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An experimental study examining the effectiveness of an instructional leadership training program for school principals

Rezzan Uçar*
Van Yüzüncü Yıl University, Educational Scineces Department, Van, Türkiye, ucarrezzan@gmail.com
Murat Kayri
Van Yüzüncü Yıl University, Computer Education and Instructional Technology Department, Van, Türkiye, muratkayri@yyu.edu.tr
Mehmet Şata
Van Yüzüncü Yıl University, Educational Sciences Department, Van, Türkiye, mehmetsata@yyu.edu.tr

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*Corresponding Author

ABSTRACT This study examined the effect of an instructional leadership training program for school principals in Türkiye on teachers' perceptions. A quasi-experimental pretest–posttest control group design was employed. The experimental group comprised 23 public school principals who received training and 171 teachers working in their schools. The control group included 171 teachers whose principals received no training. The principals completed 24 hours of instructional leadership training over three months, delivered in four-hour sessions every two weeks. Data were collected using the Instructional Leadership Behaviors Scale. Analysis of covariance (ANCOVA) compared posttest scores while controlling for pretest scores, while paired-samples t-tests examined within-group changes. Results revealed significantly higher posttest instructional leadership perceptions in the experimental group than in the control group across the total scale and all subdimensions. Significant pretest–posttest increases occurred in the experimental group, whereas no significant changes were observed in the control group. Continuous leadership training incorporating presentations, coaching, group work, workshops, and practical applications is recommended.

Keywords: *Effectiveness, Instructional leadership, School principal, Training program*

Okul müdürlerine yönelik öğretimsel liderlik eğitim programının etkililiği üzerine deneysel bir araştırma

ÖZ Bu araştırmada, Türkiye'deki okul müdürlerine yönelik geliştirilen öğretimsel liderlik eğitim programının öğretmen algıları üzerindeki etkisi incelenmiştir. Araştırmada yarı deneysel ön test–son test kontrol gruplu desen kullanılmıştır. Deney grubunda eğitim alan 23 devlet okulu müdürü ve bu okullarda görev yapan 171 öğretmen, kontrol grubunda ise müdürleri eğitim almayan 171 öğretmen yer almıştır. Okul müdürlerine üç ay boyunca iki haftada bir dört saat olmak üzere toplam 24 saatlik öğretimsel liderlik eğitimi verilmiştir. Veriler Öğretim Liderliği Davranışları Ölçeği ile toplanmıştır. Grupların son test puanları, ön test puanları kontrol edilerek kovaryans analizi (ANCOVA) ile karşılaştırılmış; grup içi değişimler bağımlı örneklemler t-testiyle incelenmiştir. Bulgular, deney grubundaki öğretmenlerin öğretimsel liderlik algılarının toplam ölçek ve tüm alt boyutlarda kontrol grubuna göre anlamlı düzeyde yüksek olduğunu göstermiştir. Deney grubunda ön test–son test puanları anlamlı düzeyde artarken kontrol grubunda anlamlı değişim görülmemiştir. Okul müdürlerine yönelik sunum, koçluk, grup çalışması, atölye ve uygulamalı etkinlikler içeren sürekli mesleki gelişim programları önerilmektedir.

Anahtar Sözcükler: *Eğitim programı, Etkililik, Okul müdürü, Öğretimsel liderlik*

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INTRODUCTION

Organizations can adapt to environmental changes and gain a competitive advantage by differentiating themselves from other organizations through the quality of their human resources. In this context, leadership plays a critical role in ensuring that organizations effectively function in line with their objectives. Leadership is not limited to administrative functions; it is also considered a multidimensional process that includes strong human interactions (Carton, 2022; Haslam et al., 2022). Today, managers with leadership qualities are prominent in almost every organizational structure. When considered specifically in educational organizations, the need for qualified educational leaders who will play a decisive role in helping the education system achieve its goals is evident.

The success of education systems depends largely on the leadership competencies of school leaders. Accordingly, contemporary school principals are expected not only to fulfill administrative duties but also to be "instructional leaders" who guide teaching processes, support teachers, and improve learning environments. However, research in Türkiye and internationally reveals that school principals face various challenges in effectively fulfilling their instructional leadership roles and that professional development opportunities in this regard are inadequate (Cansoy et al., 2024; Gümüşeli, 1996, Hausmann et al., 2002; McLure & Aldridge, 2022; Shaked, 2024). Teachers' perceptions of school principals' leadership behaviors have a decisive impact on the general school climate, teaching quality, and teachers' job satisfaction (Guo et al., 2025; Liu et al., 2020). However, the extent to which school principals demonstrate instructional leadership behaviors does not depend solely on leadership training. The literature indicates that the implementation of instructional leadership is influenced by multiple factors. Specifically, system-level, contextual, personal, and professional factors—such as the centralized and bureaucratic structure of the education system, legal regulations, the organizational characteristics of schools, cultural expectations, and school principals' individual characteristics and professional competencies—collectively shape instructional leadership practices (Gümüş & Bellibaş, 2015; Gümüşeli, 1996; Hallinger, 2005, 2018; Hallinger & Ko, 2015; Leithwood et al., 2008). In particular, in centralized education systems, school principals devote a substantial proportion of their time to administrative and bureaucratic responsibilities, which may limit their capacity to lead teaching and learning processes. Nevertheless, the literature also emphasizes that instructional leadership behaviors constitute professional competencies that can be significantly enhanced through structured leadership development programs (Corcoran et al., 2009; Darling-Hammond et al., 2007). In this context, investigating the effectiveness of structured and long-term training programs aimed at developing the instructional leadership competencies of school principals emerges as an important necessity in terms of both practice and educational policies (Bryant & Walker, 2024; Dorukbaşı & Cansoy, 2024; He et al., 2024). Therefore, while acknowledging the structural and contextual factors that may constrain instructional leadership, the present study focused on the professional competencies of school principals that can be developed through professional learning and examined the effectiveness of a structured training program designed to strengthen their instructional leadership behaviors. Based on this fundamental problem, the purpose of this study is to examine the impact of an instructional leadership training program developed for school principals on teachers' perceptions of their principals' instructional leadership roles. In line with this basic purpose, answers were sought to the following questions;

1. Does the instructional leadership training program significantly affect teachers' perceptions of school principals' instructional leadership behaviors?
2. Is there a significant difference between the pretest and posttest scores in the instructional leadership perceptions of teachers in schools where principals participating in the instructional leadership training program?
3. Is there a significant difference between the pretest and posttest scores in the instructional leadership perceptions of teachers in schools where principals do not participate in the instructional leadership training program?
4. Is there a significant difference between the posttest instructional leadership perceptions of teachers in schools where principals participate in the instructional leadership training program and those where principals do not participate?

Instructional Leadership

Since the early 1960s, research in the field of educational leadership and administration has made significant contributions to understanding the impact of educational leaders on student achievement and, in this regard, has paved the way for the conceptualization of the concept of "instructional leadership" (Lee et al., 2012; Muswere et al., 2024). In line with the findings of studies on effective schools and effective teaching in the United States in the 1970s, efforts to improve local schools gained momentum, and these developments were influential in shaping educational policies (Hallinger & Murphy, 1986; Javornik & Mirazchiyski, 2023; Leithwood, 2021). This reform process brought about a focus on leadership development for the sake of school development sustainability and paved the way for the widespread establishment of "leadership academies" for school principals in the 1980s (Hallinger, 2003, 2005). The focus of these leadership academies has been on critical issues related to instructional leadership as one of the core components of an effective school model (Hallinger & Murphy, 1986). As a result of these developments, the leadership role of school principals has come to the fore as the key to successful school management, and a general consensus has emerged in the literature regarding the decisive role of principals in student learning (Fromm et al., 2016; Stiggins & Duke, 2008; Spillane et al., 2003).

The concept of "instructional leadership" was first discussed in the literature by Edwin Bridges in an article published in the Journal of Educational Administration in 1967 (Hallinger & Wang, 2015; Puruwita et al., 2022). This early contribution pioneered the theoretical foundations of the concept. In 1979, Edmonds linked achievement gaps between schools with similar socioeconomic conditions to the instructional leadership roles of school principals, significantly increasing academic interest in the concept (Akın, 2020; Nader et al., 2019; Ylimaki, 2007). Following these developments, Bossert and her colleagues (1982) expanded the concept of instructional leadership by emphasizing the ability of effective school principals to identify instructional problems and effectively mobilize school resources to solve them (Hallinger & Wang, 2015). In line with ongoing theoretical developments, Hallinger and Murphy (1985) developed a comprehensive conceptual framework to more systematically analyze the instructional leadership role of school principals. This framework provided the methodological basis for subsequent research and also enabled the reshaping of instructional leadership in terms of practical applications (Ay & Boz, 2022; Hallinger et al., 2016, 2025).

Although instructional leadership is a topic extensively studied in the literature, a common understanding regarding its definition appears to have yet to emerge. Different researchers define instructional leadership in various ways, based on their own theoretical perspectives and research focuses. For example, Hallinger (2005) views instructional leadership as a form of leadership with strong directive capacity that is effective in the process of restructuring schools. In contrast, Spillane et al. (2003), taking a more distributed leadership perspective, define instructional leadership as a transactional form of leadership that motivates, facilitates, and supports teachers' learning, transformation, and development of their instructional practices. Fromm et al. (2016) define instructional leadership as a leadership competency encompassing functions such as mentoring/coaching teachers to enhance their teaching capacity, providing targeted professional development opportunities, and providing constructive feedback through classroom observations. The common denominator across these definitions is that the principal should directly lead instructional processes and take an active role in them. In the present study, instructional leadership is functionally defined as the set of leadership behaviors exhibited by school principals to guide and improve teaching and learning processes, as perceived by teachers. More specifically, instructional leadership is conceptualized through five behavioral dimensions: defining and sharing school goals, managing the curriculum and teaching process, evaluating the teaching process and students, supporting and developing teachers, and creating a suitable teaching-learning environment and climate (Şişman, 2016). Accordingly, the functionalization of instructional leadership in this study reflects teachers' perceptions of the extent to which school principals exhibit leadership behaviors in these five dimensions.

While effective school principals are generally defined as strong instructional leaders, Hallinger and

Murphy (1985), recognizing the ambiguity surrounding the roles and behaviors of instructional leaders, conducted extensive research on this topic in the United States in the early 1980s. These studies suggested that the instructional leadership role consists of three fundamental dimensions and ten leadership functions. The three dimensions of the model are (1) defining the school's mission, (2) managing the curriculum, and (3) fostering a positive school learning climate. The first dimension, defining the school's mission, encompasses the principal's responsibility to establish the school's vision and determine its core objectives in collaboration with stakeholders. The second dimension, managing the curriculum, involves effectively coordinating and monitoring teaching processes and curricula. The third dimension, creating a positive school learning climate, is related to the high level of academic expectations and the understanding of continuous improvement that effective schools possess (Hou et al., 2019; Lee et al., 2012; Ng, 2019; Sanchez & Watson, 2021). To effectively fulfill these leadership responsibilities, school principals must have sufficient knowledge and expertise in the areas of teaching and learning (Hallinger, 2005). When the literature is examined, it is frequently found that school principals can have a significant impact on the productivity level of schools (Koyuncu & Kazak, 2023; Mergani et al., 2025; Ugurlu & Abdurrezzak, 2016). Differences in performance observed among schools with similar structural and demographic characteristics are largely attributable to how the school is managed (Dutta & Sahney, 2021). This evidence demonstrates the importance of school principals' leadership roles on educational outcomes.

An examination of the job descriptions of school principals reveals that various perspectives on this role have been developed in different sources. Within the context of the Turkish education system, a school principal is defined as a primary educational leader responsible for managing and representing educational activities with a team spirit, using all school resources effectively and efficiently within the framework of legal and administrative regulations, in line with the general objectives and fundamental principles of Turkish National Education (Ministry of National Education, 2016). International literature offers diverse theoretical approaches to defining the school principal. For example, Edmonds (1979) defines the principal as an instructional leader who focuses the entire school organization on student learning; Lunenburg (2010) considers the principal as the primary administrator responsible for the operation of school. McAdams (1998) defines the principal as a "teacher's teacher," highlighting their role as a pedagogical guide. Glaes-Couts (2021) emphasizes the role of principals in supporting teachers in their curriculum implementation. According to He et al. (2024), principals undertake significant responsibilities that encompass not only the management of school resources but also comprehensive human resources. Sağlam (2021) describes the principal's duties as a leadership style encompassing multifaceted responsibilities such as providing the school's human and material resources, using these resources effectively, planning, implementing, and evaluating educational activities, creating a positive school climate, and resolving problems. The common point of these definitions is the emphasis that the school principal is a central actor who directs the teaching processes. These conceptualizations are also reflected in the professional standards adopted across different national education systems. In Australia, the Australian Professional Standard for Principals conceptualizes the principalship through five professional practices: leading teaching and learning, developing self and others, leading improvement, innovation and change, leading the management of the school, and engaging and working with the community (AITSL, 2022; Savaş, 2019). Similarly, in England, the Headteachers' Standards emphasize responsibilities related to school culture, teaching, curriculum and assessment, professional development, organizational management, and school improvement (Çınkır, 2019; Department for Education [DfE], 2020). In the United States, the Professional Standards for Educational Leaders frame educational leadership around areas including mission and vision, curriculum, instruction and assessment, professional capacity of school personnel, professional community, operations and management, and continuous school improvement (National Policy Board for Educational Administration [NPBEA], 2015; Gümüş & Bellibaş, 2015). Taken together, these examples demonstrate that, although the specific responsibilities of principals vary across education systems, leading teaching and learning constitutes a central component of the principalship.

Becoming a School Principal in The Turkish Education System

In Türkiye, the prevailing view in the training and appointment of school administrators has traditionally been that teaching is the primary profession, and this understanding continues to influence current practices. This perspective has given rise to the assumption that good teachers can naturally become good school administrators and that prospective school administrators do not necessarily require pre-service preparation beyond teacher education. In this context, the continuing perception of teaching as the primary profession has hindered the institutionalization of school administration as a distinct profession (İpek, 2023) and has made it difficult for school administrators to move beyond their roles as teachers and effectively demonstrate leadership behaviors. In the Turkish education system, the appointment of school administrators and the qualifications required for these positions are determined by laws and regulations. However, the Ministry of National Education frequently revises the regulations governing the selection and appointment of school administrators, failing to establish a stable and consistent system (Aramaz & Çelikten, 2025). On the other hand, recent regulations regarding the training of school administrators show that in Türkiye, professional development activities for school principals are mainly carried out within the scope of in-service training, and structured and long-term training programs focusing systematically on developing instructional leadership are quite limited (MoNE, 2026). In contrast, in many countries, it is accepted that school leadership plays a critical role in the development of education systems, and significant investments are made in programs aimed at developing the leadership competencies of school administrators (Kesen et al., 2019). In particular, in countries such as the United States (Gümüş & Bellibaş, 2015), the United Kingdom (Recepoğlu & Kılınç, 2014), Canada (Gümüş & Bellibaş, 2015), Australia (AITSL, 2015), and Singapore (Akyol & Yeşilbaş-Özenç, 2021), the understanding that school principals should not only perform managerial duties but also lead instructional processes has gained increasing strength. Accordingly, leadership development programs, certification programs, mentoring practices, and continuous professional development activities have become widespread for school principals. Indeed, research in the field of school leadership shows that systematic training aimed at improving the leadership competencies of school principals can positively contribute to school improvement processes, teacher professional development, and student learning (Darling-Hammond et al., 2007; Düz & Kazak, 2024; Leithwood et al., 2020). Similarly, OECD (2009) and UNESCO (2024) reports emphasize the need to provide continuous professional development opportunities for school administrators so that they can adapt to changing educational environments and effectively guide teaching processes. These developments reveal that the leadership behaviors of school principals should be considered not as spontaneously developing traits, but as competencies that need to be supported through planned and systematic training programs. On the other hand, instructional leadership is considered a type of leadership that should be exhibited in schools (Wanzare & Da Costa, 2001), and the literature discusses the instructional leadership roles of school principals as follows: It is stated that school principals have significant effects on school culture (Şahin, 2011), teacher performance (Wahab et al., 2020), school climate (Dutta & Sahney, 2021), teachers' level of organizational identity (Akın-Köstereliođlu & Olukçu, 2019), and organizational commitment (Yaman & Ezer, 2015). In this context, it is clearly seen that the instructional leadership roles of school principals need to be developed in order to make the functioning of schools and learning environments more effective.

However, it has been observed that studies empirically examining the effectiveness of structured training programs to improve the instructional leadership behaviors of school principals are quite limited. This situation requires leadership development programs for school principals to be evaluated with scientific evidence. On the other hand, experimental and quasi-experimental studies in the literature examining the effectiveness of leadership development programs for school principals show that these programs positively affect instructional leadership behaviors, teachers' professional development, and school development processes (Clark et al., 2009; Corcoran et al., 2009; Darling-Hammond et al., 2007; Meyer & Richter, 2025). These findings provide important empirical evidence that the leadership competencies of school principals can be improved through systematic training programs. Based on this necessity, this research aims to develop a structured training program to strengthen the instructional leadership roles of school principals; and to evaluate the effect of this program on teachers' perceptions of these roles.

METHOD

Research Design

This research was conducted using an experimental design to examine the impact of an instructional leadership training program on teachers' perceptions of their principals. A quasi-experimental design with a pretest-posttest control group was used in the study. A quasi-experimental research design is used to estimate the causal effect of an intervention. However, in a quasi-experimental research design, individuals are not randomly assigned to experimental and control groups by chance. In this context, participants were not randomly assigned to experimental and control groups in the study, but the effect of the intervention was examined through pretest-posttest measurements (Gheysari et al., 2024). The primary purpose of this quasi-experimental study is to provide the researcher with the opportunity to compare two groups to measure the effect of the independent variable (Creswell, 2014).

Participants

This study aimed to determine whether school principals' instructional leadership behaviors in their schools changed as a result of the instructional leadership training program, based on teachers' perceptions. The study group of the research consists of 23 school principals working in 23 public schools in the central districts of Van province and 342 teachers teaching in these schools. Of these schools, 6 are kindergartens, 5 are primary schools, 5 are secondary schools, 2 are primary and middle schools, and 5 are high schools. The 23 principals in the study group received a 24-hour "Training on Improving School Principals' Instructional Leadership Skills," four hours every two weeks for a total of three months. The teachers in these 23 schools constituted the experimental group of the study, and the teachers in the schools where school principals who did not receive this training served constituted the control group of the study. In this context, 171 teachers were included in the experimental group and 171 in the control group.

In this study, the instructional leadership behaviors of school principals were evaluated based on teachers' perceptions. Since instructional leadership, by its nature, is a type of leadership that directs teaching processes and teacher practices, the most direct observers of these behaviors are teachers (Hallinger, 2005). Furthermore, because self-report measurements carry the risk of social desirability bias (Podsakoff et al., 2003), a data collection method based on teachers' perceptions was preferred in this study.

Data Collection Tool

The "Instructional Leadership Behaviors Scale," developed by Şişman (2004), was used to measure teachers' perceptions of their principals. This scale, used in the study, consists of a total of 50 items divided into five sub-dimensions. The five factors included in the scale are: Determining and Sharing School Goals (10 items), Management of the Curriculum and Instructional Process (10 items), Evaluation of the Instructional Process and Students (10 items), Supporting and Developing Teachers (10 items), and Creating a Regular Teaching-Learning Environment and Climate (10 items). Each item on the scale is evaluated on a 5-point Likert-type scale. Each sub-dimension can receive a minimum of 10 and a maximum of 50 points; the total score on the scale ranges from a minimum of 50 to a maximum of 250.The total variance explained by the scale is 70.37%. The factor loadings of the items in the scale range from 0.46 to 0.79. The Cronbach's alpha reliability coefficients for the factors in the scale are 0.95, 0.93, 0.94, 0.93, and 0.96, respectively. The Cronbach's alpha coefficient for the overall scale was 0.98.

In the current study, Cronbach's alpha coefficient, confirmatory factor analysis, Average Variance Extracted (AVE), and Heterotrait-Monotrait (HTMT) statistics were used to prove the reliability and validity of the measurements obtained from the measurement tool. The findings are shown in Table 1.

Table 1.
Validity and Reliability Coefficients of Measures Obtained from The Instructional Leadership Behaviors Scale

Factors	Items	Items Loading	Cronbach α	AVE
Defining and Sharing School Aims	I1	0.780	.953	.673
	I2	0.834		
	I3	0.866		
	I4	0.845		
	I5	0.853		
	I6	0.728		
	I7	0.854		
	I8	0.823		
	I9	0.858		
	I10	0.756		
Managing Educational Program and Instructional Process	I11	0.741	.918	.540
	I12	0.865		
	I13	0.714		
	I14	0.777		
	I15	0.647		
	I16	0.723		
	I17	0.697		
	I18	0.695		
	I19	0.777		
	I20	0.692		
Evaluation of Instructional Process and Students	I21	0.801	.953	.671
	I22	0.814		
	I23	0.860		
	I24	0.833		
	I25	0.866		
	I26	0.802		
	I27	0.718		
	I28	0.823		
	I29	0.858		
	I30	0.823		
Teacher Support and Development	I31	0.843	.942	.604
	I32	0.779		
	I33	0.694		
	I34	0.800		
	I35	0.827		
	I36	0.834		
	I37	0.701		
	I38	0.694		
	I39	0.818		
	I40	0.882		
Creating Proper Teaching-Learning Environment and Climate	I41	0.879	.961	.717
	I42	0.882		
	I43	0.862		
	I44	0.859		
	I45	0.834		
	I46	0.846		
	I47	0.827		
	I48	0.812		
	I49	0.854		
	I50	0.784		

An examination of Table 1 reveals that the factor loadings for the scale range from 0.647 to 0.882 (>0.40). This demonstrates that the scale's validity is met at a high level (Huck, 2012). The internal consistency coefficients for the five-factor structure were found to be high, ranging from 0.919 to 0.961. The AVE value ranged from 0.540 to 0.717. As is known, AVE measures the similarity between the items of a factor, and a factor greater than 0.50 is required for convergent validity (Henseler et al., 2015).

Table 2 shows the HTMT values, which calculate the average correlation between items measuring two different constructs.

Table 2.
HTMT Ratio for The Instructional Leadership Behaviors Scale

	F1	F2	F3	F4	F5
F1					
F2	0.835				
F3	0.807	0.804			
F4	0.767	0.833	0.842		
F5	0.836	0.841	0.848	0.840	

Note: F1 = Defining and Sharing School Aims, F2 = Managing Educational Program and Instructional Process, F3 = Evaluation of Instructional Process and Students, F4 = Teacher Support and Development, F5 = Creating Proper Teaching-Learning Environment and Climate

Table 2 shows that the HTMT ratio values are below 0.95. The exact threshold level of the HTMT is debatable; after all, "when is a correlation close to one"? Some authors suggest a threshold of 0.85 (Kline, 2015), whereas others propose a value of 0.90 (Teo et al., 2008). To ensure discriminant validity for the Instructional Leadership Behaviors Scale used in this study, an HTMT value of less than 0.90 was considered. Considering both the AVE and HTMT ratios, it can be argued that construct validity was achieved in all dimensions of the scale (Henseler et al., 2015). Considering the model data fit values obtained from confirmatory factor analysis, the $\chi 2$ / df fit index was obtained as 2.40. Literature reports that the value of the chi-square test should be in the range of $0 \leq \chi 2 / df \leq 5$ (Sümer, 2000). Furthermore, the SRMR (Standardized Root Mean Square Residual) and RMSEA (Root Mean Square Error of Approximation) fit indices used in the study are expected to be less than 0.08 (Hu & Bentler, 1999). In this study, the RMSEA value was 0.068 and the SRMR value was 0.042. The additional fit indices also indicated an excellent model fit, with CFI = .989, TLI = .988, NNFI = .988, and NFI = .986. These values substantially exceeded the commonly recommended threshold of .90, providing further support for the five-factor measurement model. (Bentler & Bonett, 1980, Hu & Bentler, 1999; Sümer, 2000). Comparison of the observed fit values with reference fit values suggested in the literature revealed that all fit values were within the appropriate range. Considering all fit values, AVE, HTMT, factor loading values, and reliability coefficients, it can be concluded that the five-factor structure (50 items) of the Instructional Leadership Behaviors Scale was confirmed.

Data Collection Process

In the study, before the training began, a pretest was administered to the teachers working in the schools of the principals who participated in the instructional leadership training program. Simultaneously, the same scale was administered to teachers working in schools whose principals did not participate in the training program. After the training program was completed, the same schools were visited again to collect posttest data. This attempted to measure the impact of the training program.

Experimental Procedure

A Google form was shared with school principals working in the central districts of Van Province, and those who wished to participate in the training program were asked to indicate their willingness to participate in the training using the shared Google form. An interview form based on Hallinger and Murphy's (1985) instructional leadership model was administered to the school principals who volunteered to participate in the training. The form included three preparatory questions addressing participants' general understanding of leadership, followed by open-ended questions focusing on key instructional leadership practices, including defining and communicating the school's vision and mission, managing and monitoring the instructional program, fostering a positive learning climate, supporting teachers' professional development, providing resources to enhance academic achievement, and evaluating instruction. The principals' responses were examined to identify difficulties and developmental needs in these areas of instructional leadership. Based on this needs assessment, 25

school principals who demonstrated a need for further development in instructional leadership practices were included in the training program. Of these, 23 principals attended the training regularly and constituted the final intervention group.

It should be noted that this interview-based needs assessment was used solely for selecting principals for the training program; teachers' perceptions were subsequently used as the outcome measure to evaluate the effectiveness of the intervention. The training program was developed by integrating theoretical, needs-based, and context-specific considerations. Hallinger and Murphy's (1985) instructional leadership framework provided the primary theoretical basis for the program, while the interviews conducted with participating school principals helped identify areas requiring further development. The content was also adapted to the roles, responsibilities, and working conditions of school principals within the Turkish education system. In designing the practice-oriented components of the program, selected activities and examples from Owen's (2022) *The leadership skills handbook* were utilized as a source of inspiration and were substantially adapted and transformed to align with instructional leadership practices and the Turkish educational context. Accordingly, the activities were not used in their original form but were redesigned around school-based situations and instructional leadership responsibilities relevant to the participating principals. Based on these theoretical, needs-based, and contextual foundations, the program combined theoretical instruction with practice-oriented activities, including workshops, coaching, model applications, and drama. Hallinger and Murphy's (1985) model conceptualizes instructional leadership through three broad dimensions: defining the school mission, managing the instructional program, and promoting a positive school learning climate. These three broad dimensions provided the theoretical framework for the training program, whereas instructional leadership outcomes were operationalized and measured through the five dimensions of Şişman's (2004) Instructional Leadership Behaviors Scale. Conceptually, Defining and Sharing School Aims corresponds primarily to defining the school mission; Managing the Educational Program and Instructional Process and Evaluation of the Instructional Process and Students reflect functions related to managing the instructional program; and Teacher Support and Development and Creating a Proper Teaching–Learning Environment and Climate reflect functions primarily associated with promoting a positive school learning climate. Thus, the five dimensions used in the present study represent a more differentiated operationalization of instructional leadership that is broadly aligned with Hallinger and Murphy's three-dimensional framework.

The training was delivered by a faculty member with expertise in educational administration, graduate-level teaching experience in leadership, and extensive research experience in the field of leadership. The training program lasted three months and consisted of 24 hours of face-to-face training. Principals participated in four hours of training every two weeks. The first hour of training included theoretical knowledge, followed by practical training. The first week of training covered general definitions of leadership, the distinction between a leader and a manager, the power sources of a leader, and the characteristics a leader should possess. The first hour of this training was devoted to theoretical knowledge, while the next three hours focused on practical applications. Each month, the focus was on identifying and sharing school goals, managing the curriculum and instructional process, evaluating the teaching process and students, supporting and developing teachers, and creating a stable teaching-learning environment and climate.

For example, regarding the identification and sharing of school goals, theoretical information was first provided regarding school goal setting, the visioning process, strategic planning, and its stages. A goal-setting workshop was then held with the group. The entire group was divided into subgroups of three or four. They were asked to assess their awareness of their school's current goals and how they managed this process. They were asked to paste these evaluations onto large pieces of cardboard with Post-it notes and present their findings for each group's evaluation. This ensured that they understood how actively they played a role in the school's goals. Next, the activity to prepare the vision and mission poster began. Groups were formed, with school principals with similar backgrounds being carefully selected. Each group was asked to prepare a poster containing the school's vision and mission, enabling them to convey the school's goals to its stakeholders. In the previous session, the theoretical basis for preparing a vision

statement was explained. The need for vision meetings was emphasized, and each individual in the small group was asked to take on the role of a school stakeholder (parent, student, teacher, etc.) and participate in the vision meeting, contributing to the vision. After completing the necessary steps, each group expressed their vision in different ways. Some shared the vision statement with a poster, others by singing a song. In the third practice session, participants were distributed previously developed leadership scenarios for sharing the determined vision statement with school stakeholders, and they were asked to fulfill their roles within the framework of these scenarios. In the final stage, an activity was conducted on how each could express their school vision using five words, and the most effective expression was selected jointly. At the end of this one-day activity, participants were aimed at acquiring theoretical knowledge, as well as the skills to determine the school's goals and share them effectively. The training content is given in Table 3 below.

Table 3.
Content of The Training Program

Sessions	Topic Title	Gains
Session 1	Leadership, its importance, differences between leaders and managers - leadership approaches	• Realizing the importance of leadership, • Understanding the importance of leadership, • Understanding the differences between leader and manager, • Having knowledge about various leadership approaches.
Session 2	Instructional leadership; 1st Dimension: Determining and Sharing School Goals	• Realizing the conditions of the school where he/she works, • Being able to determine the goals of the school where he/she works, • Organizing a sample vision meeting, • Gaining the ability to convey the achieved vision to a group.
Session 3	Instructional leadership; 2nd Dimension: Management of Curriculum and Teaching Process	• Ensuring that school principals plan, implement and manage educational programs effectively, • School principals gain the ability to direct teachers, monitor course processes and increase academic success, • Integrating the knowledge learned by school principals into school management processes.
Session 4	Instructional leadership; 3rd Dimension: Teaching process and evaluation of students	• Making effective classroom observation, • Being able to give constructive feedback based on observation results, • Being able to make data-based decisions at the school level, • Ability to plan teaching-oriented meetings with teachers,
Session 5	Instructional leadership; 4th Dimension: Supporting and developing teachers	• Being able to determine the professional development needs of teachers, • Ability to apply effective feedback techniques, • Ability to conduct development-oriented teacher meetings, • Ability to develop applications that will increase teacher motivation, • Ability to prepare a school-based professional development plan, • Ability to monitor teacher development.
Session 6	Instructional leadership; 5th Dimension: Creating a regular teaching-learning environment and climate	• Being able to explain the relationship between learning climate and school climate, • Being able to develop strategies to improve the school climate, • Being able to plan practices that support teacher motivation, • Ability to develop practices that can create a culture of trust.

Data Analysis

Before conducting the main analyses, the distributional characteristics of the pretest and posttest scores were examined. Descriptive statistics, including means, standard deviations, minimum and maximum values, were calculated for the total instructional leadership score and its five subdimensions. The normality of the score distributions was evaluated using skewness and kurtosis coefficients. Across the experimental and control groups, the skewness coefficients ranged from −1.93 to −0.29, while the kurtosis coefficients ranged from −0.90 to 1.97. These values were within the acceptable limits of ±3 for skewness and ±10 for kurtosis suggested by Kline (2015), indicating that the distributions did not substantially deviate from normality. Therefore, parametric statistical procedures were employed.

First, independent-samples t-tests were conducted to compare the pretest scores of the experimental and control groups and to determine whether the groups were comparable before the intervention. To evaluate the effectiveness of the instructional leadership training program, separate analyses of covariance (ANCOVA) were then conducted for the total instructional leadership score and each of its five subdimensions. In each ANCOVA model, the posttest score was specified as the dependent variable, group membership (experimental and control) as the fixed factor, and the corresponding pretest score as the covariate. This approach allowed the posttest scores of the two groups to be compared after statistically controlling for their initial scores.

Before conducting ANCOVA, the assumptions of linearity between the covariate and the dependent variable, homogeneity of regression slopes, normality of residuals, and homogeneity of error variances were examined. The homogeneity of regression slopes assumption was evaluated by testing the interaction between group membership and the corresponding pretest score. Levene's test was used to assess the homogeneity of error variances. After the assumptions were confirmed, adjusted posttest means and standard errors were calculated for the experimental and control groups.

In addition, paired-samples t-tests were performed separately for the experimental and control groups to examine changes between the pretest and posttest scores within each group. These analyses were used to address the research questions concerning within-group changes, whereas ANCOVA was considered the primary analysis for evaluating the effectiveness of the intervention.

The statistical significance level was set at .05, and all analyses were evaluated using 95% confidence intervals. For ANCOVA results, partial eta squared (ηp^2) was reported as the measure of effect size. Values of approximately .01, .06, and .14 were interpreted as small, medium, and large effects, respectively. Cohen's d was calculated for the t-test comparisons, with values of approximately 0.20, 0.50, and 0.80 interpreted as small, medium, and large effects, respectively. Probability values smaller than .001 were reported as $p < .001$ rather than $p = .000$. All statistical analyses were conducted using IBM SPSS Statistics 25.

Ethics Committee Approval

The ethics committee approval required for the study was obtained from the Van Yüzüncü Yıl University Social and Human Sciences Publication Ethics Committee (Document date and number: 26.06.2025-2025/16-07).

FINDINGS

As part of the study, pretest measurements obtained from both groups regarding instructional leadership and its sub-dimensions were compared and are presented in Table 4.

Table 4.
Comparison of Pretest Scores of The Experimental and Control Groups

Variable	Group	n	$\bar{X}$	SD	df	t-test	*p*	d
Defining and Sharing School Aims	Experimental	171	4.00	0.75	340	0.84	.401	-
	Control	171	3.93	0.76				-
Managing Educational Program and Instructional Process	Experimental	171	3.92	0.73	340	1.22	.222	-
	Control	171	3.82	0.82				-
Evaluation of Instructional Process and Students	Experimental	171	3.78	0.88	340	0.31	.757	-
	Control	171	3.81	0.86				-
Teacher Support and Development	Experimental	171	3.32	0.90	340	0.36	.717	-
	Control	171	3.28	1.14				-
Creating Proper Teaching-Learning Environment and Climate	Experimental	171	3.79	0.91	340	0.06	.951	-
	Control	171	3.79	1.02				-
Instructional Leadership	Experimental	171	3.76	0.75	340	0.41	.686	-
	Control	171	3.73	0.85				-

Note: F1 = Defining and Sharing School Aims, F2 = Managing Educational Program and Instructional Process, F3 = Evaluation of Instructional Process and Students, F4 = Teacher Support and Development, F5 = Creating Proper Teaching-Learning Environment and Climate

Table 4 presents the results of the independent samples t-test for the pretest scores of the experimental and control groups. The findings indicate that there was no significant difference between the total instructional leadership scores of the experimental (M = 3.76, SD = 0.75) and control groups (M = 3.73, SD = 0.85) (t(340) = 0.41, p = .686). Similarly, no statistically significant difference was found between the two groups in terms of variables F1–F5, which are sub-dimensions of instructional leadership (p > .05). These results indicate that the experimental and control groups were equivalent in terms of instructional leadership levels before the intervention, and therefore, any changes observed after the intervention may be associated with the instructional leadership training program. To examine the effect of the instructional leadership training program while controlling for pretest scores, ANCOVA was conducted for the total instructional leadership score and its subdimensions. The results are presented in Table 5.

Table 5.
ANCOVA Results for The Experimental and Control Groups

Variable	Adj. Mean: Experimental Group	Adj. Mean: Control Group	$F(1, 339)$	*p*	η_p^2
Defining and Sharing School Aims	4.30	3.91	92.91	< .001	.215
Managing the Educational Program and Instructional Process	4.21	3.82	74.18	< .001	.180
Evaluation of the Instructional Process and Students	4.17	3.80	58.63	< .001	.147
Teacher Support and Development	3.85	3.37	62.94	< .001	.157
Creating a Proper Teaching–Learning Environment and Climate	4.13	3.75	49.28	< .001	.127
Total Instructional Leadership	4.13	3.73	92.46	< .001	.214

Note: Adjusted means were estimated after controlling for the corresponding pretest scores. Partial η^2 values of approximately .01, .06, and .14 indicate small, medium, and large effects, respectively. All observed effect sizes were large.

After controlling for the corresponding pretest scores, the ANCOVA results indicated statistically significant differences between the experimental and control groups in all dimensions of instructional leadership. The adjusted posttest mean for defining and sharing school aims was higher in the experimental group (M_{adj} = 4.30) than in the control group (M_{adj} = 3.91), F(1, 339) = 92.91, p < .001, η_p^2 = .215. Similarly, the experimental group obtained significantly higher adjusted posttest scores than the control group for managing the educational program and instructional process, F(1, 339) = 74.18, p

< .001, η_p^2 = .180; evaluating the instructional process and students, F(1, 339) = 58.63, p < .001, η_p^2 = .147; teacher support and development, F(1, 339) = 62.94, p < .001, η_p^2 = .157; and creating a proper teaching–learning environment and climate, F(1, 339) = 49.28, p < .001, η_p^2 = .127.

A statistically significant difference was also found between the groups in the total instructional leadership score after controlling for pretest scores, F(1, 339) = 92.46, p < .001, η_p^2 = .214. The adjusted posttest mean of the experimental group (M_{adj} = 4.13) was higher than that of the control group (M_{adj} = 3.73). Based on the partial eta-squared values, the effects were large across all dimensions and for the total score. Overall, these findings indicate that the instructional leadership training program had a substantial positive effect on teachers' perceptions of school principals' instructional leadership behaviors.

To examine whether teachers' perceptions of their principals' instructional leadership changed over time in the absence of the intervention, paired-samples t-tests were conducted for the control group. The results are presented in Table 6.

Table 6.
Comparison of Pretest and Posttest Scores of The Control Group

Variable	Test	N	$\bar{X}$	SS	sd	t-test	*p*	d
Defining and Sharing School Aims	Pretest	171	3.93	0.76	170	0.70	.485	-
	Posttest	171	3.90	0.27				-
Managing Educational Program and Instructional Process	Pretest	171	3.82	0.82	170	0.50	.621	-
	Posttest	171	3.79	0.39				-
Evaluation of Instructional Process and Students	Pretest	171	3.81	0.86	170	0.07	.946	-
	Posttest	171	3.80	0.47				-
Teacher Support and Development	Pretest	171	3.28	1.14	170	1.89	.069	-
	Posttest	171	3.36	0.85				-
Creating Proper Teaching-Learning Environment and Climate	Pretest	171	3.79	1.02	170	0.92	.358	-
	Posttest	171	3.75	0.58				-
Instructional Leadership	Pretest	171	3.73	0.85	170	0.13	.898	-
	Posttest	171	3.72	0.44				-

Table 6 presents the dependent samples t-test results for the pretest and posttest scores of the control group. The findings revealed that the control group did not show a significant change in any subscale (p > .05). Regarding the total instructional leadership score, no significant difference was found between the pretest (M = 3.73, SD = 0.85) and posttest (M = 3.72, SD = 0.44) means (t(170) = 0.13, p = .898). Similarly, the differences in all subscales F1–F5 were statistically insignificant. These results indicate that the instructional leadership level in the control group remained stable throughout the implementation process and that the observed changes were within the range of random variation.

To examine changes in teachers' perceptions of their principals' instructional leadership following the intervention, paired-samples t-tests were conducted for the experimental group. The results are presented in Table 7.

Table 7 presents the results of the dependent samples t-test for the pretest and posttest scores of the experimental group. The findings revealed that the experimental group showed significant increases in all sub-dimensions and in the total instructional leadership score (p < .001). In terms of the total instructional leadership score, the pretest mean (M=3.76, SD=0.75) increased significantly in the posttest (M = 4.14, SD = 0.65) (t(170) = 8.45, p < .001, d = 0.54). Cohen's d values ranged from 0.39 to 0.62, indicating that the intervention had a moderate impact on the level of instructional leadership. The increase observed in the Teacher Support and Development dimension (d = 0.62), in particular, suggests that the intervention had stronger effects on certain sub-dimensions. Overall, the results reveal that the intervention significantly improved teachers' perceptions of school principals' instructional leadership behaviors.

Table 7.
Comparison of Pretest and Posttest Scores of The Experimental Group

Variable	Test	N	$\bar{X}$	SD	df	t-test	*p*	d
Defining and Sharing School Aims	Pretest	171	4.00	0.75	170	6.81	< .001	0.46
	Posttest	171	4.31	0.60				
Managing Educational Program and Instructional Process	Pretest	171	3.92	0.73	170	6.28	< .001	0.46
	Posttest	171	4.24	0.66				
Evaluation of Instructional Process and Students	Pretest	171	3.78	0.88	170	6.80	< .001	0.49
	Posttest	171	4.17	0.70				
Teacher Support and Development	Pretest	171	3.32	0.90	170	8.92	< .001	0.62
	Posttest	171	3.87	0.88				
Creating Proper Teaching-Learning Environment and Climate	Pretest	171	3.79	0.91	170	5.84	< .001	0.39
	Posttest	171	4.12	0.78				
Instructional Leadership	Pretest	171	3.76	0.75	170	8.45	< .001	0.54
	Posttest	171	4.14	0.65				

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

This study evaluated the effectiveness of a structured training program implemented to improve the instructional leadership roles of school principals, based on teachers' perceptions. The findings indicated that there was no statistically significant difference between the experimental and control groups in terms of the total instructional leadership score or its subdimensions at the pretest stage. This finding suggests that the two groups were comparable before the intervention with respect to teachers' perceptions of school principals' instructional leadership behaviors. Within the Turkish education system, teachers are required to obtain a sufficient score on a written examination to become eligible for administrative positions. School principal appointments are based on a combination of written examination scores, an evaluation form, and an oral examination (İpek, 2023; Ministry of National Education, 2021). Given that the principals in both groups were appointed through the same selection process, the similarity observed in the pretest results is an expected finding.

The research results show that there is a significant increase in the perceptions of teachers in schools where principals participating in the instructional leadership training program work, regarding their principals' instructional leadership behaviors. On the other hand, no significant change was observed in the control group. This finding indicates that instructional leadership skills can be improved through education and structured programs for the professional development of school principals can contribute to strengthening instructional leadership behaviors. Because the outcome measure was based on teacher reports, the findings of the present study should be interpreted as changes in teachers' perceptions of principals' instructional leadership rather than as direct evidence of changes in principals' observed leadership behaviors. Nevertheless, the pattern of findings is broadly consistent with previous research indicating that leadership development programs may contribute to changes in principals' leadership practices and related teacher-reported outcomes (Meyer & Richter, 2025; Tingle et al., 2019). Thus, the present study extends this literature by demonstrating that, following the intervention, teachers perceived stronger instructional leadership among principals who participated in the training program. Instructional leadership is a leadership approach that focuses directly on the core functions of the school, such as improving the instructional process, supporting teachers, and improving student learning (Leithwood et al., 2020). Therefore, it is expected that training to improve the knowledge and skills of school principals in these areas will translate into leadership behaviors perceived more positively by teachers.

The ANCOVA results showed that, after controlling for the corresponding pretest scores, the experimental group had significantly higher adjusted posttest scores than the control group for overall instructional leadership and all five dimensions. These findings indicate that the training program had a significant effect on teachers' perceptions of their principals' instructional leadership. Among the five

dimensions, the largest intervention effect was observed for defining and sharing school aims followed by managing the educational program and instructional process, teacher support and development, evaluation of the instructional process and students, and creating a proper teaching–learning environment and climate. These findings indicate that the training program had its strongest adjusted between-group effect on teachers' perceptions of principals' practices related to defining and communicating school aims. This finding is consistent with the conceptualization of instructional leadership proposed by Hallinger and Murphy (1985), in which framing and communicating school goals constitute the core functions of the dimension of defining the school mission. Hallinger (2005) similarly emphasizes that instructional leaders are goal-oriented and are responsible for establishing a clear direction for the school by developing clear, measurable, and academically focused goals and communicating these goals throughout the school community. From this perspective, the relatively strong effect observed in the present study may indicate that the training enabled principals to make school goals more explicit, visible, and shared with teachers. The smallest intervention effect was observed for creating a proper teaching–learning environment and climate. This may be because this dimension is related to more complex structures, such as school culture, teacher behaviors, and organizational processes, which may require a longer period to change. Indeed, changes in school climate and the teaching–learning environment may emerge through longer-term practices rather than short-term interventions. Moreover, because the present study was based on teachers' perceptions, it may take time for changes in principals' leadership practices to become visible to teachers (Ma et al., 2024). Therefore, the findings suggest that the instructional leadership training program may produce more immediate effects in areas directly related to leadership practices, such as setting the direction of the school and managing and evaluating instructional processes, whereas effects on more complex organizational dimensions, such as school climate, may require a longer period to emerge.

The within-group analyses provided additional support for the ANCOVA findings. In the control group, teachers' perceptions of their principals' instructional leadership remained statistically stable across the study period, with no significant pretest–posttest differences in the total score or any of the subdimensions. In contrast, the experimental group showed statistically significant pretest–posttest increases in the total instructional leadership score and all subdimensions. Among these within-group changes, teacher support and development showed the largest standardized pretest–posttest change in the experimental group ($d = .62$). These findings indicate that, while teachers' perceptions remained stable in the absence of the intervention, teachers whose principals participated in the training reported more positive perceptions of their principals' instructional leadership following the intervention. The research findings are consistent with previous studies that have shown that leadership development programs for school administrators yield positive results. Corcoran et al. (2009) determined that school administrators showed improvement in various leadership competencies after training. Similarly, Clark et al. (2009) reported that training programs for principals supported managerial development. In a more recent study, Meyer and Richter (2025) found that a professional development program for school principals had positive effects on improving teaching quality and supporting teacher development. When these studies are considered together, the view that leadership behaviors can be developed through training is supported. However, it is also observed that the effects of leadership development programs may not be reflected equally in all outcome variables. Indeed, Master et al. (2022) determined that principal development programs had positive effects on managerial practices but did not lead to a significant change in student achievement. This suggests that the effects of leadership training primarily manifest in the behaviors of school administrators and the perceptions of teachers, and that its reflection on more complex variables such as student outcomes may require a longer period and additional conditions.

According to the research findings, the greatest impact of the instructional leadership training program was observed in the dimension of supporting and developing teachers. This dimension was followed by the dimensions of teaching process and student evaluation, setting and sharing school goals, curriculum and teaching process management, and creating a regular learning-teaching environment and climate. This result is consistent with the literature (Amzat et al., 2022; He et al., 2024; Kilag & Sasan, 2023) which states that one of the fundamental functions of instructional leadership is to support the

professional development of teachers. Considering the responsibility of teachers to support the academic and cognitive development of students, promoting their professional development is considered one of the fundamental priorities of education systems. Indeed, it is stated that the development of teachers' professional competencies strengthens their pedagogical skills and teaching practices (He et al., 2024). In this context, it can be said that the instructional leadership training program contributed to the teachers' perception of the school principals' behaviors towards supporting and developing teachers in a more visible way. The findings obtained, especially in the dimension of teaching process and student evaluation, are also noteworthy. As part of the training program, school principals received practical training on instructional supervision, providing feedback, and monitoring classroom teaching processes. Therefore, it is possible that teachers developed a perception that school principals provided more guidance and support for teaching practices. On the other hand, the relatively lower level of impact in terms of creating a regular learning-teaching environment and climate may stem from the fact that this dimension is related to more complex structures such as school culture and organizational climate, which take longer to change. This suggests that the effects of leadership training are primarily manifested in the behaviors that principals can directly exhibit, while changes related to the overall school climate may require a longer period of time.

The research findings revealed that the second largest impact was found in the evaluation of instructional process and students. Studies on school improvement indicate that principals' instructional leadership, in addition to teacher knowledge and skills, has a significant impact on student achievement and well-being (Glaes-Couts, 2021). Similarly, school principals' instructional leadership behaviors have a significant impact on student achievement (Dutta & Sahney, 2021). This result is understandable, as the instructional leadership training program for school principals focuses on developing behaviors related to instructional leadership, such as evaluating the curriculum, assessing student achievement, holding informative meetings with teachers and students about the school's success, and sharing and appreciating the school's and students' achievements with teachers and students (Şişman, 2016). Therefore, it is expected that teachers would perceive the roles of school principals in monitoring, evaluating, and guiding the teaching process as more visible. When the findings are considered together, it can be said that the instructional leadership training program contributed to teachers' more positive perception of the leadership behaviors of school principals regarding the teaching process and student evaluation. The research also found that the third largest impact, to the same extent, is on the determination and communication of school goals and the management of the curriculum and instructional process. Research on effective schools indicates that these schools have a clearly defined vision and mission (Hallinger & Murphy, 1985). Determining the vision and mission and sharing them with school stakeholders is crucial for instructional leadership. This dimension relates to the principal's role in determining the school's core goals. It also focuses on the principal's role in working with staff to ensure that the school has clear, measurable, and time-bound goals focused on the academic development of students. It is also the principal's responsibility to communicate these goals so that they are widely known and supported throughout the school community (Hallinger, 2005). Numerous activities have been conducted throughout the educational process addressing the dimension of identifying and sharing school goals, and they have been linked to other dimensions emphasized throughout the educational process. Therefore, the positive change in teachers' perceptions of the school principals' behavior can be considered an expected outcome. Some studies in the literature indicate that school goals vary from school to school and even vary significantly among stakeholders within the same school (Stemler et al., 2011). This situation can lead to fragmentation of efforts among school stakeholders and differences of understanding among them (Gurley et al., 2014). Establishing common goals and sharing and discussing ideas among all school stakeholders fosters collaboration and trust (Toikka & Tarnanen, 2024). All of these can contribute to creating a more positive school environment. Indeed, research has shown that a shared school vision has an impact on behaviors such as decreased teacher intentions to leave the profession (Qadach et al., 2019; Whipp & Salin, 2018), increased development of learning communities in schools (Toikka & Tarnanen, 2024), and increased teacher motivation (Barnett & McCormick, 2003). In this context, the findings suggest that the instructional leadership training program contributed to teachers' more positive perception of the leadership behaviors of school principals in defining and sharing school goals and uniting school stakeholders around common objectives.

According to the research findings, a significant effect in favor of the experimental group was also found in the dimension of curriculum and teaching process management. Instructional leadership includes the responsibilities of the school principal to supervise and evaluate the teaching process, monitor the curriculum, and track student development. Therefore, instructional leadership requires the direct participation of the school principal in activities aimed at improving teaching and learning processes (Hallinger, 2005). The fact that the instructional leadership training program includes detailed applications for planning, monitoring, evaluating, and improving instruction may explain the positive change observed in this dimension.

It is also noteworthy that the lowest effect was observed in the dimension of creating a regular teaching-learning environment and climate. This situation may be due to the fact that this dimension is more complex and related to organizational processes that can change in the long term compared to other dimensions. Indeed, the instructional leadership approach is based on the assumption that schools will improve through school principals setting academic goals, directing teaching processes, motivating teachers, and supporting student learning. However, the effects of instructional leadership, particularly on school climate and the learning environment, often require longer-term implementation (Hallinger, 2005).

On the other hand, school principals' leadership practices are shaped not only by their individual competencies but also by their organizational and structural conditions. Legal regulations, bureaucratic processes, limited school resources and central management practices can limit the leadership behaviors of school principals (Cansoy et al., 2018; Köybaşı et al., 2017). Similarly, Hallinger and Ko (2015) state that structural regulations regarding the education system may restrict the leadership behaviors of school principals. For this reason, it can be considered as an expected situation that the behaviors related to creating an orderly learning-teaching environment and a positive school climate will change at a more limited level compared to other dimensions.

The results of this study offer important implications for researchers, practitioners, and education policymakers. In the Turkish education system, school principals can transition from teaching to administration based on specific criteria and centralized evaluation processes. However, school principals are expected not only to perform administrative duties but also to lead instructional processes, support teachers' professional development, and guide practices aimed at improving student learning. This necessitates the continuous development of school principals' knowledge and skills regarding instructional leadership. The findings indicate that the instructional leadership training program had a significant positive effect on teachers' perceptions of school principals' instructional leadership. Therefore, planning systematic and sustainable training programs to support the professional development of school principals may be beneficial. At the school level, principals can translate these findings into practice by collaboratively establishing a limited number of clear and measurable instructional goals and regularly reviewing progress toward these goals with teachers. They can conduct regular classroom observations followed by constructive, evidence-based feedback, use student learning data to identify instructional priorities, and organize school-based professional learning activities in response to teachers' needs. Principals can also create opportunities for teacher collaboration and peer learning, protect instructional time from unnecessary interruptions, and regularly monitor the implementation of the curriculum. Such practices may help integrate instructional leadership into principals' daily routines rather than treating it as a separate administrative responsibility.

Limitations and Recommendations

Several limitations should be considered when interpreting the findings of this study. First, the voluntary participation of school principals and the absence of random assignment may have introduced selection bias. Principals who volunteered to participate in the training may have differed from nonparticipating principals in characteristics such as motivation or openness to professional development. Therefore, although the quasi-experimental design and the use of pretest scores as covariates strengthened the analysis, causal interpretations of the findings should be made with caution. Second, the outcomes were

based on teachers' perceptions rather than direct observations of principals' leadership behaviors. Accordingly, the findings reflect changes in teachers' perceptions of principals' instructional leadership and should not be interpreted as direct evidence of changes in principals' actual leadership behaviors or skills.

In particular, leadership development programs that incorporate different learning methods, such as presentations, hands-on workshops, group work, peer learning, mentoring, and coaching, may contribute to the development of school principals' instructional leadership practices. In addition, professional development activities aimed at strengthening instructional leadership should be designed as a continuous learning process that extends beyond the initial period of principals' tenure. Such sustained professional development may help school principals manage instructional processes more effectively, support teachers' professional development, and contribute to the achievement of schools' academic goals.

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TÜRKÇE GENİŞLETİLMİŞ ÖZET

Eğitim sistemlerinin başarısı büyük ölçüde okul liderlerinin liderlik yeterliklerine bağlıdır. Bu doğrultuda, çağdaş okul müdürlerinden yalnızca yönetsel görevleri yerine getirmeleri değil; aynı zamanda öğretim süreçlerini yönlendiren, öğretmenleri destekleyen ve öğrenme ortamlarını iyileştiren "öğretim liderleri" olmaları beklenmektedir. Ancak, Türkiye'de ve uluslararası literatürde yapılan araştırmalar (Cansoy vd., 2024; Gümüşeli, 1996; Hausmann vd., 2002; McLure ve Aldridge, 2022; Shaked, 2024), okul müdürlerinin öğretimsel liderlik rollerini etkili biçimde yerine getirmede çeşitli güçlükler yaşadığını ve bu konuda mesleki gelişim olanaklarının yetersiz kaldığını ortaya koymaktadır. Öğretmenlerin, okul müdürlerinin liderlik davranışlarına yönelik algıları ise, okulun genel iklimi, öğretim kalitesi ve öğretmenlerin mesleki doyumu üzerinde belirleyici etkiler yaratmaktadır (Guo vd., 2025; Liu vd., 2020). Bu çerçevede, okul müdürlerinin öğretimsel liderlik yeterliklerinin geliştirilmesine yönelik yapılandırılmış ve uzun soluklu eğitim programlarının etkililiğinin araştırılması hem uygulama hem de eğitim politikaları açısından önemli bir gereklilik olarak ortaya çıkmaktadır (Bryant ve Walker, 2024; Dorukbaşı ve Cansoy, 2024; He vd., 2024). Bu temel problemden hareketle, bu çalışmanın amacı, okul müdürlerine yönelik geliştirilen bir öğretimsel liderlik eğitim programının, öğretmenlerin müdürlerinin öğretim liderliği rollerine ilişkin algıları üzerindeki etkisini incelemektir.

Bu araştırma, öğretim liderliği eğitim programının öğretmenlerin yöneticilerine yönelik algıları üzerindeki etkisini incelemek amacıyla deneysel desene dayalı olarak yürütülmüştür. Çalışmada öntest-sontest kontrol gruplu yarı deneysel desen kullanılmıştır. Bu araştırmada okul müdürlerinin öğretim liderliği eğitim programı neticesinde okullarındaki öğretim liderliği davranışlarında bir değişiklik olup olmadığı öğretmenlerin algıları ile tespit edilmeye çalışılmıştır. Araştırmanın çalışma grubunu, 23 devlet okulunda bulunan 23 okul müdürü ve bu okullarda öğretmenlik yapan 342 öğretmen oluşturmaktadır. Çalışma grubunda yer alan 23 okul müdürüne iki haftada bir dört saat olmak üzere toplamda üç ay boyunca 24 saatlik "Okul Müdürlerinin Öğretim Liderliği Becerilerinin Geliştirilmesi Eğitimi" verilmiştir. Bahsi geçen bu 23 okulda bulunan öğretmenler çalışmanın deney grubunu, bu eğitimi almayan öğretmenler ise araştırmanın kontrol grubunu oluşturmuşlardır. Bu bağlamda, araştırmanın deney grubunda 171 ve kontrol grubunda ise 171 öğretmen yer almıştır. Veri toplamak amacıyla öğretmenlerin yöneticilerine yönelik algılarını ölçen ve Şişman (2004) tarafından geliştirilen "Öğretim Liderliği Davranışları Ölçeği" kullanılmıştır. Van İli Merkez ilçelerinde görev yapan okul müdürleri ile bir Google form paylaşılmış ve eğitim programına katılmak isteyenlerin paylaşılan Google form üzerinden eğitime katılma isteklerini belirtmeleri istenmiştir. Eğitime katılma başvurusu olan okul müdürlerine yönelik Hallinger ve Murphy (1985) öğretim liderliği modeli temel alınarak oluşturulan görüşme formu hazırlanmış ve görüşmeler gerçekleştirilmiştir. Bu görüşmeler neticesinde ihtiyacı olduğu düşünülen 25 okul müdürü eğitim programına dahil edilmiştir. Ancak 23 okul müdürü düzenli olarak eğitimlere katılmıştır. Tasarlanan eğitim programı okul müdürlerinin öğretim liderliği becerilerini geliştirmeye yönelik planlanmıştır. Bu kapsamda Hallinger ve Murphy (1985) öğretim liderliği modelinde yer alan üç temel boyutu kapsayan içerikler oluşturulmuştur. Eğitimler eğitim yönetimi alanında uzman, liderlik dersini lisansüstü düzeyde veren ve liderlik ile ilgili birçok çalışması olan öğretim üyesi tarafından verilmiştir. Çalışmanın içeriği; atölye çalışmaları, koçluk, örnek uygulamalar ve drama gibi yöntemler kullanılarak gerçekleştirilmiştir. Eğitim programı üç ay sürmüştür. Okul müdürlerine her iki haftada bir dört saat yüz yüze eğitim verilmiştir. Puan dağılımlarının normalliği, çarpıklık (skewness) ve basıklık (kurtosis) katsayıları kullanılarak değerlendirilmiştir. Deney ve kontrol gruplarındaki çarpıklık katsayılarının -1,93 ile -0,29; basıklık katsayılarının ise -0,90 ile 1,97 arasında değiştiği belirlenmiştir. Bu değerlerin Kline (2015) tarafından önerilen ±3 ve basıklık için önerilen ±10 kabul edilebilir sınırlar içerisinde yer alması dağılımların normal dağılımdan önemli ölçüde sapma göstermediğine işaret etmektedir. Bu doğrultuda verilerin analizinde parametrik istatistiksel yöntemler kullanılmıştır.

Verilerin analizinde öncelikle deney ve kontrol gruplarının uygulama öncesinde karşılaştırılabilir olup olmadığını belirlemek amacıyla ön test puanları bağımsız örneklemler t-testi ile karşılaştırılmıştır. Öğretim liderliği eğitim programının müdahale etkisini değerlendirmek amacıyla toplam öğretim

liderliği puanı ve beş alt boyut için ayrı ayrı kovaryans analizleri (ANCOVA) gerçekleştirilmiştir. ANCOVA analizlerinde son test puanları bağımlı değişken, grup (deney ve kontrol) sabit faktör ve ilgili ön test puanları kovaryans olarak modele dahil edilmiştir. Böylece deney ve kontrol gruplarının son test puanları, başlangıç düzeyleri istatistiksel olarak kontrol edilerek karşılaştırılmıştır. Ayrıca, deney ve kontrol gruplarındaki ön test–son test değişimlerini incelemek amacıyla her grup için ayrı ayrı bağımlı örneklemler t-testleri uygulanmıştır. Müdahalenin etkililiğinin değerlendirilmesinde ANCOVA temel analiz olarak ele alınmıştır. Tüm analizler .05 anlamlılık düzeyi ve %95 güven aralığında değerlendirilmiştir.

Araştırma sonucunda, ilgili ön test puanları kontrol edildikten sonra deney ve kontrol gruplarının düzeltilmiş son test puanları arasında öğretim liderliği toplam puanı ve tüm alt boyutlarda deney grubu lehine istatistiksel olarak anlamlı farklılıklar bulunduğu belirlenmiştir. ANCOVA sonuçlarına göre müdahalenin tüm boyutlardaki etki büyüklükleri yüksek düzeyde olup, en büyük etki okulun amaçlarının belirlenmesi ve paylaşılması boyutunda gözlenmiştir ($\eta p^2 = .215$). Bu boyutu sırasıyla eğitim programı ve öğretim sürecinin yönetimi ($\eta p^2 = .180$), öğretmenlerin desteklenmesi ve geliştirilmesi ($\eta p^2 = .157$), öğretim süreci ve öğrencilerin değerlendirilmesi ($\eta p^2 = .147$) ve düzenli öğrenme–öğretme çevresi ve iklimi oluşturma ($\eta p^2 = .127$) boyutları izlemiştir. Toplam öğretim liderliği puanında da yüksek düzeyde bir müdahale etkisi belirlenmiştir ($\eta p^2 = .214$). Ayrıca, grup içi karşılaştırmalar deney grubunda toplam öğretim liderliği puanı ve tüm alt boyutlarda ön testten son teste anlamlı artışlar olduğunu, kontrol grubunda ise anlamlı bir değişim bulunmadığını göstermiştir. Bu boyutu sırayla öğretim süreci ve öğrencilerin değerlendirilmesi, okulun amaçlarının belirlenmesi ve paylaşılması ile eğitim programı ve öğretim sürecinin yönetimi ve düzenli öğrenme öğretme çevresi ve iklimi oluşturma boyutları takip etmiştir. Bu çalışmanın sonuçları araştırmacılar, eğitimciler ve politika yapıcılar için önem taşımaktadır. Türk Eğitim Sistemi içerisinde okul müdürleri öğretmenlikten yöneticiliğe bir yazılı sınav sonucu ile geçebilmektedir. Oysaki okul müdürlerinin liderlik özellikleri çerçevesinde kazanmaları gereken çok fazla yeterlik söz konusundur. Bu kapsamda eğitim öğretim süreçlerinin kalitesinin artırılması, okul, öğretmen ve öğrenci seviyelerinde anlamlı değişiklikler elde edilmesi için okul müdürlerinin öğretim liderliği davranışları geliştirilmelidir. Araştırmada elde edilen sonuçlara dayanarak, eğitim uygulayıcılarının ve politika yapıcıların sunumlar, koçluk, grup çalışmaları, çeşitli atölye ve uygulama çalışmaları gibi bir dizi sürekli öğrenme etkinliği sunan liderlik eğitim programları tasarlamaları önerilmektedir.