

Journal of School Administration

Vol 10, No 4, Winter 2023

ISSN: 2538 - 4724



The Role of Digital Competence in the Classroom Leadership of New Teachers in Fars Province¹

Moein Khoshnood², Fatemeh Narenji Thani^{3*}, Javad Pourkarimi⁴

Abstract

The present study aimed to investigate the role of digital competence in the classroom leadership of new teachers. The study was applied in terms of purpose and used a descriptive-analytical methodology. Moreover, the data were collected according to the quantitative approach. The population included all graduates of Farhangian University in Fars Province who started teaching during the academic years from 2016 to 2021. Using Cochran's formula and the available sampling method, 238 people were selected as a statistical sample from 4500 new teachers. The data were collected using the EU Standardized Digital Competence Questionnaire (as cited in Gümüş & Kukul, 2023) and the Classroom Leadership Scale (Karabağ Köse, 2019). Using Cronbach's Alpha coefficient, the instruments' reliability was determined at 0.96 and 0.95 for the EU Standardized Digital Competence Questionnaire and the Classroom Leadership Scale, respectively. Data were analyzed using the t-test to determine the status of the research variables, Pearson's correlation coefficient for investigating simple relationships between the variables, stepwise regression analysis, and confirmatory factor analysis for determining the construct validity. The study results showed that the new teachers' digital competence was (in general) above average, and only one component (i.e., creating digital content) was evaluated at an average level. Furthermore, a significant relationship was observed between the components of digital competency and classroom leadership. Ultimately, the results of the stepwise regression indicated that new teachers' digital competence could explain around 30% of their classroom leadership.

ARTICLE INFO Article history:

Received: 02/09/2022

Accepted: 05/03/2023

Available online: Winter 2023

Keyword:

Digital competence, Classroom leadership, New teachers

Khoshnood, M., Narenji Thani, F., & Pourkarimi, J. (2023). The Role of Digital Competence in the Classroom Leadership of New Teachers in Fars Province, *Journal of School Administration*, *10*(4), 192-215.

^{1.} This article is derived from the master thesis on Educational Administration conducted at the University of Tehran, Tehran, Iran.

^{2.} M.A. of Educational Administration, University of Tehran, Tehran, Iran.

^{3.} Assistant Professor, Department of Educational Administration and Planning, Faculty of Psychology and Educational Science, University of Tehran, Tehran, Iran.

^{*} Corresponding Author: Email: fnarenji@ut.ac.ir

^{4.} Associate Professor, Department of Educational Administration and Planning, Faculty of Psychology and Educational Science, University of Tehran, Tehran, Iran.

Introduction

The classroom setting is considered complex because of the multiple factors. However, it can be a place to teach skills and knowledge that prepare students for the future and also location students begin learn discipline, gather to information, and gain experience. Therefore. The Successful classroom is necessary for creating an effective teaching-learning system but can also foster student enthusiasm and motivation for learning and increase levels of active participation engagement. and Furthermore, literature reviews have shown that effective classrooms result from shared roles and responsibilities between teachers and students. Based on a theoretical perspective, beliefs and assumptions about these roles and responsibilities can be grouped into four primary areas of classroom practice: classroom teaching and learning, classroom behavior management, and the classroom environment - social aspects and physical space (Franklin& Harrington, 2019). In this regard, Adiyono et al. (2022) have emphasized that Maintaining order, using classroomteaching materials effectively and efficiently, and supporting the active participation of all students require classroom leadership competency. Therefore, classroom leadership refers to all teachers' actions to create, facilitate, and maintain an effective learning environment. In other words, any form of successful teaching requires adequate and convenient managerial decisions (Wolff et al., 2021). Such choices are actualized through developing the curriculum, organizing resources and the work. stages of managing the environment to enhance monitoring of students' advancement, and predicting potential issues (Ogunode et al., 2023).

In other words, classroom leadership involves all actions carried out by teachers to create an environment where social-emotional issues are conveniently taught scientifically (Khany & Ghasemi, 2021).

Most characteristics mentioned for interaction. leaders. including influencing followers having diverse traits, motivating them toward common goals. and actualizing their inner also energies, are valid for the relationship between teachers and students (Karabağ Köse, 2019). In addition, the optimal and convenient management of the classroom guarantees the effects of education, increases students' motivation for learning, minimizes students' inappropriate behaviors, and establishes positive relationships between stakeholders in education, including teachers, students, and parents (Umar & Ko, 2022). For many decades, the goal of classroom leadership has been to create a secure, supportive, and disciplined environment to optimize opportunities for learning and social, emotional, and moral growth. Although the goal still holds and has yet to change, the rapid development of digital technologies across all levels of education has made it necessary to rethink the strategies and instruments for achieving that goal (Johler et al., 2022).

Today's computers and other technologies are not only providing new opportunities for effective classroom leadership but also questioning the traditional methods of teaching and the internalized cultures they adopt. This has created new problems and challenges; therefore. new teachers consider classroom leadership a significant concern. (Lorensius et al., 2022). Cabero Almenara & Barroso Osuna (2018) argued that the technology incorporated

into education was an indicator that determined the rate of development and evolution in educational models; indeed, to achieve innovation and placing students in various situations, making them perform various activities and them diverse offering educational experiences can be an influential factor in learning. For the same reason, it conveniently incorporates information and communication technologies (ICT) in educational institutions (schools), and a society where technology plays a significant role seems necessary. Thus, educational technologies have brought about desirable outcomes in educational processes and have made academic staff and teachers attain optimal knowledge, skills, and attitudes to effectively implement the above forms of innovation and satisfactorily respond to their student's needs in the digital age. As a result, modern education depends to a great extent on teachers' professional skills and educational competence (cited in Pozo Sánchez et al., 2020). Thus, teachers must be equipped with digital competence to achieve effectiveness and quality in their daily educational activities and processes (Instefjord & Munthe, 2017). Therefore, it can be concluded that digital competence is necessary for a society founded on highly intertwined forms of technology. As a result, teachers' digital competency is increasingly attracting the attention of several organizations, researchers, and educators responsible for training future citizens who must be equipped with that skill (Mercader & Gairin, 2021). In addition. teachers with digital competence see and perceive technology as a concept that far exceeds a set of programs, software, and hardware and understand how digital culture can routine influence their roles and

performance at the schools and society of the 21st century (Johler et al., 2022).

Nevertheless, teachers need to be equipped with a certain level of digital competence to know how and why such competence can be effective in classroom management and leadership and their capabilities in facilitating learning-teaching processes during the use of ICT (Larson et al., 2020; Moradi & Keshmiri, 2021). In addition to teachers, educational staff should go beyond academic competence and be equipped with technological competence (Nganji, 2018). Due to the significance of the matter, teachers' ICT skills and their attainment of digital competence can make up a significant portion of teacher education programs (Ilomäki et al., 2016). Thus, incorporating them in in-service courses and teacher education curricula, most notably at Farhangian University, seems essential. The goal is not just to get familiar with and implement such competence but to create procedures that guarantee graduates' effective use in their teaching-learning processes and classroom leadership. Teachers' empowerment with technology has always paid attention to specialists, managers, and researchers due to creating a dynamic environment and the rapid growth of modern technologies. However, much less consideration has been paid to new teachers, who are believed to have recently ended their academic studies and are equipped with the most up-to-date knowledge. In this manner, they are left alone in the turbulent environment of education, and everybody expects them to have the best performance (Sadeghi et al., 2021). On the other hand, new teachers' convenient performance in learning-teaching does not merely rely on university and theoretical courses. Solving the most remarkable problem (i.e., the gap between theory and practice) requires attending to other necessary competencies and capabilities in the digital age, particularly regarding new teachers' digital competence and classroom leadership.

Moreover, after the spread of the COVID-19 pandemic and the emergence of the need to move toward modern teaching-learning approaches across the country's schools and change teaching models, the need to pay attention to teachers' digital competence has become more highlighted than ever. However, attention to such competencies and capabilities is vital in a technology-based society that perpetually evolves. Literature reviews have shown that various factors, including teachers' selfesteem, language skills, intercultural qualifications, emotional intelligence, psychological support, learners' fulfilment, job satisfaction, authentic leadership, and self-efficacy, can affect classroom leadership (Akman, 2020; Wang, 2023; Khany, 2019; Costa et al., 2018; Abboud, 2019; Saeed & Ali, 2019; Wang, 2019; Bay, 2020; Kavrayici, 2021). Furthermore, due to the broader use of transformative technologies in the teaching and learning system, more research needs to be conducted on teachers' digital competencies and ability to use new technologies in classroom leadership. The research literature review indicates that digital and information and communication technology literacy have received some attention. However, more focus should be given to the importance impact of teachers' and digital competence on classroom leadership. Therefore, the current study was conducted to investigate the critical role of digital competence in the classroom

leadership of new teachers in the educational system.

literature review

The concept of competence and the selection of capable people for critical positions are not new and have a long history (Bartolomé et al., 2022). However, the modern use of the term in organizations and the scientific views toward it in Western countries emerged in the mid-20th century through the efforts of David McClelland (1970). a distinguished psychologist at Harvard University. McClelland assigned high credit to the concept of competence by incorporating it into the literature on human resources. On the other hand, investigations show that the Competencies Movement began in education. The main reason for its emergence was the lack of connection between what people learned during formal education and the contingencies of the labor market (Núñez-Canal et al., 2022).

Moreover. diverse there are definitions of competence. For instance, according to the European Commission et al. (2019), competence refers to a set of concepts and facts (i.e., knowledge), skills (e.g., skills during processes), and attitudes (e.g., inclinations and ways of about how to perform thinking procedures) that can lead to a better performance in one's job or particular situations. Nowadays, the use of ICT in education is an indispensable necessity; therefore, teachers' digital competence is for improving classroom essential leadership (Bugrova et al., 2022). Because technological, cultural, and social outlooks constantly change, there are several definitions of digital literacy and competence, so achieving a unitary description of this concept is problematic (Falloon, 2020). Taking a look at the literature on the topic shows that digital literacy and digital competence are the same. However, most of the studies in the field have used the two terms interchangeably. Indeed, digital literacy is first step toward the digital competence. The term "digital literacy" was first used around 1997 by Paul Gilster, who defined it as a set of skills to access the Internet, search, manage, and information. Digital revise digital literacy combines computer literacy, information literacy, and media literacy. However, digital literacy often points to the skills necessary for individuals living in modern societies (cited in Zhao et al., 2021). The concept of digital competence was first used in 2006, and after an update proposed by the European Commission, Directorate-General for Education, Youth, Sport, and Culture, as defined in the following manner: "digital competence includes the secure, critical, responsible use of and digital technologies learn to interact, at workplaces, and participate across society." The includes competence information and data literacy. collaboration communication and (interaction through digital media), creating digital content. security (including digital welfare and the competence relevant to cyber-security), and problem-solving in а digital environment. Lázaro et al. (2018)defined digital competence as knowledge, skill, and capability that equips teachers with a critical, secure, pedagogical view and during technology-based learning. It is one of the eight essential skills for lifetime learning that any citizen needs to develop by the end of primary schooling.

Thus, teachers are among the main factors responsible for developing digital competence in future generations, making attaining a high level of digital competence in modern society essential (Rodríguez-García et al., 2018). Consequently, various institutions and associations have proposed diverse competence frameworks at organizational and international levels to achieve digital competence. For instance, out of the frameworks proposed by various authors, the following can be considered among the most eclectic ones (Cabero-Almenara et al., 2020):

- Digital Competence Framework for Citizens (DigComp)

- Digital Competence of Educators (DigCompEdu)

- International Society for Technology in Education (ISTE)

- UNESCO's Framework of ICT Competence for Teachers

- National Agency for Educational Technology and Teacher Development (INTEF, 2017)

- The British Digital Learning Framework

- ICT Skills for the Professional Development of Teachers at the Columbian Ministry of National Education

- ICT Competence and Standards for the Teaching Profession at the Chilean Ministry of Education

Faced developments with in education, Spain's Ministry of Education, Culture, and Sports has standardized digital competence through the National Institute for Educational Technology and Teachers' Development as a public institution responsible for innovation and the education of teachers' professional abilities. This is part of a project in which the EU has developed its framework and has so far been implemented for different purposes, especially in employment, education, and lifelong learning. This framework is proposed in his five areas

and 21 mandates below (European Commission et al., 2019):

1) The information and data literacy competence: browsing, searching, and filtering out data, information, and digital content; evaluating data, information, and digital content; managing data, information, and digital content

2) communication and collaboration in a digital environment: interacting through digital technologies, sharing something via digital technologies, participating with citizens through digital technologies, collaborating via digital technologies, the cyberspace (Internet) etiquette, digital identity management

3) The digital content creation: protecting equipment and hardware, protecting personal data and privacy, protecting health and welfare, protecting the environment

4) safety in the digital environment: Personal protection and well-being, data protection, digital identity protection, security measures, safe and sustainable use.

5) The problem-solving in a digital environment: removing technical issues, detecting needs and offering technological responses, using digital technologies creatively, detecting gaps – distance – between the existing condition and the desired one in terms of digital competence

Finally, as noted before, the literature review shows that although digital and ICT skills and competencies are effective in learning effectiveness and classroom leadership, very few studies have examined the correlation between these variables in the education context. As mentioned below Some of the most important and relevant ones at the national and international levels are mentioned below. For example, the research of Nejat & Khosravipour (2022) noted that the insufficient use of technology by teachers in the teaching and learning process reduces teachers' learning effectiveness and productivity. In addition, the researchers stated that although teachers' digital competence is critical, we face many challenges in using a model or framework that fits the country's local conditions. In this regard, Soheili et al. (2021) concluded that teachers' attitude toward technology and interest in being equipped with related competencies is one of the most important reasons for teachers' acceptance of technology in education. Because it is only possible to create any innovation and educational transformation with the support and acceptance of teachers, and teachers with digital competence motivate students to increase their participation in the teaching and learning process. Likewise, based on research results from Ebrahimi(2022); the existence of digital competencies in teachers not only allows them to prepare and present appropriate educational content by combining pedagogy and technology using various approaches but also causes them to have a more realistic understanding of the achievement students' learning of outcomes. Thus, they can change their classroom leadership model according to students' needs. Zare ShevkhKolaie & Javadipour (2023) found that teachers' perception of digital competence in the post-corona era includes 12 components (digital education strategies, teaching and learning goals in the digital environment. digital education infrastructure. collaboration with stakeholders, expansion of technological communication, influence Spirituality of teachers in the digital environment is the digitalization of behaviour, orientation towards digitalization, digital

management system, information skills, content creation skills and using digital tools). Their research findings suggest that teachers' evolving role requires innovative teaching methods, which have become crucial to classroom preparation and instruction. According to research their findings. the transformation in the role of teachers has led to a greater emphasis on adopting new teaching methods, thereby making it a crucial prerequisite for teachers to be well-prepared before entering the classroom.

Nguyen et al. (2022) discovered that teachers used technologies, content, and intelligent learning guidelines based on learners' characteristics to develop an enjoyable learning environment. Creating this environment can increase knowledge and thinking skills, organize learning activities, eliminate problematic situations, increase motivation, and develop and assess students' learning. In addition, the findings of Amjad et al. (2021) showed that using ICT was effective in classroom leadership. On the other hand, Moltudal (2021) found that a complicated relationship existed between digital competence and leadership, classroom which was influenced by teachers' professional and knowledge-based perceptions much beyond technology. Moreover, it was shown that the obstacles and opportunities faced by primary and high school teachers in technology-rich educational environments were not limited to technology. However, it addressed teachers' perceptions of the width of knowledge and flexibility required to manage and teach comfortable and highly complex learning environments. Cho et al. (2020) believe schools were introduced into the digital Thus, along with other age.

developments in that age, the role of technology in classroom leadership and discipline school became more highlighted, and teachers and students began to perceive that importance. In the same vein, the findings of Moltudal et al. (2019) showed that various levels of digital competence among teachers led to diverse professional perceptions and classroom methods. Teachers' professional digital competence and the ability to lead a classroom in a technology-incorporated environment were intertwined.

Moreover, Moltudal et al. (2019), Krumsvik et al. (2016), & Bolick & Bartels (2015) stated that teachers with inadequate digital competence would become worried during the introduction and implementation of digital technologies and feared that they might lose control over the class. Indeed, some teachers were anxious about threats to their authority and issues in their classroom leadership.

On the other hand, Enavati et al. emphasized (2016)that using educational technologies managed effectively to facilitate classrooms learning and improve the performance of multigrade schools. Thus, as mentioned before, studies on the relationship competence between digital and classroom leadership still need to be completed. As a result, due to the topic's significance and as a way of bridging the gap in the field, the present study aimed to investigate the role of digital competence in the classroom leadership of new teachers in Fars Province. In this regard, the following purposes were developed:

1. Investigating the existing condition of digital competence and classroom leadership among new teachers in Fars Province 2. Investigating the relationship between the components of digital competence and classroom leadership among new teachers in Fars Province

3. predicting classroom leadership based on the components of digital competence among new teachers in Fars Province As is evident in Figure 1, the Initial Model of EU Digital Competence (2019) was used to evaluate digital competence, and Karabağ Köse's (2019) model was implemented to evaluate classroom leadership. On this basis, the conceptual model of the study was illustrated as follows (Figure 1):



Figure 1. Conceptual Research Model

Methodology

This study examines the role of digital competence in the classroom leadership of new teachers. Data were collected descriptive using the quantitative approach to meet the research objectives. This method can be a good study technique for describing and analyzing the phenomenon by gathering the necessary data and examining the relationships between the variables. The study population included all the graduates of the Farhangian University of Fars province who started teaching during the academic years from 2016 to 2021. Using Cochran's formula and the available sampling method, 238 people were selected as a statistical sample from 4500 new teachers. Two types of questionnaires were used for data collection, including the five-point Likert scale, which was entirely consistent with the research model and research component dimensions. Data-gathering surveys were as follows:

1) The standard questionnaire was used to evaluate new teachers' digital competence. The European Commission designed (Ferrari, 2013) and standardized this questionnaire based on a comprehensive framework (Gümüş & Kukul, 2023). The questionnaire consists of 21 items and five components, including; information and data literacy, communication and collaboration in the digital environment, digital content

Vol 10, No 4, Winter 2023

creation, safety, and problem-solving in the digital environment.

2) A questionnaire adapted from Karabağ Köse (2019) was used to investigate the classroom leadership of new teachers. This questionnaire includes 25 items and four components: Interaction, motivation, in-class, and outof-school processes.

Data were analyzed using SPSS Statistics version 24.0 and LISREL version 8.8, and each component's normality of distribution was checked using the Kolmogorov–Smirnov test. Also, the correlation matrix of the variables was used to examine the correlation between the variables, and finally, the confirmatory factor analysis

was used to test the research hypotheses. For validation of the questionnaires, content and construct validity methods were employed. For content validity, the views of seven experts were used through the content validity index (CVI). Experts classified the items as 1 for "irrelevant," 2 for "relatively relevant," 3 for "relevant," and 4 for "completely relevant." After the expert feedback was obtained, the CVI was calculated at 0.85, indicating the appropriateness of the questionnaire items. In addition, as shown in Table 1-confirmatory factor analysis was used for construct validity. The results suggest that the proposed model is appropriate and that the sample data supports the proposed model.

Table 1- confirmatory factor analysis (CFA) fit indices of the initial questionnaires

Questionnaires	X²/df	RMSEA	RMR	NFI	NNFI	CFI	IFI	RFI	GFI	AGFI
digital competence	2.42	.069	.054	.97	.98	.98	.98	.97	.86	.82
classroom leadership	1.91	.055	.050	.97	.98	.98	.98	.96	.91	.88

The reliability of the questionnaires was determined and confirmed by Cronbach's alpha coefficient. As seen in Table 2, Cronbach's alpha for the digital competence questionnaire is $(\alpha=0.96)$ and for the classroom leadership questionnaire ($\alpha=0.95$).

Table 2. Cronbach's alpha coefficient

Reliability Statistics		
Variables	Cronbach's Alpha	N of Items
digital competence	.96	21
classroom leadership	.95	25

Finding

In the present study, the demographic data on the respondents showed that 16.8

percent were female and 83.2 percent were male. Regarding the level of education, 66% had a bachelor's, 32.3% had a master's degree, and 1.7% had a Ph.D. degree. The average age of the respondents to the questionnaires is about 28 years. The minimum age is 23 years, and the maximum is 38 years. Furthermore, analysis of the normality of the variables by the Kolmogorov-Smirnov test showed that digital competence and classroom leadership had a normal distribution.

The T-test has been used to investigate the current state of digital competence and classroom leadership of

new teachers. The results of Table 3 show that the current state of digital competence of new teachers (in general) and the components of information and data literacy. communication and collaboration, safety, and problemsolving in the digital environment were above the average level. At the same time, the component of digital content creation is at an average level. It should be noted that the current state of classroom leadership (in general) and its components were also above average.

Table 3: The current state of digital competence and classroom leadership of new teachers and its components with a theoretical average of "3"

One-Sample Test

_			Test	Value = 3		
	t	Sig	Mean Difference	Mean	Std. Deviation	Result
Information & data literacy	13.362	.000	.74370	3.74	0.85	above average
Communication & collaboration in a digital environment	15.717	.000	.92332	3.92	0.90	above average
digital content creation	938	.349	06182	2.93	1.01	average level
Safety in a digital environment	5.946	.000	.39832	3.39	1.03	above average
Problem-solving in a digital environment	5.934	.000	.39244	3.39	1.02	above average
Total (digital competence)	7.462	.000	.40756	3.40	0.84	above average
Interaction	45.683	.000	1.44468	4.44	0.48	above average
Motivation	37.649	.000	1.37255	4.37	0.56	above average
out-of-school processes	20.315	.000	.98845	3.98	0.75	above average
in-class processes	35.982	.000	1.33824	4.33	0.57	above average
Total (classroom leadership)	42.094	.000	1.30363	4.30	0.47	above average

A correlation matrix of the variables was used to investigate the relationship between digital competence and its components in classroom leadership. As Table 4 shows, there is a positive and significant correlation between digital competence in general and its components with classroom leadership (α =0.01). Also, among the components of digital competence, information and data literacy (sig=0.000; r=0.57) and then the components of communication and collaboration in the digital environment (sig=0.000; r=0.39) and creation of Digital content (sig=0.000; r=0.39) had the highest correlation with classroom leadership.

1 ...

Correlations							
Variables		Informat ion & data literacy	Communicat ion & collaboratio n in a digital environment	digital conten t creatio n	Safety in a digital environme nt	Problem- solving in a digital environme nt	digital compete nce
Information & data	Pearson Correlation	1					
literacy	N	238					
Communica tion & collaboratio	Pearson Correlation Sig. (2-tailed)		1				
n in Digital Environmen t	Ν		238				
digital content creation	Pearson Correlation Sig. (2-tailed)			1			
	N			238			
Safety in a digital	Pearson Correlation				1		
environment	Sig. (2-tailed) N				238		
Problem- solving in a	Pearson Correlation					1	
digital environment	Sig. (2-tailed) N					238	
digital competence	Pearson Correlation Sig. (2-tailed)						1
	N						238
classroom	Pearson Correlation	.571**	.390**	.399**	.349**	.311**	.456**
leadership	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	Ν	238	238	238	238	238	238

Table 4. Correlation Matrix Between Research Variables

**. Correlation is significant at the 0.01 level (2-tailed).

To ensure the relationships between the components and test the validation of conceptual model fit, the goodness-of-fit indexes have been used, such as freedom for X-ray ratio (χ 2/DF), standardized root mean residual (SRMR), Adjusted Goodness-of-Fit Index (AGFI), and Goodness-of-Fit Index (GFI), the root mean squared error of approximation (RMSEA), the normed fit index (NFI), non-normed fit index (NNFI). The results indicate that the model has a relatively good fit for the data (Table 5 and Figure 2).



Chi-Square=44.76, df=20, P-value=0.00119, RMSEA=0.072

Figure 2. The experimental model of research based on standard coefficients

Fit index	χ2/df	RMSA	GFI	AGI	RMR	IFI	NNFI	NFI
Domain	1-5	< 0.08	>0.9	>0.9	< 0.05	0 -1	>0.9	>0.9
Calculated	2.23	.072	.96	0.91	0.032	0.99	0.98	0.98

Table 5. The goodness-of-fit measure of the research model

The t-value was used to determine the significance of the relationships between the variables. Since the significance has been checked at 0.05, there is no significant relationship if the values obtained with the t-value test are below +1.96. On the other hand, the t-test value

calculated between digital competence and classroom leadership (6.52) was significant at a 0.05 level. As a result, digital competence positively and significantly impacts classroom leadership, with a path coefficient of β =0.51(Figure 3).



Chi-Square=47.42, df=20, P-value=0.00051, RMSEA=0.073

Figure 3. The experimental model of research based on T values

Finally, in order to explain classroom leadership based on the components of new teachers' digital competence, multiple regression (in a step-by-step method) has been used.

 Table 6: Results of step-by-step regression analysis of classroom leadership based on digital competence components

Model Summary							
Model	р	D Squara	Adjusted R	Std. Error of the			
	К	K Square	Square	Estimate			
1	.571	.326	.323	.39310			

Table 6 shows that the value obtained from the multiple correlations between digital competence components and classroom leadership (R=0.57) indicates a correlation between classroom leadership and the linear combination of digital competence components. Also, the values obtained (sig=0.000; F=114.10) indicate that digital competence can predict classroom leadership.

Model		Unstandardiz	ed Coefficients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	Constant	3.114	.114		27.270	.000
	Information & data literacy	.318	.030	.571	10.682	.000

Coefficients

Table 7: Stepwise regression results

As Table 7 shows, among the digital competence, components of information and data literacy with values (sig=0.000; β=0.57) can predict leadership. classroom Also. the regression model's coefficient shows that information and the data literacy significantly component affects classroom leadership. Accordingly, the predicting equation for classroom leadership based on the components of

digital competencies can be written as follows:

Classroom leadership = 0.57(information and data literacy) + random erorr term

Discussion and conclusion

Although developments in ICT and the use of the Internet have brought about unprecedented changes in education and have offered notable benefits to society, some challenges have arisen due to insufficient information and knowledge regarding individuals' privacy and information security. Thus, in an educational setting, not only is it essential for teachers to identify the problems and risks associated with access to new technology, but also to raise awareness and use strategies to prevent their possible negative consequences is also essential. Research shows that gaining confidence and creating a positive attitude towards a digital environment in an educational context requires teachers to be prepared with digital knowledge (content, science, and the art of learning and teaching), skills (social and technical), and attitudes, especially in security-related cases in such environments. In other words, modern teachers responsible for training future citizens should be equipped with digital competence. Furthermore, they should effectively lead and manage their classrooms bv implementing conveniently such competence during the learning-teaching process. The success of teachers in management classroom plays а significant role in the fulfilment of learning, growth, and the development of learners' academic innovation and cheerfulness. As a result, due to the significance and necessity of classroom leadership in students' academic success (as the country's future assets), the present study attempted to investigate the role of new teachers' digital competence in their classroom leadership.

The study's findings showed that, in general, the new teachers' existing condition in terms of digital competence and some of its components was above average. However, only one component (i.e., creating digital content) was evaluated at an average level. This is because new teachers can utilize convenient instruments search. to

evaluate, select, and save information. data, and digital content and use them in due time to increase the effectiveness of their teaching. On the other hand, they can establish communications via digital technologies and share their information with the main stakeholders involved in the education system using convenient instruments. In this regard, it should be noted that new teachers are not only equipped primarily with the skills to protect their information in the digital environment but also with the skills to deal with problems related to the digital environment. Technology and identify the needs and environments required for scanning, provisioning, and tuning. Be suitable. Creative solutions and ultimately identify gaps in their digital skills. To explain this result, the average age of new teachers (28 years old) can be considered a factor affecting their awareness and interest in implementing digital technology. In other words, for reasons like the more frequent use of the web, computer, and email and their presence in social media, new teachers can use modern technologies faster and within a shorter time.

Moreover, they can upgrade and enhance their competencies in line with technological advancements in the 4th Industrial Revolution. This result was in line with the findings of Baseri Toroghi (2013), Moghaddaszadeh et al. (2016), Aküzüm & Özdemir Gültekin (2017), Krumsvik et al. (2016), Pozo Sánchez et al. (2020), & Geeraerts et al. (2018). For instance, the findings of Krumsvik et al. (2016) showed that using social media and a command of modern technologies increased teachers' digital competence. Similarly, Pozo Sánchez et al. (2020) stated that teachers' digital competence had a significant relationship with their inclination education and toward

permanent learning. A negative relationship was observed between digital competence and teachers' ages. In other words, when teachers' age increased, they tended to be less interested in attaining and improving their ICT skills.

On the other hand, in general, new teachers appear to be readier, more inclined, and more motivated to combine technology with pedagogy (Geeraerts et al., 2018). On the other hand, the emergence of the COVID-19 pandemic, the necessity of using modern technologies in teaching and changing learning approaches, reduced and resistance to implementing teachinglearning processes in electronic environments have increased teachers' digital awareness, knowledge, capabilities, and skills. (Sayadi & Soleymani, 2020). In other words, the emergence and expansion of the COVID-19 pandemic made improving digital competence more teachers' apparent. Thus, Zancajo et al. (2022) argued that the above crisis revealed the necessity of equipping teachers with digital skills to enhance learning effectiveness in electronic an environment. In other words, teachers believe in the need to use technology in all processes relevant to classroom management and consider its appropriate implementation as one of the most notable factors in improving learning outcomes enhancing and their professional performance.

On the other hand, the present study's findings showed that the investigated new teachers were above average regarding classroom leadership. New teachers could motivate their students by encouraging them to set big and achievable goals, planning activities to support them outside of school in the form of extracurricular social activities. participating in class-related decisions, and presenting content appropriate to the needs of their students based on modern technologies. In addition, new teachers behaved respectfully and fairly and welcomed their students' criticism and suggestions in a trusting manner. To explain the above findings by referring to some researchers, most new teachers, particularly those in their first years of teaching, are more enthusiastic about teaching. Thus, they are more likely to manage and lead their classes conveniently. In this regard, Momeni Mahmoei & Talebi's (2022) findings showed significant relationship а between classroom management skills and teaching enthusiasm.

Moreover, some scholars have stated that one of the most important reasons for new teachers' capability in managing their classes is their command of specialized knowledge relevant to the practical approaches and methods of steering a classroom (Mirarab Razi et al., 2019). Research has shown that in recent years, most new teachers (especially graduates higher education from institutions managed by the Ministry of Education) must take and pass various courses on classroom management and styles and modern teaching-learning approaches. Thus, the above community is expected to be equipped with sufficient knowledge to manage a classroom conveniently.

Though analyzing the findings concerning the relationship between digital competence (in general) and it is components and classroom leadership indicated a significant correlation, information, and data literacy had the most significant correlation with classroom leadership. In other words, increasing skills in searching, evaluating,

selecting, and managing data. information, and digital content enabled new teachers to manage and lead their classes more effectively. This result was in line with the findings of Nguyen et al. (2022), Amjad et al. (2021), Cho et al. (2020), Moltudal et al. (2019), & Enavati et al. (2016). For instance, Nguyen et al. (2022) argued that utilizing digital technologies during teaching increased participation and interaction between learners, teachers, and peers. In addition, Enayati et al. (2016) also emphasized that using technology as an effective method of classroom management facilitated the learning process and improved teachers' performance, particularly in multigrade classes. In other words, digital competence was not just effective in the manner of teaching but in the professional success of new Ultimately, teachers. the multiple regression analysis was utilized to explain classroom leadership according to the components of digital competence. The results showed that information and data literacy could predict classroom leadership out of the components of digital competence. In line with this finding, Moghaddaszadeh et al. (2016) showed that teachers who were equipped with information literacy and updated their knowledge permanently could increase the effectiveness and efficiency of their classrooms by implementing modern educational strategies. Furthermore, such teachers had adequate autonomy in doing their chores. As a result, they could solve scientific and professional issues across all teaching and classroom management areas by themselves based on their skills and receive timely feedback in their workplaces.

Based on the results of the present study and as a way of maintaining and

perpetually increasing the quality of classroom leadership among new teachers, some practical suggestions are offered below. In addition, the topranking managers and policymakers in the Farhangian University of Fars Province can consider the following items for planning and policymaking based on data and information.

Practical suggestions

1. The study's findings indicated that the teachers ranked lower in digital content creation than other digital competence components. Therefore, actions must be taken to increase the skills of new teachers in creating multimedia content. For example, improve the existing content according to the needs of the learners through the use of digital tools and mechanisms such as the organization of competence-based courses, and the learners motivate them by offering them material and intangible bonuses to increase their attention. inclination, and ability.

2. The skill of protecting security and intellectual property rights makes up another component of new teachers' digital competence, which needs special attention. By designing mechanisms, particularly in the form of in-service courses, educational institutions need to increase new teachers' knowledge and attitudes concerning the use of modern technologies, the positive and negative impacts of digital technologies in preserving the health of one's body and soul, and the benefits and drawbacks of access to the Internet. Moreover, their skills in protecting information, suitable tools to protect their privacy and professional identity in a digital environment, and convenient strategies to perceive risks and threats and respond effectively must be improved.

3. Increasing capabilities relevant to communication and collaboration in a environment digital another is consideration worthy of attention. For example, implementing digital technologies as easily accessible sources of supplementary learning, using such technologies to maintain communication with learners and other stakeholders to facilitate administrative and educational matters, performing procedures and even organizing some events, effectively utilizing technological instruments to offer feedback to learners and their parents about their progress and the relevant issues and problems, offering opportunities to maintain adequate and multilateral instructor-learner and learner-learner communications, on the one hand, and creating an environment for learners to express their views and ask questions through digital technologies, on the other hand. establishing learner-centered groups to exchange information making bv purposeful use of social networks (e.g., WhatsApp and Telegram) are some activities strategies and that an educational institution can perform to increase collaboration and communication in a digital environment.

4. The analysis of the findings shows that information and data literacy have the most relationship with classroom leadership. Therefore, new teachers can increase and update skills such as; using advanced search strategies to find reliable information, increasing the skill evaluating the credibility of of information, using a wide range of suitable criteria, having the ability to store information in an orderly and usable manner, using cloud services (through Google Drive, Sky Drive.), and the ability to use a wide range of online tools (such as email, Skype, social

networks, Etc.) to take more serious steps towards lifelong learning and be more successful, especially in classroom leadership.

5. Considering that according to the results of the present study, the status of out-of-school processes is lower than other components of classroom leadership. Therefore, the policymaking of the educational system should design appropriate mechanisms to reinforce the importance and necessity of paying attention to classroom leadership and its effect on improving students' academic performance in teachers.

6. Finally, due to the positive relationship between new teachers' digital competence and classroom leadership, the Ministry of Education can detect strengths and improvable areas by becoming aware of the current state of teachers' digital competence. In addition, they can take practical steps toward empowering new teachers. like organizing seminars. educational workshops, and courses to enhance their digital competence and, consequently, improve their classroom leadership. In this regard, it is necessary to incorporate digital competence into new teachers' plans for individual and professional development developing bv and implementing convenient mechanisms. Ultimately, the top-ranking managers of the education system and staff managers in the offices of education should offer modern technological instruments to new teachers for their optimal use in teachinglearning.

Limitations

As the present study was conducted on a sample of new teachers who graduated from Farhangian University, Fars Province, random sampling still needed to be implemented despite the researchers' efforts. Thus, generalizing the study's results to other new teachers nationwide needs to be performed with care.

Ethical considerations

During the implementation of this research and the preparation of the article, all national laws and principles of professional ethics related to the subject of research, including the rights of statistical community, organizations and institutions, as well as authors and writers have been observed. Adherence to the principles of research ethics in the present study was observed and consent forms were consciously completed by all statistical community.

Sponsorship

The present study was funded by the authors of the article.

Conflict of interest

According to the authors of the present article, there was no conflict of interest.

This article has not been previously published in any journal, whether domestic or foreign, and has been sent to the Journal of School Administration Quarterly for review and publication only.

References

Abboud, R. A. W. (2019). Classroom Leadership and its Relation to Job Satisfaction in Mid-School Teaching for Baghdad Governorate/Karkh III. *Journal Port Science Research*, 2(3), 485-507.

Adiyono, A., Fadhilatunnisa, A., Rahmat, N. A., & Munawarroh, N. (2022). Skills of Islamic Religious Education Teachers in Class Management. *Al-Hayat: Journal of Islamic Education*, 6(1), 104-115.

Akman, Y. (2020). The Role of Classroom Management on Confidence in Teachers and Educational Stress. *International Journal of Contemporary Educational Research*, 7 (1), 335–345.

Aküzüm, C., & Özdemir Gültekin, S. (2017). Sınıf öğretmenlerinin iletişim becerileri ile sınıf yönetimi becerileri arasındaki ilişkinin incelenmesi [Examining the relationship between primary school teachers' communication skills and classroom management skills]. *Electronic Journal of Education Sciences*, 6 (12), 88-107.

Amjad, A., Irshad, A., & Hayat, N. (2021). The Effects of Information Communication Technology (ICT) on Classroom Management at the Secondary Level. *Journal of Education* & *Humanities Research, University of Balochistan, Quetta-Pakistan, 12*(2), 10-17.

Bartolomé, J., Garaizar, P., & Larrucea, X. (2022). A pragmatic approach for evaluating and accrediting digital competence of digital profiles: A case study of entrepreneurs and remote workers. *Technology, Knowledge and Learning*, 27(3), 843-878.

Baseri Toroghi, Sh. (2013). Investigating the relationship between teachers' information literacy and classroom management in public high school for girls in district one of Tehran [Master's thesis, The University of Tehran]. [In Persian]

Bay, D. N. (2020). Investigation of the relationship between self-efficacy beliefs and classroom management skills of preschool teachers. *International Electronic Journal of Elementary Education*, *12*(4), 335–348.

Bolick, C. M., & Bartels, J. T. (2015). Classroom Management and Technology, Handbook of classroom management (2nd edition). New York: Routledge.

Bugrova, V., Kovalevskaia, N., Matyashova, D., Orlov, I., & Geleta, I. (2022). Teaching digital law as a prerequisite for the formation of students' digital competence and digital culture. *Revista Conrado*, *18*(S1), 640-646.

Cabero Almenara, J., & Barroso Osuna, J.M. (2018). Los escenarios tecnológicos en Realidad Aumentada (RA): posibilidades educativas en estudios universitarios [Technological scenarios in Augmented Reality (AR): educational possibilities in university studies]. *Aula abierta, 47*(3), 327-336.

Cabero-Almenara, J., Barroso-Osuna, J., Palacios-Rodríguez, A., & Llorente-Cejudo, C. (2020). Digital Competence Frameworks for university teachers: their evaluation through the expert competence coefficient. *Interuniversity Electronic Journal of Teacher Training*, 23(2), 1-18.

Cho, V., Mansfield, K. C., & Claughton, J. (2020). The past and future technology in classroom management and school discipline: A systematic review. *Teaching and Teacher Education*, 90, 103037.

Costa, J. H., Froemming, L. M. S., Araujo, F. O. de., & Nunes, J. M. G. (2018). Can Teacher Classroom Leadership Contribute To Students' Satisfaction? A Review Of The Literature. *Revista Produção E Desenvolvimento*, 4(3), 15–28.

Ebrahimi, S. (2022). The role of teachers' digital competencies, use intention of online teaching and students' Online learning difficulties in predicting online teaching behavior. *Journal of Educational Scinces*, 29(2), 105-126. [In Persian].

Enayati, T., Zameni, F., & Movahedian, M. (2016). Classroom management strategies of multigrade schools with emphasis on the role of technology. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, 7(2), -. doi: 10.5812/ijvlms.12161.

European Commission, Directorate-General for Education, Youth, Sport and Culture, (2019). *Key competences for lifelong learning*. Luxembourg: Publications Office of the European Union.

Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68(5), 2449–2472.

Ferrari, A. (2013). *DIGCOMP: A* framework for developing and understanding digital competence in Europe. Luxembourg: Publications Office of the European Union.

Franklin, H., & Harrington, I. (2019). A Review into Effective Classroom Management and Strategies for Student Engagement: Teacher and Student Roles in today's classrooms. *Journal of Education and Training Studies*, 7(12).

Geeraerts, K., Tynjälä, P., & Heikkinen, H. L. T. (2018). Intergenerational learning of teachers: What and how do teachers learn from older and younger colleagues? *European Journal* of *Teacher Education*, 41(4), 479–495. Gümüş, M. M., & Kukul, V. (2023). Developing a digital competence scale for teachers: validity and reliability study. *Education and information technologies*, 28(3), 2747–2765.

Ilomäki, L., Paavola, S., Lakkala, M., & Kantosalo, A. (2016). Digital competence–an emergent boundary concept for policy and educational research. *Education and information technologies*, 21(3), 655-679.

Instefjord, E. J., & Munthe, E. (2017). Educating digitally competent teachers: A study of integration of professional digital competence in teacher education. *Teaching and Teacher Education*, 67, 37-45.

INTEF (2017). Marco Común de Competencia Digital Docente [Common Digital Competence Framework for Teachers]. Madrid: Ministry of Education, Science and Sports.

Johler, M., Krumsvik, R. J., Bugge, H. E., & Helgevold, N. (2022). Teachers' Perceptions of Their Role and Classroom Management Practices in a Technology Rich Primary School Classroom. *In Frontiers in Education*, *7*, 170.

Karabağ Köse, E. (2019). Development and Psychometric Properties of Teacher Classroom Leadership Scale (TCLS). *Kuram ve Uygulamada Eğitim Yönetimi*, 25(1), 139-168.

Kavrayici, C. (2021). The relationship between classroom management and sense of classroom community in graduate virtual classrooms. *Turkish Online Journal of Distance Education*, 22(2), 112-125.

Khany, R. (2019). EFL Teachers' Emotional Intelligence, Emotional Support, and Their Classroom Leadership: A Structural Equation Modeling Approach. *International* Journal of Research in English Education, 4(3), 1–20.

Khany, R., & Ghasemi, F. (2021). Development and validation of teacher classroom leadership scale in EFL context. *International journal of leadership in education*, 24(4), 513-532.

Krumsvik. Jones. R., L.O., Ofstegaard, M., & Eikeland, O.J. (2016). Upper Secondary School Teachers' Competence: Digital Analyzed by Demographic, Personal and Professional Characteristics. Nordic Journal of Digital Literacy, 11(3), 143-164.

Larson, K. E., Hirsch, S. E., McGraw, J. P., & Bradshaw, C. P. (2020). Preparing Preservice Teachers to Manage Behavior Problems in the Classroom: The Feasibility and Acceptability of Using a Mixed-Reality Simulator. *Journal of Special Education Technology*, *35*(2), 63–75.

Lázaro-Cantabrana, J. L., Gisbert-Cervera, M., & Silva-Quiroz, J. E. (2018). Una rúbrica para evaluar la competencia digital del profesor universitario el contexto en latinoamericano [A rubric to evaluate the digital competence of the university professor in the Latin American context]. EDUTEC. Revista Electrónica de Tecnología Educativa, (63), 1-14.

Lorensius, L., Anggal, N., & Lugan, S. (2022). Academic Supervision in the Improvement of Teachers' Professional Competencies: Effective Practices on the Emergence. *EduLine: Journal of Education and Learning Innovation*, 2(2), 99-107.

McClelland, D. C. (1970). The two faces of power. *Journal of international Affairs*, 29-47.

Mercader, C., & Gairín, J. (2021). The perception of teachers' digital competence of preservice pre-primary and primary education teachers. The Influence of Degree and Entrance Path. *IEEE Revista Iberoamericana De Tecnologías Del Aprendizaje*, *16*(1), 100-106.

Mirarab Razi, R., Azizi Shomami, M., & Grayli, F. (2019). Study the relationship between classroom management knowledge and emotional fatigue with the moderating role of creativity. *Research In Teaching*, 7(3), 141-157. [In Persian].

Moghaddaszadeh, H., Yaminfirooz, M., & Alimohamadi, K. (2016). An Investigation of the Relationship between Information Literacy Skills and Effectiveness of Teachers: A Case Study of Primary School Teachers in Sari City. *Library and Information Science Research*, 6(1), 306-320. [In Persian].

Moltudal, S. (2021). Purposeful Actions in Leadership of Learning Processes: A Mixed Methods Study of Classroom Management in Digital Learning Environments [Doctoral dissertation, University of Bergen, Norway].

Moltudal, S., Krumsvik, R., Jones, L., Eikeland, O., & Johnson, B. (2019). The Relationship between Teachers' Perceived Classroom Management Abilities and Their Professional Digital Competence. *Designs for Learning*, 11(1), 80–98.

Momeni Mahmoei, H., & Talebi, M. (2022). The relationship between selfefficacy and classroom management skills with teachers' passion for teaching in Roshtkhar City, Iran. *The 8th National Conference on Modern Studies and Research in the field of Educational Sciences, Psychology and Counseling of Iran*, Tehran. [In Persian].

Moradi, S., & Keshmiri, S. (2021). Preparing to lead the digital transformation in schools. *School Administration*, 9(2), 358-386. Nejat, S. J., & Khosravipour, B. (2022). Digital competencies of teachers in the Post-Corona Pandemic. *The 11th National Conference on Sustainable Agriculture and Natural*, Iran, Tehran. [In Persian].

Nganji, J. T. (2018). Towards learnerconstructed e-learning environments for effective personal learning experiences. *Behaviour & Information Technology*, *37*(7), 647-657.

Nguyen, L. T., Kanjug, I., Lowatcharin, G., Manakul, T., Poonpon, K., Sarakorn, W., & Tuamsuk, K. (2022). How teachers manage their classroom in the digital learning environment– experiences from the University Smart Learning Project. *Heliyon*, e10817.

Núñez-Canal, M., de Obesso, M. D. L. M., & Pérez-Rivero, C. A. (2022). New challenges in higher education: A study of the digital competence of educators in Covid times. *Technological Forecasting and Social Change*, *174*, 121270.

Ogunode, N. J., Olowonefa, J. A., & Ayoko, V. O. (2023). Task-oriented leadership style and performance of educational institutions in Nigeria. *Ta'lim va rivojlanish tahlili onlayn ilmiy jurnali*, 3(3), 12-22.

Pozo Sánchez, S., López Belmonte, J., Fernández Cruz, M., & L'ópez Núñez, J. A. (2020). Correlational analysis of the incident factors in the level of digital competence of teachers. *Interuniversity Electronic Journal of Teacher Formation*, 23(1), 143-159.

Rodríguez-García, A. M., Cáceres Reche, M. P., & Alonso García, S. (2018). The digital competence of the future teacher: bibliometric analysis of scientific productivity indexed in Scopus. *IJERI: International Journal of Educational Research and Innovation*, (10), 317–333. Sadeghi, R., Moazami, M., Hashemi, S. M., Kayosi, E., & Miresmaeili, B. (2021). Providing a model of technological empowerment for new elementary school teachers in Tehran. *Popularisation of Science, 12*(1), 105-127. [In Persian].

Saeed, S., & Ali, R. (2019). Relationship between authentic leadership and classroom management in public and private sector universities. *Journal of Education and Educational Development*, 6(1), 171–187.

Sayadi, Y., & Soleymani, H. (2020). Perception of lived experiences of elementary school teachers from successful school principals in crisis situations. *School Administration*, 8(3), 173-149.

Sieberer-Nagler, K. (2016). Effective Classroom-Management & Positive Teaching. *English Language Teaching*, 9(1), 163-172.

Soheili, F., Arezi, S., & Mohamadi, R. (2021). The relationship between digital competence and individual and contextual factors: a Study of teachers of Sanandaj. *Quarterly Resources and Information Services Management*, 8(3), 1-12. [In Persian].

Timm, J. M., & Barth, M. (2021). Making education sustainable for development happen in elementary schools: The role of teachers. Environmental Education Research, 27(1), 50-66.

Umar, M., & Ko, I. (2022). Elearning: Direct effect of student learning effectiveness and engagement through project-based learning, team cohesion, and flipped learning during the COVID-19 pandemic. *Sustainability*, *14*(3), 1724.

Wang, C. (2019). The Relationship Between the English-medium Instructor's Language Proficiency, Intercultural Competence, Teaching Self-efficacy, and Classroom Leadership [Doctoral dissertation, St. Thomas University].

Wang, C. (2023). Commanding the class in a Foreign Tongue: The influence of language proficiency and intercultural competence on classroom leadership. *Education and Urban Society*, *55*(1), 34–55.

Wolff, C. E., Jarodzka, H., & Boshuizen, H. (2021). Classroom management scripts: A theoretical model contrasting expert and novice teachers' knowledge and awareness of classroom events. *Educational Psychology Review*, 33(1), 131-148.

Zancajo, A., Verger, A., & Bolea, P. (2022). Digitalisation and Beyond: the effects of Covid-19 on post-pandemic educational policy and delivery in Europe, *Policy and Society*, *41*(1), 111–128.

Zare SheykhKolaie, S. F., & Javadipour, M. (2023). Primary Teachers' Lived Experiences of Digital Competencies Required for Post-Covid-19 Era: A Phenomenological Study. *Journal of Curriculum Research*, 12(2), 173-201. [In Persian].

Zhao, Y., Pinto Llorente, A. M., & Sánchez Gómez, M. C. (2021). Digital competence in higher education research: A systematic literature review. *Computers & Education, 168,* 104212.

Introducing the authors

Author 1 Name: Moein Khoshnood Email: mkhoshnood@ut.ac.ir

M.A. of Educational Administration, Department of Educational Administration and Planning, Faculty of Psychology and Educational Science, University of Tehran, Tehran, Iran.

Author 2 Name: Fatemeh Narenji Thani *Email: fnarenji@ut.ac.ir*

Faculty Member, Assistant Professor, Department of Educational Administration and Planning, Faculty of Psychology and Educational Science, University of Tehran, Tehran, Iran.

Author 3 Name: Javad Pourkarimi *Email: jpkarimi@ut.ac.ir*

Faculty Member, Associate Professor, Department of Educational Administration and Planning, Faculty of Psychology and Educational Science, University of Tehran, Tehran, Iran.





