

# DEGREE OF ELECTRONIC MANAGEMENT USE AMONG PUBLIC SCHOOL PRINCIPALS AND ITS RELATIONSHIP TO THE QUALITY OF ADMINISTRATIVE WORK IN AL KHOBAR

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## ABSTRACT

*This article aimed to identify the degree to which public school principals use e-management and its relationship to the quality of administrative work in Al-Khobar. The study used descriptive and correlative approaches. A questionnaire was used to collect responses from 38 principals. The results showed a high degree of electronic management use, with an average score of 3.99 (standard deviation=0.628) as well as a high degree of quality of administrative work, with an average score of 3.94 (standard deviation=0.694); there was a strong correlation relationship between electronic management and quality of administrative work (statistically significant at the 0.01 level). The results suggest the need for continuous improvement in work performance by increasing awareness of the importance of using computer hardware and its application programs as well as increasing administrative communication between staff and administrative levels, and conducting more on-going training on the use of computer electronic devices and access to all new application computer programs.*

**Keywords:** Administration, School Administration, Electronic Management, Quality, Administrative Work and Quality of Administrative Work.

## INTRODUCTION

The current era is witnessing rapid changes and developments in the field of information and communications technology (Bandura, 2002), which has in turn affected all areas of life, including the educational field. Such changes have contributed to the development of school management performance through the emergence of a modern administrative method that differs from the traditional method (Terry, 1998) as it can work electronically to promote school administration performance. Enhance performance can lead to saving time, reducing costs, facilitating administrative work procedures, and achieving educational and learning goals at a high speed (Guskin, 1994).

As a result of this technological development, the use of electronic management in all its forms has become a priority of educational systems around the world (Brown & Thompson, 2011) for many reasons, including increased knowledge growth, impact of technology and communications on societies and lifestyles today and in the future, and need to use technology in administrative work in order to improve the teaching and learning process. Therefore, school administration has increased its use of electronic management in the performance and

implementation of its various administrative works (Al-Nawashi, 2009). The principal understands the goals of the administrative process and works to develop a vision for the school and what it should be in the future; he or she sets educational goals and works to achieve them effectively using technological devices (Al-Mikhlaifi, 2017). Consequently, electronic management may promote quality work, as the quality of administrative work is considered an advanced management approach without a beginning or an end. It aims to achieve continuous improvement to keep pace with the aspirations and expectations of the changing beneficiaries. Therefore, obtaining the required quality through positive change in the methods of school administrative work requires workers to have sufficient capacity and skills to use information technology (Appelbaum et al., 2000).

The use of information and communication technology has become important for school administration in the current educational field; however, principals use electronic management according to their skills and capabilities and sometimes rely on paper documents to perform and implement work (Schiler, 2003). The use of electronic management in schools is a necessary process that helps principals accomplish their various school administrative work in terms of planning, organizing, coordinating, directing, following up, and evaluating (Al-Jalabneh, 2013). Al-Jalabneh indicated that the use of electronic management helps facilitate access to information through its presence on the information network while Owain (2017) indicated the ability of electronic devices to store, process, and retrieve information. Meanwhile, Blackwell (2009) indicated that principals' use of information technology in school administrative work made them more capable and more effective in carrying out their work. According to Brock (2017), the use of information technology in school administration greatly affects the leadership process.

However, activating the use of electronic management in schools to perform administrative tasks, thereby developing and improving the performance of school administrative work, is still below the hoped-for level. Hamdi (2008) pointed to the reliance on paper documents more than electronic ones, in addition to having difficulty finding the time to deal with electronic management. Al-Qarni (2011) found few training courses for administrators in computer applications. Meanwhile, school administrators are dealing with a large number of students and teachers, increased school burdens, and the difficulty of transferring and saving information electronically (Al-Rashidi, 2014). Previous studies have shown the reality of activating electronic management in schools, the difficulties facing principals when using them, the need for training to use technology, and the lack of the necessary time to deal with students and teachers due to the large amount of administrative work. Thus, this study seeks to determine the degree of principals' use of electronic management in accomplishing their various administrative works.

This study asks the following question: To what degree do principals use electronic management and what is its relationship to the quality of administrative work in Al-Khobar? This question is further divided into the following sub-questions:

- According to principals in Al-Khobar, to what degree do they use e-management?
- According to principals in Al-Khobar, what is the level of quality of their administrative work?
- According to principals in Al-Khobar, is there a statistically significant relationship between their degree of electronic management use and the quality of their administrative work?
- Are there statistically significant differences (at  $\alpha \leq 0.05$  level) in the degree of electronic management use among principals in Al-Khobar attributable to specialization and/or number of years of service?

## LITERATURE REVIEW

Technological progress and development at the global level have led to more recent changes and developments (Grübler, 2003), leading to need for all educational institutions to use modern administrative patterns in order to keep pace with this development (Altbach, 2005). This has led to the emergence of electronic management, which enabled many educational institutions, including schools, to process their various documents and administrative operations in an electronic manner. However, the result has been a decline in paper transactions and reliance on electronic methods instead of traditional methods when performing and implementing various administrative actions (Staples et al., 2005). Electronic management is limited to not only its technological dimension represented in digital technology, but also its administrative dimension represented in developing various administrative functions. It works to achieve more flexibility and speed when performing various administrative functions, such as planning, organization, coordination, follow-up, and evaluation as well as delegation and administrative empowerment and enhanced effectiveness of administrative performance (Asiri, 2016).

According to Greenland (2019), Electronic management involves using those electronic technologies through which information can be accessed as it includes any type of communication devices and applications. The use of electronic management in the implementation of all administrative processes is currently considered one of the most important processes because it is significant for communication among individuals working in educational institutions. The importance of electronic management can be clarified as follows (Budhiraja, 2001): it helps facilitate the administrative communication among workers in educational institutions; it helps reduce the use of paper when performing various tasks; it provides flexibility for employees working in the educational field so they can enter the network at any time, any place, and any time; and it improve the effectiveness of decision-making through the presence of information and data on the network and access to it at any time.

### **E-management Applications in School Administration**

A set of electronic applications applied in school administration helps principals to facilitate the performance of various works and obtain better services (Grönlund, 2001). The most important of these are school administration affairs, school personnel affairs, students' school affairs, and curriculum (Al-Rashidi, 2012; Asmari, 2009; Al-Qasim, 2010).

### **Quality of Administrative Work**

In order to achieve good management to ensure access to good services for beneficiaries, the administration must seek restructuring, whether at the field or activity level. This requires institutions to define quality for them and determine where they are going, the extent of changes to administrative methods when performing and executing various actions to reach a high level of production, and that the goals pursued are achieved quickly and with high efficiency (Sadiq, 2014).

Radwan (2012) identified a number of quality concepts as defined by scientists, noting that quality refers to being appropriate for use. According to Bowers et al., (2018), quality is a set of properties or components represented in four components: process control, continuous improvement, commitment to work, and cognitive progress. Finally, quality describes an

improvement that can be obtained as a result of focusing on the needs of beneficiaries and working to implement those (Manatos, 2017).

Quality of administrative work can be expressed by excellence, accuracy, and proficiency in the performance and implementation of principals for their various school administrative works, where the quality of administrative work can be defined as a measure of the compatibility of the service provided with the beneficiaries' expectations (Al-Ghazali, 2017). The importance of quality administrative work for individuals who benefit from service in educational institutions is a meaningful means for achieving success and stability as well as continuing to perform and implement school administrative work. The importance of quality of administrative work in the educational field can be explained in three areas: growth of the service, increased competition, provision of service (Al-Ghazali, 2017).

### **Application of Quality Administrative Work in Schools**

Maliki (2015) identified ways to apply the quality of administrative work in schools, such as continuously developing and improving, performing the right work from the beginning, obtaining the correct information to make appropriate decisions, following up on and directly supervising individuals, defining the school's mission and vision and linking them to the vision of education and its mission, promoting participation on school boards and in parents' councils, developing curricula and training workers to teach them, preparing the annual plan and ensuring that students acquire the basic skills, and activating the role of technology in education.

Al-Refaah (2015) identified a number of ways in which quality can be achieved in administrative work, including quality planning (i.e. determining tasks and activities that define quality goals and requirements), quality control (i.e. following up on the implementation of work to reduce errors), quality assurance (i.e. planning and applying methodological activities within the quality system), and quality improvement (i.e. increasing the effectiveness of activities and operations and their returns in order to achieve additional benefits for the school and its beneficiaries).

## **METHODOLOGY**

In order to achieve the objectives of the current study, which was conducted the first semester of 2019-2020, a relational descriptive approach was used (Al-Zuhairi, 2017).

### **Participants**

The study population consisted of all 43 principals of government public education schools (boys) for the primary, intermediate, and secondary school stages in Al-Khobar. Thirty-eight principals responded to the request to participate, representing 88.4% of society as a whole. Sample members who are literary specialization constituted the highest percentage, 55.3% (21), compared to 44.7% (17) for scientific specialization, suggesting that the majority of principals in Al-Khobar specialize in the literary field. Meanwhile, 52.6% (20) of principals had 1 to fewer than 15 years of experience, compared to 47.4% (18) with 15 or more years of experience. Thus, the majority of principals have fewer than 15 years of service in education.

To achieve the objectives of the study, a questionnaire consisting of two axes was built in order to measure the variables of the study. The questionnaire was prepared after reviewing theoretical literature and previous studies related to the subject (e.g. Al-Dahdouh, 2015; Ashqar,

2018; Darwish, 2011). It was formulated in a clear and understandable way for respondents to achieve the objectives of the study. The questionnaire, in its final form, consisted of two parts: basic primary data and demographic variables (i.e. type of specialization and number of years of service) and four fields consisting of 39 phrases distributed on two axes. The first axis focused on electronic management and axis consisted of three fields: school administrative affairs (9 phrases), school personnel affairs (9 phrases), and school student affairs (9 phrases). The second axis focused on the quality of administrative work and consisted of one field with 12 phrases.

### Validating the Study Tool

The validity of the study tool was verified in two ways. First, the apparent validity of the tool (the validity of referees) ensures that the questionnaire measures what it set out to measure through the clarity of its expressions and its affiliation to the field to which it belongs. To achieve this, the questionnaire was distributed to a number of academic referees specializing in educational management and other disciplines in a number of universities. Second, the internal consistency of the tool was confirmed by applying it to a survey sample (i.e. 17 principals) other than the study community of principals of general education schools. The extent to which each of the questionnaire expressions is related to the total degree of the field to which the phrase belongs as well as the extent of the association of each phrase to the axis to which the phrase belongs was determined using the Pearson correlation coefficient and was found statistically significant functions occurred at either the 0.01 or 0.05 level of significance, thereby showing validity.

### Reliability

The reliability of the study tool was confirmed by distributing it in its final form to the pilot sample of 17 principals. The instrument's reliability was calculated using the Cronbach alpha coefficient, and was ranged between (0.88-0.98) which indicates its reliability.

## FINDINGS AND DISCUSSIONS

To answer the first sub-question (i.e. According to principals in Al-Khobar, to what degree do they use e-management?), arithmetic averages and standard deviations were used (see Table 1).

Rank	Phase no.	Axis/field	Mean	Standard Deviation	Degree
<b>School administrative affairs</b>			<b>3.90</b>	<b>0.696</b>	<b>High</b>
1	6	Using computer application programs in the implementation of various school work	4.21	0.777	Very high
2	2	Finding school needs electronically	4.05	0.957	High
3	7	Using email to communicate with outside school	4.05	0.985	High
4	8	Preparing reports of the completed administrative works and sending them electronically	4.00	0.771	High
5	5	Preparing school plan electronically	3.95	0.985	High

6	1	Saving school information electronically	3.87	0.935	High
7	9	Following up on the implementation of the various educational activities electronically	3.87	0.935	High
8	3	Distributing the various tasks to the workers electronically	3.58	1.05	High
9	4	Providing services to students and workers electronically	3.50	0.980	High
School personnel affairs			<b>3.94</b>	<b>0.693</b>	<b>High</b>
1	2	Updating the school staff data electronically	4.45	0.828	Very high
2	1	Registering the school staff data electronically	4.42	0.722	Very high
3	7	Preparing school schedules for teachers electronically	4.42	0.793	Very high
4	4	Tracking attendance and absence of workers electronically	4.39	0.974	Very high
5	5	Communicating with school staff electronically	4.00	0.900	High
6	3	Following up on the implementation of the work electronically	3.87	1.07	High
7	6	Preparing training programs for teachers electronically	3.50	1.05	High
8	8	Receiving teachers' opinions on textbooks electronically	3.32	1.07	Medium
9	9	Registering books distributed to teachers electronically	3.11	0.981	Medium
School student affairs			<b>4.12</b>	<b>0.645</b>	<b>High</b>
1	4	Conducting online registration of students' quarterly and annual grades	4.68	0.662	Very high
2	6	Using computers in designing and printing student documents	4.58	0.683	Very high
3	1	Recording student data annually in electronic form	4.53	0.797	Very high
4	2	Updating student data electronically	4.36	0.823	Very high
5	3	Recording attendance and absence of students using the computer	4.34	0.966	Very high
6	7	Sending reports to parents of students on the level of achievement of their children electronically	4.26	0.891	Very high
7	5	Distributing various educational activities among students electronically	3.61	0.916	High
8	9	Designing training courses for students using computers	3.42	1.05	High
9	8	Registering books distributed to students electronically	3.24	1.28	Medium
<b>E-management: the degree of use of e-management among principals of general education schools</b>			<b>3.99</b>	<b>0.628</b>	<b>High</b>

Table 1 shows that general education principals had a high degree e-management use, with an average of 3.99 (standard deviation=0.628). The top three ranked phrases were 4 (school student affairs), 2 (school personnel affairs), and 6 (school administration affairs). Phrase 4 (school student affairs), “conducting online registration of students’ quarterly and annual

*grades,*” had an average of 4.68 (standard deviation =0.662); it showed a very high degree of use due to principals’ greater interest in students as the focus of the educational process. Phrase 2 (school personnel affairs), *“updating the school staff data electronically,”* had an average of 4.45 (standard deviation=0.828); it showed a very high degree of use due to principals’ interest in workers, who are the main element in transferring knowledge and bear the greatest burden in educating students on all kinds of sciences and knowledge. Phrase 6 (school administration affairs), *“using computer application programs in the implementation of various school work,”* had an average score of 4.21 (standard deviation=0.777); it showed a very high degree of use because principals rely on electronic technologies and application programs to carry out and implement administrative work, such as planning, coordination, guidance, and follow-up.

The three lowest ranking expressions were 8 (school personnel affairs), 8 (school student affairs), and 9 (school personnel affairs). Phrase 8 (school personnel affairs), *“receiving teachers’ opinions on textbooks electronically,”* had an average of 3.32 (standard deviation=1.07); it showed a moderate degree of use as teachers express their views of textbooks directly to the educational supervisor and use school meetings to put forth proposals and opinions on everything related to developing the educational process, without needing to send such information electronically. Phrase 8 (school student affairs), *“registering books distributed to students electronically,”* had an arithmetic average of 3.24 (standard deviation=1.28); it showed a moderate degree of use because administrative employees deliver books to students and register delivery on paper, so no electronic distribution record is necessary. Phrase 9 (school personnel affairs), *“registering books distributed to teachers electronically,”* had an average score of 3.11 (standard deviation=0.981); it was used to an average degree because books are delivered to teachers and their registration is done on paper instead of electronically or because teachers obtain the textbook electronically because they are confident teaching the subject without the teacher’s book.

To answer the second sub-question (i.e. According to principals in Al-Khobar, what is the level of quality of their administrative work?), arithmetic averages and standard deviations were extracted (see Table 2).

Rank	Phase no.	Phase	Mean	Standard deviation	Degree
1	8	Improving the performance and competence of teachers	4.11	0.798	High
2	10	Continuously improving the performance and implementation of works	4.05	0.804	High
3	12	Providing fast access to school administrative information anytime and anywhere	4.04	0.928	High
4	7	Improving the level of performance and efficiency of administrators	4.03	0.822	High
5	6	Increasing the speed of completion of work on time and with high accuracy	4.00	0.838	High
6	1	Improving the school educational environment	3.97	0.788	High
7	9	Reducing the cost of accomplishing various tasks	3.92	0.818	High

8	2	Fulfilling school staff requirements quickly	3.87	0.906	High
9	11	Helping principals achieve school goals at a high speed	3.84	0.886	High
10	3	Developing many cognitive skills for individuals working	3.84	0.718	High
11	5	Facilitating administrative communication between teachers and administrative levels	3.82	0.865	High
12	4	Developing many professional skills for staff	3.79	0.777	High
<b>Total score for level of quality of administrative</b>			<b>3.94</b>	<b>0.694</b>	<b>High</b>

Table 2 shows that the total score for the level of quality of administrative work for principals in Al-Khobar had an average of 3.94 (standard deviation=0.694) and was used to a high degree. The two highest ranking phrases were 8, “*improving the performance and competence of teachers,*” with an average of 4.11 (standard deviation=0.798), and 10, “*continuously improving the performance and implementation of works,*” with an average of 4.05 (standard deviation=0.804). Both phrases showed a high degree of use because, for Phrase 8, principals were setting up training courses for teachers to teach them to deal with the school curriculum by preparing lessons and appropriate teaching aids for different lessons. Meanwhile, for Phrase 10, principals had a greater awareness of the importance of electronic management when implementing various procedures and developing the administrative methods used, developing educational activities and working to develop teachers’ capabilities and skills, and setting goals and identifying the means necessary to implement them and follow up on their implementation.

Although all phrases showed a high degree of use, the two lowest phrases were 5, “*facilitating administrative communication between teachers and administrative levels,*” with an arithmetic average of 3.82 (standard deviation=0.865), because teachers performed tasks without referring to administrators and communicated with the principal or deputy directly while implementing the tasks entrusted to them, and 4, “*developing many professional skills for staff,*” with an average score of 3.79 (standard deviation=0.777), due to principals’ large administrative and academic workloads and their focus on implementing them as well as their limited time to conduct training sessions for everyone during the school day and the large amount of school work.

To answer the third sub-question (i.e. According to principals in Al-Khobar, is there a statistically significant relationship between their degree of electronic management use and the quality of their administrative work?), the Pearson correlation coefficient was calculated between the overall degree of e-management use and its fields and the overall degree of quality of administrative work (see Table 3).

<b>Table 3</b>						
<b>PEARSON’S CORRELATION COEFFICIENT BETWEEN OVERALL DEGREE OF E-MANAGEMENT USE AND ITS FIELDS AND OVERALL DEGREE OF QUALITY OF ADMINISTRATIVE WORK</b>						
<b>Field/axis</b>		<b>School administrative affairs</b>	<b>Personnel affairs</b>	<b>Student affairs</b>	<b>E-management</b>	<b>Quality of administrative work</b>
<b>School administrative affairs</b>	Pearson correlation	1	0.838**	0.650**	0.900**	0.748**
	Significance level		0.000	0.000	0.000	0.000



	Number of phrases	38	38	38	38	38
<b>Personnel affairs</b>	Pearson correlation	0.838**	1	0.868**	0.975**	0.842**
	Significance level	0.000		0.000	0.000	0.000
	Number of phrases	38	38	38	38	38
<b>Student affairs</b>	Pearson correlation	0.650**	0.868**	1	0.902**	0.785**
	Significance level	0.000	0.000		0.000	0.000
	Number of phrases	38	38	38	38	38
<b>E-management</b>	Pearson correlation	0.900**	0.975**	0.902**	1	0.855**
	Significance level	0.000	0.000	0.000		0.000
	Number of phrases	38	38	38	38	38

\*\* Statistically significant at the 0.01 level of significance

Table 3 summarizes the relationship between electronic management and the quality of administrative work. It shows a strong correlational relationship that is statistically significant at the 0.01 level. The Pearson correlation coefficient is 0.855 (0.00 level of significance), and a strong correlation (at the 0.00 level of significance) exists between all areas of electronic management and the quality of administrative work. Thus, the more principals use computer devices in the performance and implementation of their various administrative tasks, the higher the quality of performance at work. Principals indicated widespread use of electronic management when performing administrative functions, such as planning, coordinating, leading, following up, and evaluating. They also use computers in school personnel affairs, such as registering staff data, preparing their schedules, and following up on the implementation of their various work, and in school student affairs, such as registering their data, preparing their schedules, and following their attendance and absences. Principals also use applied computer programs to prepare quarterly and annual exams and print certificates for students, which contributes to fulfilling beneficiaries' requirements, completing work quickly, and showing continuous improvement and development performance to achieve quality work.

The results of the fourth sub-question (i.e. Are there statistically significant differences (at  $\alpha \leq 0.05$  level) in the degree of electronic management use among principals in Al-Khobar attributable to specialization and/or number of years of service?) are discussed according to specialization and number of years. Arithmetic averages and standard deviations were extracted for the degree of principals' use of electronic management according to the specialization variable, as shown in Table 4. A t-test was used to indicate the significance of differences (see Table 5).

Field/Axis	Specialization	Sample	Mean	Standard deviation
School administrative affairs	Scientific	17	4.07	0.491
	Literature	21	3.76	0.813
School personnel affairs	Scientific	17	4.06	0.472
	Literature	21	3.85	0.830
School student affairs	Scientific	17	4.07	0.580
	Literature	21	4.15	0.705
Electronic management	Scientific	17	4.07	0.450
	Literature	21	3.92	0.746

Field/Axis	t value	Freedom degree	Level of statistical significance	Average differences
School administrative affairs	1.0351	36	0.185	0.303
School personnel affairs	0.938	36	0.355	0.212
School student affairs	0.383	36	0.704	0.082
Electronic management	0.702	36	0.487	0.145

Table 5 shows no statistically significant differences (at  $\alpha \leq 0.05$  level) for degree of principals' electronic management use based on specialization in all fields and the overall degree of the axis. This result is attributed to increased awareness among principals in the scientific and literary disciplines of the importance of using modern administrative patterns that depend on technology in the performance and implementation of work due to its speed in implementing various works.

Mathematical averages and standard deviations were also extracted for the degree of principals' electronic management use according to their years of service (see Table 6). A t-test was used to indicate the significance of the differences (see Table 7).

Field/Axis	No. of years of service	Sample	Mean	Standard deviation
School administrative affairs	Less than 15 years	20	4.13	0.608
	15 years and more	18	3.64	0.710
School personnel affairs	Less than 15 years	20	4.21	0.568
	15 years and more	18	3.64	0.709
School student affairs	Less than 15 years	20	4.33	0.515
	15 years and more	18	3.88	0.705
Electronic management	Less than 15 years	20	4.22	0.510
	15 years and more	18	3.72	0.652

<b>Field/Axis</b>	<b>t value</b>	<b>Freedom degree</b>	<b>Level of statistical significance</b>	<b>Average differences</b>
<b>School administrative affairs</b>	2.327	36	0.026	0.498
<b>School personnel affairs</b>	2.743	36	0.009	0.569
<b>School student affairs</b>	2.237	36	0.032	0.445
<b>Electronic management</b>	2.667	36	0.001	0.504

Table 7 shows statistically significant differences (at the  $\alpha \leq 0.05$  level) in the degree of principals' electronic management use according to years of service in all fields and the overall degree of the axis. The differences favored fewer than 15 years of service. Principals who have served for less than 15 years are more familiar with computers and their uses. Meanwhile, principals who have served for more than 15 years may prefer to use traditional methods when performing and implementing their various actions rather than relying on modern methods.

### **CONCLUSIONS AND RECOMMENDATIONS**

In light of the results of the current study, several recommendations related to electronic management are offered. First, principals should promote the provision of services to students electronically as they are the focus of the educational process. They should also promote the provision of services to workers as the primary element in student education. Second, principals should use modern computer application programs to perform work by looking at everything new in these programs. Third, principals should emphasize the importance of school meetings to provide teachers and parents with suggestions regarding the role of the educational process in development while also gathering feedback and proposals in electronic form in order to act on them. Finally, principals should follow up on providing services to students and teachers by following the arrival of textbooks for all students and teachers and recording their electronic distribution.

Regarding the quality of administrative work, the results of this study also suggest several recommendations. First, principals should upgrade teachers' competence by providing more training courses on dealing with the school curriculum by preparing lessons and choosing educational methods and appropriate teaching methods. Second, principals should increase interest in activating the electronic administrative communication among administrative-level employees by directing and instructing them to contact and communicate with administrative staff at schools. Finally, principals should promote continuous improvement and development to ensure quality in performance and develop teachers' skills professionally by providing training to develop their skills and capabilities; they should also follow up with teachers carrying out their work and direct them to use modern teaching methods and appropriate educational means for different lessons.

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