

# Sustainable Development of School Buildings Management in the Exploratory Schools in the Hashemite Kingdom of Jordan

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## Abstract

The management and sustainability of school buildings is one of the primary challenges facing school administrations in the twenty-first century, especially after the increasing demand for education and seeking to increase the absorptive capacity of the increasing numbers of students, in addition to increasing the number of days of the school year and the fact that students are staying for a period of more than six hours a day in the school. This requires studying the reality of sustainable development to manage school buildings and its ability to meet the future needs of the teaching and learning processes. From here, the objective of the study was to reveal the administrative practices necessary to achieve sustainable development of school buildings in the exploratory schools (technology schools in Jordan) by answering the following questions:

1) What administrative needs are required to achieve sustainable development practices in the management of exploratory schools in the Hashemite Kingdom of Jordan from the point of view of school principals, their assistants and Main Teachers in these schools?

2) Do the sustainable development practices in the management of exploratory school buildings in the Hashemite Kingdom of Jordan differ at the level ( $\alpha = 0.05$ ) according to gender, type of school, job?

To achieve the objective of the study and answer its questions, a questionnaire was prepared consisting of (47) items, each reflecting the school management practices necessary to achieve the sustainable development of the school building. The coefficient of reliability and validity of the instrument was verified with alpha-Cronbach (0.96) for the instrument as a whole. The study sample included (623) individuals. For data analysis, the arithmetical means, standard deviations, T test, and mono-variance analysis were used.

The results of the study showed that the management of the exploratory schools needs administrative practices to achieve the sustainable development of the school building to a high degree in the field of school and service facilities. The responses of the sample members of the study recorded the highest mean of 4.13, while the lowest need was recorded for the field of management of the site of the school building with a mean of 3.67. The results of the T-test analysis showed that there were statistically significant differences ( $\alpha = 0.05$ ) between the responses of the sample of the study in the management of the site of the school building in favor of the Main Teacher with a mean of 3.81 compared with the responses of school principals and their assistants. The results of the study also showed that there were statistically significant differences between the responses of the sample of the study in the field of school building site due to the type of school in favor of basic education schools (first and second cycle ) compared to primary schools (1-10). As for the gender variable, the results of the T-test analysis showed that there were no statistically significant differences between the arithmetical means of the responses of the sample of the study in all fields of study.

**Keywords:** sustainable development, exploration schools

## 1. Introduction

The sustainable development of school buildings and their locations is one of the challenges facing school administration in the twenty-first century. Textbooks and teachers are no longer sufficient to achieve the desired goals. However, a sustainable learning environment should be created to implement the educational process in its entirety and integration. This can be done through the creation of a school environment with the facilities and equipment required for facilitating the implementation of various educational and learning activities and programs.

The school building began to take the first position on the agenda of planners and officials of the educational process, especially with regard to the technical conditions and engineering standards adopted from the choice of the location of the building, the internal and external areas, the design of its facilities, and the organization and suitability with the nature of the school stage and its objectives.

The management of the school building depends on many aspects relating to the technical, physical, psychological, health and educational aspects of the building (Van Slyke & Goode, 2003). The sustainability of this building is not sufficient, but extends to include the maintenance of the equipment, the cleanliness of the building, and the preservation of its furniture. These are important responsibilities for the principal and a good indicator of the school's internal efficiency.

The school's principal and staff are directly responsible for the management of the school building. They monitor the furniture, equipment, and other needs of the building in order to raise its internal efficiency and achieve the objectives of the school. In addition, the good use of classrooms, spaces and their optimal investment in the implementation of school activities in general and in the educational-learning process in particular is one of their main responsibilities; to avoid any neglect or disruption of any of its facilities, the selection of school furniture and maintenance of the building and maintenance of cleanliness to ensure the safety of students is just as important as the provision of learning supplies, especially as it aims to make the school environment a sustainable learning environment that is attractive to students and stimulating learners' motivation towards learning (Al-Maaytah, 2007).

Atwi (2004) points out that the management of the school building starts mainly with the urban style and the environment surrounding the building, the appropriateness of the school's location and area, and the validity of the building for its use and suitability for the implementation of the curriculum, as well as the attention to the cleanliness of the building and its aesthetic character from the inside and outside and the appropriate facilities of the toilets, libraries, laboratories and cafeterias, and workshops, as well as providing lighting, ventilation and heating to make them a suitable environment for the educational processes. As for the role of the school principal and staff, Al-Maaytah (2007) refers to many issues related to the sustainability of school building management, which include the following:

- 1) The optimal use of the school building and its educational facilities represented by schoolrooms, spaces, squares, learning resources and laboratories, and focus on the good distribution for educational-learning activities.
- 2) Good selection of school furniture and the availability of the conditions of durability and specifications of it on the one hand, and the beauty and taste to provide comfort for students and employees on the other.
- 3) The continuous maintenance of the school building with its various facilities, in addition to the follow-up of its restoration to maintain its quality and ensure its continuity.
- 4) To monitor the overall safety of the school building; to prevent any incidents that endanger the lives of students, employees and visitors alike.
- 5) To provide the complete physical conditions of lighting, ventilation, cooling and heating, making it a comfortable environment for students and employees.
- 6) To maintain the cleanliness of school facilities and ensure health safety, starting with classrooms, courtyards, toilets, school canteens, playgrounds, and student lounges.
- 7) Maintenance of equipment and the supply of furniture, such as seats, tables, air conditioners, refrigerators and other devices.

The management of school buildings is no longer restricted to teaching classes, but has expanded to include the ability to meet the needs of the curriculum and facilities such as libraries, laboratories, learning resource rooms, school theaters, sport halls, exhibition halls, workshops and toilets, in addition to the Department of Security and School Protection for students and school canteens. It also includes the management of stores, bookstores and furniture, and the beautification of the school, which adds a kind of vitality and psychological comfort to students and all its employees and visitors alike (Dweik, 2001). The space of the site should also provide for future expansion. It is wrong to believe that increasing the number of students is the only reason for future expansion; while in fact, the development of the curriculum and the introduction of new methods of teaching, the introduction of information technology, training for professional development, community service, extended education and associated activities, in addition to changing economic and social conditions all require an increase in the area of school buildings (Al-Zanafli, 2013).

### *1.1 Exploratory Schools in Jordan*

Based on the above, the researcher believes that it is necessary to talk about the management and sustainability of school buildings exploratory schools in the Hashemite Kingdom of Jordan, where the reality of the school buildings in these schools is reflected in the standards adopted in determining the specifications of the school building and its facilities; where the qualitative measures in the Hashemite Kingdom of Jordan indicate that the total area of the school varies from stage to stage. Where the area of the first cycle school with 30 classrooms is 4120 M<sup>2</sup> while the area of a school of the second cycle with 40 classrooms is 6265 M<sup>2</sup> with the addition of two laboratories to the last one, the area should not be less than 6620 M<sup>2</sup>. It is also not necessary to provide a computer lab, science laboratory or vocational guidance room in the first-cycle schools, while it is necessary to provide them in the second and post-primary schools.

The report of the Education Initiative on Education and Development (Jordan Education Initiative, 2003) refers to the typical specifications of the buildings of the exploratory schools, as follows:

- In the first-cycle schools 30 classrooms, and 40 classrooms in the second-cycle schools with an area of 49 M<sup>2</sup>.
- A Learning Resource Center in each of the first-cycle schools with an area of 126 M<sup>2</sup> provided with 15 computers and a range of audiovisual and printed materials.
- A multi-purpose hall in each of the first-cycle schools with an area of 126 M<sup>2</sup>, used for meetings and school activities.
- A computer lab in each of the second-cycle schools with an area of 98 M<sup>2</sup> provided with 20 computers, a television set and a VCR. Each of these schools should have a library with various books and magazines.
- Each of the second-cycle schools has six fully equipped science laboratories and furniture.
- In each of the schools of the second cycle there are two classrooms, one for activities associated with the curriculum and the other for life skills.
- In each of the schools of the first and second cycles there are four employment and administrative rooms.
- In each of the schools of the first and second cycles there are two teachers' rooms.

In addition, all schools are provided with toilets equipped for people with special needs, a store and a canteen. All the rooms in each school are equipped with air conditioning to accommodate high temperatures.

The creation of a sustainable learning environment in terms of spatial distribution and efficiency of the school building is a priority for educational development in the current period, especially after the steady urban growth in all areas of Jordan; so it is necessary to adopt certain specifications for school buildings. The design of the school building should not only be limited to classrooms, management and storage, but should take into account all the requirements of the current and future educational-learning processes associated with school activities, and its ability to meet the needs of renewable education.

In terms of the quality of the facilities required for the exploratory schools in the light of Her Majesty Queen Rania Al Abdullah's initiative in education and development aims to expand the number of the administrative rooms to become 4 rooms for the schools of the second-cycle (5-10 basic education) and increase to reach 6 administrative rooms for post-primary schools (11-12). As for the number of teachers' rooms, the expansion will reach 3-4 rooms for schools of 15-20 classrooms. There is also a trend towards increasing the number of rooms for school activities to 3 rooms for schools with more than 20 classrooms, and two rooms for learning resources for schools with more than 25 classrooms. The number of warehouses, multi-purpose rooms, computer labs, health care rooms and laboratories has received much attention in the future expansion by type of education (Jordan Education Initiative, 2003).

Based on all of the foregoing, research into the reality of sustainable development for the management of existing school buildings in the exploratory schools in the Hashemite Kingdom of Jordan is justified in light of what is presented in the local and global educational arena of policies related to the need to develop and modernize the Jordanian educational institutions, including building management. In doing so, its outputs are capable of being creative, innovative and keeping abreast of scientific and technological developments, and thus able to contribute to building a knowledgeable society.

### *1.2 The Study Problem and Its Questions*

States are no longer interested in establishing schools according to approved standards as an essential part of their development process unless there is an effective school administration. This administration together with all its staff are the main components and elements of the internal educational processes, and they interact with the

components of the external environment alike. Hence, the school is considered to be the basic educational unit in the educational system and a platform for educational development, and the management of this environment with its facilities, equipment and accessories is to determine the level of performance on the one hand, and to improve the quality of performance in it on the other. The school's effective management starts with its principal and staff as they supervise and the direct responsible personnel of the school administration and the safety of its environment. He also has the responsibility for managing the school building with all its facilities and its requirements, and even maintaining it in order to achieve the proper functioning of the educational processes in all aspects related to mental, physical, psychological and social development of students.

An institution of Her Majesty Queen Rania Al Abdullah created an initiative to support Jordan's efforts to improve the quality of education and build a knowledge economy using technology. Exploratory schools in the Jordanian Education Initiative are required to develop their structure in accordance with sustainable development. In order to keep abreast of what is new in the educational arena, and act in accordance with these developments, development of systems and programs is required. Hence, the researcher calls for the study of the reality of sustainable development for the management of school buildings in the exploratory schools in the Hashemite Kingdom of Jordan. In the framework of diagnosis and understanding of the context of current education in exploratory schools, the researcher will analyze and explain the answers to the main question of the study:

What is the reality of the sustainable development for the management of the school buildings in the exploratory schools in the Hashemite Kingdom of Jordan?

This main question has a set of sub-questions:

- 1) What is the reality of the administrative needs to achieve sustainable development practices in the management of exploratory schools in the Hashemite Kingdom of Jordan from the point of view of school principals, their assistants and the main teachers in these schools?
- 2) Is the reality of the administrative needs to achieve sustainable development practices in the management of exploratory school buildings in the Hashemite Kingdom of Jordan different at the level  $\alpha = 0.05$  according to gender, type of school, and job?

### *1.3 Significance of the Study and Objectives*

- 1) Revealing the reality of management of the exploratory school buildings in the Hashemite Kingdom of Jordan.
- 2) Analysis of the necessary administrative skills needed by the school principal and their assistants and the main teachers to achieve sustainable development in the management of school construction.
- 3) Exploring the ability of the management (principal and staff) of the exploratory schools in the Hashemite Kingdom of Jordan to ensure the sustainability of school construction and its maintenance with their administrative and technical powers.
- 4) Disclosure of deficiencies in administrative practices that lead to waste in the sustainability of the investment of exploratory school buildings in the Hashemite Kingdom of Jordan.
- 5) To present a number of recommendations for the activation and employment of sustainable development in the educational institutions in the Hashemite Kingdom of Jordan to meet the requirements of creativity, as is the case in the exploratory schools in the Jordanian Education Initiative.

### *1.4 The Study Delimitations*

The study instrument was applied to the school principals, their assistants and Main Teachers in exploratory schools in the capital Amman in the first semester of the school year 2016/2017. The study was limited to the reality of the administrative needs to achieve sustainable development for the management of the buildings of the exploratory schools in the Hashemite Kingdom of Jordan.

### *1.5 Terms of the Study*

Exploratory Schools: They are a group of schools affiliated to the Ministry of Education within the capital Amman Governorate, supervised by the Jordanian Education Initiative and characterized by infrastructure that serves computer labs to activate the implementation of computerized curricula (Ministry of Education, Jordan, 2007).

- Management of Sustainable Development of the school building: A process carried out by the school management aimed at maintaining and investing in the sustainability of the school building to meet the needs of students, all its employees, and the current and future local community through the use of all school facilities in order to achieve quality education.

- **Jordanian Education Initiative:** An institution of Her Majesty Queen Rania Al Abdullah. The initiative was launched to support Jordan's efforts to improve the quality of education, encourage creativity, develop capacity and build a knowledge economy using technology. The initiative's vision is to reach a global center for excellence and innovation in education which activates the models of public-private partnership to advance the educational process in Jordan and the region. Its mission is to stimulate the development of education through innovation and the integration of technology in education, thus contributing to the qualitative addition of students, teachers and the educational system to building the knowledge economy (Jordanian Education Initiative, 2003).

### *1.6 Related Literature*

By presenting the previous studies related to the subject of the study, we find that Tylor's (1991) study aimed at revealing the relationship between the sustainability of the school building and the learning process. The results of the study showed that it is difficult to separate the learning environment from the school building, explaining the importance of the relationship between the physical environment of education and the learning process as they complement each other. The study indicates that the child learns more quickly in diverse and exciting natural school environments, explaining the importance of re-modeling the current classroom and making it more sustainable by designing modern schools and rethinking (what the school means). Al-Gamal (2003) also confirmed the importance of taking into account the future changes, as the schools may not be as we know them today.

Green and Turrell (2005) examined the level of investment in the school building and its relation to students' academic achievement. The study was conducted on a sample of government schools for students aged 5-18 in England. The study aimed at revealing the degree of correlation between investment management of the school building and the level of student performance. Data were collected by distributing a questionnaire to the schools under study. An interview card was also used with the local officials. One school was chosen as a case study in Derbyshire province. The results of the study showed that there is a positive correlation between the degree of investment of the school building and the level of performance of the students and their scholastic superiority and their motivation for learning. The good investment in the school building has a positive impact on the school staff as well, especially in raising their motivation to work and behave positively.

The study of Picus et al. (2005) aimed to reveal the degree of relationship between the management of school buildings and their educational facilities in the schools of the state of Wyoming. And then there is the use of the standard score obtained by the students in the evaluation test of the facilities provided by the school. The results of the analysis showed no correlation between the type of services and facilities offered to students in the school and student performance. As for the students' other metadata, the results of the study showed that there is a clear and significant interest in the follow-up of students' attendance, and the school's keenness to create a safe, clean and appropriate learning environment. The study also issued a recommendation to the decision makers that the school building alone should not be considered sufficient to improve the level of student achievement.

Uline and Tschannen-Moran (2008) examined the degree of interaction between facility quality management in the school building and student achievement level. The sample included 80 teachers working in junior high schools in Virginia. A questionnaire was prepared to collect data on the nature of the school building using a seven-level criterion to determine the quality of facilities provided to students in the school building. Data were also collected on the level of student achievement. For data analysis, the binary correlation coefficient and multiple regression coefficient was used to reveal the level of relationship between the quality of facilities provided in the school building and the nature of the school climate, and the level of student achievement. The study results revealed that there was a high positive relationship between the quality of the facilities and services provided in the school building and the high level of the students' achievement in English Language and Math. The study concluded with a recommendation to the members of the local community to invest taxes in improving the school building through the establishment of buildings for the services and facilities of students within the school because of the positive relationship between the nature of the physical environment and the social environment in school, and the impact of their interaction in raising the level of students' outputs.

Al-zuboun and Dorso's (2013) study: The study aimed to know the teacher's opinions of the exploratory schools in the program "Towards new school trends" in Jordan and the relationship with gender variable and stage taught by the teacher and experience. The study tool was distributed to 269 teachers. The study reached several results, including: that the teacher's opinions of the exploratory schools on the dimensions of study were high and that there were differences of statistical significance in the views of teachers towards the program attributed to gender, stage, and experience.

## 2. Field Study

The researcher carried out a number of procedures, namely, identifying the method used, describing the population of the study, the instrument used in it, how it was built, the evidence of validity and reliability, and the way in which the scientific materials were collected. The researcher employed statistical methods in her analysis and discussed the results.

### 2.1 Method of Study

In order to achieve the objectives of the study, the researcher used the descriptive analytical method, in which she tries to describe the phenomenon of the subject of the study, analyze its data, and the relationship between its components.

### 2.2 Population of Study

- Pilot study: The sample of the pilot study consisted of 44 principals, 17 assistant principals and 27 main teachers in 22 exploratory schools in Jordan. They were selected in a randomized, stratified manner for the purpose of codifying the study instrument and verifying its validity for the original sample and later were excluded from the original sample.
- The Study Sample: The questionnaire was distributed to a sample of 629 principals, 103 assistant principals and 368 main teachers of the total population of study (8397). The sample represented (7%) of the population of the study.
- Statistical description of the sample according to the preliminary data: Table 1 shows the percentages, number of sample members and the category of the sample:

Table 1. The sample study and its variables

Percentage	Number	Category	Variables
41.4%	258	Males	Gender
58.6%	365	Females	
18.1%	104	Principal	Job
17.9%	103	Principal Assistant	
54.0%	368	Main Teacher	Educational Stage
22.4%	125	Basic Education (1-4)	
56.9%	317	Basic Education (5-10)	
20.6%	115	Basic Education (1-10)	

### 2.3 Instrument of the Study

The study adopted the survey method in the collection of data using as the main research tool, the questionnaire, which was built after reviewing the documents issued by the Ministry of Education in the Hashemite Kingdom of Jordan regarding the design of the modern school buildings through the needs and buildings section of the Directorate General of Planning and Quality Control. In addition to the theoretical literature and previous studies related to the subject of the study (Picus et al., 2005; Uline & Tschannen-Moran, 2008; Al-Jarrah et al. 2015; Jarrah, 2016). The questionnaire consisted of two parts:

Part 1: Includes general information about the research sample and the independent variables, namely gender, job, and educational stage.

Part 2: It consists of 47 items, each of which reflects the degree to which the school administration needs administrative practices to achieve the sustainable development of the school building; options for responses were set at the following levels: to a very large extent, to a large extent, medium extent, to a low extent, to a very low extent and are digitally represented in degrees: 5, 4, 3, 2, 1 respectively. The items of the questionnaire reflected the type of needs for such administrative practices, as follows:

- The first dimension: Management of the site of the school building
- The second dimension: Management of the administrative offices and teachers' rooms
- The third dimension: Management of Classrooms
- The fourth dimension: Health and Safety Management
- The fifth dimension: Management of school and service facilities

- The sixth dimension: Management of the Maintenance of the school building and maintenance of its sustainability.

#### 2.4 Instrument Validity and Reliability

To verify the validity of the instrument, it was presented to a group of arbitrators and specialists in management and educational planning and they were asked to express their opinion on the veracity of the items and the accuracy of language formulation and to what extent the items belong to the study dimensions, in addition to the clarity of meaning, and they were asked to add, delete or modify any item; the arbitrators' views and their suggestions were taken into account. As for the verification of the reliability of the instrument, the half-split method was used; the Cronbach-Alpha coefficient was calculated; it was 0.96) as shown in Table 2.

Table 2. Cronbach-alpha internal consistency coefficient for the study dimensions

No.	Dimensions of the Study	Chronbach-Alpha
1.	Management of the site of the school building	0.75
2.	Management of the administrative offices and teachers' rooms	0.79
3.	Classroom management	0.87
4.	Health and Safety Management	0.89
5.	Management of school and service facilities	0.92
6.	Management of the Maintenance of the school building and maintenance of its sustainability.	0.91
The Instrument in Total		0.96

### 3. Study Variables

#### 3.1 Independent Variables

Gender (Males and Females), Job (School Principal, Principal Assistants and Main Teachers) and the Educational Stage (Basic Education 1-4, Basic Education 5-10 and V Basic Education 1-10). Basic Education in Jordan is divided into 3 levels similar to elementary school, middle school, and high school in the west.

#### 3.2 Dependent Variable

This is the degree that expresses the respondents' needs for administrative practices that achieve sustainable development for the management of school buildings in the exploratory schools in Jordan.

#### 3.3 Statistical Treatment

Data were collected and entered into the computer using the Statistical Package Program for Social Sciences (SPSS). To answer the study questions, the arithmetical means and the standard deviations of the responses of the sample members were calculated for each of the questionnaire items and for each dimension of the study.

One Way ANOVA analysis was applied to detect the differences between the responses of the study sample on the study dimensions, and then a meta-comparison analysis was carried out to determine the location of the differences between the arithmetic means of the responses of the sample members due to the variables.

### 4. Results and Discussion

The researcher will rely on the interpretation of the results of the study on a certified criterion, by the length of the cells in the five-dimensional Likert scale, and by calculating the range between the degrees of the scale ( $5-1 = 4$ ), then divide it by the largest value in the scale to obtain the cell length ( $4/5 = 0.80$ ). After adding this value to the lowest value in the scale to determine the upper limit of this cell, the cell length becomes as shown in the following table: (Michael, 2006).

Table 3. The adopted criterion in the study

Degree of Acceptance	Relative Weight	Length of Cell
Very Low	20%-36%	1-1.8
LOW	More than 36%-52%	More than 1.8-2.60
Medium	More than 52%-68%	More than 2.60-3.40
High	More than 68%-84%	More than 3.40-4.20
Very High	More than 84%-100%	More than 4.20-5

The First Question: What is the reality of the administrative needs to achieve sustainable development practices in the management of exploratory schools in the Hashemite Kingdom of Jordan from the point of view of school principals, their assistants and the Main Teachers in these schools?

The results of the study showed that there are many educational services and school facilities that are currently available in the exploratory schools in the Hashemite Kingdom of Jordan. The following table clarifies these services:

Table 4. Educational and school facilities currently available in exploratory schools

Services	Percentage
Providing special rooms for learning resources	96.6%
Providing a special room for the social worker	93.6%
Providing a special nursing room	86.2%
Providing scientific laboratories	81.2%
Providing a suitable playground for sports activities	58.8%
Providing a special office for each teacher	8.1%

The arithmetical means and standard deviations of the responses of the study sample members were extracted from all questionnaire items and for each dimension of the study, reflecting the type of needs for such practices to judge the sample's degree of acceptance, as shown in Table 5.

Table 5. The arithmetical means and standard deviations of the study sample responses to the study dimensions and the instrument as a whole

Degree of Acceptance	Standard Deviations	Means	Dimensions	Dimension's number	No.
High	0.77	4.13	Management of school and service facilities	5	1
	0.72	4.11	Health and Safety Management	4	2
	0.75	4.10	Classroom management	3	3
	0.75	4.05	Management of the Maintenance of the school building and maintenance of its sustainability.	6	4
	0.79	3.94	Management of the administrative offices and teachers' rooms	2	5
	0.72	3.76	Management of the site of the school building	1	6
	0.64	4.03		Total	

Table 5 shows that there is an urgent need by the school management for administrative practices that meet the requirements of the sustainable development of the school buildings in the exploratory schools, all of these administrative practices recorded high arithmetic means, mainly the requirements for administrative practices related to the management of school and service facilities with a mean of 4.13; this indicates that the school and service facilities are of a high importance due to their role in applying the curriculum, especially that school

facilities are an attractive environment for students while carrying out accompanying activities, as they stimulate motivation towards learning. This result is in line with Al-Maaytah (2007) in that improving the internal efficiency of the school is related to the extent to which facilities and services are provided to ensure that students perform many educational activities within the school.

As for the health and safety management, it is no less important in terms of the reserves of school management to achieve sustainable development of the management of buildings. The responses of the sample members of the study recorded a mean of 4.11; it is especially important to ensure school safety and security for students because they spend about six hours a day inside the building, so there is an urgent need to do such practices to maintain sustainability. This is what Dweik (2001) points out: that providing comfort and reassurance to students inside the school building is a positive factor in achieving a successful teaching environment. In his study, Tylor (1991) attempted to establish a relationship between the school environment and the level of student achievement. The results of his study showed a positive relationship between the physical environment (including buildings) of education and the achievement of study for students.

The dimension of management of the classroom and equipment came in the third place with a mean of 4.10 by a high degree. This finding indicates that classroom management and their facilities are important in achieving sustainable development of school construction. Their importance lies in the fact that most of the activities of the organized educational processes are practiced inside them, and therefore the provision of an adequate classroom environment is essential. This finding is consistent with the results of Slyke and Goode (2003) on the importance of providing a learning environment that meets the needs of learners as a priority for attracting and motivating students.

The maintenance of the school building dimension, which recorded a mean of 4.05 is no less important than other fields, as it relates to the maintenance of water tanks, the disposal of damaged furniture accumulation, periodic maintenance of the building and work to beautify it. All of these practices are required of the school administration to achieve the sustainability of the school building.

The management of the administrative offices and teachers' rooms dimension is also important, although the mean of this dimension (3.94) was lower than the previous dimensions and was in the fifth rank. Since the comfort of administrators and teachers is no less important than other facilities and the teachers while in the school need to complete the work of students, this requires the provision of private offices where they carry out their work and perform their required functions.

Finally, the dimension of management of the site of the school building was ranked sixth with a mean of 3.76. The choice of site of the school building and the address of the authorities concerned with spaces and areas surrounding the school is usually not related to the administration of the school, but they are addressed through the directorates of education in the educational areas in the Hashemite Kingdom of Jordan, in particular in paving the roads surrounding the school and follow-up cleaning of the surrounding spaces and other things associated with other buildings surrounding the school building.

The Second Question: What is the reality of the administrative needs to achieve sustainable development practices in the management of exploratory schools in the Hashemite Kingdom of Jordan from the point of view of school principals, their assistants and the main teachers in these schools?

Variables will be discussed separately:

Gender Variable: T-test analysis was carried out to detect the differences in the statistical significance of the gender variable. The statistical means and standard deviations of the responses of the sample members were extracted in order to determine the difference between them, as shown in Table 6.

Table 6. Results of the T-test of the differences between respondents' responses due to the gender variable in all the study dimensions

Dimension	Gender	Means	Standard Deviations	T value	Level of significance
Management of the site of the school building	Male	3.78	0.74	0.65	0.519
	Female	3.74	0.71		
Management of the administrative offices and teachers' rooms	Male	3.97	0.74	0.79	0.427
	Female	3.93	0.73		
Classroom management	Male	4.11	0.75	0.52	0.607
	Female	4.08	0.76		
Health and Safety Management	Male	4.12	0.72	0.43	0.664
	Female	4.10	0.73		
Management of school and service facilities	Male	4.14	0.76	0.12	0.906
	Female	4.12	0.79		
Maintenance of the school building	Male	4.03	0.73	0.55	0.584
	Female	4.06	0.77		
Total	Male	4.04	0.64	0.311	0.756
	Female	4.06	0.77		

The results of the T-test in Table 6 show that there are no statistically significant differences between the responses of the sample members due to the gender variable. This result indicates that all male and female schools need such administrative practices to achieve sustainable development of school buildings in exploratory schools in Jordan.

Job Variable: The T-test analysis was also carried out for the job variable after combining the principal category with the principal assistant as performing the same administrative tasks compared to the Main Teacher. The means and standard deviations were then extracted for the responses of the sample members, as shown in Table 7.

Table 7. Results of the T-test of the differences between respondents' responses due to the job variable in all the study dimensions

Dimension	Job	Means	Standard Deviations	T value	Level of significance
Management of the site of the school building	Principal and his Assistant	3.76	0.74	*2.29	0.022
	Main Teacher	3.81	0.72		
Management of the administrative offices and teachers' rooms	Principal and his Assistant	3.88	0.70	1.60	0.110
	Main Teacher	3.98	0.76		
Classroom management	Principal and his Assistant	4.06	0.70	0.96	0.488
	Main Teacher	4.11	0.79		
Health and Safety Management	Principal and his Assistant	4.10	0.67	0.41	0.680
	Main Teacher	4.13	0.76		
Management of school and service facilities	Principal and his Assistant	4.11	0.72	0.54	0.592
	Main Teacher	4.15	0.80		
Maintenance of the school building	Principal and his Assistant	4.03	0.72	0.51	0.608
	Main Teacher	4.06	0.77		
Total	Principal and his Assistant	3.99	0.59	1.07	0.286
	Main Teacher	4.05	0.68		

\* Significance at level ( $\alpha = 0.05$ ).

The results of the T-test analysis of the function variable revealed statistically significant differences ( $\alpha = 0.05$ ) between the responses of the sample of the study in the field of management of the site of the school building in favor of the Main Teacher with a mean of (3.81) compared to the category of principal and assistant principal with a mean of (3.76). This result indicates that the Main Teacher is not directly responsible for the management practices required for the site management of the school building. Therefore, the Main Teacher's responses show that they need such practices because the educational process is integrated and cannot be separated. There were no statistically significant differences between the responses of the study sample members in the other dimensions. This indicates that all members of the study sample need to carry out administrative practices.

The Educational Stage Variable: The statistical means and standard deviations of the responses of the study sample members expressing their degree of need for administrative practices to achieve the sustainable development of the school building were extracted. In order to determine the source of the statistical significance differences, the mono-variance analysis was carried out as in Table 8.

Table 8. Results of the analysis of the variance of the responses of the sample of the study according to the variable of educational stage

z	Source of Variance	Sum of Squares	Degrees of Freedom	Means of Squares	F Value	Level of significance
Management of the site of the school building	Between groups	4.962	2	2.481	*4.775	.009
	Within groups	287.806	554	.520		
Management of the administrative offices and teachers' rooms	Between groups	1.621	2	.811	1.500	.224
	Within groups	299.447	554	.541		
Management of Classrooms	Between groups	.803	2	.402	.729	.483
	Within groups	305.397	554	.551		
Health and Safety Management	Between groups	.578	2	.289	.553	.575
	Within groups	289.336	554	.522		
Management of school and service facilities	Between groups	.472	2	.236	.388	.678
	Within groups	336.788	554	.608		
Maintenance of the school building	Between groups	2.615	2	1.307	2.317	.099
	Within groups	312.529	554	.564		

\* Significance at level ( $\alpha = 0.05$ ).

The results of the multi-variance test analysis shown in Table 8 shows that there are statistically significant differences between the responses of the study sample members in the field of managing the site of the school building in favor of teaching basic education schools (1-4) with a mean of (3.86) compared to basic education schools (1-10) with a mean of (3.58). There are also statistically significant differences between the basic education principals' needs (1-10) compared to the school principals' basic education (5-10) with a mean of (3.78) in favor of the last category. While there are no statistically significant differences between the responses of the study sample members to the rest of the study dimensions. The need for the management of exploratory schools for such practices linked to the location of the school building is very important; these schools were developed within the Jordan Education Initiative for Sustainable Development. The rest of the dimensions did not show statistically significant differences in the sample needs, and therefore all of them needed management skills to help them manage school buildings in exploratory schools, including classrooms, school security and safety and the maintenance of the school building.

## 5. Recommendations

- 1) Adopting the mechanisms and criteria of Her Majesty Queen Rania Al Abdullah's initiative in education and development and applying them effectively to reach a knowledge society based on Jordan's sustainable development.
- 2) Enhancing the role of the exploratory schools in Jordan in moving towards the requirements of the knowledge society through the optimal use of information technology.
- 3) Conducting workshops to train school principals, their assistants and teachers on how to manage school

construction in order to maintain its sustainability.

4) To grant school principals administrative powers that enable them to address the official authorities with regard to the management of the site of the school building, such as the municipality or the departments involved in planning the cities and streets surrounding the school building to preserve its safety and sustainable development.

5) Schools administrations should take advantage of spaces and areas within the school to think about benefiting from them, and use them in establishing school activities.

6) Schools should develop a future vision on how to take advantage of school buildings in the process of developing their education, so it is reflected in the level of performance of students and their teachers and administrators.

7) The school administration should create a sustainable green school environment to ensure a clean environment free from pollution, which will be fun and enjoyable for all students and staff, as well as the surrounding community.

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