ERJournal
Education Reform Journal Volume 7 Number 2, 2022
http://dx.doi.org/10.5281/zenodo.7489405
e-ISSN: 2602-3997

The Effect of Instructional Leadership, Organizational Innovativeness, and School Hindering on Teachers' Satisfaction at BILSEMs

Ramazan Atasoy[1] Celalettin Özden[2]

Submitted: April 10, 2022; Accepted: December 22, 2022; Published Online: December 31, 2022

Abstract

In this research, it is aimed to reveal the direct and indirect relationships among instructional leadership, teachers' job satisfaction, school hindering, and organizational innovativeness within the framework of the SEM model constructed in a cross-sectional survey design. The teacher's opinions scale for BILSEMs was used as the data collection tool. In this study, 'organizational innovativeness and school hindering' were proposed as mediators of the relationship between instructional leadership and teachers' job satisfaction. The results based on the analysis of responses from 357 teachers of 81 BILSEMs selected with the simple random sampling method revealed significant direct and indirect effects of instructional leadership on the teacher satisfaction via both organizational innovativeness and school hindering. In conclusion, instructional leadership is positively related to enhancing teachers' job satisfaction, supporting and improving organizational innovativeness, decreasing school hindering through focusing on the school resources. The results of the research are expected to shed light on current and future innovative policies and reform initiatives about gifted education.

Keywords: Gifted education policies, instructional leadership, organizational innovativeness, school hindering, teacher satisfaction

Introduction

Gifted Education is a special and important topic on the educational policy agenda of many countries, which apply numerous strategies, reforms, and methods for identifying and servicing gifted students. It is one of the specific fields with interrelated many social, cultural and economic variables that put forward barriers and inequalities for some and advantages and occasions for others through its structural biases embedded (Banks, 2010) in national education policies and practices. Many parameters shape giftedness beliefs and values (Neihart & Teo, 2013) about ability and talent development. Political, social, and economic developments, traditional, local, national or global tendencies, cultural codes, society's innovation seeking and society's awareness, expectations and willingness dynamics of students, contextual situations, country's educational qualities and realities of countries form and direct gifted educational reform and policy. Researchers have consistently pointed out that gifted students' policies and practices from their insufficient and inequitable identifications to their evaluations and leadership styles

[1] Corresponding author: Harran University, Faculty of Education, Department of Primary Education, Assoc. Prof. [*0000-0002-9198-074X*], atasoyramazan@harran.edu.tr
[2] Turkish Ministry of National Education, Dr. [*0000-0003-3728-7781*], cozden2001@gmail.com

have failed to reflect gifted students' potential across the nation (Graham, 2013; Hamilton et al., 2018). Policies raising awareness about gifted students, such as the Marland report (1972), which was put forward after Sputnik syndrome (Atasoy, 2020) in the USA, became a cornerstone. However, it is known that developed countries such as England and Israel have a long history in the education of gifted children (Cevher & Kılıc, 2018). In Türkiye, due to its strategic location and historical and cultural context, *Enderun* school practices draw attention in policies for gifted students. In recent decades, it has been observed that education policies and reforms for gifted students have been shaped by the influence of internal and external dynamics (Coruk, 2019) such as PISA and TIMSS exams, which evaluate international student achievement, and EU harmonization policies, development plans and national education councils.

In Türkiye, Science and Art Centers (BILSEMs) operate for the education of gifted students. These training centers are the most suitable and practical models in the conditions of Türkiye (Kir & Akbasli, 2021). They are official institutions affiliated with the Ministry of National Education (MoNE). BILSEMs differ from other schools in terms of their missions and visions, functioning and administrative processes, and serve gifted students outside of normal school hours and on weekends. Alongside assisting to remove the constraint of time, place, and educational hindering, they allow the students to improve the skills needed to be a scientist, support their self-regulation (Neber & Schommer-Aikins, 2002), enrich their thinking skills, develop scientific research skills, use scientific process and evolve scientific creativity.

Within the scope of school leadership dimension, instructional leadership stands out in these training centers. Instructional leadership transforms schools into educational institutions where innovative and modern thinking processes are applied, and increases the well-being of teachers and students (Huong, 2020). With an innovative perspective, the instructional leader ensures the sustainability of learning experiences in line with the desired goals, and supports the innovative approaches applied by teachers (Ozden & Atasoy, 2021), provides teachers with opportunities for professional self-development, supports teachers in their new instructional practices (Kim & Lee, 2020), and supplies technological and a notional assist for the instructional process (Gedifew, 2020). It is critical for instructional leaders to identify and direct issues of BILSEMs' innovativeness capability and capacity and participate decision in the level of national about the issues of reforms, policies, and practices, promote to feel their teacher job satisfaction, and remove their school hindering. In this context, it can be said that there is a relationship among instructional leadership, organizational innovativeness, and teachers' job satisfaction.

Teachers play a key role in educating gifted students at BILSEM in line with their abilities according to the needs of the country and society. Therefore, teachers' job satisfaction is an important issue at BILSEMs. Evidence shows that only teachers with high job satisfaction can lead their students to their abilities, their development, and their journey of self-discovery (Kunter et al, 2013). It can contribute also to building a productive institutional atmosphere, to make students more creative, and to find out new projects and products (Sims, 2017). Teachers with job satisfaction who are qualified and resourceful always make contributions to students, school climate, and innovativeness (Tang & Choi, 2009). This concept with a sensitive structure can be affected by some educational factors as instructional leadership (Kim & Lee, 2020; Ozden & Atasoy, 2021; Toropova, Myberg, & Johansson, 2021), organizational innovativeness (Hofman, Boom, Meeuwisse & Hofman, 2013; Schleicher, 2015; Sims, 2017), and school hindering (Morettini, 2021; OECD, 2019; Segabutla & Evans, 2019).

Organizational innovativeness is another factor that has a relationship with teachers' job satisfaction and instructional leadership. Applicants of innovation in educational organizations are instructional leaders (Schleicher, 2015), teachers who are open to change (Leoste et al., 2020), students, and other stakeholders. As practitioners of innovation, teachers realize innovation, experience innovation, and decide to use it (Leoste et al., 2020). In this process, their biggest supporters are instructional leaders. In terms of teachers' job satisfaction, although instructional leaders and teachers communicate well with innovative practices, some obstacles originating from the educational institution should not be forgotten.

When BILSEMs are equipped with qualified teachers and adequate equipment, they will provide the expected benefits in the future. However, educational obstacles may arise in these institutions due to teachers, administrators, the inadequacy of technological infrastructure, the inadequacy of physical conditions and educational equipment (Cetin & Dogan, 2018). Kir and Akbasli (2021) found that the

unconscious competitive attitude of school administration, working days and hours, insufficient educational programs reduce teachers' motivation and job satisfaction. Similarly, Cetin and Dogan (2018), Sarıtas, Sahin, and Catalbas (2019) revealed in their research that BILSEMs have difficulties due to the inadequacy of materials and equipment, physical infrastructure, and training programs. Altun and Vural (2012), Kir and Akbasli (2021) stated that the professional development opportunities offered to BILSEM teachers are insufficient. Therefore, in the literature, it is observed that there are many problematic factors arising from management, lack of physical infrastructure, lack of educational material, unsuitable working conditions, and other factors at BILSEMs.

It has been exhibited that the instructional leadership has many direct relationships with teachers' work attitudes (Liu, Bellibas & Printy, 2018), but less is reported concerning how instructional leadership has a relationship between teachers' job satisfaction attitudes at BILSEM through the organizational dimension. Additionally, no study has been found that investigates the direct and indirect effects of the above-mentioned factors on management, teachers' job satisfaction, organizational innovativeness, and school hindering. This research aimed to reveal the direct and indirect relationships between the instructional leadership applied at BILSEMs and the variables of teachers' job satisfaction, school hindering, and organizational innovativeness within the framework of a model. The study could direct the seeking after the model about the education of the gifted students, efforts to develop strategies, reforms, educational policies and gifted education policies.

Conceptual Framework

Teachers' Job Satisfaction

Teachers' job satisfaction is a phenomenon that should be evaluated in terms of the improvement of the teaching environment and student learning in a desired and permanent structure. This term briefly can be defined as the efficiency and satisfaction of the teacher from his job. It stems from many factors. Kurnaz Baltacı et. al, (2020) indicated that job satisfaction includes personal characteristics such as ambitiousness, calmness, perseverance, being an entrepreneur, as well as work-related social rights, behaviors, attitudes, wages, career advancement opportunities, and business relationships. Pettinger (2010) discusses job satisfaction in the context of employees' positive feelings about the quality and satisfaction of their work. The research claimed that teachers' job satisfaction depends on some personal and work-related factors. In the literature job satisfaction of teachers may be considered in the context of the positive support of the student learning (Kunter et al., 2013), school climate, engagement towards school, instructional environment, educational quality, relation with school leader (Ingersoll, 2001; Johnson, Kraft & Papay, 2012; Toropova, et al., 2021), organizational innovativeness (Sims, 2017), school resources, and/or school hindering. Teachers with job satisfaction directly and indirectly affect the teaching environment.

The teacher is the central factor that guides students in their development in line with their interests, abilities, and skills, increases their academic success, and enables them to discover themselves. For teachers to fulfill these important functions more effectively and interactively, their job satisfaction is expected to be high. In this sense, positive effects will emerge in many areas related to education, depending on the teachers' adequate job satisfaction. Teachers' job satisfaction reduces their work pressure and feelings of burnout (Toropova, et al., 2021). Moreover, job-satisfied teachers provide a better learning environment for their students and implement a higher quality instructional practice (Kunter et al, 2013), these teachers have a high level of dedication to their work (Blömeke, Houang, Hsieh, & Wang, 2017). Schiefele and Schaffner (2015) stated that as students' motivation and academic success increase, teachers' motivation also increases. In this respect, the motivation and positive atmosphere stemming from the success of gifted students studying at BILSEM training centers can significantly support teachers' job satisfaction, positive feelings, and commitment to the institution.

School Hindering

Reaching instructional goals and high academic performance are welcomed almost in all school types. However, this may not always be possible. Because many hindering types can affect the school environment such as cognitive status, socioeconomic condition, family, culture, and subculture, biological and health status, circle of friends, etc.

Research showed that school hindering comprises several types of sources such as teacher hindering (OECD, 2019; Schildkamp, Poortman, Luyten & Ebbeler, 2017), students' self-hindering (Coban, 2020; Thomas & Gadbois, 2007; Yu & McLellan, 2019), gender hindering in school (Leaper & Starr, 2019; Inandi, 2009; Watson et al., 2017), school climate hindering (OECD, 2016), and hindering due to lack of teaching material and equipment (Birgit, 2011). Many types of hindering resources revealed that hindering is a kind of student's environmental problem. In the literature, studies showed that a supportive and positive environment in school affects students' academic performance positively and carries them to the instructional goals in a persistent way (Hoferichter, Hirvonen & Kiuru, 2021; Kiuru et al., 2014). Conversely, the non-supportive and negative environment in school affects students' academic performances negatively, prevents students from achieving instructional goals (Chen & Weikart, 2008; Widodo, 2019), and causes teachers and students to commit undesired behaviors (Uzbe & Bacanli, 2015).

The school learning environment is highly related to school climate comprising teacher and student-related factors (OECD, 2013). In this environment, teacher hindering is one of the most important hindering factors. Teacher hindering could emerge in many ways, like absences or missing school (Clotfelter, Ladd & Vigdor, 2007; Rogers & Vegas, 2009), teacher resistance towards innovations, technological and environmental changes in school (Bas, 2021; OECD, 2019; Morettini, 2021), teachers who do not encourage students to discover their potential, teachers who have low expectations from students (OECD, 2013), teachers who teach classes without preparation and ignoring the individual needs of students, and lack of cooperation between teachers (Schildkamp et al., 2017). Teacher resistance or self-hindering also can affect teacher's instructional performance, development, and professional self-efficacy in a negative way (Goddard, Goddard, & Tschannen-Moran, 2007). Lack of teacher clarity is also another hindering type. The research claimed that teacher clarity facilitates students' learning. Insufficient clarity of the teacher can cause students to perform low-quality learning and hinder the absorption of targeted instructional skills (Segabutla & Evans, 2019; Ozden & Atasoy, 2021). This means that teacher shortage, inadequacy, and low interaction is the determinant of the quality of student learning (Hanushek, 2011). However, among all teacher inadequacies, attitudes and competencies towards the technological dimension have become the prominent skills in educational organizations in the new normal that has emerged with the Covid 19 pandemic. Howard and Mozejko (2015) stated that some teachers adapt to digital technologies, while others do not adapt and show resistance due to school culture, confidence the technology usage, and belief in the use of technology.

Alongside teacher hindering, material and equipment inadequacy is another hindering type that could cause a negative and non-supportive learning environment at school. Teaching material and equipment hindering could originate from insufficiency of laboratories and equipment, lack of course materials, computers, and an internet connection, inadequate educational computer software, insufficiency of library materials, and audio-visual resources. In the literature, there are various studies on the reflections of the lack of teaching material and equipment on learning experiences. Mji and Makgato (2006) stated that insufficiency of laboratories and equipment were detected as a problem for students, teachers, and school administration. Rahim and Chandran (2021) emphasized that lack of computer laboratories, difficulties in accessing the internet, technical support, and insufficient infrastructure are barriers for students that make them disappointed and hindered in educational life. Lack of equipment and material resources can affect instructional outcomes and negatively affect teacher performance at school (Chen, Chen, Hwang & Yang, 2010).

Organizational Innovativeness

Innovation is a concept that enables organizations and institutions to survive, ensure their sustainability, and adapt to change. Organizational innovativeness can be defined as the creation or

acquisition of new ideas and perspectives, systems, innovative policies, field-specific innovative programs, innovative processes, discoveries, products, and services (Sung & Kim, 2021). In another word, organizational innovativeness can be characterized as the effort spent to obtain more advantageous new products and services or to produce existing products and services more competitively by using new inputs, strategies, ideas, policies, programs, tools, methods techniques that have not been used before. It is a critical factor that should be considered for individuals, institutions, and organizations that want to gain an advantage in every field and increase their competitive power to achieve their goals (Ni et al., 2021).

Organizational innovation contributes to the competitiveness of organizations, and facilitates the development of new products or the renewal of existing products and processes (Rupietta, Meuer & Backes-Gellne, 2021). The process of adapting to innovation or manage the innovation consists of a variety of stages involving the changing concept (Martín-García, Martínez-Abad & Reyes-González, 2019). Today, the concept of innovation adopted by every institution and organization has become an inseparable concept of the world of education too. Thurlings, Evers, and Vermeulen (2015) stated that the three important pillars of innovation in educational organizations are individuals who adapt quickly to society, the need for innovation in the field of education, and the need to guide educational organizations in today's competitive environment. Drivers of innovation in educational organizations, school leadership that implements instructional leadership and distributive leadership (Schleicher, 2015), teachers who are dedicated to innovation, work collaboratively, who can manage and lead, implement and support innovation, use technological resources (Leoste et al., 2020), who have clean and shared vision and strategy, students who fulfill their cognitive, behavioral, and emotional responsibilities, and external stakeholders can be listed as the examples to this. As one of the drivers of innovation from a teacher's point of view, an innovative change process can be considered as being aware of innovations, experiencing and deciding to use these innovations in the teaching process, and finally, making these innovations a normal part of daily educational practices (Leoste et al., 2020). With another explanation, as a dynamic process, innovation in instructional life includes many steps such as noticing the need to change for a new approach, decide to change and using new methods and inputs experience the new approach, and finalize it as a routine application in the instructional process.

In schools, organizational innovation contributes to increasing student success and improving the quality of education services, ensuring equality in access and participation in education for different student groups, contributing to the development of important skills for future societies, and increasing the productivity and effectiveness of education policies (European Commission, 2018). Schools that implement organizational innovations increase student performance have higher educational goals, use time effectively, and have a regular school environment. Besides, in the innovative school environment, teachers make self-evaluate themselves about their students' performance, apply formative assessments, and exchange views among themselves for better teaching and guide students (Hofman et al., 2013).

Instructional Leadership

Last decades, the fundamental image of school management was revealed as instructional leadership (Bush, 2018; Hallinger & Heck, 1998), and this kind of leadership was formed within the scope of school management, learning and teaching processes, educational programs, and instruction. Instructional leadership can be defined as school leadership that aims to make students more effective in all their learning experiences at school to achieve the learning objectives indicated by the educational programs (Hallinger et al., 2020). By another definition, it can be said that instructional leadership is providing opportunities and environments to students and to be successful in the teaching and learning process, increasing students' and teachers' well-being and satisfaction, transforming schools from mere places where the curriculum is only taught to places where creative and innovative thinking processes operate (Huong, 2020). This means that school principals could perform an essential role to make schools more effective beyond standard administrative performance in the instructional leadership spectrum.

Instructional leadership makes an effort to carry the student's instructional aims (Dilekci & Limon, 2020; Hallinger, Gumus & Bellibas, 2020). While traditional school leadership or management undertake much bureaucratic correspondence and processes like finding financial support, building repairs, paying school bills, conducting a disciplinary investigation, instructional school leadership undertakes

instructional behaviors and practices that increase academic success (Ozdemir, 2018). Instructional leadership has its characteristic elements such as being compatible with the curriculum, evaluation criteria, sustainable learning environment, charismatic instructional leadership, corporate culture and climate (Huong, 2020). While maintaining his/her managerial role, the instructional leader controls classroom environments by using transparent, innovative, and visionary personality traits, ensures the implementation of sustainable teaching and learning processes in accordance with the curriculum, supports cognitive activation in teaching-learning processes and clarity of instruction (Ozden & Atasoy, 2021), establishes a connection between the society and the school, observes, helps (Moeketsane, Jita, & Jita, 2021), and supports teachers' professional and personal development.

Instructional leadership has five essential actions such as administrators take a strong stance to facilitate teachers' professional development, administrators provide opportunities for teachers' development, administrators try to put forward different teaching practices with teachers, administrators act in harmony with educational programs, and teachers are accountable to each other for change and leadership behaviors (Kim & Lee, 2020). Similarly, Blase and Blase (2003) emphasized that encouraging teacher learning actions in a collaborative way was more fruitful than a teacher on a solo mission.

Instructional leadership should be in harmony with teachers, students, parents, and other stakeholders, visit the teachers and students in the class (Ozdemir, Sahin & Ozturk, 2020), make conversations about school functionality, and remind the school mission, increasing interaction (Marks & Printy, 2003), motivate teachers, students and families, provide technical and conceptional support for teaching process, (Gedifew, 2020) evaluate teachers, develop new teaching practices, apply appropriate assessment and evaluation systems, and increase technology-supported applications in classrooms. To realize all these roles and responsibilities, instructional leadership requires working in cooperation with teachers, creating a culture of learning at all levels, providing feedback by following the learning and teaching process, being easily accessible at school, supporting the professional development of teachers, communicating with everyone in the school, providing and processing data for the development of the school (Alig-Mielcarek, 2003; Sharif, 2020) makes and implements its decisions based on the data collected from the school.

Relationship among the Concepts

In this research, we focused on BILSEM teachers who work as an expert in their fields. Studies focusing on the theory of satisfaction in the literature (Cardtozo, 1965; Kotler & Keller, 2008; Oliver, 1981; Thomassen, 2007) form the theoretical basis of the present study. Teachers' job satisfaction is dependent on various factors. These multifactor constructs can be classified mainly into six groups: (i) leadership style, (ii) school resources and hindering, (iii) school climate, (iv) teaching and management processes (OECD, 2005; Sarıer, 2016), (v) organizational innovativeness, (vı) teacher's school well-being and their engagement towards school. Researchers claimed that leadership style and reducing school hindering play a critical role in organizational innovativeness and school improvement (Leoste et al., 2020). Moreover, it claimed in previous researches that instructional leadership styles have positive effects on school outcomes, teacher motivation, and school engagement that support positively teachers' job satisfaction (Gedifew, 2020; Ozdemir, Sahin & Ozturk, 2020). In this sense, job satisfaction, which is shaped interactively with teachers' thoughts, attitudes, and beliefs, constitutes an important dimension of our research. In addition, Sims (2017) emphasized the importance of school working conditions, adequate resources, reasonable workload, school innovativeness capacity, and colleague collaboration in terms of job satisfaction in teachers. Ingersoll also (2001) mentioned that opportunities for professional development, senior leadership support, and greater autonomy are important for job satisfaction. On the other hand, Toropova et al. (2021) pointed out that job satisfaction is closely related to participation in decision-making mechanisms. Similarly, there is evidence that the culture of trust and respect created by the school leadership provides much more job satisfaction beyond providing financial resources to teachers on teachers' job satisfaction (Johnson et al., 2012).

The implementation of innovative processes in schools creates positive effects on teachers both in terms of instructional and administrative aspects. In particular, it is stated that innovations related to certain curricula are beneficial for teachers to improve themselves in areas such as assessment methods,

communication skills, attitudes, self-confidence during teaching (European Commission, 2018). However, besides that, there is evidence that the lack or inadequacy of human and material resources affects the teaching process and teacher motivation in school settings (Bas, 2021; Clotfelter, et al., 2007; OECD, 2019; Rogers & Vegas, 2009; Morettini, 2021). Faizi, Shakil, and Karim (2019), evidence showed that there are schools that have severe poverty of equipment and course materials where students are badly affected in terms of educational life. Evidence was also found on the incompetency and/or inadequacy of human and material resources.

In this study, we modeled related variables such as instructional leadership behavior, school hindering, organizational innovativeness, and teachers' job satisfaction focused specifically on mediated effect. Our theoretical model is designed in Figure 1.

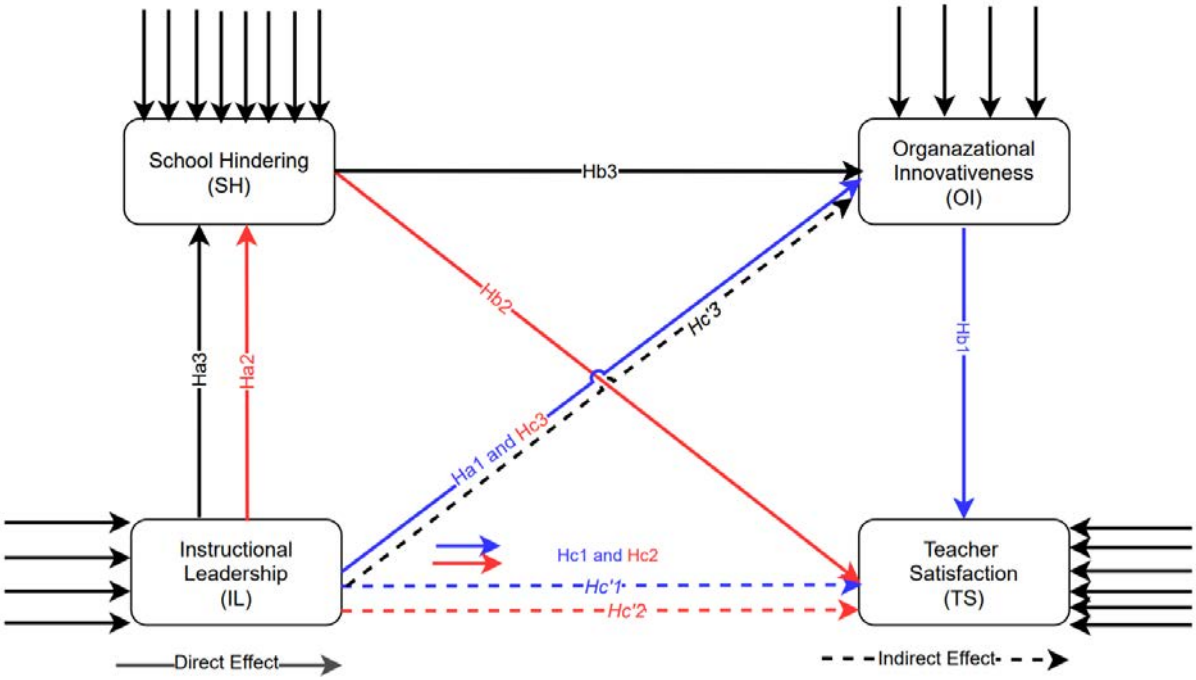

Figure 1. Model of the Research

In Figure 1, we hypothesized three models in which we pointed out that instructional leadership mediates teachers' job satisfaction (Hc'^{1} and Hc'^{2}) and organizational innovativeness (Hc'^{3}). Related to these three models, all direct, indirect, and mediated hypotheses are given respectively.

Model 1: IL→OI→TS: [H^{a1}: There is a direct relationship between IL and OI; H^{b1}: There is a direct relationship between OI and TS; H^{c1}: There is a direct relationship between IL and TS; $H^{c'1}$: *To what extent is IL associated with TS and OI?*]

Model 2: IL→SH→TS: [H^{a2}: There is a direct relationship between IL and SH; H^{b2}: There is a direct relationship between SH and TS. H^{c2}: There is a direct relationship between IL and TS. $H^{c'2}$: *To what extent is IL associated with TS and OI?*]

Model 3: IL→SH→OI: [H^{a3}: There is a direct relationship between IL and SH; H^{b3}: There is a direct relationship between SH and OI; H^{c3}: There is a direct relationship between IL and OI; $H^{c'3}$: *To what extent is IL associated with OI and SH?*]

Research Method

Research Design

This study was constructed with a cross-sectional survey design based on quantitative methods. In cross-sectional surveys, to obtain inferences and predictions among variables, researchers aim to collect data for a selected population at one point in time (Creswell, 2014; Cohen et al., 2013). In this part, we present respectively the study sample and data collection procedures, variables and measures, and data analysis processes.

Sampling

The data used in the current study was obtained from BILSEMs in Türkiye. Evidence for the study was based on the responses to an online teacher survey of these schools. Responses sufficient for analysis were gathered from 81 schools. Of the 1253 teachers in those schools, 357 valid responses were collected with a 28.5% response rate.

Data Collection Tools and Variables

The "Teacher's Opinions Scale for Science and Art Center" scale developed by Atasoy and Ozden (2021) was used to collect data. Using this scale, we collected data from BILSEM teachers concerning the perception of instructional leadership behavior in each BILSEM as well as the school hindering, organizational innovativeness, and teacher satisfaction variables using an online survey via four-point Likert-type scales ranging from “strongly disagree” (1) to “strongly agree” (4). The original scale CFA values are as follows: Chi-Square Test (CMIN/DF) = 2.138, Comparative Fit Index (CFI) = 0.937, Tucker-Lewis Index (TLI) = 0.929, Incremental Fit Index (IFI) = 0. 938, Goodness of Fit Index (GFI) = 0.895, Adjusted Goodness of Fit Index (AGFI) = 0.869, Standardized Root Mean Square Residual (SRMR) = 0.07, and Root Mean Square Error of Approximation (RMSEA) = 0.058. In this study, the Cronbanh’s alpha values were found as follows and show similarity with the original scale. The Cronbach’s alpha value of the scale was 0.71, which showed an acceptable range level of reliability. The factors of the scale were as follows; instructional leadership (IL) (four items; α; .84), school hindering (SH) (eight items; α; .89), organizational innovativeness (OI) (six items; α; .84), and teacher satisfaction (TS) (six items; α; .85).

Dependent Variables: We determined the teacher satisfaction at BILSEM the dependent variable in this study. The teacher satisfaction variable was constructed using six items related to the teachers’ perception of their profession, education quality and standards, instructional satisfaction, BILSEM climate, beliefs of their students’ educational development, and their beliefs of school outcome effectiveness. The organizational innovativeness variable was structured and modeled in this study as dependent and mediated outcomes. Organizational innovativeness variable was constructed using four items related to the BILSEM teachers and principals about efforts to the new idea development for teaching and learning processes, their capabilities of openness to change, search or approach of new ways and methodologies to problem-solving, and practical support and collaboration concerning new idea.

Mediated Variables: We used school hindering and organizational innovativeness variables as a mediated variable in the model. Each mediator variable added to the model at the same time was defined as three different hypotheses (see figure 1). School hindering variable was constructed using eight items related to the teachers’ perception about BILSEM. School hindering items include lack or inadequacy of qualified teachers, laboratory and equipment, instructional materials, computers and digital technologies, internet access, computer software for instruction, library materials, and sources of audio-visuals.

Independent Variable: Instructional leadership variable consists of four items including support of instructional improvement, provide effective knowledge and useful assistance for teaching and learning, identify teachers and students development needs providing professional/instructional development and encourage an atmosphere of caring and collaborative work among teachers and student.

Data Analysis

Means, standard deviations, scale reliabilities (Cronbach's alpha), and intraclass correlations (ICC) were computed for all variables. It was also analyzed bivariate correlations between all variables measured by the BILSEM teacher survey using SPSS 23.0 package program. Before running the analysis, we checked the consistency of all selected variables in the model with respect to the assumptions of normality, missing values, outlier, multicollinearity, and variance homogeneity. First, a standardized z value has been calculated and so values in which are not consistent with ±3 reference are omitted from the analysis. It is fixed and also omitted five outliers data according to the Mahalanobis distances reference point. We have found consistent VIF scores to be lower than 3 (1.264-1.572) and Durbin Watson scores range between 1.711 and 1.819. In addition to this, the tolerance values scores were found .795, and the Condition Index value is found 1.00 according to the linear regression model. Normality assumption was also checked and skewness and kurtosis values were found to be less than ± 1.5 (Westfall & Henning, 2013). Finally, we performed structural equation modeling (SEM). In this context, we added all the variables into the model at the same time to determine the mediated effect among the three hypothesized paths above using Mplus 8.3 (Muthén & Muthén, 2017).

Findings

Descriptive Analysis

Study variables' means, standard deviations, and correlation values are given in Table 1 as descriptive statistics.

Table 1. Means, Standard Deviations, and Correlation Values

	Mean	SD	1	2	3	4
IL	3.329	.585	1			
OI	3.218	.537	.597**	1		
TS	3.238	.502	.743**	.602**	1	
SH	2.160	.537	-.459**	-.370**	-.499**	1

*p< .05; **p<.01; N=357

IL: Instructional Leadership; OI: Organizational Innovativeness; TS: Teacher Satisfaction: SH: School Hindering

It can be deduced related to Table 1 that teachers' perceptions of instructional leadership ($\bar{x}$=3.329), organizational innovativeness ($\bar{x}$=3.218), and teacher satisfaction beliefs ($\bar{x}$=3.238) are nearly high (the data collection tool is four-point likert-type scale, in this likert scale the highest point between 3.25 - 4.00). Moreover, school hindering perceptions of the teachers are moderate. It can be also inferred related to the correlation between variables that there are positive, moderate-level, and significant relations between instructional leadership and organizational innovativeness (r=.597; p<.001) and teacher satisfaction (r=.743; p<.001); whereas, there are negative, moderate-level, and significant relations between instructional leadership and school hindering (r=-.459; p<.001). We also found a positive and moderate-level correlation between organizational innovativeness and teacher satisfaction (r=.602; p<.001); and a negative and significant relationship with school hindering (r=-.370; p<.001).

Testing Hypotheses

Using Mplus 8.3 packet program, we tested our hypotheses of the structural equation model by following a two-step analyzing strategy in the processes. First, we checked the measuring model confirming the goodness fit indexes according to the criteria of Byrne, (2010). We concluded that the goodness fit index values are acceptable according to the prior appropriate references in the literature (Harrington, 2009). Then, we attained the path diagram, path coefficients, direct, indirect, and total effects of the study depending on the hypotheses. All direct, indirect, and total effects reached through the structural equation analysis are given in figure 2 and Table 2 and 3 below:

Table 2. Direct Effects

Direct Effects	School Hindering				Organizational Innovativeness				Teacher Satisfaction			
→	β	SE	*t*	*P*	β	SE	*t*	*p*	β	SE	*t*	*p*
IL→	-0.472	0.050	-9.348	0.001	0.611	0.065	9.415	0.001	0.620	0.080	7.745	0.001
SH→	→				-0.141	0.063	-2.235	0.025	-0.182	0.047	-3.857	0.001
OI→	→								0.215	0.081	2.638	0.001
MFI	CFI		TLI		RMSE		SRMT		GFI		χ^2/Sd	
	0.949		0.942		0.0397		0.042		.900		392.138/203	

Note: β: Standardized beta coefficients, SE: standard error.

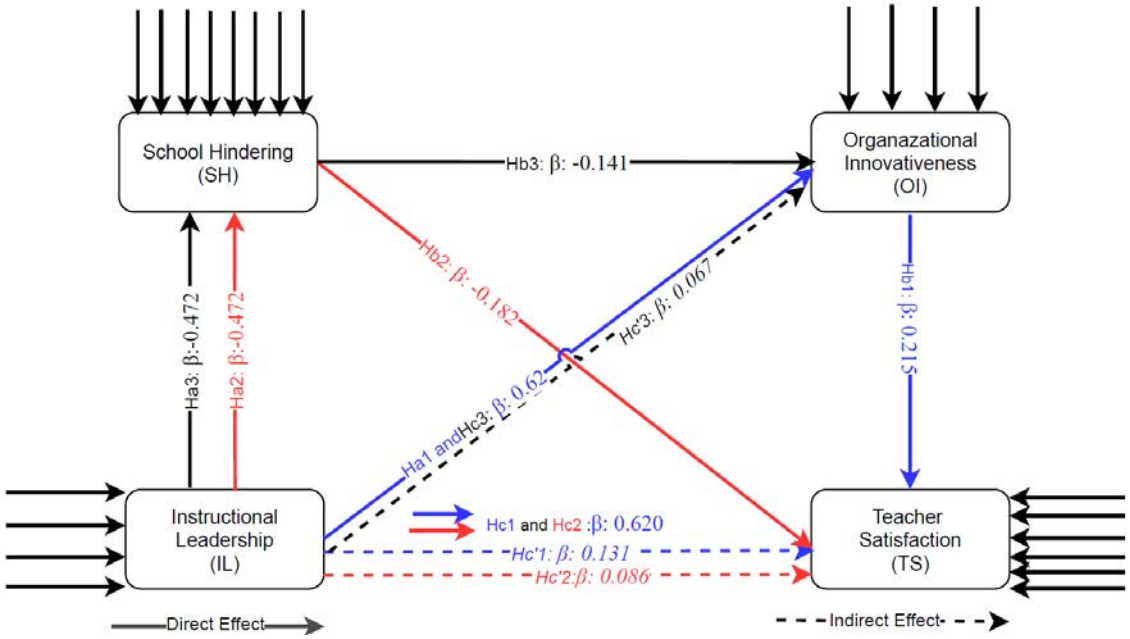

Figure 2. The Model for Mediated Relationships between Instructional Leadership, Teacher Satisfaction, Organizational Innovativeness, and School Hindering

As seen in Table 2 and Figure 2, the regression results show that instructional leadership predicts organizational innovativeness [H^{a1}: (β = .62, t=9.415, p < .001)], teacher satisfaction [H^{c1}: (β = .62, t=7.745, p < .001)]; and organizational innovativeness predicts teacher satisfaction [H^{b1}: (β = .215, t=2.638, p < .001)]. These findings prove that H^{a1}, H^{b1}, and H^{c1} hypotheses are confirmed and the assumptions of mediated effect are met. Similarly, the regression findings indicate that instructional leadership predicts negatively school hindering [H^{a2}: (β = -.47, t=-9.348, p < .001)], teacher satisfaction [H^{c2}: (β = .62, t=7.745, p < .001)]; and school hindering predicts teacher satisfaction [H^{b2}: (β = -.182, t=-3.857, p < .001)] negatively. These results demonstrate that H^{a2}, H^{b2}, and H^{c2} hypotheses are approved and the assumptions of mediated effect are supported. Finally, the regression findings indicate that instructional leadership predicts negatively school hindering [H^{a3}: (β = -.47, t=-9.348, p < .001)], organizational innovativeness [H^{c3}: (β = .62, t=9.415, p < .001)]; and school hindering predicts organizational innovativeness [H^{b3}: (β = -.14, t=-2.235, p < .001)] negatively. These results demonstrate that H^{a3}, H^{b3}, and H^{c3} hypotheses are confirmed and the assumptions of mediated effect are satisfied.

Mediating Effect

One of the study interests is to explore how organizational innovativeness and school hindering might mediate the effects of instructional leadership on teacher satisfaction behavior. The other dimension of research interest is to reveal how school hindering might mediate the effects of instructional leadership on organizational innovativeness.

As shown in Table 3 and Figure 2, first, the direct effects of the independent variable (IL) on the dependent variable (TS) are found to be statistically significant. Secondly, the direct effects of IL on both mediators in the model SH and OI are statistically significant. In addition to this, the direct effects of both mediated variables SH and OI on TS are detected to be statistically significant. Similarly, the direct effects of IL on OI which is also recognized as a dependent variable in the model are found to be statistically significant. Secondly, the direct effects of IL on mediator SH in the third hypothesis and SH on OI are statistically significant. This means that it is possible to say that the independent variable has some statistically significant effects on organizational innovativeness, school hindering and teacher satisfaction dependent variables, and the mediator variables as mentioned in Table 3 and Figure 2. Hence, it may be revealed that mediators (SH and OI) have some effects on the dependent variables without the IL independent variable. In this context, related findings show that the applicability, consistency, and suitability of the mediation analysis in the model are feasible according to Kline (2016). Mediating model effects (indirect effects) concerning all hypotheses are given in Table 3 and Figure 2.

Table 3. Mediating Model Effects

Hypotheses	Direct Effects				Indirect Effect				Total Effect			
TS/OI<-	β	SE	*t*	*p*	β	SE	*t*	*p*	β	SE	*t*	*p*
Hc'1→: [IL → OI → TS]	0.620	0.080	7.745	0.001	0.131	0.049	2.701	0.001	0.837	0.035	24.333	0.001
Hc'2→: [IL→ HS → TS]	0.620	0.080	7.745	0.001	0.086	0.023	3.739	0.001	0.837	0.035	24.333	0.001
Hc'3→: [IL→ SH → OI]	0.611	0.065	9.415	0.001	0.067	0.030	2.237	0.025	0.678	0.049	13.878	0.001

Note: β: Standardized beta coefficients, SE: standard error.

As shown in Table 3 and Figure 2, according to Hypotheses 1 and 2, the relationship between IL styles and TS is statistically significant, and moderate-level at first (β = .62, p < .001); but when the mediator variables are added into the model, both of the path coefficients [(OI: β = .131, *p*< .001) and (HS: β = .086, *p*< .001)] are still significant (indirect effects). However, these coefficient effects are found to have decreased. The probability of a critical ratio for *Hc'1* [IL → OI → TS] is as large as 2,701 and for *Hc'2* [IL → SH → TS] is as large as 3.739 in absolute value .001. In other words, the regression weight for IL behaviors in the prediction of TS was found significantly different from zero. This means that OI and HS in the prediction of TS have a partially mediated effect on the relationship through IL styles and TS. Similarly, according to Hypothesis 3, the relationship between IL styles and OI is statistically significant (β = .61, *p*< .001). However, when the mediator variable is added into the model, the path coefficients [(SH: β = .067, *p*< .001) are still significant (indirect effects), Thus, the coefficient effect is found to have decreased. The probability of a critical ratio for Hc'3 [IL → SH → OI] is as large as 2.237 in absolute value .001. As a result, it has been concluded that within the relationship between IL and OI, SH has a partial mediating role, which proves our third hypothesis.

Discussion

This study referred satisfaction theory to unpack how instructional leadership may motivate teachers to engage in TS and OI at BILSEMs. By modeling with four sets of research variables more used and popular in educational administration environments and using SEM in the analyses processes, the current study was conducted to determine the mediation effects of organizational innovativeness and school hindering on the relationship between instructional leadership and teacher satisfaction [Model 1 and 2] and between instructional leadership and organizational innovativeness [Model 3]. In addition to this, we specifically focused on the extent to which instructional leadership is harmonized and linked respectively with teacher satisfaction and organizational innovativeness directly and by adding mediation effects of organizational innovativeness and school hindering in Turkish BILSEM education centers. After that, we discussed the interpretation of the main findings, and we mentioned the limitations of the study, and finally, we concluded the paper with recommendations for policy, practice, and future research.

According to the results of the study, H^{a1}, H^{b1}, and H^{c1} hypotheses were confirmed that there is a direct relationship between IL - OI, OI - TS, and IL - TS. It is argued that instructional leadership affects

organizational innovativeness and teacher satisfaction directly and organizational innovativeness affects also teacher satisfaction similarly, therefore, it can be said that in a positive learning environment where instructional leadership is applied, creating a positive atmosphere and innovativeness could be make a difference in the institution's all subsystems. As a result of meeting the assumptions of direct relations between the variables, which are among the mediator variable assumptions, it was concluded that the organizational innovativeness variable hypothesis partially mediated Model 1. The results of multiple regression analysis displayed that school principals' instructional leadership behaviors at BILSEM could predict teachers' job satisfaction; thus, organizational innovativeness was found to be a mediator. More specifically, it was found that school principals' instructional leadership behaviors increased organizational innovativeness ammong teachers, which contributed to their job satisfaction towards these educational centers. Evidence concerning instructional leaders who improve a school climate based on trust, cooperation, and an atmosphere of organizational innovativeness in schools supports also teachers' job satisfaction. This result is parallel with educational literature that teacher satisfaction is a phenomenon that is affected by both instructional leadership and organizational innovativeness (Liu & Hallinger, 2022; Moeketsane, Jita, & Jita, 2021).

Since BILSEMs are educational institutions that differ from other school systems with certain qualifications and school structures, the job satisfaction of the teachers working in these institutions is very important in terms of the educational and academic success of the students. Thus, BILSEM needs teachers that experts in their field and teachers who intended to discover students' gifts, teaching methods, applying for individual course programs, using new digital technologies, be able to apply pedagogical content knowledge about gifted students, etc. In this context, direct relationship results indicated among instructional leadership, organizational innovativeness, and teachers' job satisfaction are meaningful. Although teacher satisfaction is contextually related to many variables, considering the variables investigated within the limitations of this study, it can be thought that innovativeness and leadership are the main determinants of teachers' job satisfaction. Instructional leadership from these two variables requires a more professional approach for school management. That is expected of school principals to provide new technological educational materials, encourage a democratic school atmosphere, support new ideas and projects, assist in using digital technologies and new instructional methods for students (Hallinger et al., 2020, Huong, 2020). Evidence concerning instructional leaders who improve a school climate based on trust, cooperation, and an atmosphere of organizational innovativeness (Blase & Blasé, 2003) in schools supports also teachers' job satisfaction in parallel with these research findings. In this context, BILSEM where gifted students are educated in these centers is the best environment in which instructional leadership can be motivated to teachers.

Organizational innovativeness perceived by teachers can be discussed also in the context of motivation theory. At this point, the need for self-actualization, which is the highest need category of Maslow's need hierarchy and Bloom's learning hierarchy which is promoting produces new or original works may trigger teachers' levels of overlap with organizational innovativeness expectations. Howard and Mozejko (2015) stated that although there are a limited number of exceptional teachers who use digital technologies in highly innovative and creative ways, in terms of pedagogy, teachers tend to integrate technologies into existing practices and schools rather than changing their practices and placing them in their schools. Hofman et al. (2013) stated that in schools where organizational innovativeness implements, the teachers develop their professional teaching methods, their guidance performance, evaluation approaches, communication approaches with students for better teaching. So if a teacher can find a school institution in which could apply his/her professional above-mentioned skills they could be a satisfied teacher with his/her job. On the other hand, Altintas and Ilgun (2016) signed that there is a need for reformist and qualified education policies in gifted education in order to increase job satisfaction of BILSEM teachers. Similarly, Gunes (2018) emphasized that BILSEMs should be revised their policies on teacher training, increasing teacher quality and program development in the context of policies and reforms for gifted education. For a successful reform in education, clear objectives, providing sufficient information on the subject (Schleicher, 2019) and teachers' participation in the decisions taken (Desimone, 2002) are a basic requirement. At this point, it may be important to deeply analyze the policy qualities theory (PQT) developed for the implementation of educational reforms in terms of clarity, consistency, authority, power and stability (Desimone, 2002; Porter, 1994; Yakut Ozek, 2021). According

to the results of his qualitative analysis based on PQT, Yakut Ozek (2021) found that the reforms and policies made at BILSEMs were not consistent with previous policy implementations, the realizations regarding participation in decisions remained low and the pressure of the power and authority was dominant. These results could be seen as threats that undermine teacher satisfaction and organizational innovation.

Teachers' job satisfaction can belong to their affective and cognitive perceptions of the profession, it can also explain with the school climate of the current work (Gedifew, 2020; Hallinger & Heck, 1998; Liu, Bellibas, & Gumus, 2020; OECD, 2014b; Ozdemir, Sahin & Ozturk, 2020; Skaalvik & Skaalvik, 2011). There are studies showing that instructional leaders can lead teachers to instructional goals by building a strong school climate toward improving teaching and learning in their schools, thanks to leadership practices that encourage a positive learning environment (Ingersoll, 2001; Johnson, et al., 2012; Toropova, et al., 2021). It is useful to draw attention with the lens of school climate to the characteristic elements inherent in instructional leadership in the perception of teachers' job satisfaction. In this context, instructional leaders ensure that the aims of the school are shared by all teachers in establishing a school climate, provide teachers professional development opportunities necessary for effective teaching, supports organizational innovativeness, establishes positive communication networks with staff for these purposes, and monitors student development.

As seen in model 2, it is confirmed also that there are direct effects according to the H^{a2}, H^{b2}, and H^{c2} hypothesizes [IL - SH; SH - TS; IL - TS]. Thus, it has been reached that there are indirect and partially mediated effects for Model 2 through school hindering between instructional leadership and teachers' job satisfaction, depending on the fact that all mediator variable assumptions are met. This means that instructional leadership behaviors and practices predict teachers' job satisfaction decreasing school hindering byways of mediation effects at BILSEM. This result is parallel with educational effective school literature. However, it is useful to underline the necessity of being more cautious when interpreting an emotional and intangible concept such as teachers' job satisfaction by associating it with a more concrete concept such as school hindering. Indeed, Akhan and Altas (2021) detected that teachers who working at BILSEM have many deficiencies in working conditions but they are motivated and happy for working at BILSEM. Similarly, the research found that teachers who work at BILSEM are pleased despite many schools hindering existing as advanced parental expectation, school administrative attitudes (Kir & Akbasli, 2021), insufficient technical support, and equipment (Bozan & Savi-Cakar, 2020).

There are many hindering types in literature such as teaching material and equipment (Birgit, 2011) or teacher hindering, etc. in general hindering stemming from school's social or physical environments. Research pointed that a supportive and positive environment in school which is one of the aims of instructional leadership increases student's academic performance (Hoferichter et al., 2021; Kiuru et al., 2014) and teacher motivation and commitment. This research indicates that the instructional leadership behaviors and practices exhibited at BILSEM education centers which are relatively more advantageous in terms of school barriers are perceived positively by teachers. Hence, it can be said that instructional leadership reduces the negative effect of school hindering.

Finally, according to the result of model 3, it is approved also that there are direct effects according to the H^{a3}, H^{b3}, and H^{c3} hypothesizes [IL - SH; SH - OI; IL - OI]. Thus, it has been attained that there are indirect and partially mediated effects for Model 3 through school hindering between instructional leadership and organizational innovativeness, depending on the fact that all mediator variable assumptions are met. This means that instructional leadership behaviors and/or practices predict teacher's perception of organizational innovativeness at BILSEM. When the direct relationship effect perceived by teachers at BILSEM education centers between school hindering and instructional leadership are examined, it is noteworthy that there are strong instructional leadership practices in eliminating school hindering in these education centers. Similarly, instructional leadership appears to be a strong predictor of organizational innovativeness. An indirect relationship was found in the instructional leadership's prediction of organizational innovativeness through the school hindering as a mediator variable. This result is important to harmonize in the context of leadership practice and organizational innovativeness that BILSEM education centers in which the creation or acquisition of new ideas and perspectives, systems, innovative policies, field-specific innovative programs, innovative processes, discoveries,

products, and services (Sung & Kim, 2021) to survive, ensure their sustainability and adapt to change. It is thought that the fact that the human and material resources in BILSEMs are relatively more advantageous compared to other types of schools is effective in the positive perceptions of teachers' innovativeness and instructional leadership. An educational institution such as BILSEM in which characterize by positive harmony with leadership and organizational innovativeness concepts could be critical to the suitability of change (Leoste et al., 2020; Martín-García, et al., 2019), to remove school hindering, to obtain more advantageous new products and services, or to produce existing products and services more competitively (European Commission, 2018; Rupietta et al., 2021), new inputs, strategies, ideas, policies, programs, tools, methods.

Limitations

The variables discussed in this article are limited to reflecting the relationships among instructional leadership, teachers' job satisfaction, organizational innovativeness, and school hindering. However, many factors affecting teachers' job satisfaction are related to the quality of instruction, school climate, and motivational components rather than quantity, so for further research, it is also suggested to use qualitative methods assessing more detail, focus on longitudinal studies, and suppose to design new researches related to the other leadership styles, regional, cultural and school environments issues to understand factor affecting teachers' job satisfaction, organizational innovativeness and school hindering at BILSEM education centers. This study could only characterize the relationship between selected independent variables, dependent variables, and mediated variables, no causality conclusion can be drawn. It has been observed that the role and power of instructional leadership in minimizing school hindering and supporting organizational innovativeness have a positive effect on teachers' job satisfaction working at BILSEMs. However, this effect may also be due to the positive privilege given to these training centers, which are in a relatively more advantageous position. More detailed research related to this effect is needed.

Recommendations for Future Research

Within the scope of this study, firstly, as suggestions, it can be adopted as a policy that teachers who have been trained in gifted education area in order to increase teacher job satisfaction at BILSEMs. More specific in-service training can be provided for teachers working in these centers. Instead of power and authority-oriented leadership practices and hierarchical coordination mechanisms, leadership practices that support instructional and educational leadership practices can be encouraged. Obstacles related to the physical, social and educational dimensions of teaching that negatively affect the development of organizational innovation culture can be minimized. Finally, policies can be developed to increase the job satisfaction of teachers working at BILSEMs.

Conclusion

In conclusion, we recommended a model, including more teacher's lenses to see the big picture reflecting the effectiveness of the relationship between instructional leadership and teachers' job satisfaction using two mediated variables. As a result of the model, we can say that instructional leadership behaviors are positively related to enhance teachers' job satisfaction based on emotional path, support and improve organizational innovativeness, and decrease school hindering focusing on the school resources. This research has revealed that instructional leadership supports teachers' job satisfaction through both mediator variables (organizational innovativeness and school hindering) and is a powerful model for organizational innovativeness for BILSEM education centers.

Acknowledgements
None. No funding to declare.

Conflict of Interest
Author has no conflict of interest to report.

References

Akhan, O., & Altas, S. (2021). BILSEM history teachers' opinions on BILSEM working conditions. *Manisa Celal Bayar University Journal of the Faculty of Education, 9*(1), 133-147. https://doi.org/10.52826/mcbuefd.924337

Alig-Mielcarek, J. M. (2003). *A model of school success: Instructional leadership, academic press, and student achievement* (Doctoral dissertation), The Ohio State University.

Altintas, E., & Ilgun, S. (2016). Ogretmenlerin ustun zekali ogrencilerin egitimine yonelik dusunce ve onerileri [The ideas and suggestions of teachers about education of gifted students]. *Electronic Turkish Studies*, *11*(14).

Altun, T., & Vural, S. (2012). Evaluation of the views of teachers and administrators of a science and art center (sac) about professional development and school improvement. *Electronic Journal of Social Sciences*, *11* (42), 152-177.

Atasoy, R. (2020). Sputnik Sendromu. N. Cemaloglu (Ed.). *Sendromların Egitim ve Yonetime Yansimalari: Mitolojiden Kurama* (ss. 45-58). Ankara: Pegem Akademi.

Atasoy, R., & Ozden, C. (2021). Bilim ve sanat merkezlerine yonelik ogretmen gorusleri olcegi: Gecerlik ve guvenirlik calismasi [Teachers' opinions scale for science and art centers: Validity and reliability study]. *Journal of Global Sport and Education Research, 4* (1), 1-16.

Banks, J. A., Banks, C. A. M. (Eds.). (2010). *Multicultural education: Issues and perspectives.* John Wiley.

Bas, G. (2021). Teacher Beliefs about Educational Reforms: A Metaphor Analysis. *International Journal of Educational Reform*, *30*(1), 21-38.

Birgit, E. (2011). Supportive and hindering factors to a sustainable implementation of ICT in schools. *Journal for Educational Research Online, (3)*1, 75-103.

Blasé, J., & Blase, J. (2003). *Handbook of instructional leadership: How successful principals promote teaching and learning*. California: Corwin Press.

Blömeke, S., Houang, R., Hsieh, F. J., & Wang, T. Y. (2017). Effects of job motives, teacher knowledge and school context on beginning teachers' commitment to stay in the profession: A longitudinal study in Germany, Taiwan and the United States. In G. K. LeTendre & M. Akiba (Eds.), International handbook of teacher quality and policy (pp. 374–387). London: Routledge

Bozan, I. & Savi-Cakar, F. (2020). Bilim ve sanat merkezi ogretmenlerinin yasadiklari sorunlar ve bu sorunlara iliskin cozum onerilerinin belirlenmesi [Science and art center teachers' problems and solution proposals for these problems]. *Turkish Studies Education, 15*(3), 160

Bush, T. (2018). *Egitim liderligi ve yonetimi kuramları* (Cev. Ed.: R. Sarpkaya). Ankara: Pegem Akademi Yayıncılık.

Byrne, B. M. (2010). *Structural equation modeling with AMOS*. New York: Routledge/Taylor and Francis Group.

Cardozo, R. N. (1965). An experimental study of customer effort, expectation, and satisfaction. *Journal of Marketing Study*, *2*(3), 244-249.

Cetin, A., & Dogan, A. (2018). The problems of mathematics teachers working in science and art centers. *Ankara Universitesi Egitim Bilimleri Fakultesi Ozel Egitim Dergisi*, *19*(4), 615641.

Chen, C. H., Chen, S. H., Hwang, G. J., & Yang, T. C. (2010). Factors influencing teachers' adoption of a ubiquitous technology application in supporting teacher performance. *International Journal of Mobile Learning and Organisation*, *4*(1), 39-54.

Chen, G., & Weikart, L. A. (2008). Student background, school climate, school disorder, and student achievement: An empirical study of New York City's middle schools. *Journal of School Violence*, *7*(4), 3-20.

Clotfelter, C., Ladd H., & Vigdor, J. (2007). Are teacher absences worth worrying about in the U.S.*?, NBER Working Paper Series*, No. 136648, *National Bureau of Economic Research*, Cambridge, MA, http://dx.doi.org/10.3386/w13648.

Coban, O (2020). Relationships between students' socioeconomic status, parental support, students' hindering, teachers' hindering and students' literacy scores: pısa 2018, *World Journal of Education, (10)*4, 45-59.

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education.* New York, London: Routledge.

Coruk, A. (2019). Planli kalkinma donemindeki milli egitim sura kararlarinin kalkinma planlarindaki egitime iliskin hedefler cercevesinde degerlendirilmesi [Evaluation of the Decisions of National Education Councils in the Planned Development Period within the Framework of Educational Objectives in Development Plans]. *Egitimde Kuram ve Uygulama*, *15*(4), 297-318.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach.* Sage publications.

Dahar, M. A., & Faize, F. A. (2011). Effect of the Availability and the use of Science Laboratories on Academic Achievement of Students in Punjab (Pakistan). *European Journal of Scientific Research*, *51*(2), 193-202.

Desimone, L. (2002). How can comprehensive school reform models be successfully implemented?. *Review of educational research*, *72*(3), 433-479.

Dilekci, U., & Limon, İ. (2020). Okul mudurlerinin ogretimsel liderlik davranislari ile ogretmenlerin mesleki adanmisliklari arasindaki iliskide oznel iyi olusun araci rolu [The Mediator Role of Teachers' Subjective Well-Being in theRelationship between Principals' Instructional Leadership andTeachers' Professional Engagement]. *Kuram ve Uygulamada Egitim Yonetimi, 26*(4), 743-798 doi: 10.14527/kuey.2020.017.

Faizi, W.N., Karim, R. A., & Shakil, A. F. (2019). Availability of Essential Laboratory Equipment for Biology: A Case Study of North Nazimabad Town, Karachi. *Journal of Science Education*, *1*(1), 15-24.

Gedifew, M. T. (2020). Exploring the instructional leadership development practices in Ethiopia. *Journal of Education and Learning (EduLearn)*, *14*(3), 402-410.

Goddard, Y. L., Goddard, R. D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record, 109*, 877-896.

Graham, K. E. (2013). Mathematics and science acceleration in grade eight: School leaders' perceptions and satisfaction (Publication No. 3559255) [Doctoral dissertation]. ProQuest Dissertations and Theses Global.

Gunes, A. (2018). Türkiye'de bilim sanat merkezleri [Science and art centers in Turkey]. *Avrasya Sosyal ve Ekonomi Arastırmaları Dergisi*, *5*(6), 185-193.

Hallinger, P., & Heck, R.H. (1998). Exploring the principal's contribution to school effectiveness: 1980-1995. *School Effectiveness and School Improvement 9*(2): 157–191.

Hallinger, P., & Wang, W.C. (2015). *Assessing instructional leadership with the Principal Instructional Management Rating Scale*. Dordrecht, the Netherlands: Springer.

Hallinger, P., Gumus, S., & Bellibas, M. S. (2020). 'Are principals instructional leaders yet?'A science map of the knowledge base on instructional leadership, 1940–2018. *Scientometrics*, *122*(3), 1629-1650. doi: 10.1007/s11192-020-03360-5

Hamilton, R., McCoach, D. B., Tutwiler, S. M., Siegle, D., Gubbins, E. J., Callahan, C. M., Broderson, A. V., Mun, R. U. (2018). Disentangling the roles of institutional and individual poverty in the identification of gifted students. *Gifted Child Quarterly, 62*(1), 6–24. https://doi.org/10.1177/0016986217738053

Hanushek, E. (2011). The economic value of higher teacher quality, *Economics of Education Review*, *(30)*3, 466-479.

Harrington, D. (2009). *Confirmatory factor analysis.* Oxford: Oxford University Press.

Hoferichter, F., Hirvonen, R., & Kiuru, N. (2021). The development of school well-being in secondary school: High academic buoyancy and supportive class-and school climate as buffers. *Learning and Instruction*, *71*, 101377.

Hofman, R. H., de Boom, J., Meeuwisse, M., & Hofman, W. A. (2013). Educational innovation, quality, and effects: An exploration of innovations and their effects in secondary education. *Educational Policy*, *27*(6), 843-866.

Howard, S., & Mozejko, A. (2015), Teachers: technology, change and resistance, in Henderson, M. and G. Romeo (eds.), *Teaching and Digital Technologies: Big Issues and Critical Questions*, Cambridge University Press, Port Melbourne, Australia.

Huong, V. T. M. (2020). Factors Affecting Instructional Leadership in Secondary Schools to Meet Vietnam's General Education Innovation. *International Education Studies*, *13*(2), 48-60.

Inandi,Y. (2009). The barriers hindering female teachers from becoming school principals. *Egitim Arastirmalari - Eurasian Journal of Educational Research*, 36, 161-178

Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis, *American Educational Research Journal, 38*(3), 499–534.

Johnson, S. M., Kraft, M. A., & Papay, J. P. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their professional satisfaction and their students' achievement, *Teachers College Record, 114*(10), 1–39.

Kim, T., & Lee, Y. (2020). Principal instructional leadership for teacher participation in professional development: evidence from Japan, Singapore, and South Korea. *Asia Pacific Education Review, (21)*, 261-278. https://doi.org/10.1007/s12564-019-09616-x

Kir, S., & Akbasli, S. (2021). Being a teacher in BILSEM: A Sample from Ankara. *HAYEF: Journal of Education*, *18*(2), 193-220.

Kiuru, N., Pakarinen, E., Vasalampi, K., Silinskas, G., Aunola, K., Poikkeus, A.-M., Metsäpelto, R.-L., Lerkkanen, M.-K., & Nurmi, J.-E. (2014). Task-Focused Behavior Mediates the Associations Between Supportive Interpersonal Environments and Students' Academic Performance. *Psychological Science*, *25*(4), 1018–1024. https://doi.org/10.1177/0956797613519111

Kline, R.B. (2016). *Principles and practice of structural equation modeling* (4th ed.). NewYork, NY: Guilford Press.

Kotler, P.; Keller, K. L. (2006). *Marketing Management* (12th ed). Prentice Hall: New Jersey, USA.

Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., & Hachfeld, A. (2013). Professional competence of teachers: Effects on instructional quality and student development, *Journal of Educational Psychology*, *105*(3), 805.

Leaper, C., & Starr, C. R. (2019). Helping and Hindering Undergraduate Women's STEM Motivation: Experiences With STEM Encouragement, STEM-Related Gender Bias, and Sexual Harassment. *Psychology of Women Quarterly*, *43*(2), 165–183. https://doi.org/10.1177/0361684318806302

Leoste, J., Heidmets, M., Ley, T., & Stepanova, J. (2020). Classroom innovation becoming sustainable: A study of technological innovation adoption by Estonian primary school teachers. *Interaction Design and Architecture (s) Journal (IxD&A)*, *47*, 144-166.

Liu, S., & Hallinger, P. (2022). The effects of instructional leadership, teacher responsibility and procedural justice climate on professional learning communities: A cross-level moderated mediation examination. *Educational Management Administration & Leadership*, 17411432221089185

Liu, Y., Bellibas M.S., & Printy, S. (2018). How school context and educator characteristics predict distributed leadership: A hierarchical structural equation model with 2013 TALIS data, *Educational Management Administration & Leadership 46*(3): 401–423.

Liu, Y., Bellibas, M. S., & Gumus, S. (2020). The Effect of Instructional Leadership and Distributed Leadership on Teacher Self-efficacy and Job Satisfaction: Mediating Roles of Supportive School Culture and Teacher Collaboration. *Educational Management Administration & Leadership,* doi:10.1177/1741143220910438 7-1628

Marks, H. M., & Printy, S. M. (2003). Principal leadership and school performance: An integration of transformational and instructional leadership. *Educational Administration Quarterly, 39*(3), 370–397.

Martín-García, A. V., Martínez-Abad, F., & Reyes-González, D. (2019). TAM and stages of adoption of blended learning in higher education by application of data mining techniques. *British Journal of Educational Technology*, *50*(5), 2484-2500.

Mji, A., & Makgato, M. (2006). Factors associated with high school learners' poor performance: a spotlight on mathematics and physical science, *South African Journal of Education, 26*(2)253–266.

Moeketsane, M., Jita, L., & Jita, T. (2021). Correlates of South African subject leaders' perspectives and their perceived competence on instructional leadership, *South African Journal of Education, 41*(1).

Morettini, B. (2021). Forms of resistance: Insights into beginning teacher development. *International Journal of Educational Research Open*, *2*, 100041.

Muthén, L. K., & Muthén, B. (2017). *Mplus user's guide: Statistical analysis with latent variables, user's guide.* Muthén & Muthén.

Neihart, M., & Teo, C. T. (2013). Addressing the needs of the gifted in Singapore. *Journal for the Education of the Gifted*, *36*(3), 290-306.

Ni, G., Xu, H., Cui, Q., Qiao, Y., Zhang, Z., Li, H., & Hickey, P. J. (2021). Influence mechanism of organizational flexibility on enterprise competitiveness: The mediating role of organizational innovation. *Sustainability*, *13*(1), 176.

OECD, (2013). How the quality of the learning environment is shaped, (Volume IV): What Makes Schools Successful? Resources, Policies and Practices

OECD, (2016). The school learning environment. PISA 2015 results (Volume II): Policies and practices for successful schools.

OECD, (2019). Teacher behaviour and student learning. PISA 2018 results (Volume III): What school life means for students' lives.

Oliver, R. L. (1981). Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing,* 57(3), 25-48. http://psycnet.apa.org/psycinfo/1984-10995-001

Ozdemir, G., Sahin, S., & Ozturk, N. (2020). Teachers' self-efficacy perceptions in terms of school principal's instructional leadership behaviours. *International Journal of Progressive Education*, *16*(1), 25-40.

Ozdemir, M. (2018). *Egitim yonetimi: Alanın temelleri ve cagdas yonelimler*. Ankara: Ani Yayincilik.

Ozden, C., & Atasoy, R. (2021). Sınıfta ogretim. N. Ozdemir, S. Turan ve O. Coban (Ed.). *21. yuzyil okullarini yeniden dusunmek* (ss. 229-258). Ankara: Pegem Akademi.

Porter, A. C. (1994). National standards and school improvement in the 1990s: Issues and promise. *American Journal of Education*, *102*(4), 421-449.

Rahim, M. N., & Chandran, S. S. C. (2021). Investigating EFL students' perceptions on e-learning paradigm-shift during Covid-19 pandemic. *Elsya: Journal of English Language Studies*, *3*(1), 56-66.

Rogers, H., & E. Vegas (2009). No more cutting class? Reducing teacher absence and providing incentives for performance*, Policy Research Working Papers*, No. 4847, The World Bank, http://dx.doi.org/10.1596/1813-9450-4847.

Rupietta, C., Meuer, J., & Backes-Gellner, U. (2021). How do apprentices moderate the influence of organizational innovation on the technological innovation process?. *Empirical Research in Vocational Education and Training*, *13*(1), 1-25.

Sarıtas, E., Sahin, U., & Catalbas, G. (2019). Science and Art Centers (SAC) according to the parents. *Journal of Qualitative Research in Education*, *7*(1), 114-133.

Schildkamp, K., Poortman, C., Luyten, H., & Ebbeler, J. (2017). Factors promoting and hindering data-based decision making in schools, *School Effectiveness and School Improvement, (28*)2, 242-258, DOI: 10.1080/09243453.2016.1256901

Schleicher, A. (2015). *Schools for 21st-Century Learners: Strong Leaders, Confident Teachers, Innovative Approaches. International Summit on the Teaching Profession*. OECD Publishing. 2, rue Andre Pascal, F-75775 Paris Cedex 16, France.

Schleicher, A. (2019). Dunya okulu. 21. yuzyılın okul sistemi nasıl kurgulanmalı. *Cev. S. Karadeniz). Bahcesehir Universitesi Yayınları. İstanbul*.

Segabutla, M. H., & Evans, R. (2019). Lack of lecturer clarity during instruction: Possible reason for poor throughput? *South African Journal of Higher Education*, *33*(3), 115-131.

Sharif, U. M. (2020). The role of the principal is developing an instructional leadership team in school. *Educational Research and Reviews*, *15*(11), 662-667.

Sims, S. (2017). TALIS 2013: Working conditions, teachers' job satisfaction and retention (Department for Education Statistical Working Paper). London: Department of Education.

Sung, W., & Kim, C. (2021). A study on the effect of change management on organizational Innovation: Focusing on the mediating effect of members' innovative behavior. *Sustainability*, *13*(4), 2079.

Tang, S. Y. F., & Choi, P. L. (2009) Teachers' professional lives and continuing professional development in changing times. *Educational Review*, *61*(1), 1-18.

Thomas, C. R., & Gadbois, S. A. (2007). Academic self-handicapping: The role of self-clarity and students' learning strategies. *British Journal of Educational Psychology, 77*(1), 101–119. https://doi.org/10.1348/000709905X79644

Thomassen, J. P. R. (2007). *De klantgerichte overheid: werken aan en voor tevreden burgers en organisaties.* Kluwer.

Thurlings, M., Evers, A.T., & Vermeulen, M. (2015). Toward a model of explaining teachers' innovative behavior: A literature review. *Review of Educational Research, 85*(3), 430-471. https://doi.org/10.3102/0034654314557949

Toropova, A., Myrberg E., & Johansson, S. (2021). Teachers' job satisfaction: the importance of school working conditions and teacher characteristics, *Educational Review, 73*(1), 71-97, DOI: 10.1080/00131911.2019.1705247

Uzbe, N., & Bacanli, H. (2015). The role of achievement goal orientation, self-esteem and academic achievement in prediction of self-handicapping. *The Journal of Turkish Educational Sciences, 13*(1), 33-50.

Watson, P.W.St., Rubie-Davies, J.C.M, Meissel, K., Peterson, E.R., Flint, A., Garrett, L, & McDonald, L. (2019). Teacher gender, and expectation of reading achievement in New Zealand elementary school students: essentially a barrier?, *Gender and Education, 31* (8), 1000 1019, doi: 10.1080/09540253.2017.1410108

Westfall, P. H., & Henning, K. S. S. (2013). *Texts in statistical science: Understanding advanced statistical methods.* Boca Raton, FL: Taylor & Francis.

Widodo, H. (2019). The role of school culture in holistic education development in muhammadiyah elementary school sleman yogyakarta, *Dinamika Ilmu, 19*(2), 265-285

Yakut Ozek, B. (2021). Egitim reformunun basarısını etkileyen etmenler: Bilsem modelinin politika nitelikleri kuramı baglamında analizi [Factors affecting the success of education reform: Analysis of the bilsem model in the context of policy features theory]. *Nevsehir Hacı Bektas Veli Universitesi SBE Dergisi*, *11*(3), 1192-1222.

Yu, J., & McLellan, R. (2019). Beyond academic achievement goals: The importance of social achievement goals in explaining gender differences in self-handicapping. *Learning and Individual Differences*, *69*, 33-44.