

The Degree of Practicing of Public-School Principals to Technological Leadership in Aqaba Governorate in Light of the Corona Pandemic from Teachers' Point of View for the Academic year 2020-2021

Wafa' Abdulrahim Al-Quabe'h

Ministry of Education || Jordan

Abstract: The study aimed to reveal the degree to which public school principals practice technological skills from teachers' point of view in the Aqaba Governorate in light of the Corona pandemic. The descriptive survey method was adopted to achieve the objectives of the study where a questionnaire was developed that included (35) paragraphs, the study sample takes by simple random method from the study population, and it consisted of (200) male and female teachers. The statistical package for the social sciences (SPSS) was used to analyze the data. The study results concluded that the degree of technological leadership practice among principals of primary schools in light of the Corona pandemic from the teachers' point of view came to a high degree. The study results found that there are statistically significant differences at the level of significance ($\alpha \geq 0.05$) in the impact of the gender differences tend in favor of females with an arithmetic mean higher than the arithmetic mean for males. Whereas the females see the administration's application of technological leadership to provide the student's right to learn despite the challenges that the Kingdom is experiencing as a result of the Corona pandemic in the educational sector and other sectors). The arithmetic averages for the level of application of government school principals to technological leadership ranged between (3.70- 4.60 out 5), this indicates the high level of application. Paragraph No. (10) came in the first place, which states, "The principal uses the presentation program during school meetings," with an arithmetic mean of (4.60). While Paragraph No. (28) states, "The principal makes supervisory visits to teachers during their training of students in remote meetings," on the last rank, with a mean of (3.70). The study recommended increasing the education and training of administrative leaders on applying modern technological concepts and practices in management.

Keywords: distance education, Corona pandemic, schools, technological leadership, school principals, the Hashemite Kingdom of Jordan, Aqaba Governorate.

درجة ممارسة مديري المدارس الحكومية للقيادة التكنولوجية في محافظة العقبة في ظل جائحة كورونا من وجهة نظر المعلمين

وفاء عبد الرحيم القوابعه

وزارة التربية والتعليم || الأردن

المستخلص: هدفت الدراسة للكشف عن درجة ممارسة مديري المدارس الحكومية للمهارات التكنولوجية من وجهة نظر المعلمين في محافظة العقبة في ضوء جائحة كورونا. ولتحقيق أهداف الدراسة تم اعتماد المنهج الوصفي المسحي، حيث تم تطوير استبانة اشتملت على (35) عبارة، وقد أخذت عينة الدراسة بالطريقة العشوائية البسيطة من مجتمع الدراسة، وتكونت من (200) معلما ومعلمة. تم

استخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS) لتحليل البيانات. وتوصلت نتائج الدراسة إلى أن درجة ممارسة القيادة التكنولوجية لدى مديري المدارس الحكومية في ظل جائحة كورونا من وجهة نظر المعلمين جاءت بدرجة مرتفعة، كما بينت النتائج وجود فروق ذات دلالة إحصائية عند مستوى الدلالة ($\alpha \leq 0.05$) في تأثير الفروق بين الجنسين تميل لصالح الإناث بمتوسط حسابي أعلى من المتوسط الحسابي للذكور. في حين ترى الإناث ضرورة تطبيق الإدارة للقيادة التكنولوجية لتوفير حق الطالب في التعلم رغم التحديات التي تواجهها المملكة نتيجة تفشي جائحة كورونا في قطاع التعليم والقطاعات الأخرى. وتراوحت المتوسطات الحسابية لمستوى تطبيق مديري المدارس الحكومية على الريادة التكنولوجية بين (3.70-4.60 من 5)، وهذا يشير إلى المستوى العالي للتطبيق. وجاءت العبارة (10) في المقام الأول والتي تنص على أن "مدير المدرسة يستخدم برنامج العروض التقديمية في اجتماعات المدرسة" بمتوسط حسابي (4.60)، بينما نصت العبارة (28) على أن "يقوم المدير بزيارات إشرافية للمعلمين أثناء تدريبهم للطلبة في اللقاءات البعيدة" في المرتبة الأخيرة، بمتوسط (3.70)، وأوصت الدراسة بتثقيف وتدريب القيادات الإدارية على تطبيق المفاهيم والممارسات التكنولوجية الحديثة في الإدارة.

الكلمات المفتاحية: التعليم عن بعد، جائحة كورونا، المدارس، القيادة التكنولوجية، مديرو المدارس، المملكة الأردنية الهاشمية، محافظة العقبة.

1- Introduction.

At the end of 2019, the world witnessed a significant event that threatened all sectors in all countries of the world. At the end of this year and the beginning of the following year, the Corona pandemic, or what is known as COVID 19, caused catastrophic changes that affected the lives of people in various fields, whether health, economic, social, educational, and others. Since the corona pandemic began disrupting people's regular lifestyle, the virtual world has come to save the world and sustain life. Shopping, entertainment, work, and education moved from the traditional direct method to dealing via the Internet. Thus, the spread of COVID-19 has had profound effects on education globally. With schools and universities closed, many have turned to technology to continue the process of teaching and learning. That's led to significant changes in the education system for students, teachers, and parents alike, which made it imperative for everyone to redouble efforts to overcome this virus and the challenges that have arisen from the emergence of this pandemic (Bozkurt, 2020, P8).

The corona pandemic has caused the interruption of most students enrolled in schools and universities from education at the global level, which forced all parties to the educational process to experience distance education. Over time, these parties began to face many challenges, especially technological ones, while practicing this type of education. Therefore, this study aimed to identify the degree of technical leadership practice among school principals.

1.1 Statement of the Problem:

Some educational literature indicates that technological leadership is critical to complete the educational process with its various components, and the results of some studies presented in this field revealed that technical leadership is an essential factor in creating a rich environment in learning experiences that help the learner improve his educational status. (Al-Maliki, 2021, P7)

Despite the developments that the world witnessed during the last decade of the twentieth century, most notably global changes as a result of various circumstances, especially the Corona

1.2 The limits of the study:

The study was limited to the following limitations:

- Human limits: represented by teachers and principals of public schools in some schools in the Aqaba Governorate in the Hashemite Kingdom of Jordan.
- Locational limits: primary, basic, and secondary government schools in Aqaba Governorate
- Time limits: the academic year 2020/2021.
- Objective limits: The dimensions of technological leadership were represented in distance education in light of the Corona pandemic.

1.3 Importance of study:

The current study derives its importance from its subject, which is to identify the degree of leadership practice technology among government school principals in light of the Corona pandemic from the point of view of teachers.

As this study sheds light on the interrelationship between crises and technology leadership, and the current research is one of the attempts that aim to deal with crises in a scientific manner, which may draw the attention of planners and those responsible for the educational process to the importance of technological leadership and linking it to crisis management methods.

1.4 Hypotheses:

There are statistically significant differences at ($0.05 \geq \alpha$) in the degree to which government school principals are applying technological leadership in the Aqaba Governorate in light of the Corona pandemic from the teachers' point of view due to the variables: gender, years of experience, and educational qualification.

1.5 Operational Definitions:

Distance education: is the education that is applied through the student's obtaining knowledge and receiving education by employing educational programs based on the Internet, provided that smart devices are available.

Corona Pandemic (COVID-19): A global epidemic caused by a type of corona pandemic named after this strain of viruses. The number 19 indicates the year this disease was announced.

Technological leadership: It uses the means of modern technical development in administrative processes to facilitate and accelerate the achievement of goals, and the ability to keep pace with current changes and effects, such as the Corona epidemic, and to deal with these challenges by exploiting technological skills.

Governmental School Principals: They are those in charge of administrative work in public schools affiliated with the Ministry of Education in the Hashemite Kingdom of Jordan in the Aqaba Governorate.

2- Study Methodology

Depending on the nature of the study and to achieve its objectives, the researcher used the descriptive survey method, which relies on the study of the phenomenon, as it exists in reality, and clarifies its characteristics by collecting, analyzing, and interpreting information. Al-Agha (1997) stated that the descriptive survey method is based on the study of phenomena on the ground, describing them accurately. They are expressed quantitatively so that the quantitative expression gives a numerical description by clarifying the size and impact of this phenomenon and the extent of its connection with other phenomena. The opinions of male and female teachers in primary, basic, and secondary schools in Aqaba city were surveyed about the degree of application of technological leadership in light of the Corona pandemic.

Statistical methods used in the research:

We unpacked and analyzed the questionnaire through the Statistical Package for the Social Sciences V.20 (SPSS), and parametric statistical tests were used, after testing the distribution of the study sample through the Kolmogorov–Smirnov test.

Where the values of the questionnaire items were less than the level of significance, which is ($\alpha = 0.05$), this confirms to us that the distribution is normal or parameterized, so we will rely on statistical tests that fit with this distribution.

3- Theoretical Framework.

Around mid-March 2020, the government announced that all schools, colleges, and universities would be closed indefinitely due to the government's concerns about the corona pandemic (COVID-19). The epidemic spread to most parts of China, the United States of America, Italy, Spain, Europe, and Africa. This means that school students in all public and private schools have finished the first semester of the academic year 2020 without submitting end-of-term exams because many public and private schools administer assessment exams at the end of each semester of the academic year.

Thus, all parties to the educational process have been subjected to increasing pressures regarding the necessity of developing technology skills and adopting them as an essential alternative in the teaching, learning, and management processes. These developments revealed many developments in the educational aspect. Electronic school and educational platforms appeared on the academic side, enabling teachers, students, and parents to access information sources easily.

Thus, the importance of technology increases with the passage of days, as dealing with technological devices and software and technical applications have become an important area. In addition, many countries rely mainly on education. Hence, as simpler technology with lower cost, technological leadership may perform the same purpose better than complex technology with a higher price. Furthermore, technological leadership also contributes to reducing operating costs in institutions, whether in administrative or production work, communicating effectively between employees and beneficiaries, exchanging information, and making it easier for the institution to obtain the necessary data to make decisions and evaluate goals (Al-Maliki, 2021, P7).

Theoretical literature and previous research in various scientific journals and databases were reviewed, and a set of studies related to the subject of the study were identified and were dealt with from the most recent to the oldest, and they are as follows :

Study (1): Saadeh and Hamza (2021) conducted a study entitled "**The degree of technological leadership practice among principals of basic schools in the Amman district in light of the Corona pandemic from the teachers' point of view.**" They aimed to identify the degree of technological leadership practice among the principals of basic schools in the Amman district during the Corona pandemic from teachers' point of view. The study sample consisted of (406) male and female teachers who were chosen by the simple random method. The questionnaire was developed that included (40) paragraphs distributed over five areas of technological leadership. One of its most important results was that the degree of technological leadership practice among principals of primary schools in the Amman district in light of the Corona pandemic from the teachers' point of view came to a high degree in all areas of the questionnaire as a whole. The study results found statistically significant differences at the function level ($\alpha = 0.05$) due to the gender variable in favor of females, as well as to the educational qualification variable, in favor of the category (bachelor's degree and below). The results also concluded that there were no statistically significant differences at the function ($\alpha = 0.05$) between the average estimates of the sample members on the total degree of the scale due to the difference in years of experience variable. The study recommended that administrative leaders be educated and trained to apply modern concepts and practices in management, including technological leadership.

Study (2): Al-Maliki (2021) conducted a study entitled "**The degree of application of technological leadership in secondary schools in Jeddah in the light of the Corona pandemic.**" He aimed to identify the degree of application of technological leadership in secondary schools in Jeddah in light of the Corona pandemic from the teachers' point of view. He relied on the descriptive approach for its relevance to the nature of this study, where the opinions of teachers in secondary schools in Jeddah were surveyed about the degree of application of technological leadership in their schools in light of the Corona pandemic. The sample was (738), and to collect data, the researchers designed the questionnaire, which was prepared in an electronic questionnaire to facilitate the application process. The study concluded that

the degree of application of technological leadership in secondary schools in Jeddah in light of the Corona pandemic was medium and was arranged in descending order according to the arithmetic mean of the fields as follows: the area of productivity and professional practice, then the field of assessment and evaluation, then the field of learning Education, then the field of social, legal and ethical issues, then the field of support, management and operations, and finally the field of leadership and vision. The study also showed that there were statistically significant differences for the application of technological leadership in the light of the Corona pandemic, attributed to the variable of gender in favor of males and the variable of qualification in favor of graduate studies. Also, to the variable number of years of service in favor of 10 years and more, and to the variable type of building in favor of government buildings.

Study (3): Al-Shdeifat study (2020) aimed to identify the reality of the employment of distance education due to the Corona pandemic in the schools of Mafraq Governorate from the point of view of schools principals. The study used the descriptive approach, where the study sample consisted of (145) principals (males and females) in the schools of Mafraq Governorate. The results showed that there were statistically significant differences in the estimates of the study sample of the reality of the employment of distance education due to the Corona crisis from the principals' points of view of the school of Mafraq Governorate, according to the gender variable, in favor of females. And there were no statistically significant differences in their estimates of the reality of the employment of distance education due to the Corona crisis from the principals' points of view of the Mafraq Governorate schools, according to the variable of the educational stage.

Study (4): The study of El Firdoussi, Lachgar, Kabaili, Rochdi, Goujdami, & El Firdoussi (2020) aimed to investigate and evaluate distance learning in Morocco during the Corona pandemic. This research included (3037) students and (231) professors registered in different stages of higher education programs. The study results found that online learning is not more interesting than regular learning, and professors need at least 50% in-person teaching. At the educational and technical levels, the study recommended the need for technical support and training on the use of these tools; to promote distance education in Morocco.

Study (5): Al-Taweer's study (2020) aims to use digital technology to employ it in the educational process in Libya and the repercussions of the Corona crisis and to search for solutions to it. The descriptive-analytical method was used in this study. The study reached several results, the most important: The use of contemporary technology leads to creativity and innovation in teaching. The study also recommended raising the degree of interest and awareness of all faculty members in schools and universities using modern technology and its essential role by intensifying training courses and workshops, which would help the success of the educational process.

Study (6): The study of Qunaibi, Ziada, Rashid, Sunolai, Zahir, and Qutina (2020) aimed to identify the reality of e-learning in Palestine during the Corona pandemic from the teachers' point of view,

and the study used the descriptive-analytical method and a sample of (256) teachers was selected. The study reached several results, the most important of which are: The Palestinian curriculum is in great need of development to be compatible with e-learning, and the degree of teachers' practice of e-training is moderate. The results also showed the teachers' demand for e-learning platforms within a single reference.

Study (7): The study of Al-Nawaji (2020) aimed to know the degree to which government school principals practice technological leadership and its relationship to the level of administrative communication from their point of view. The descriptive correlative approach was used, and the questionnaire was used for data collection. The sample consisted of (300) male and female teachers from the public schools affiliated with Ain Al-Basha District. The results showed how government school principals in Ain Al-Basha District practice technological leadership from the teachers' point of view. The level of administrative communication came to a medium degree. Also, the results showed no statistically significant differences in the estimates of the sample members according to the variables of gender, experience, and academic qualification.

Study (8): The Upoalkpajor (2020) study aimed to examine the impact of the Corona pandemic on education in Ghana. The study used descriptive and explanatory approaches. The study sample consisted of (100) teachers and students from secondary schools in the urban area of Tamale in the northern region of Ghana. The study results revealed that the Corona pandemic is having a significant impact on education in Ghana. Depending on the study results, schools want resources; to rebuild the loss in education through the pandemic.

Study (9): Amayreh and Ashour (2019) conducted a study entitled the degree of the practice of transformational leadership among school principals in Irbid district and its relationship to decision-making effectiveness from teachers' point of view. They aimed to identify the degree of the practice of transformational leadership among school principals and its relationship to decision-making effectiveness from teachers' point of view in Irbid district. The study sample consisted of (253) male and female teachers of the basic stage, and (193) male and female secondary stage teachers are working in government schools affiliated to the Irbid Education Directorate were chosen at random. The descriptive survey method was used to achieve the goal of the study, where the transformational leadership questionnaire and the decision-making effectiveness questionnaire were used. The study results showed that the degree of transformational leadership practice of school principals in the Irbid Education Directorate was on average from the teachers' point of view. The results also showed that the degree of effectiveness of decision-making among school principals in the district of Irbid was on average from the teachers' point of view. The results also revealed a positive and statistically significant relationship between the practice of transformational leadership by the principals of Irbid Education Schools and the effectiveness of decision-making. In light of the results, recommendations were made.

Study (10): Khattab and Sharman (2018) presented a study in their secondary schools for technological leadership and education sciences in their schools in Amman. The study sample consisted of (370) male and female teachers selected by stratified random method from government and private secondary schools. Two tools were used for the study: the first to measure the degree to which secondary school principals practice technological leadership in the capital, Amman, and the second to measure the degree of change leadership for these principals. The validity and reliability of the two tools were confirmed. The data were also statistically processed using arithmetic means, standard deviations, ranks, Pearson correlation coefficient, Crowe-Nacho's alpha equation, two-independent test, one-way ANOVA, and Scheffe test. Among the most important findings of the study, the degree to which secondary school principals practice technological leadership in their schools from the teachers' point of view in the capital, Amman, was medium. And the degree of the practice of secondary school principals to lead change in their schools from the teachers' point of view in the capital, Amman, was high.

Study (11): Abd ALRahman (2018) conducted a study that aimed at revealing the reality of the application of electronic management in the functions of administrative operations among Jordanian school principals in the capital governorate, Amman, from the point of view of the principals themselves. The descriptive approach was used. The questionnaire was used as a tool for data collection, and the study sample consisted of (330) principals. The results showed that electronic management came to a large degree. There were statistically significant differences in the estimates of the study sample members due to the variable of the type of schools in all fields.

Study (12): Saleh and Abu Mokh (2017) presented a study entitled "The degree to which school principals practice leadership skills within the Green Line in Palestine from the teachers' point of view in light of the two entrances to the learning organization and organizational culture." They aimed to identify how primary school teachers practice leadership skills from the teachers' point of view within the Green Line in Palestine in light of the organization of learning and organizational culture. The researchers prepared two tools; the first was a questionnaire consisting of (52) items to know the degree of practicing leadership skills from the teachers' point of view, which consisted of four areas. The second was a questionnaire that included (34) items to know the organization of learning and the degree of implementation of organizational culture from the teachers' point of view. The study sample consisted of (230) teachers. The study results showed that the degree to which primary school teachers practice leadership skills from the teachers' point of view was generally high. The skills were as follows: interpersonal skills, managerial skills, cognitive skills, and human social skills, respectively. And it revealed that there are no statistically significant differences between the averages of primary school teachers' practitioners to the degree of practicing leadership skills from the teachers' point of view due to the variables of gender, academic rank, experience, and schoolwork. However, primary school implementation of a learning organization and organizational culture from the teachers' point of view was

high. Moreover, there was a positive correlation between the practice of leadership skills and other domains and their schools' application of the learning organization and organizational culture as a whole, on the other hand, from the teachers' point of view.

Study Population:

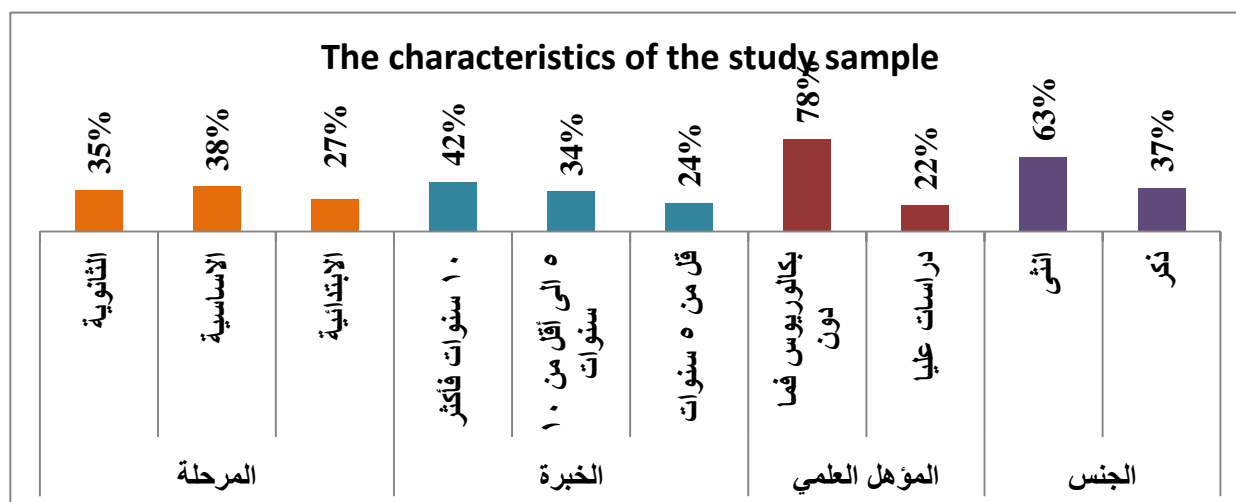
The study population consists of all private and public-school teachers in the Hashemite Kingdom of Jordan in the Aqaba Governorate.

Study sample:

Due to the large size of the original community, a random sample of government schoolteachers was selected in some government schools in Aqaba. Their number was (200), and this is the number that responded to the questionnaire "The degree of application of government school principals to technological leadership in Aqaba Governorate in light of the Corona pandemic from the teachers' point of view" Table (1) shows the study sample:

Table (1) Distribution of the study sample according to its variables

Gender	Number	percentage
Male	74	%37
Female	126	%63
Total	200	%100
Qualification	Number	Percentage
Postgraduate	44	%22
Bachelor's degree or less	156	%78
Total	200	%100
Experience	Number	Percentage
Less than 5 years	48	%24
5 to less than 10 years	68	%34
10 years and more	84	%42
Total	200	%100
Stage	Number	Percentage
Basic	54	%27
Primary	76	%38
Secondary	70	%35
Total	200	%100



Source: Prepared by the researcher based on the outputs of the SPSS V.20

Instruments of the Study:

The researcher developed the study tool in the form of a questionnaire according to the fields of study to determine the degree to which government school principals apply technological leadership in the Aqaba Governorate in light of the Corona pandemic from the teachers' point of view.

Questionnaire:

The questionnaire consisted of (35) items in its initial form, and the researcher distributed it to two different fields: the first relates to collecting personal information about the study sample members: gender (male, female), educational qualification (postgraduate studies, bachelor's degree and below), experience (less than 5 years, 5 to less than 10 years, 10 years and more) and School stage (primary, elementary, high school); The second includes (35) items, and the paragraphs of these domains were designed using the five-point Likert scale, which included the following degrees of use: (5) strongly agree, (4) agree, (3) somewhat agree, and (2) not agree, and (1) strongly disagree.

Validity of the study instrument:

The validity of the content of the study instrument was verified by presenting it in its initial form, and it was (40) paragraphs on (3) judges specialized in curricula and teaching methods. They were asked to judge each paragraph of the article. It is a tool in terms of clarity, the integrity of the language, and the extent to which it is related to the field in which it is classified, then adding, deleting, modifying, or any observations they consider essential. Based on the judges' opinions, observations and suggestions, some paragraphs were reformulated, modified, and deleted so that the number of paragraphs of the scale became (35) paragraphs.

4- Results and Discussion.

This study examined the degree to which government school principals apply technological leadership under the conditions of the Corona pandemic from teachers' point of view. She highlighted many interrelated problems and challenges, including infrastructure barriers, the digital divide in terms of access and use, and skill gaps for principals and teachers in public schools. It also aimed to know the impact of each variable (gender, educational qualification, practical experience, stages) on the degree of application of government school principals to technological leadership in the Aqaba Governorate from the teachers' point of view in light of the Corona pandemic.

The study results concluded that the degree of application of digital leadership by government school principals in the conditions of Corona in the Aqaba Governorate during the Corona epidemic was medium.

First: Presentation and discussion of the results of the first question: "What is the degree to which government school principals apply technological leadership in Aqaba Governorate during the Corona pandemic from the teachers' point of view?"

Table No. (2) indicates the answers of the study sample members to the items related to the study tool, as the arithmetic averages for this dimension ranged between (3.70-4.60) on the five-point Likert scale, which indicates the high level of application of government school principals to technological leadership in Aqaba Governorate, in light of the Corona pandemic from teachers' point of view.

Paragraph No. (10) came in the first place, which states, "The principal uses the presentation program during school meetings, " with an arithmetic mean of (4.60) and a standard deviation of (0.70). While Paragraph No. (28) states, "The principal makes supervisory visits to teachers during their training of students in remote meetings, "on the last rank, with a mean of (3.70) and a standard deviation of (0.48).

Table (2) Arithmetic means and standard deviations of the responses of the study sample members on the items of the questionnaire and the tool as a whole

N	Item	means	St.d	ranking	level
1	The principal seeks to exploit all technological means to meet the challenges of distance education in light of Corona	4.50	0.71	6	High
2	The principal is a role model for teachers in applying technology and employing it in distance education	4.40	0.70	10	High
3	The principal relies on the results of scientific research and questionnaires in building the technological aspect of the school's development plan	4.00	0.82	30	High
4	The principal ensures that the technological means that are used achieve the educational objectives	4.40	0.84	9	High
5	The principal depends on modern technical media, the Internet, and the computer; Which makes the learning process more fun, exciting and interesting	4.20	0.63	23	High

N	Item	means	St.d	ranking	level
6	The principal uses presentations during school meetings	4.60	0.70	1	High
7	The principal closely follows up on issues related to the periodic maintenance of technology and communication tools in the school	4.10	0.32	29	High
8	The principal r is constantly following up on teachers' use of technology tools and diversification in them during remote teaching under the circumstances of Corona	4.20	0.79	19	High
9	The principal directs teachers to the necessity of communicating with students using technology	4.00	0.67	32	High
10	The principal is quick to respond when malfunctions and damage occur in educational technology tools	4.20	0.63	22	High
11	The principal assists teachers and students in facilitating the use of technology	4.20	0.63	21	High
12	The principal seeks to provide modern computer programs for education in distance learning conditions in light of the Corona pandemic	4.20	0.42	24	High
13	The principal is constantly communicating with officials in the Ministry of Education to provide suggestions on keeping pace with technological developments	4.10	0.99	25	High
14	The principal directs teachers to the necessity of completing their work, such as using the Excel program to save students' grades	4.10	0.57	28	High
15	The principal is keen to direct teachers to enter and save students' grades on the EMIS system as soon as possible	4.20	0.79	18	High
16	The principal takes appropriate corrective actions when any technical or technological problem occurs that disrupts the work	4.10	0.57	27	High
17	The principal uses remote video communication such as (ZOOM, TEAMS) to hold remote meetings with teachers	4.30	0.82	14	High
18	The principal adopts modern technological programs in communicating with students and parents	4.10	0.74	26	High
19	The principal urges parents to activate the use of technology tools to follow up on their children	4.30	0.67	17	High
20	The principal is interested in holding meetings and lectures to develop technical skills on all sides of the educational process	4.30	0.67	16	High
21	The principal conducts remote training courses for teachers on the use of technical tools and interactive programs in cooperation with specialized experts	4.60	0.52	2	High

N	Item	means	St.d	ranking	level
22	The principal relies on official communication channels such as the ministerial email to communicate with teachers and students and provide them with instructions and developments.	4.50	0.53	8	High
23	The principal seeks to urge teachers and students to digital citizenship	4.30	0.95	11	High
24	The principal takes all preventive measures and electronic protection to try to counter any acts of penetration of the e-learning system	4.00	0.67	31	High
25	The principal urges teachers to follow up on students during the distance learning process and prevents students from being bullied online	4.50	0.71	5	High
26	The principal takes appropriate measures to deter any student trying to bully his classmates	4.30	0.67	15	High
27	The principal follows up on students who do not respond to the teacher during remote meetings	4.50	0.53	7	High
28	The principal makes supervisory visits to teachers during the training of students in remote meetings	3.70	0.48	35	High
29	The principal motivates teachers who strive to diversify the educational tools that make teaching more fun and interactive	4.30	0.82	13	High
30	The principal identifies strengths and weaknesses in employing technology to improve education	4.20	0.63	20	High
31	The principal sets long-term outcomes for employing technology in administrative and educational processes	4.50	0.71	4	High
32	The principal encourages teachers to evaluate the technological tools used to improve educational outcomes based on their satisfaction	4.00	0.47	33	High
33	The principal is keen to provide electronic copies of educational bulletins to all teachers in the school	4.30	0.82	12	High
34	The principal keeps pace with educational developments in the field of technology and its uses in the educational and administrative process	3.90	0.57	34	High
35	The principal collaborates with highly qualified teachers in employing technology to improve educational processes	4.50	0.71	3	High

Source: Prepared by the researcher based on the outputs of the SPSS V.20 program (the level of significance used is $\alpha = 0.05$).

The table shows the low dispersion in the participants' answers about technology, which indicates the convergence in the members' views of the analysis unit about the reality of the company's interest in

the technology field and its influential role in the company. In general, it turns out that the level of technological leadership by government school principals in the Aqaba Governorate in light of the Corona pandemic was high.

Second: presentation and discussion of the results of the second question: "Are there statistically significant differences at ($\alpha = 0.05$) in the degree to which government school principals apply technological leadership in Aqaba Governorate in the light of the Corona pandemic from teachers' point of view due to the variables: gender, years of experience, and educational qualification

In order to answer this question, the arithmetic means and standard deviations of the responses of the study sample members were calculated for each paragraph of the questionnaire according to the variables of gender, scientific level, experience, and stage, as shown in Table (3).

Table (3) Arithmetic means and standard deviations of the responses of the study sample members on the items of the questionnaire and the tool as a whole according to the variables of gender, qualification, experience, and stage

Gender	Arithmetic means	standard deviations
Female	4.55	0.156
Male	3.78	0.094
Qualification		
Postgraduate	4.16	0.465
Bachelor's degree or less	4.36	0.356
Experience		
Less than 5 years	4.06	0.461
5 to less than 10 years	4.35	0.433
10 years and more	4.30	0.452
Stage		
Basic	3.97	0.364
Primary	4.31	0.467
Secondary	4.40	0.416

Source: Prepared by the researcher based on the outputs of the SPSS V.20 program (the level of significance used is $\alpha = 0.05$).

Table (4): Results of the three-way variance analysis on the tool as a whole according to the variables of gender, educational qualification, years of experience, and educational stage

Variance	Sum of squares	Degrees of freedom	Mean squares	F. value	Statistical significance
Gender	1.411	1	1.411	75.82	0.000

Variance	Sum of squares	Degrees of freedom	Mean squares	F. value	Statistical significance
Qualification	0.094	1	0.094	0.512	0.495
Experience	0.142	2	0.071	0.351	0.716
Stage	0.335	2	0.168	0.958	0.426
The error	22.00	193			
Total	51.00	199			

Source: Prepared by the researcher based on the outputs of the SPSS V.20 program (the level of significance used is $\alpha = 0.05$).

Table No. (4) shows that there are statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the impact of gender among teachers and the rest of the variables (educational qualification, years of experience, school stage). However, there are no statistically significant differences at the significance level ($\alpha \leq 0.05$). And to look at the differences attributable to gender, the following table shows this.

Variance	Gender	Arithmetic means	standard deviations	T Values	Indication value
The tool as a whole	Female	4.55	0.156	8.707	0.000*
	Male	3.78	0.094		

Source: Prepared by the researcher based on the outputs of the SPSS V.20 program (the level of significance used is $\alpha = 0.05$).

It is clear from the above table that the gender differences tend in favor of females with arithmetic mean higher than the arithmetic mean for males. Whereas the females see the administration's application of technological leadership to provide the student's right to learn despite the challenges that the Kingdom is experiencing as a result of the Corona pandemic in the educational sector and other sectors.

Recommendations.

In light of the findings, the study recommends the following:

- 1- Supporting the progress of e-learning in the future by applying distance learning better at the school level, whether during typical or emergencies.
- 2- Many actions are still needed to develop and improve technological leadership in distance education, such as managing technical problems and especially the free supply of equipment/internet, including its school fees.
- 3- Providing all parties to the educational process with the necessary training to improve their skills in dealing with distance education technologies and the need to provide technological education resources in schools with the lowest technology tools.

- 4- Provide advice and guidance to decision-makers to develop more innovative and exciting educational tools and implement a more synchronized education system.
- 5- Providing more interactive teaching tools, which depend on using technology to meet the needs of the teacher and student, giving electronic copies of educational bulletins, and holding remote meetings on how to employ technology in school administration and education.
- 6- Disseminating experiences of applying technological leadership in various educational institutions and sharing and transferring knowledge between these institutions and technology leaders in a way that enhances the development of these experiences and expands their reach.
- 7- Improving the level of electronic awareness about the issues of piracy, plagiarism, and cyberbullying.

References.

English references:

- 1- Bozkurt et al. (2020). A global outlook to the interruption of education due to COVID19 Pandemic: Navigating in a time of uncertainty and crisis. Asian Journal of Distance Education, 15(1), 1-26.
- 2- Elfirdoussi, Selwa, Mohamed Lachgar, Hind Kabaili, AbdelaliRochdi, DrissGoujdami, and Larbi El Firdoussi. "Assessing distance learning in higher education during the COVID-19 pandemic." Education Research International 2020 (2020).
- 3- Upoalkpajor, Joshua-Luther Ndoeye, and Cornelius BawaUpoalkpajor. "The impact of COVID-19 on education in Ghana." Asian journal of education and social studies 9, no. 1 (2020): 23-33.

Arabic references

- 1- الأغا، احسان (1997) البحث التربوي "أدواته مناهجه، وعناصره". مطبعة الرنتيسي.
- 2- سعادة، نانسي خالد؛ حمزة، محمد عبد الوهاب (2021). درجة ممارسة القيادة التكنولوجية لدى مديري المدارس الأساسية في عمان في ظل جائحة كورونا من وجهة نظر المعلمين. رسالة ماجستير غير منشورة، كلية العلوم التربوية جامعة الشرق الأوسط.
- 3- الشديفات منيرة عبد الكريم (2020). "واقع توظيف التعليم عن بعد بسبب مرض الكورونا في مدارس قصبة المفرق من وجهة نظر مديري المدارس فيها". المجلة العربية للنشر العملي، العدد التاسع عشر تاريخ الإصدار: 2 – أيار – 2020 م ISSN: 2663-5798
- 4- الشمران، عاطف؛ أبو حميد، إيفيت خطاب (2018). درجة ممارسة قائدي المدارس الثانوية للقيادة التكنولوجية وعلاقتها بدرجة قيادة التغيير في مدارسهم من وجهة نظر المعلمين في عاصمة عمان، دراسات العلوم التربوية، 45، (4).
- 5- صالح، علي محمد جبران؛ أبو مخ، محمود محمد زكي (2017). درجة ممارسة مديري المدارس للمهارات القيادية داخل الخط الأخضر في فلسطين من وجهة نظر المعلمين في ضوء مدخلي المنظمة المتعلمة والثقافة التنظيمية. المجلة الدولية للبحوث التربوية جامعة الامارات العدد (1) المجلد (41)

- 6- عبد الرحمن، إيمان جميل (2018) واقع تطبيق الإدارة الإلكترونية في وظائف العمليات الإدارية لدى مديري المدارس الأردنية في محافظة العاصمة عمان وسبل تطويرها. مجلة الجامعة الإسلامية للدراسات التربوية والنفسية، (2)26، 1-29.
- 7- عميرة، رضا "محمد سعيد"؛ عاشور، محمد علي (2019). درجة ممارسة القيادة التحويلية لدى مديري المدارس في مديرية قصبة إربد وعلاقتها بفاعلية اتخاذ القرار من وجهة نظر المعلمين. مجلة الجامعة الإسلامية للدراسات التربوية والنفسية ISSN 2410-3152
- 8- قنيبي، زيادة؛ رشيد، صانولاي؛ ظاهر، وقطينة(2020). واقع التّعليم الإلكتروني في السّياق الفلسطيني من وجهة نظر المعلمين. الشبكة المشتركة لوكالات التعليم.
- 9- المالكي، عادل عازب؛ اليزيدي، نايف عايد؛ اليزيدي، عبد الرحمن مليح؛ الطويرقي، وليد حميد؛ الجهني، عبید الله حسين (2021). درجة تطبيق القيادة التكنولوجية في المدارس الثانوية بجدة في ضوء جائحة كورونا من وجهة نظر المعلمين والمعلمات. مجلة كلية التربية، جامعة الطائف، المجلد السابع والثلاثون - العدد العاشر
- 10- النواجي، لعي (2020) درجة ممارسة مديري المدارس الحكومية في الرदन للقيادة التكنولوجية وعلاقتها بمستوى الاتصال الإداري من وجهة نظر المعلمين، (رسالة ماجستير غير منشورة) ، جامعة عمان العربية، عمان، الاردن.