outcomes from preschool education. There is a consensus that teachers' pedagogical knowledge, skills, and practices are critical to children's learning and development in preschool education as in other school levels. Thus, it was aimed to determine to what extent preschool teachers' engagement in collaborative professional practices predicts their pedagogical practices for the needs of children.

As a result of the analysis, it was determined that the engagement of preschool teachers in collaborative professional practices positively and significantly predicted their pedagogical practices for the needs of children. This result is consistent with studies on the effect of teachers' engagement in professional development activities on their in-class practices and student outcomes (Buczynski & Hansen,2010; Chung et al., 2005; Kohler et al., 1997). In addition, teachers' engagement in collaborative learning activities can prevent their work stress and isolation in the classroom behind closed doors. Correspondingly, in the study conducted by Sandilos et al. (2018), it was determined that the engagement of preschool teachers in professional development activities is a buffer for the negative effect of teacher stress on the teacher-child relationship.

In addition to following a specific curriculum, preschool teachers make a difference in the learning and development of children by arranging the learning environment and organizing activities according to their interests and needs. Besides, teachers influence children's development more than the curriculum or pedagogy (Wiseman & Kumar, 2021). Teachers' inclusion of practices that will support children's learning and development largely depends on their pedagogical knowledge, skills, and competencies. Although teacher preparation programs are a source of knowledge and skills for teacher candidates, today's rapid changes require professional development and learning. Moreover, theoretical knowledge is not always successful in practice. This situation makes professional development a necessity for preschool teachers.

Various alternative ways for professional development have been suggested in the literature. In-service training, workshops, conferences, coaching, mentoring, and professional learning communities are some of them. However, high-quality professional development activities should be embedded in context and provide opportunities for teachers to collaborate and share ideas (Darling-Hammond et al., 2017). It can be said that collaborative professional practices such as coaching, mentoring, pedagogical discussions and classroom observations offer the opportunity for teachers to learn more and reflect them to the class. Lovett and Gilmore (2003) stated that each teacher is a learning resource for others, and not giving teachers opportunities for collaboration would mean denying a valuable learning resource.

Classroom quality in early childhood settings is a multidimensional construct that includes promoting child development (socially, physically, and cognitively) that results in positive child outcomes and providing nurturing teacher-child interaction (Connelly, 2018). Classroom quality is affected by teachers' pedagogical practices. However, rapid changes and different needs necessitate the development of pedagogical practices. Today, due to globalization, multicultural society structure makes new pedagogical practices compulsory. Giving all children equal opportunities at school and richer educational experiences for children, including the vulnerable and disadvantaged (Brodin et al., 2015; Sheridan et al., 2009), requires adapting pedagogical practices to meet children's needs. The results of this research show that collaborative professional practices of preschool teachers can predict teachers' learning activities in the classroom. As a result, it can be said that collaborative professional development practices in which teachers are active in the process positively affect the process quality in preschool education.

The professional development of teachers in early childhood serves two main purposes. The first is to support teachers' knowledge, skills, and practices through professional development practices. The second is that teachers become professionals who constantly renew themselves and ensure professional development (Sheridan et al., 2009). The result of this research provides support for the first purpose of professional development stated above.

Considering the impact of teacher-child relationships on child outcomes and school success, it is crucial to identify and regulate every possible variable that may affect the quality of teacher-child relationships in the context of pedagogical practices (Chung et al., 2005). As a result, this research shows that collaborative professional practices are a variable that will affect pedagogical practices and, indirectly, child outcomes. Thus, creating structures that will increase teacher collaboration in the context of school, identifying obstacles to collaboration, and taking precautions will contribute to the process quality. Therefore, school administrators and policy makers should allocate more resources to teachers' professional development and collaborative practices. School-based collaborative practices can also be supported. In this context, teachers' access to continuous professional development and collaborative learning opportunities can be organized through activities such as in-school mentoring, workshops, and professional meetings. Finally, research should be conducted to examine the effects of current educational policies and practices and school and environmental variables on teachers' professional development and classroom practices.

LIMITATION

Inevitably, our study has some limitations. Firstly, since TALIS data have limitations regarding the cross-country comparability and common use of data, only teacher data from the Turkish sample were used in the study. This limits the generalizability of our

findings. Secondly, since our study is cross-sectional and correlational, although it gives a clue about the cause-and-effect relationship, it does not give a definite result in terms of the cause-and-effect relationship. Finally, since the research scales are based on self-reporting, teacher reports may create a bias**.**

Declaration of Conflicting Interests

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Statements of publication ethics

We hereby declare that the study has not unethical issues and that research and publication ethics have been observed carefully.

Researchers' contribution rate

The study was conducted and reported with equal collaboration of the researchers.

Ethics Committee Approval Information

Ethics committee decision was taken by the Iğdır University Scientific Research and Publication Ethics Committee with the letter dated 06.04.2023 and numbered 2023/7.

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