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Assessing teachers' competencies in teaching and learning using distance education

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ABSTRACT

Educators responded to the corona epidemic period by using virtual education. This article examines the perceptions of first three grade teachers in Jordan toward attaining teaching competencies in the field of distance education. Data were collected using a survey technique and a questionnaire with a reliability coefficient of 0.82. The results suggested competencies linked to online teaching. The results provided insight into the skills and experiences that were possessed to varying degrees: e-course management placed first in terms of relevance with a relative mean (65%), followed by computer applications (50%), networks (47%), and educational materials design (42%). There were no statistically significant differences based on gender and academic qualifications. Therefore, the findings improve teachers' lack of distance learning professional competencies.

Keywords: competence, teachers, online learning, educational technology

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INTRODUCTION

The usage of ICT in our everyday lives is significant; it has impacted every aspect of our culture. Schools benefit from the myriad of new ways in which students may use ICT to communicate, learn, and exchange information (Pingel, 2010). As communication technologies advance technologically, online education has become a realistic alternative; learners connect with teachers, classmates, and subject matter in a setting that provides many of the benefits of conventional face-to-face contact without having to leave their home or workplace (Keegan, 2002; Rudestam, 2004). Online learning is defined as "the use of the internet to access learning materials; to interact with learners, the content, teacher, and other learners; and to obtain support during the learning process, to acquire knowledge, to construct personal meaning, and to grow from the learning experience" (Ally, 2005).

Many teaching approaches, including distance education, virtual education, e-learning, web-based learning, and distributed learning, are referred to as "online learning". Distant education however is defined broadly as the use of technology to create, administer, and deliver electronic educational activities to students through the Internet (Aljhani et al., 2018). It is the method of exchanging knowledge with the learner while at a location other than the teacher's location (Holmberg, 1995; Keegan, 2002; Tapia-Ladino et al., 2016).

The presence of teachers with quality teaching competencies that replicate their reality is critical to the success of distance education because teaching in the digital world is a procedure of preparing and developing teachers to be able to move at a steady speed to face the difficulties of attracting and teaching all pupils (Al-Qatami, 2019), this is due to the direct relationship between the technically qualified teacher and the achievement of the objectives of distance learning (Hoq, 2020).

Several studies have found that the risks, issues, changes, and improvements that education is experiencing in the present day as a result of the use of modern and advanced technology are mostly focused on the technique through which teachers develop their competencies. (Ling et al., 2005). Online learning does not abolish the function of the teacher but rather enhances it (Febriyani et al., 2022). Teaching is still one of the most coveted vocations in the USA (Kearns et al., 2021).

The first three grades are regarded as one of the most significant phases of education since they serve as the foundation for the development of children's personalities and equip them with the fundamental information and skills necessary for success. Many studies have found that the dangers, problems, changes, and advancements that education is facing in the contemporary age as a result of the use of advanced and modern technology are mostly centered on the process of improving teachers' competence in the field of digital learning (Megat Abdul Rahim et al., 2021). The purpose of this study was to shed light on the teacher's professional competencies at Jordanian schools.

Theoretical Perspective

Distance learning is a teaching and learning system that includes the design, construction, planning, implementation, management, evaluation, and delivery of educational activities to learners anywhere

and at any time via electronic educational platforms, desktops, laptop computers, smartphones, and other digital equipment (Hussien et al., 2020). And during the corona epidemic, most nations employed distance learning to address the crisis of students' suspension from schools, and to compensate for this disruption. Jordan, like other countries, worked by adopting distance learning to enable students to access educational content (Al-Sharari, 2020; Shaub, 2020).

Distance learning was recognized by Jordanian educators to be one of the teaching methods that preserved educational continuity in the setting of the corona outbreak (Albadawi & Sabbah, 2022). Competencies can assist teachers in achieving their distance learning goals (Adnan & Anwar, 2020). According to the educational literature, a competent teacher is qualified to fulfill his function as a consequence of understanding the skills, concepts, and tendencies inherent in competencies, and therefore the actual execution of the role he is qualified to play (Adăscăliței et al., 2020).

The current research aims to investigate the following competencies for the first three-grade teachers: computer and its' application, networks, electronic course design and preparation, and Electronic course management (Abdulhaq, 2016; Al-Daghim et al., 2021; Allah et al., 2022; Fowler, 2018).

Online Competences

Previous research defines online competencies as personal, social, educational, and technological. Research also has established four kinds of online competencies:

(1) content,

(2) design,

(3) communication, and

(4) management (Baran & Correia, 2014; Guasch et al., 2010; Palloff & Pratt, 2011; Smith, 2008).

Dobbin et al. (2009) grouped them into eight categories:

(1) content management skills,

(2) technical skills,

(3) instructional design,

(4) social processes and attendance,

(5) assessment management,

(6) student orientation,

(7) institutional knowledge, and

(8) pedagogy.

Salam et al. (2011) proposed a framework that incorporates pre-teaching competencies like preparation, planning, and design. He also proposed intra-teaching competencies like facilitation, interaction, provision, and feedback seeking. Finally, Bigatel et al. (2012) classified online teaching competencies into seven categories based on successful online teaching tasks:

(1) active learning,

(2) management and leadership,

(3) active and responsive teaching,

(4) multimedia technology,

(5) classroom adequacy,

(6) technological competence, and

(7) policy application.

COAT has also developed nine online teaching competencies:

(1) instructing pupils in online learning,

(2) digital competence,

(3) teaching/learning management,

(4) basic course design principles,

(5) pedagogy and pedagogy,

(6) sociocultural process and existence,

(7) the Internet security for grades K-12,

(8) evaluation and assessment, and

(9) legal and institutional policies and practices (Habibi, 2021).

Previous research agreed on the following competencies for teachers while teaching online: pedagogy, technology, design, content, management, institutional, communication, and social (Koehler et al., 2013).

According to TPACK, successful online teaching happens when teachers have a body of knowledge developed from a complex interplay between content knowledge, pedagogy, and technology. In this article, distance teaching competencies are classified as one of four types of performance (e.g., computer and its applications, course design, management, and networking). Previous research agreed on the following competencies for teachers to have while teaching online: pedagogy, technology, design, content, management, institutional, communication, and social (Koehler et al., 2013).

Importance of the Research

This study is important for many reasons:

1. The Ministry of Education's important role in preparing a generation of teachers who, in turn, contribute to the service of their country by possessing Supervisory skills, design of educational materials, integration of educational technology, and skills in managing the educational process.
2. Informing teachers in the first three grades about distance education skills can raise their understanding of the competencies that should be focused on in distance teaching and demonstrate them as behaviors in teaching practices.
3. Determining such competencies aids in assessing the strengths and weaknesses of instructors at all levels of study in this discipline in schools locally and internationally in the future.
4. Considering the set of competencies as factors of evaluation to enhance the performance of online learning teachers in the first three grades.
5. Keeping this study in line with contemporary worldwide trends and developments in the educational area.

Purpose of the Study

In many places worldwide, teacher competency has surfaced as a critical concern, 60 million teachers globally require career development to develop their teaching skills (Jallade et al., 2001). In developing nations, half of the teachers were unprepared compared to their country's stated teacher education criteria (Sinclair, 2002). In Jordan, the 1st Educational Development Conference in 1987 proposed that every primary and secondary school include a computer lab. As a result, all schools received a computer to coexist in the technological world. Despite these attempts, many Jordanian primary three-grade teachers have academic backgrounds unrelated to online instruction.

Table 1. Mean, SD, and relative mean (RM) values for all items of the computer application domain

Items	Competency	Mean	SD	RM
1	Create and save files and folders on your computer.	3.81	1.10	76%
2	Compressing and decompressing compressed data.	3.76	0.84	75%
3	Use of Microsoft Office apps (for word processing, presentations, and tables).	3.76	0.88	75%
4	Setting data processing stages (inputs, operations, outputs).	3.65	0.82	73%
5	Knowing how to utilize a computer to present data.	3.59	0.68	72%
6	Recognizing file extensions.	2.66	1.01	53%
7	Understanding of the prerequisites for developing successful digital educational materials.	2.10	1.01	42%
8	Knowledge of computer capabilities and limits.	2.00	0.99	40%
9	Maintaining the operating system (Windows) and the many versions of it.	2.00	0.89	40%
10	Utilizing a computer and its countless programs.	1.89	0.68	38%
11	Recognizing virus detection and prevention methods.	1.88	0.54	38%
12	Formatting the output for display on the screen using the desktop and taskbar.	1.78	0.99	36%
13	Keep up with the latest versions of different computer programs.	1.68	1.01	34%
14	Managing many apps, whether downloading or uninstalling.	1.61	1.23	32%
15	Understanding of the foundations of various programming languages.	1.45	1.17	29%
Overall		2.50	0.42	50%

According to Esposito and Sinatora (2022), Jordan's group for digital dialogues, Jordanian teachers generally agreed that no unqualified teachers should be engaged in online education. According to some Jordanian policymakers, the standard of education in Jordan has declined significantly as a result of losing schools during the COVID-19 epidemic and the inadequacy of online learning to accomplish its aims. They claim that Jordan will require two decades to make up for academic losses and return to pre-pandemic norms (Kawar et al., 2022). However, until recently, the distance learning abilities of teachers were not reviewed in remote learning experiences in Jordan during the epidemic. This research will result in an evaluation of instructors' competence to teach by and learn utilizing distance education.

The purpose of this research is to examine the competencies of the teachers of the first three grades in the context of the distance learning program in schools in Jordan. As well as the reflection of gender or experience in English as a second language as independent variables. The research attempts to answer the following research questions:

1. **Q1.** What is the degree to which primary school teachers achieve distance learning competencies?
2. **Q2.** Are there statistically significant differences in the achievement of distance learning efficiencies by primary school teachers due to, academic qualification, and gender variables?

METHOD

Instrumentation

Based on the nature of the problem posed, the study adopted a descriptive approach. A two-part instrument was used to gather data; the first section deals with collecting information about gender and teachers' academic qualifications. The second section of the questionnaire included 69 items assessing the teacher competencies with a point Likert scale, with 1 being strongly disagreed, 2 being objected, 3 being neutral, 4 agreeing, and 5 strongly agreeing. It takes roughly 10-15 minutes to collect data on this scale. A panel of eight judges from the field of specialization verified the instrument. The questionnaire items were modified by the judges' recommendations. The reliability of the questionnaire was tested using the test-retest procedure on a sample of 25 teachers from the study population, and these teachers were omitted from the original study sample. Cornbrash's alpha was applied to the data, yielding a reliability coefficient of 0.82

Participants

A random sample of 206 male and female teachers from public elementary schools in Jordan's Irbid Governorate was chosen. With an 80% response rate, 164 teachers completed the survey. There were 76 (46.3%) men and 88 (53.7%) females in the sample. There were 62 teachers with a bachelor's degree (37.8%), 62 teachers with a master's degree and a Ph.D. (37.80%), and 40 teachers with a higher diploma (24.39%). The sample's mean age was 39.8 years (standard deviation [SD]=1.13; range=24 to 52).

Data Analysis

To address the first question, the means and SDs for each item as well as the total mean value were calculated. To address the second question, a one-way analysis of variance (ANOVA) was used to assess if there were variations in distance learning competencies due to levels of academic qualification. For the gender variable, a t-test was utilized.

RESULTS

To answer the first question related to determining the competencies of primary school teachers in the field of distance learning in Jordan, the means, SDs, and relative means were calculated for each item and each division of study; a higher mean value implies a higher degree of competence, whereas lower mean value suggests a lesser level of competence. In this study, a mean value of less than 2.50 is considered a low value, 2.5-3.49 is a moderate value, 3.5-4.49 is a high value, and more than 4.49 is a typical value.

Computer Applications

Table 1 displays the means, SDs, and relative means for each item in the field of computers and its applications competencies. The overall mean value of all items is arranged from highest to lowest. The means of the first five items that appear on the table were between 3.59-3.81, demonstrating a high degree of competency in the field of computers and their applications fundamentals regarding files and folders, storing, compressing, and using Word application. However, the rest of the items had low values ranging from 2.1 to 1.45. The overall mean is 2.50.

Table 2. Mean, SD, and relative mean (RM) values for all network domain elements

Items	Competency	Mean	SD	RM
1	Understanding how to delete any unread or unwanted emails.	2.66	0.79	53%
2	Download apps from the Internet that contain files.	2.61	1.01	52%
3	Searching for catalogs and libraries on educational institution websites.	2.57	0.99	51%
4	Send and receive data via Internet continuously.	2.49	0.88	50%
5	I am familiar with the Internet chat room services.	2.49	1.01	50%
6	-	2.48	1.01	50%
7	Know how to utilize several search engines to get information.	2.48	0.98	50%
8	Recognizing the many methods of Internet communication.	2.45	1.02	49%
9	The best approach to send the content is via email.	2.34	0.45	47%
10	On the Internet, you may get the most recent literature & research on the issue of specialty.	2.34	0.12	47%
11	Knowledge of the network's search engine.	2.34	0.89	47%
12	Using electronic libraries to strengthen skills.	2.28	0.88	46%
13	Understanding the different Internet connection ways.	2.23	0.87	45%
14	Subscriptions can be made to one or more websites.	2.23	0.84	45%
15	Communicating with students and school officials over the Internet.	2.14	0.99	43%
16	English proficiency is required to facilitate Internet use.	2.14	1.01	43%
17	I am acquainted with the file transfer service.	2.13	1.10	42%
18	Create new volunteer and group projects.	2.12	0.89	42%
19	Understand that academic forums have a chat option.	1.89	0.89	38%
Overall		2.34	0.87	47%

Table 3. Mean, SD, and relative mean (RM) values for all items of the e-course management scale

Items	Competency	Mean	SD	RM
1	Reply on student e-mail queries.	4.50	0.31	90%
2	Develop a time calendar plan including most important course events (midterm & activity receipt).	4.50	0.89	90%
3	Assigning exercises to pupils depending on their past experiences.	4.45	1.03	88%
4	Organizing the course's incoming students into homogeneous clusters.	4.40	0.87	88%
5	Managing resources in educational environment for students using course's educational platform.	**4.39**	1.23	88%
6	Observing student's progress while he studies courses online to determine amount of knowledge he has gained.	**4.10**	1.21	82%
7	Coordination of weekly sessions and activities with students is required to ensure interaction.	**4.00**	0.56	80%
8	Check that the e-learning systems (teacher/student devices) are compatible.	3.40	0.89	68%
9	Assessing learning objectives regularly.	3.25	0.12	65%
10	Managing the argument in network-based group discussions for experience exchange.	2.10	1.01	42%
11	Create a dictionary of essential terminology related to the course using the website.	2.00	0.89	40%
12	Encourage participation in synchronous and asynchronous media platforms.	2.00	1.12	40%
13	Use the student portfolio-e.	1.98	0.56	40%
14	Test administration for e-courses through network (scheduling & prevention of cheating).	1.76	1.01	35%
15	Giving feedback in various formats raises the student's scientific level.	1.58	0.71	32%
Overall		3.23	0.41	65%

Field of Network

Table 2 shows the means, SDs, and relative means for each item in the network competencies category. The aggregate mean value of all elements is listed in descending order. Teachers of the basic three grades have access to three competencies with means ranging from 2.50 to 2.66. The rest of the items received a low degree, with a mean ranging from 2.49 to 1.89. The overall mean is 2.34.

E-Course Management

Table 3 displays the means and SDs for each item in the e-course management field competence category. The mean value of each item is displayed in descending order. The table displays four high-level competencies in the field of e-course management, with means ranging from 4.40 to 4.50. Three competencies with means ranging between 4.00 and 4.39. Two competencies with means 3.25-3.40. For the other competencies, there are means ranging from 1.58 to 2.10. The overall mean is 3.25.

E-Course Design

Means, SDs, and relative means of the items in the field of e-course design are shown in **Table 4**. It shows that there is only one competence rated high with a mean of 4. items and one item with a mean of 2.80. The rest of the items received a poor rating, ranging between 2.49 and 1.17. The overall mean is 1.98.

To answer the second question, are there statistically significant differences in the achievement of distance learning efficiencies by the first three grades teachers at α=0.05 in the opinions of male and female teachers due to gender and academic qualification?, the researcher calculated the arithmetic means and SDs associated with independent variables.

Effect of gender on the first three grades schoolteachers' skills

The arithmetic mean, SDs, and the t-test were calculated to measure the effect of gender on the degree to which primary school teachers in Jordan possess the skills necessary to teach online, and the results are shown in **Table 5**.

Table 4. Mean, SD, and relative mean (RM) values related the to design of the electronic courses

Items	Competency	Mean	SD	RM
1	E-mailing student activities and homework.	4.10	1.01	82%
2	-	2.80	1.23	56%
3	Organizing ideas, facts, and rules.	2.40	1.00	48%
4	Instructional web page design and development.	2.10	0.82	42%
5	Developing educational activities related to desired outcomes & appropriate for the level of students & their thinking patterns.	2.09	0.74	42%
6	On the course website, provide students with a course overview.	2.09	0.72	42%
7	Choosing how to present material on the educational website in a way that is simple to access and utilize.	2.01	1.24	40%
8	Determining the suitability of the course and its content for presentation through the Internet.	2.01	1.11	40%
9	Choosing the type of engagement by which students connect with their college, learning materials, & instructor.	2.0	1.00	40%
10	Develop instructional activities that are compatible with online education's capabilities.	1.98	0.79	40%
11	The general objectives of the course should be created on the school's platform.	1.90	0.78	38%
12	In the first pages of the electronic course, include meaningful and quantifiable course objectives.	1.89	0.79	38%
13	Develop appropriate evaluation tools for the content provided on the course website.	1.88	1.12	38%
14	Recognize the multimedia elements (music, images, text, etc.) utilized in the course.	1.88	1.01	38%
15	-	1.87	0.98	37%
16	Recognizing feedback patterns that improve e-learning performance.	1.87	0.88	37%
17	Identifying the material and personnel needed to create the online course.	1.87	1.02	37%
18	The ability to insert pertinent topic links (links).	1.68	1.01	34%
19	Creating a script using course content that may be programmed to upload to the web.	1.59	0.92	32%
20	Using an online course management system.	1.51	0.23	30%
Overall		1.98	0.89	42%

Table 5. t-test results comparing competencies scores of male & female teachers

Sex	n	Mean	SD	t-test
Male	76	2.24	2.25	2.34
Female	88	1.99	0.48	

Note. $\alpha \leq 0.05$

Table 6. ANOVA of the degree of availability of distance learning competencies among teachers of the first three grades in Jordan

Variances	SS	MS	df	f	p
Between groups	0.038	0.019	2	0.084	0.923
Within groups	19.243	0.243	79		
Total	19.284	81.01	-		

Note. MS: Mean squares; SS: Sum of squares; & $\alpha \leq 0.05$

Table 5 shows that there are no statistically significant differences between the level of significance ($05.0 \leq \alpha$ in the opinions of teachers of the first three grades on the degree to which they possess the skills necessary to use them for distance teaching due to the variable (gender), $t=2.34$, $p<0.05$, meaning, the gender had no bearing on the degree to which teachers in the first three grades acquired the competencies required to teach online.

The impact of academic qualifications on the competencies of the first three-grade schoolteachers

ANOVA was conducted to assess whether there were statistically significant differences among the degrees of approval of the availability of distance learning competencies for teachers of the first three grades in Jordan. The results are presented in **Table 6**.

It was noted from **Table 6** that there were no statistically significant differences in the educational qualification, as the significance value was $F=0.084$, $p<0.05$), meaning that the educational qualification did not affect the degree to which teachers of the first three grades possessed the skills necessary to teach online.

DISCUSSION

Improving teacher competencies in online education would increase education quality and make it for students more fascinating and engaging. It would also remove the stagnation of the classroom setting. The results of the study will enable teachers to communicate unique perspectives by drawing their students' attention to the real world: teaching and learning will be contextual condition-specific, and student-centered. This study examined the extent to which teachers of the first three grades in Jordanian schools achieved the competencies of online teaching. These competencies were grouped into four categories: computer applications, networking, e-course management, and e-course design. The results showed that course management was the most important, with a mean of 3.23 and a relative value of 65%. Computer applications, with a mean of 2.50 and a relative mean value of 50%. The field of networks received a mean of 2.34 with a relative mean of 47%, and the design of the electronic course received a mean of 1.98 with a relative mean of 42%. Finally, the total score with a mean of 2.58. The findings show that the four domains and total scores had an almost equal arithmetic mean, meaning teachers have a poor level of competence in online teaching, which should be used in teaching the first three grades. The cause for this weakness is a lack of direct possession of teaching competencies owing to a lack of financial capacities in schools such as computer devices, networks, and others. Attention must be made to current school conditions in terms of providing computer devices, the Internet, and materials required for use of distance education, which indicates the presence of teachers' lack of these skills, which may have an impact on the emergence of such a result.

Since the field of course management for online teaching first emerged, it is posited may largely date the era of COCID-19 in a large way, when most schools attempted to meet the need to convert teaching to distance education by focusing on managing materials online, and they directed teachers to some YouTube that relate to in this field with simple operating skills. As a result, this field has importance among the four categories.

It came in last place in the discipline of creating and assessing electronic courses. This might be due to two factors: The first is a shortage of computers, and equipment in schools, and poor internet connections that support the use of online education. The other problem is that most teachers' residences lack computers, inadequate networks, and internet access, particularly in rural areas. On the one hand, the teacher's requirement for training courses in this subject motivates him to possess and implement such competencies.

These results are consistent with the study of Huda et al. (2017), which showed that the degree of teachers' achievement of e-learning competencies in Gaza schools was moderate. It also differed from the study of Al-Enezi (2021) and Megat Abdul Rahim et al. (2021), which found that the achievement of e-learning competencies in light of the corona pandemic among teachers was high. It also differed from the study of Alenezi (2012) and Harijanto et al. (2021), all of which were conducted in an Arab environment.

The results showed five competencies of computer application competencies, which came in the first place and in a medium degree, which are dealing with files, compressing them, saving them, retrieving them, and making use of them. While the remaining competencies turned out to be rated poorly, even though they represent important competencies that teachers need to teach online. The reason may be because these skills are present in most of the courses on introduction to the computer and its applications, and perhaps some teachers took this course during their studies, and perhaps some dealt with the computer to print their school papers such as exams and others, while having weak knowledge of the rest of the paragraphs may be due to the lack of teachers trained enough. The study suggests focusing on the field of computer applications in the teacher training program for teachers of the first three grades in Jordan.

In the field of networks, the study showed three competencies (interacting with e-mail and downloading files from the Internet) that were moderately evaluated by teachers of the first three grades. This is because these competencies are considered essential for a distance learning teacher (Tamm, 2019). As for the remaining competencies in this field, they were perceived weak. This study suggests emphasizing the importance of these competencies in teacher training programs. In the field of e-course management, four competencies related to organizing students, distributing them on the educational platform, monitoring their progress and color, and donating them were perceived as very high. The rest of the competencies in this field were perceived as low.

Finally, in the field of designing electronic courses, there is one competence related to the use of e-mail in homework, which was rated high by teachers. The rest of the items received a poor rating, which means that the field of designing electronic courses did not receive any attention from the ministry of education in Jordan. Therefore, this study suggests focusing on these competencies and including them in the pre-service teacher training programs.

The findings revealed that there were no statistically significant differences in the average attainment of teaching competencies due to the teacher's gender. This conclusion coincides with Alazmi et al. (2016) research but contradicts Adolf et al. (2021) and Al-Hadlaq's (2003) studies, which were both high and favored males. The outcomes might have been influenced by the school's environmental circumstances. Comparable in male and female schools, as well as similar in teachers' economic and home circumstances. The study's findings revealed that there were no statistically significant variations in the ways of acquiring online teaching competencies based on educational degrees. This outcome is linked to the fact that the functional needs of the instructor, as well as the school and environmental settings, are the same for everybody, independent of educational qualification. This study varies with Cartelli et al. (2010) and Grammens et al. (2022), which found statistically significant differences in favor of higher degrees owing to the educational qualification variable.

The results of this study can be considered important in benefiting from contemporary distance learning competencies during the development of teacher training programs so that teachers who teach via electronic platforms can keep pace with the transformations that occur in education as a result of the challenges of the corona epidemic (Alghamdi & Alghamdi, 2021). This study recommends focusing on teacher training programs, especially in the field of computer applications, instructional design, management of electronic courses, and internet networks. The results of this study also point to the development of distance learning programs and link them to the competencies that teachers should possess in distance education (Hejase & Chehimi, 2020).

CONCLUSION AND IMPLICATIONS

Following the global epidemic of the corona, most educational institutions worldwide and locally have made online education over the Internet essential. Teachers may feel uneasy teaching online courses due to the competencies of online teaching and teacher roles and responsibilities in distance learning. As a result, there is a need to evaluate teachers' skills in distance teaching so that teachers can effectively use and activate distance learning resources. The findings of this study advocate for teacher rehabilitation and training in online teaching skills to increase the quality of distance education, particularly for teachers in the first three grades. This may be accomplished through establishing teacher training and qualifying programs, as well as professional development for in-service teachers.

According to the current study's findings, teacher competencies are classified into four categories: e-course administration, computer applications, networking, and e-course design. Decision-makers at Jordan's Ministry of Education can utilize these skill sets to prioritize the academic quality of all teachers, particularly those in the first three grades. Furthermore, these findings inspire decision-makers in the Ministry of Education and schools to provide more technical support to teachers, provide advisory services on their teaching competency, conduct seminars, and provide more technical guidance for online learning to teachers with low salaries. Furthermore, these skills motivate the ISP to provide better internet services and watch for internet cut-offs in Jordan.

The current study has limitations in that it was done in just one region in Irbid Governorate, which is situated in northern Jordan, and it has a limited amount of technological equipment and frequent internet outages. The findings are based solely on the perspectives of teachers in the first three grades, but they should aid teachers' perspectives in future research in terms of design and study instruments. A new date for participation in a greater number of schools should be established, and this study should be replicated in other Jordanian directorates.

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Ethics declaration: The author stated that as part of their voluntary involvement, participants completed an informed consent document. Throughout the investigation, the rules of ethical protocol for conducting research were followed.

Declaration of interest: The author declares no competing interest.

Data availability: Data generated or analyzed during this study are available from the author on request.

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