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School Administration Through the School's Electronic Management System

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Abstract: In recent years, our schools have faced the necessity of creating a new school administration system, which would provide a good basis for electronic management. In this article, we will show how an electronic school management system works, and we will track the teachers' opinions from our school regarding the use of the electronic school management system. Our research method is survey research, with quantitative and qualitative data. The selected sample is a total of 25 teachers from the primary and lower secondary school "Heronjtë e Lumës" in the village of Vërmicë, municipality of Prizren, Republic of Kosovo. Data were collected using a questionnaire. In conclusion, the findings from this study showed that the participants have a positive opinion of the school's electronic management system and it met the teachers' expectations, and they think that this system should be continued in the future. The entire school and our pedagogical staff have benefited from the use of this system.

Keywords: Administration, electronic management, management system, school leadership.

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Introduction

Over the years, information technology has shaped various industries. One sector that has benefited from various advancements in information technology is the education sector. This sector has been and will remain one of the largest in the world. As long as children continue to be engaged in learning, this industry will continue to grow and remain vibrant. With this, improvements or innovations are always included in its processes (Writer, 2021).

The literature review shows that most school managements are unsuccessful and inefficient because administrative work is done manually in all its aspects, such as management, infrastructure, finance, leadership, teachers, students, curriculum, evaluation, public relations, and cooperation (Shema, 2019). Globalization requires school management to produce human resources that are available for today's technological changes (Aliyeva, 2020).

Researchers suggest that technological innovations have helped schools to innovate in the school management system that improves their administration, performance, and quality (Alkaabi, 2018; Ilomäki & Lakkala, 2018; Sahlberg, 2020; Shema, 2019). One of the benefits of the education sector today is the electronic school management system. The electronic school management system is now being used in educational institutions around the world, where it is helping schools to deliver better results and improve school administration.

So, the Electronic School Management System uses computers and the Internet to implement the educational process with all its goals, objectives, and results. Also, it provides an electronic system for the school that takes care of the activation of the administrative side and records all administrative work and elements of electronic administration for the school. The importance of electronic school management has increased with many motivations, for the construction of a database of the school, especially of the students and teachers of the school, handling the structure of the school administration, removing the routine, boredom, and laziness that affects the teachers, the desire of the school principal to participate in a competition of good performance locally or globally, the desire of the school bodies to access the comprehensive quality and electronic management of education and to obtain its privileges.

Modules of the electronic school management system help to increase the productivity of school management and success in achieving the planned goals; the impressive ability to absorb large amounts of information and data; the possibility of discovering the extent of interconnection and coherence between components and elements of modules;

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reducing the costs of the learning process and saving time; engagement and knowledge of parents, which helps to engage the community within the school; instant access to information, where teachers can view school administration data anytime and anywhere; exceptional accuracy in the error-free output of journal statistics; continuous renewal and updating with the latest information of contemporary teaching using technology; shared digital capabilities such as depapering and traditional handling.

Identification of the Research Problem

The manual method of school management sometimes prevents good student registration, missing information monitoring, and other school activities. School administration officials are responsible for performing managerial tasks and using paper documentation. Due to the non-productivity of the current classic manual management, there are demands to create an electronic model of school management to efficiently handle administrative work.

The Ministry of Education, Science, Technology, and Innovation in the Republic of Kosovo has implemented a web application "e-School", where online communication between the Ministry-Municipality-School-Parent will be achieved through the application. The responsible officials at the level of the ministry, the municipal directorates of education, and the directorates of schools have access to the application, from which they can receive detailed information about the teaching process as a whole (Avdullahu, 2015). However, until now many schools still do not use this application. Therefore, our school developed an electronic system to effectively manage administrative work.

Purpose of Research

The advanced digital technologies available today can play a crucial role in streamlining school management activities to promote unity and trust between students, parents, teachers, and school principals. However, technology is not used to analyze data and output information. Therefore, the electronic school management system has been developed to facilitate teaching and administrative staff to manage school activities and teachers to have more complete information about their performance. Therefore, the purpose of this study is to propose a conceptual model of an electronic management system for our school and to analyze the opinions of teachers about the implementation of this system.

Literature Review

The electronic school management system is a system for managing information electronically that helps in various school affairs. It helps universities, colleges, and schools to improve their management procedures? The electronic management system does this by automating tasks such as data analysis and data entry. Automation will help schools save resources and time by eliminating the need for manual supervision, thereby reducing human resource costs (Writer, 2021).

The school's electronic management system plays a crucial role in managing the administrative functions of an institution. Such systems, if integrated with the management application, then can help facilitate communication between teachers and school administration. The system acts as one of the most important complementary tools for the functional strategy of any school. It is important for a school to formulate the system based on some credentials and to ensure that this system is attractive, educational, and useful for teachers and students. The electronic school management system helps improve efficiency and operations. Day by day the systems are being more advanced, so it is important to choose the most suitable system that will help you to manage the school in a better way. The electronic school management system is a one-stop solution for everything a school needs to function well and efficiently (Bhandari, 2023). These features have positive functions in the e-school management process, which makes the activity management processes easy, effective, low-cost, not time-consuming and personnel-intensive, reducing human errors, being more accurate and practical, as well as distributing information quickly, especially the report of the achievements of students and teachers that can be accessed by all (Setyawan, 2021). The development and implementation of the electronic school management system connect all parties involved in a well-organized digital system and helps in school management. This system can increase the productivity of the educational processes at school. This makes the interaction between administration and teachers much more efficient, and students can have easier access to the necessary learning materials (Pekisheva, 2021).

Methodology

The school "Heronjtë e Lumës" uses the electronic school management system. Below we present the administration module in this system:



Figure 1. Electronic School Management System in "Heronjtë e Lumës "

Our school's electronic management system, from a technical point of view, is a web application that uses an online database for central data storage and personal data management of all teachers and students. Maintains data for students, lesson plans for teachers, and necessary educational materials, curriculum, and administrative information for the principal. The system in our school works on the most time-consuming tasks (lesson plans, checking, posting, reporting, evaluation, etc.) are automated in this system. We expect that very soon the system will make the overall learning processes less frustrating for students with online educational materials. On the other hand, we also expect that this system will make communication faster, easier, and more productive between teachers, and parents. In addition, the system supports all workflows, so it optimizes many processes and offers customized tools for the director as well. The electronic school management system has changed school administration and management in the areas of decision-making and leadership, as well as staff management, collaboration, and planning.

Research Method

Our research method is survey research, with quantitative and qualitative data, which is defined as the process of conducting research using surveys that researchers send to respondents. The use of this method was reasonable, as our school is eager to understand what teachers think about the services of the electronic school management system and to make better decisions for the school. This type of research involves recruiting individuals, and collecting and analyzing data. Online survey research was one of the methods used for this research, which gave us very accurate responses collected from the participants.

Participants

The study was conducted in the primary and lower secondary school "Heronjtë e Lumës" in the village of Vërmica, in the municipality of Prizren, Republic of Kosovo. The school has a total of three separate physical facilities, the school in Vërmicë, Shkozë, and Dobrushtë. The selected sample is represented by the teachers of our school with a total of 25 teachers. The sample was distributed with 64% men and 36% women, with the age of 20-29 years were 20% of the participants, 30-39 years were 28%, 40-49 years were 40%, 50-59 years were 4% and 60 - 65 years old about 4%. Regarding work experience, 4% participated in the study with work experience of 0-1 years, 1-4 years 16%, 4-10 years 28%, 10-20 years 44%, and over 20 years of work around 8%. The selected sample included 1 educator preschool teacher, 11 primary school teachers, and 13 lower secondary school teachers. There were 17 teachers with bachelor's qualifications and 8 teachers with master's qualifications. However, in terms of technical knowledge, we have 16% of participants with basic knowledge of technology use, 64% with average knowledge, and 20% with advanced knowledge of information technology use. This shows that the selected sample was homogeneous in terms of age, gender, experience, and knowledge of technology use.

Research Question

- 1. Did the electronic school management system help and facilitate the school administration process from the teachers' point of opinion?
- 2. To what extent did the school's electronic management system meet the expectations of the school's teachers?
- 3. What are the contributions of the electronic school management system to school administration?

Hypothesis

Hypothesis 1: There is no statistically significant effect of gender, age, work experience, and technological knowledge on teachers' responses to the implementation of the school's electronic management system.

Hypothesis 2: There are no negative opinions of teachers regarding the use of the electronic school management system.

Hypothesis 3: There is no significant correlation between teachers' opinions on the integration of the school's electronic management system.

Data Collection

The questionnaire was designed as a data collection instrument for our research. Questionnaire questions include specific questions to understand the topic from the perspective of the respondents. Where questionnaire validity for this study is defined as the degree to which the questions in the questionnaire reflect the universe of content to which the new instrument is generalized. Therefore, the reliability of the study questionnaire was confirmed by distributing it in its final form to a sample of 25 teachers. The reliability of the instrument was calculated using the Cronbach alpha coefficient, with a value of .940, indicating its reliability. In the first part of the questionnaire, there were some closed questions regarding the personal data of the school teachers, such as gender, professional experience, and educational level. In the second part of the questionnaire, the questions were about the contributions of the electronic management of the system and the evaluation of the effect of its implementation. Response options were in the form of a five-point Likert scale. The options were described as; "Strongly Disagree", "Disagree", "Undecided", "Agree" and "Strongly Agree". The answers were ranked from "I completely disagree" to "I completely agree" by rating them from 1 to 5. However, the third part had some closed questions. The questionnaire was distributed to participants online using Google Forms. The analysis of the quantitative results was developed with the SPSS program version 22.0. While the analysis of the qualitative results was interpreted narratively, where the collaborative research technique was used to assess the validity of the qualitative data. This technique was in collaboration with other teachers who helped analyze and interpret qualitative results. Their different ideas and viewpoints were constructive and helpful. Since our sample was smaller than 50, we used the Shapiro-Wilk Test to see if our data has a normal distribution. We present the results of the normality test as follows:

	Shapiro-Wilk		
	Statistic	df	Sig.
Electronic Management System	,942	23	,198

From the results of the normality table, we are noticing that the significance value is .198 which is greater than .05, therefore we have a normal distribution for our data. Since our data have a normal distribution, we used parametric tests such as ANOVA and Pearson correlation.

Results

The results of the study, whose purpose was to determine the opinions of teachers to propose a conceptual model of an electronic management system for our school and to analyze their opinions about the implementation of this system, are summarized below. The results of the participants for the use of the electronic school management system show that about 92.0% of them emphasize that the use of the electronic school management system in the school was useful, about 96.0% of them emphasize that the use of the electronic school management system offered support for improving management processes, about 92.0% of them emphasize that the use of the electronic school management system is supporting teachers' ability to plan better, about 80.0% of them emphasize that the use of the electronic school management system of the school is making the teachers feel under control and supervision, and it helped and facilitated the administrative work of the teachers, about 88.0% of them emphasize that the use of the electronic school management system reflects the commitment of the teachers, about 72.0% of them emphasize that the use of electronic school management system raised quality and performance of the teachers, about 83.4% of them emphasize that the use of the electronic school management system improved their desire to develop themselves and about 92.0% emphasize that the use of the electronic school management system changed my perspective on technology. However, from the results of the study, we notice that a small part of the participants, about 40.0%, emphasize that using the electronic school management system was difficult. The results of teachers' opinions, summarized according to their opinions, are given in the following table:

Table 2. Teacher	`s Opinions	Electronic School	l Management System
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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undecided	3	12,0	12,0	12,0
	Agree	17	68,0	68,0	80,0

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Strongly Agree	5	20,0	20,0	100,0
Total	25	100,0	100,0	

According to the results of the table above, we notice that 88.0% of teachers have positive opinions about the use of the school's electronic management system, while 12.0% do not have an opinion on this statement. Therefore, we are seeing that technological challenges alone can be enough to make the education field restructure its administrative electronic system. Since, as our study is showing that teachers are supporting e-administration in schools that will face these challenges, where they need to take advantage of technology and integrate modern management processes, which are flexible in these processes.

In addition, the results of the study show that about 72.0% of the participants emphasize that the school administration with the electronic school management system identified the needs of our school, about 84.0% of the participants emphasize that the school administration with the system promoted the motivation skills of the teachers of our school, about 76.0% of the participants emphasize that the school administration with the system fulfilled the expectations of the teachers and managed the activities of the teachers of our school, about 84.0% of the participants emphasize that the school administration with the system accelerated the completion of the formal obligations of the teachers of our school, about 92.0% of the participants emphasize that the school administration with the system allowed quick access to the information of the teachers of our school, about 91.7% of the participants emphasize that the school administration with the system facilitated the administrative communication between the leadership level and the teachers of our school, about 88.0% of the participants emphasize that the system school administration should be used further. However, about 40.0% of the participants emphasize that the school administration with the system is spending a lot of time for the teachers of our school, and only about 16.0% of the participants emphasize that the school administration with the system is not done in other schools, therefore our school also has to pass in the traditional system. The results of the ANOVA test for the opinions of teachers from the aspect of gender, age, work experience, teaching cycle, qualification, and technological knowledge towards the use of an electronic school management system are given in the following table:

		Sum of Squares	df	Mean Square	F	Sig.
Gender:	Between Groups	,011	2	,005	,021	,979
	Within Groups	5,749	22	,261		
	Total	5,760	24			
Age:	Between Groups	,922	2	,461	,346	,711
-	Within Groups	29,318	22	1,333		
	Total	30,240	24			
Work experience:	Between Groups	,364	2	,182	,171	,844
	Within Groups	23,396	22	1,063		
	Total	23,760	24			
Work as:	Between Groups	,256	2	,128	,352,	,707
	Within Groups	7,984	22	,363		
	Total	8,240	24			
Qualification:	Between Groups	,091	2	,045	,187	,831
	Within Groups	5,349	22	,243		
	Total	5,440	24			
Technological knowledge:	Between Groups	,293	2	,147	,372,	,693
	Within Groups	8,667	22	,394		
	Total	8,960	24			

Table 2. ANOVA Test for the Opinions of Teachers

According to the results of the ANOVA test from the table above, we are noticing that there is no difference in the average scores of teachers' responses between the six groups, that of gender, age, work experience, work cycle, qualification, and technological knowledge. A one-way analysis of variance showed that gender was not significant with F=.021 and p=.0979 values. Likewise, the analyzes show that age was not an important factor in the use of the school's electronic management system with the values F=.346 and p=.711. In terms of work experience, no significant difference was found for the system used with F=.171 and p=.844 values. Regarding the work cycle, we do not notice that there is a difference in the opinions of educators (preschool teachers, low-grade and high-grade teachers), class and subject teachers, since the values are F=.352 and p=.707. According to the qualification, here we also have no difference in the opinions of the bachelor and master teachers for the electronic administration of the system management, with the values F=.187 and p=.831. And finally, we have no significant difference in the opinions of the ANOVA test, we are closely observing how an electronic school management system can be applied in a school

environment regardless of the gender, age, years of work experience, work cycle, qualification, and technological knowledge of the teachers participating in this study.

To see if there is a correlation between teachers' opinions on the use of an electronic school management system and the usefulness of integrating this system in the school, we examined Person's correlation. The Pearson correlation results are given in the table below:

		Opinions	e-SMS administration
Opinions	Pearson Correlation	1	,716 **
	Sig. (2-tailed)		,000
	N	25	25
e-SMS administration	Pearson Correlation	,716 **	1
	Sig. (2-tailed)	,000	
	Ν	25	25

Table 3. Pearson Correlation	n for the Opinions of Tea	ichers
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**Correlation is significant at the 0.01 level (2-tailed).

From the above table, they show that we have a positive correlation of .716 and a significance with .000, which shows that we have a relationship between the opinions of our school teachers and the use of an electronic school management system. Therefore, these links show that the system is important because it contains elements that provide a more interactive and interesting administration environment, as well as contribute to the creation of a competitive environment and provide a variety of forms of administrative task facilitation for both teachers, students, and the school principal.

On the other hand, in the results of the questionnaire for the open question of what additional comments you have regarding the administration of our school through the Electronic School Management System, the participants have the most diverse opinions. One of the teachers and now a preschool principal reflects: "According to the Education Strategy in Kosovo 2022-2026, the 5th objective is the Digitization of Education and our school has achieved this objective. The site of the school's electronic management system needs minor improvements, and some of the teachers need more training in using the system".

Some teachers say that: "It was a good experience and relief for the work of the teachers related to the administration, and they think that it is a targeted and undoubtedly advanced system that serves us well, where we have gained and are gaining new experiences that help us to the future, both professionally and in life".

A teacher and at the same time a pedagogue point out that: Technology today has become an inseparable part of each individual regardless of how it is used, therefore, if we only spend time, then why not spend it on something positive. Our school, day by day, is becoming a model school for all other schools in the region and the country, now we are one step ahead. Managing the electronic school management system and the school, in general, it is not an easy task, so no matter how difficult it is for us, even the leaders and managers of the system are doing a difficult and laborious task, but the desire for success and cooperation are the main key to improving educational practices. I hope things go as they have started! We are ready for cooperation".

However, we also have answers that it is difficult to start, but it takes time to adapt, however, it is good to work with technology. Also, there are requirements that training should be held about this issue. There were opinions that if we have laptops and projectors in the classrooms, the system would be more efficient for both students and teachers. There are also sincere congratulations from the teachers for the work done during this time and they really like this electronic school management system.

Discussion

Today, people are increasingly going digital. Since there is fierce competition in the field of education as well, every school should adopt a digital system to stay in step with the time. An electronic school management system helps schools run smoothly and achieve the best results for their students. The results of our study show that the diffusion of innovations theory which for this study was adopted as new school management practice, helped us in validating the hypotheses presented. The characteristics of innovation mentioned in the diffusion of innovations theory according to Rogers such as innovation, communication channels, time, and the social system on the diffusion of innovations (Rogers, 2003) have played an important role in motivating or encouraging participation teachers to use the system electronic management of our school. Our findings are under the literature reviewed (Pekisheva, 2021) where it is observed that the development and implementation of the electronic school management system help in the management of the school and connect all parties involved in a well-organized digital system. Also, our findings as well as the author's (Setyawan, 2021) make the activity management process easy, effective, and low-cost, not to spend a lot of time and a lot of personnel, reduce human errors, and be more accurate and practical. The literature from (Bhandari, 2023) and our results show that the electronic school management system is functioning well and efficiently. In addition, our findings together with the findings of the reviewed literature of their authors (Alkaabi, 2018; Ilomäki &

Lakkala, 2018; Sahlberg, 2020; Shema, 2019) suggest that digital innovations have helped the school in initiating an innovation in the system of management that significantly improves the quality and performance of the school.

The results of the study by (Orhani et al., 2022) showed that teachers were very satisfied with the use of the electronic diary in their schools. Also, the results from this study are supporting the results of our study that teachers' opinions are positive about the use of the electronic school management system. Even from the teachers' comments, we have seen that the teachers emphasize that day by day our school is becoming a model for all other schools in the region and the country. Therefore, our findings, also provide answers to the research question that to a large extent the electronic school management system fulfilled the expectations of the teachers of our school from the perspective of the teachers.

Electronic strategic school management systems help the principal in setting school goals, allocating resources, making short-term and long-term plans, and finding the best educational methods for the future, in determining teacher performance and success. of school (Demir, 2006). To examine teachers' perceptions of the use, usefulness, and ease of use of the school's electronic management system, we note that our findings yield results that answer the research question that from the teachers' point of opinion, the school's electronic management system helped and facilitated the school administration process. Overall, the results for use, usefulness, and ease of use for this study provide support for the system and are closely aligned with that suggested as potentially being a useful tool in a learning environment.

The success of school development is largely based on data. However, school managers were unable to use data effectively and efficiently in this process (Gentry, 2005). Our findings also provide answers to the research question by presenting the contributions of the electronic school management system in relation to school administration. Our findings emphasize the contributions of the electronic school management system, where the contributions are listed, as usefulness, support, planning, control, supervision, assistance, ease, quality, desire, need, competence, motivation, expectations, obligations, access, communication and management of system integration.

In addition, from the results of the research it was found that teachers who integrate the system had higher motivation, were inclined to be more involved in planning, and adopted the school's vision more. From our findings as analyzed in table 1 and from the data collected from the open question, we can prove our hypothesis that there is no negative opinion of teachers regarding the use of the electronic school management system. The results suggest that the participants' continuance intention was determined by the satisfaction of using the system. Examination of the individual components of the system showed that teachers responded favourably to most of the features available in this system.

From the results of table 2, we notice that we can prove the hypothesis presented that there is no statistically significant effect of gender, age, work experience, and technological knowledge in teachers' responses to the integration of the electronic school management system. Since, according to the F values and the significant p-value, it has been observed that the p-value has values higher than the reliability level of .005, that in this study the role of gender, age, work experience, and technological knowledge shows that it does not present any effect statistically significant. So, our findings focused on the real experiences of teachers in using the electronic school management system as a platform for the electronic administration of their tasks.

Also, further activities of interaction and discussions of teachers about the system we develop the construction of new understandings. Our findings are showing that the use of e-management systems in schools is providing a smart alternative for schools and education in such a scenario and allows teachers to provide personalized administration. results from table 3, we notice that we have a perfect positive correlation with .716, which can reject our proposed hypothesis that there is no significant correlation between the opinions of teachers towards the integration of the electronic school management system. Because our findings are showing that we have a strong relationship between the opinions of the teachers towards the use of the system in our school. Therefore, we can say that the benefits of such systems in education are convincing enough to make schools around the country appreciate them and start implementing them.

Conclusions

It is the last time that educational institutions learn how to develop an electronic school management system and widely implement it, as this is the only way for schools to be in line with the demand for the quality of education and the overall organization of the process. The electronic school management system aims to be efficient and easy to use, as well as enable easy and professional administration, compared to the paper-based manual method. Mainly the system had an efficient quality to improve school management. School principals should be encouraged to use electronic school management systems and they should believe that data are valuable resources for implementing educational reforms. It should be suggested that school managers take initiatives related to the implementation of such applications.

The overall performance and quality of the school's electronic management system were up to par in terms of usability. Based on the findings of our study, the teachers agreed that the developed electronic system was functional and raised the process of better administration of school documentation. The entire school and our pedagogical staff have benefited from the use of this system.

In addition, principals, being school leaders, must also take responsibility for the implementation of the innovation. School principals' opinions about information technology and their attitudes toward administration through an electronic school management system have effects on teachers and students as well. This fact emphasizes the adaptation of managers and their positive ideas toward technological innovations. In conclusion, the findings from this study showed that the participants have a positive opinion of the school's electronic management system and it met the teachers' expectations, and they think that this system should be continued in the future.

Recommendations

Mainly the system had an efficient quality to improve school management. Therefore, it is recommended that educational institutions develop a unique general electronic system for all schools, which helps with integration and third-party partners. Based on the findings of the study, the respondents agreed that the developed system was functional and raised the process of better school documentation management. Therefore, it is recommended that school principals support the electronic school management system, which helps to simplify the process of administration, communication, and cooperation between teachers, students, and parents. From the teachers' point of view, the electronic school management system helped and facilitated the school administration process. Therefore, teachers use the electronic school management system for better planning through a single system. The results for use, usefulness, and ease of use for this study provide recommendations for the e-management system and closely match that suggested it could potentially be a useful tool in a learning environment. Future recommendations on this topic would be good for the authors to provide an overview of how to conduct research studies in this context taking into account specific groups of users such as principals of urban and rural schools, students of these schools, or a larger number of the sample of teachers practicing the electronic school management system.

Limitations

Limitations of the study were the characteristics of the choice of methodology that may have influenced the interpretation of the findings from our research. The limitations of the study for this paper are the limitations placed on the ability to generalize from the results of our study, to show the applications in the practice of the findings of the study, which are the result of the method of choosing the sample with a limited number of teachers. Also, another limitation could be the sample selected from only one school.

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Authorship Contribution Statement

Orhani: Conceptualization, design, analysis, writing. Saramati: Data analysis, supervision. Drini: Editing/reviewing, critical revision of the manuscript.

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