The Degree Of Employment Of Information Technology In The Directorates Of The Ministry Of Education In The Development Of Administrative Innovation From The Point Of View Of Administrators In The Sultanate Of Oman

Mr. Ali bin Hamed bin Muhanna AL-Shibli; Dr. Mohammed Ali Ashour; Dr. Rashid bin Suleiman Al - Ghafry; Dr. Abdul Hamid Saeed Hassan

Abstract: The Information Technology applying Degree in Oman Ministry of Education Directorates to develop the Managerial Innovation by Administrators from their Point View The Study aimed at identifying the status of the information technology in the directorates of education to develop the managerial innovation by the administrator from their point of view. The study sample consisted of (286) administrator in (10) regional directorates and Ministry of Education in Oman. To answer the study questions, the researcher developed a questionnaire. It consisted of (53) items that were divided into (5) domains. Validity and reliability of the questionnaire were computed. Means, Standard Deviation, One way ANOVA and LSD-Test were used to answer the study questions. The results of the study were as follows: The means for the Information Technology which were applied by the Administrators in the directorates of education in Oman were follows: improving Management ability and Skills, Managerial Communication, Information and Database availability, Decision Making and Superintendence. There were statistically significant differences in the status of the Information Technology that were attributed to gender in favor of male, also that were attributed to job position in favor of head of department and attributed to experience in favor of more experience. In the light of the results, the researcher recommended that it is necessary to develop the status of Information Technology .It is also necessary to improve internet usage and continues training to the administrators.

Keywords: Information Technology, Managerial Innovation, Administrators, development

1 INTRODUCTION:

As the world enters the third millennium, the era of information and communication technology revolution, in which the world has become a small village, there have been major developments and rapid developments, notably the information and technological revolution, which has led to profound changes in the structure of the international system in general and omani society in particular. That all institutions of society, especially educational institutions, respond to these developments and technological developments. Recently, the concept and idea of e-government or electronic management, which is perceived as unconventional in the development of its performance and adoption methods, has emerged. Modern administrative salib, and that this concept can become a reality to achieve significant results at all administrative levels in various organizations. The organization can not be isolated from these developments. The physical barriers have been abolished, the organization has become part of a large global system, and keeping abreast of changes is the basis for the success of the organizations.

- *Mr. Ali bin Hamed bin Muhanna AL-Shibli; Dr. Mohammed Ali Ashour; Dr. Rashid bin Suleiman Al - Ghafry; Dr. Abdul Hamid Saeed Hassan*
- *Department of Foundation and Education Administration, College of Education, Sultan Qaboos University Muscat- Sultanate of Oman*
- *ali.alshibli2@moe.om; Safaoman37@gmail.com*

It is necessary to absorb recent developments in management, as well as the causes and backgrounds of this change and ensure that The need to apply these modern developments is that the world is witnessing a profound and rapid economic, political, social and technological development. These developments are directly reflected in the lives of individuals and organizations, and are most evident in the areas of information technology (Al-Damour, 2003). The increasing acceleration of technological change and globalization has led to a turbulent management environment characterized by intense competition, which has made decision makers in management and business schools re-evaluate the nature and shape of their programs, taking into account different forms of innovation. As a major resource in enabling creative experiences of management development (Alavi & Gallupe, 2003). The impact of information technology on management and the Organization made it necessary to restructure the Organization to remove barriers between its two administrative divisions. The new structure depended on the actual functions of individuals rather than on individuals themselves. The success of the Organization in its service delivery depended more on personal relationships and effective communication And some people who are not accustomed to such a pattern and their inability to rely on the hierarchy find it difficult to adjust their situation (Storey, 1995). The employment of information technology has a great impact on creative work, by creating the conditions that are conducive to the human being by accessing the information embodied in knowledge as quickly and easily as possible. This entails liberating man from much of his routine work and opening his way to creativity and developing his abilities and skills, Kilani et al., 2003). Therefore, the use of information technology is

linked to the skills of workers and employees. Both Gera and Gu (2004) believe that organizations using high-tech information should employ highly knowledgeable workers and in their studies emphasize that there is a link between the use of information technology and organizational creativity in practices Efficiency and production. The role of creativity is shown if we realize that change and development in organizations' effectiveness, goals, processes and employees' performance is what any organization and any society seeks. It is a major demand and an indication of the organizations' success or failure to achieve their goals. This requires creative efforts to improve Performance of these organizations efficiently and effectively (Reza, 2003). Innovation is always associated with inventions or great discoveries, and therefore it is a characteristic of scientists or experts, and it needs a huge potential and that the worker in the administrative organizations is not required to perform more than his duties covered by his job, and the fact that the organization does not put creativity higher goal than its objectives, It will be doomed to deterioration and collapse and therefore any individual of us at different positions of our job, does not try to make creativity part of his life, it governs itself by underdevelopment and the inability to contribute to the development of itself and its function and organization, and thus lose an important justification for its continuation or retention of food Lifta, or at least to offer and his rise (Assaf, 1995). Thus, Kreitner (2004,265) argues that creativity and innovation make administrative practice infinitely exciting (and often very difficult). Solving almost all administrative problems requires appropriate creative action. Managers analyze the problems mentally into parts, rearrange them, and seek solutions Beyond the normal structure of the Organization.

1.1 STUDY PROBLEM:

Although there is a quantum leap in the use and employment of information technology in the Ministry of Education in the Sultanate of Oman, to benefit from the promotion and development of the educational process, is the educational portal on the Internet, in addition to hardware and software systems and networks and others, but there is a need It is urgent to develop some technical aspects and administrative and technical practices that limit the employment of information technology and its contribution to the development of managerial creativity among administrators. This is evident from the results of the studies conducted in the Sultanate, such as Al-Kharousi study (2001), which included the Ministry of Education and its affiliated administrations, which showed the need to develop the educational information management system and develop the objectives of the system and its operations, And linking the system with other information systems in the ministry. As Al-Harimi (2003) pointed out in the results of her study the obstacles of administrative innovation in the secondary education schools in the Sultanate of Oman, the lack of skills for using modern devices in the school environment, and the existence of this dimension as a large obstacle (2003), which considered information technology as one of the axes of organizational development in the directorates of education. However, the estimates of the members of the study sample in this area came out with average estimates with The existence of differences attributed to the type variable and the educational area, and recommended a study on the relationship between organizational development and administrative creativity among employees of the Ministry of Education. This is in addition to the orientations of the Ministry of Education, which aimed at expanding the use of information technology in administrative work at all administrative levels. This requires a study to diagnose the degree of employment of information technology and its contribution to the development of administrative creativity among the administrators of the directorates of education in the Sultanate of Oman. Therefore, the current study seeks to identify the degree of employment of information technology and its contribution to the development of administrative innovation in a number of administrative areas, including: administrative decisions, improvement of skills and administrative capabilities, administrative communication, database provision, follow-up and administrative control; The proposals that can contribute to the employment of information technology in the development of creativity, and the importance of identifying the areas of study in terms of the linkage of administrative innovation to administrative processes, and from the linkage of administrative processes to the employment of information technology.

1.2 OBJECTIVES OF THE STUDY:

This study aims to answer the following questions:

1. What is the degree of employment of information technology in the directorates of education in the development of administrative creativity from the perspective of administrators?
2. Are there differences that are statistically significant in the opinions of the administrators of the degree of IT employment in the directorates of education in the development of administrative creativity attributed to the variables of the study such as (type, job title, qualification, experience, directorate).

1-3 THE IMPORTANCE OF THE STUDY:

The Ministry of Education in the Sultanate of Oman has given great importance to the establishment of the Educational Portal of the Ministry of Education. It is expected that it will facilitate the continuous flow of information, expertise and technical resources between the Ministry of Education's institutions using ICT and the use of knowledge innovations Training, education, communication, research and creative innovation to address the issues of education and promote individual and collective educational work (Al-Musawi, 2006). The importance of this research is in line with previous studies and studies of the employment of information technology and its role in the development of management practice in organizations, and impact on their effectiveness, which makes the business and administrative practices that have taken a lot of time and effort in the past, to be completed in a short time and quickly and accurately, Is increasing the effectiveness in achieving the desired objectives; and since administrative innovation is concentrated in the development of new methods and methods of management practices and management, the contribution of information technology and employment optimization has a significant impact on this aspect,

1. The contribution of its practical side in highlighting the role of information technology in the Ministry of Education.
2. Highlighting the interests of the Ministry of Education in the Sultanate and its role in the process of development and administrative modernization through the development of administrative creativity in educational administrators.
3. The application of their results will help to support the development of managerial creativity through the employment of information technology.

1-4 LIMITATIONS OF THE STUDY:

This study was limited to:

1- The General Office of the Ministry of Education and its affiliated administrations in the Sultanate of Oman.
2- Directors of departments, deputy directors of departments and heads of departments affiliated to the General Office of the Ministry of Education and its directorates in the Sultanate of Oman.
3- Answers of sample members on the questionnaire prepared for this study during the current academic year 2007/2008.

1.5 STUDY TERMS:

- Information Technology: - This concept refers to the set of hardware, software, databases and networks used by enterprises in their various functions and functions (Al-Khawaldeh, 2005, 15).
- In terms of information technology: these machines, devices, programs and systems that have an important impact in raising the efficiency and effectiveness of administrative work in the directorates of education, including computer technology, networks, e-mail, Internet, fax and so on.
- Administrative innovation: "The ability of the administrative to change or renew or develop a new approach or method and use it with modern technologies and adapt to the requirements of the environment and suit the aspirations of the modern age and meet the needs of the community, such as creativity in methods and means of work, and stimulate employees to work and highlight the talents and abilities of workers and use to achieve the goals "(Annakra, 1990, 17)
- Procedural and administrative management means: a set of procedures and behavioral processes that lead to raising the efficiency and ability of the administrative change to improve the performance of the organization.
- Administrators: - Each of the functions of the Director of the Department and Deputy Director of Department and Head of Department and at their head during

The academic year 2007/2008 is located in the General Directorate of the Ministry of Education and its directorates in the educational districts in the Sultanate of Oman. It is one of ten directorates of education and one educational administration according to Ministerial Decision 58/2001, the Directorate General of Education in the governorates of Muscat, Dhofar, (Phenomenon, Interior, Eastern North, East South, Al Batinah North and Al Batinah South).

2 PREVIOUS STUDIES

The subject of information technology and administrative innovation has received many studies and researches that enrich this area. The researcher has divided the previous studies into two sections: arabic studies and foreign studies, taking into account the chronological order starting from the oldest and the most recent, and then commenting on these studies until the similarities and differences between this study and previous studies, and areas of benefit from these studies, and the following is the researcher reviews the most important of these studies:

ARABIC STUDIES:

The hawamda study (2003) entitled "organizational climate in the directorates of education and its relation to administrative creativity in the educational leaders in jordan" aimed to identify the relationship between the organizational climate and its relation to administrative creativity. The sample of the study was 264 individuals randomly selected, the directors of education, the technical and administrative managers and the heads of the departments, responded to two questionnaires he had developed, one for the perceptions of the educational leaders of the organizational climate and the other for administrative creativity. Li and no statistically significant differences in the variables of the study. In the samiri study (2003) entitled factors affecting creativity in public organizations: an empirical study on public organizations in jeddah governorate, which aimed at identifying the factors that negatively affect creativity in public organizations, which numbered 343 employees. And the lack of information needed for individuals and the lack of clarity of the objectives of the organization and fear of failure is one of the factors affecting the creativity in the organizations under study, and the absence of internal motivation for creativity in individuals and the loss of the spirit of collective action and recommended the need to build an integrated information system in each organization to enable individuals to obtain the information they need; and to prepare conscious administrative leaders who believe in the importance of creative work and encourage it through the use of participatory methods. Khandakji's study (2005) entitled "the relationship between the use of administrative information systems and administrative creativity from the point of view of administrators in jordanian universities" aimed at understanding the relationship between the use of administrative information systems and administrative creativity in jordanian universities. The study society consists of all department directors, jordanian universities, governmental and private universities within the admissions, registration, finance, administration and personnel affairs. The study sample reached (411) individuals. The study adopted the survey method of correlation through the use of two measures to measure the mis from the point of view and the second to measure the level of administrative innovation. The study found that there are differences of statistical significance in the field of strategic planning and internal work environment of the university and administrative facilities due to the variable of

scientific qualification and for the doctorate and master. In the study of the impact of the use of information technology on the performance of employees in government agencies in jordan: a study on the effect of the relationship between information technology and the performance of workers, the study society consists of workers in the centers of government ministries and agencies (5580) employees were distributed to (46) centers, ministry and governmental apparatus in the city of amman, and 11% of the total study society was selected. The sample number was (510). The researcher used the questionnaire as a data collection tool, concluded the researcher studied a number of results, the most important of which were: the existence of a relationship that is statistically significant between the use of information technology and the dependent variable (employee performance). There is also a statistically significant relationship between the use of information technology and the size of performance, quality of performance, simplification of work,). The study of hawamdeh and harhasha (2006) entitled "the level of administrative innovation among educational leaders in the directorates of education in jordan" aims to identify the level of administrative creativity among the educational leaders in the directorates of education and identify the effect of some independent variables (experience, the level of administrative creativity the study population was one of the educational leaders in the directorates of education in jordan for the academic year 2002/2003 where the sample of the study was (264) individuals and a questionnaire was prepared and developed as a measure of the level of administrative creativity and its validity was confirmed and proven. The level of administrative innovation among the educational leaders in the directorates of education is high, where they have the creative potential and they are interested and encourage others to innovate. There are statistically significant differences between the mathematical averages according to the variable of scientific qualification in the fields of problem solving and communication and encouraging creativity. The study recommended encouraging the central leadership in the ministry to the leadership in the directorates to experiment with the new methods of work and to highlight the creative ideas and stglalha at work and take important decisions and take calculated risks resulting from these methods. The results of the alhamran study (2006) entitled "field study of the reality of information and communication technology in the exploratory schools in jordan" showed that the sample of the study answered one of its questions. There are statistically significant differences between the group that learns using ict and the group that normally learns the total score of the torrance test for creative thinking and for the first group. This indicates the contribution of icts to the development of creative thinking skills among students. (105) schools, of which (100) schools within the governorate of amman and (5) schools outside, and the researcher prepared three questionnaires the first questionnaire survey distributed to school principals and the second was a survey questionnaire distributed to the computer coordinators. The third was aimed at identifying the views on the use of icts in the exploratory schools and distributed to school principals and computer coordinators in the above mentioned schools. The researcher used the torrance test for creative thinking.

FOREIGN STUDIES:

Ozar and askar (1997), entitled "the reality and future of trends in the use of information technology in turkish schools", aimed at understanding the views of policy makers in the turkish ministry of national education on the reality and future of the use of information technology. To be a policy maker with responsibilities to guide issues in educational policies; second, to be interested in the concept of information technology, and to use the method of interviewing the target audience. The study concluded with some aspects that must be taken into consideration regarding information technology including the needs of workers for training, development of physical conditions, financial management, the need to involve the private sector and universities. According to breslar (2000), "information technology in education: creating creativity and consensus in mali and ghana", the educational system in both mali and ghana does not support the status of it applications due to the lack of both financial resources and the objectives of the two systems are slow to shift and do not encourage the diversity of flexibility, experience and creativity that allow for the expansion of the information technology in the two countries. The study also showed some of the necessities for starting to expand the use of information technology in education: the study used the method of case study to compare the two systems in the two countries through documents, questionnaires and direct observations, in which the educational system in both countries was described. And factors contributing to the use of information technology. In hinostrozan, guzman & isaacs (2002), "innovative uses of information technology in chilean schools", the results of (7) cases of creative educational practices were among (240) innovative educational practices, where cases were selected on the basis of criteria and a panel of experts including policy makers, teachers, administrators, technology experts and researchers who helped the national research team to define the local concept of educational creativity and to select study cases; the results were divided into two sections: the results of the analysis of teachers 'influence on students' projects, the quality of learning and the educational activities used; the results showed that the cases did not provide evidence of their impact on student learning as defined in the national curriculum, and in contrast showed that students can learn other things such as opportunities for capacity development through curriculum and training in technology development. Mentz, elsa & kobus (2003), entitled integration of technology management in schools from a south african perspective, aimed at identifying the current state of technology in schools in developing countries such as south africa and also to identify the strategies adopted by principals in control in the school resources for the increasing demand for technological integration of the curriculum, as well as the proposal of innovative management strategies for developing schools in developing countries in the global situation of technology use. The sample included 52 school principals from 49 schools in the butch- south africa measured was selected to participate in a telephone survey, the study found that 46% of schools have computer equipment to administrative purposes and 81% do not have any computer equipment for the purposes of teaching and education. The study of zain and atan & idrus (2004),

entitled impact of information and communication technologies on malaysian smart schools management practices, found that there were high administrative costs, passive acceptance and support from some unskilled staff, misuse of technology and problems to the strict procedural requirements imposed on unaccounted school challenges. The researchers used the questionnaire as a data collection tool for the study after its development and its validity and stability. It was designed to be answered by school principals and their assistants. While the study sample reached 31 schools.

COMMENT ON PREVIOUS STUDIES:
In our study of previous studies, the current study can be drawn from previous studies, similarities and differences between this study and previous studies, as follows:

First: the benefits of the current study from the previous studies:

1. In emphasizing the importance and justification of the current study, most studies have pointed to the impact of information technology on all aspects of administrative work in the organization, including administrative innovation and its relationship to development and creativity.
2. The diversity of the presentation of some previous studies and methodology and emphasis on the improvement of education and administrative work using information technology; as in the study (hawamda and harracha 2006, hamran 2006).
3. The researcher found that there is no arab or foreign studies dealing with the degree of employment of information technology in the development of administrative creativity in the field of education, except for one, which examined the relationship between the administrative information system and its relation to administrative creativity. We emphasize here that the sultanate of oman is witnessing a comprehensive development of technology information in all areas, including education.
4. In building the theoretical framework of the study.
5. In the selection of the study community and sample of the study.
6. Select and build the procedural tool for the study.
7. To know the educational methods to conduct the study.
8. To benefit from the recommendations reached in the previous studies to strengthen the study and focus on some aspects recommended by some previous studies.

Second: similarities and differences between previous studies and the current study:

A. SIMILARITIES:

1. The present study is similar to that of 1997 (ozar and askar), (breslar, 2000), hawamda 2003, hawamdeh and harhashna 2006) in the study sample.
2. The study is similar to ozar and askar (1997), (breslar, 2000) (hinostrozan, guzman and isaacs, 2002) , hawamda and harhasha 2006) in the study community.
3. The current study is similar to the study of johannessen (olaisen and olsen, 1999), gharaybeh 2003, al-dmour 2003, al-sumairi 2003, al-khawaldeh 2005 abdul jawad 2005, ayoub 2005, awad 2005, (blenkinsopp and zdunozyk, 2007), clibi 2007) in the procedural tool used is the questionnaire.
4. The objectives of the study are to determine the relationship between the employment of technology (huanostrozan, guzman and isaacs, 2002), khandakji 2005, alhamran 2006, information and administrative creativity.

B - DIFFERENCES:

1- The current study differs from the previous studies in the environment in which the study is applied. This is undoubtedly the sultanate of oman, which contributes to giving results different from the results of the previous studies, since each environment has its advantages that are distinguished from other other environments.
2- This study differs from many previous studies in the study community, including the directorates of education at the ministry of education in the sultanate of oman.

3 MATERIALS AND METHODS

CHAPTER III

FIELD STUDY PROCEDURES
This chapter includes an overview of the study community and its sample, the method of study, the methods of data collection, the stages of the questionnaire and its contents, the tests of the validity and stability of the tool, as well as statistical methods used in data analysis.

3.1 STUDY METHODOLOGY:

The study adopts the descriptive approach that deals with practices and phenomena as they are on the ground. This method does not require procedures beyond the researcher's ability and control. In addition, it goes beyond collecting data and describing phenomena to analyze and derive meaningful conclusions regarding the problem dealt with in the research. Between study variables.

3.2 STUDY COMMUNITY:

The study society consists of the directors of the departments, their deputies, heads of departments, the ministry of education and the ten educational districts of the ministry of education in the sultanate of oman. The total number of members of the study group reached (542) (88) department managers, 121 deputy director of department, (333) head of department, according to statistics of the statistics department of the ministry of education during the year 2006/2007 (ministry of education, 2007). Table (1) shows the distribution of the study population.

Table (1)

Distribution of the members of the study community to the ministry's office and the directorates of education by region and job title for the academic year 2006/2007.

Educational area	Job Title			Total
	Department Manager	Deputy Director of the Department	Head of Department	
Muscat	7	11	30	48
Dhofar	7	10	26	43
Buraimi	4	6	18	28
Musandam	4	3	18	25
AlBatinah North	4	8	23	35
AlBatinah South	5	7	20	32
Eastern North	6	6	19	31
Eastern South	5	9	30	44
Interior	6	10	24	40
Dhahira	5	7	22	34
Ministry	35	44	103	182
Total	88	121	333	542

Reference: *Ministry of Education Education (2007), Yearbook of Educational Statistics.*

3.3 STUDY SAMPLE:

A random sample (286) was selected from the study population (542) administratively (52.77%) of the study population, which is high and acceptable for the purposes of study, as shown in Table (2).

Table (2)

Shows the distribution of the sample members of the study

Educational area	Post			Total	Sample percentage of community%
	Department Manager	Deputy Director	Head of Department		
Muscat	4	7	10	21	%7.34
Dhofar	1	5	14	20	%6.99
Musandam	1	2	13	16	%5.59
Buraimi	3	5	14	22	%7.69
Dhahira	3	2	19	24	%8.39
Interior	5	3	12	20	%6.99
Al Batinah North	1	4	21	26	%9.09
Eastern North	1	4	21	26	%9.09
Al Batinah South	2	4	18	24	%8.39
Eastern South	2	1	24	27	%9.44
Ministry	7	20	33	60	%20.98
Total	30	57	199	286	%52.77

3.4 STUDY TOOL:

The tool of the study was a questionnaire prepared by the researcher to identify the degree of employment of information technology in the directorates of education in the development of administrative creativity from the point of view of administrators benefiting from theoretical literature and previous studies. The study tool consisted of three types of data:

1) Part 1: Data on the characteristics of the administrators of the study sample: type, academic qualification, job, experience, educational area.
2) Part II: Data on Information Technology (Independent Variable). It was developed after reviewing a collection of references and studies (Al-Dmour, 2003; Al-Mudayyun, 1994; Khandakji, 2005).

Accordingly, the questionnaire was designed in its initial form consisting of (61) paragraphs, divided into (5) main areas: (Appendix A)

- Administrative decision-making (paragraphs 1-11).
- The area of improvement of management skills and capacities (paras. 12-26).
- Administrative communication (paras. 27 to 33).
- Provision of databases and administrative information (paras. 34-50).
- Field of follow-up and management oversight (paras. 51 to 61).

3- levels of employment were classified according to the Likert Five classification (strongly agree, ok, not sure, disagree, strongly disagree) corresponding to (5, 4, 3, 2, 1), respectively.

3.5 VALIDATION OF THE TOOL

In order to verify the validity of the study tool in its preliminary form, it was presented to 14 arbitrators (Appendix C) of faculty members of Sultan Qaboos University, Nizwa University, Sohar University, Al Buraimi University College, Sahar Applied Science College and Ministry of Education specialists. The opinion of the arbitrators was changed. The questionnaire was amended based on the observations received, by deleting and modifying some of them which indicate their non-relevance to the field to which they belong, and rephrasing some of them as follows:

1. Paragraphs (5, 7, 11) of the first area paragraphs, paragraphs 1, 4 and 6 of the third area paragraphs, and paragraphs 5 and 6 of the fifth area paragraphs were amended.
2. Paragraph (2) of the first paragraph has been redrafted, paragraphs (7-10) of the second area paragraphs, and paragraphs (9, 10) of the fifth area paragraphs.
4- Paragraphs (4) of the first field, paragraphs (6-12) of the second domain, paragraph 7 of the third area, and paragraphs 1, 9, 10 and 13 of the fourth field were deleted for replication Or to overlap with other paragraphs.
3. The scale scale has been modified from (Agree: Strongly OK, OK, Not Sure, Disagree, Strongly Disagree) to (Employment Grade: Very Large, Large, Medium, Low, Very Low).

After the amendment, the questionnaire was presented in its final form to the Supervisory Committee in the Department of Assets and Educational Administration and the Department of Psychology at the College where the amendments were approved. And the adoption of the questionnaire in its final form, which consisted of (53) paragraphs distributed in the five fields of study (Appendix B)

3.6 STABILITY OF THE TOOL

To find the stability of the study instrument, the researcher used the Kronbach alpha coefficient in all fields in addition to the stability of the total instrument and table (3).

Table (3)

As a result of the coefficient of the stability of Alpha Kronbach number

Domain number	Domain	Number of paragraphs	Distribution of paragraphs in resolution		The value of the consistency coefficient of alpha Kronbach
			Of	To	
1	Area of administrative decision-making	10	1	10	0.91
2	Improving management capacity and skills	12	11	22	0.89
3	Administrative communication Area	7	23	29	0.90
4	field of provision of databases and administrative information	13	30	42	0.90
5	Follow-up and management control	11	43	53	0.92
The overall tool		53	1	53	0.90

3.7 STUDY VARIABLES

First: independent variables

1. Type has two categories: (male, female).
2. Job title has three levels: (department manager, deputy director of department, head of department).
3. Educational qualification and has three levels: (Diploma, Bachelor, Postgraduate).
4. Years experience and has three levels: (1-5 years, 6-10 years, 11 years and above).
5. Directorate: (Ministry, Muscat, Dhofar, Musandam, Buraimi, Dhahirah, Interior, Al Batinah North, Sharqiyah North, Al Batinah South, Eastern South).

Second: the dependent variable
Development of administrative creativity in the directorates of education, which expressed by the averages of the estimates of the sample members on the paragraphs and areas of the study tool:

1. The field of administrative decision making.
2. Field of improvement of management skills and capabilities.
3. The field of administrative communication.
4. Availability of databases and administrative information.
5. Field of follow-up and administrative control.

STATISTICAL TREATMENTS
The following statistical treatments were used to answer the study questions:

1. The arithmetical averages and the standard deviations to answer the first question.
2. Test (t-test) for independent samples to determine the levels of statistical significance of the differences between the averages of the estimates of the sample members related to the study variables.
3. To test the analysis of the mono-variance to determine the levels of statistical significance of the differences between the averages for the estimates of the sample members related to the variables (job title, qualification, practical experience, directorate) and the LSD test for the remote comparisons to answer the second question

4 RESULTS AND DISCUSSIONS

(Should not exceed 10 pages) the fourth chapter Results of the field study and a summary of the results and recommendations

RESULTS OF THE STUDY:
This chapter includes an overview of the results achieved after the data was collected by means of the study tool, "Identifying the Employment of Information Technology in the Education Departments in the Development of Administrative Creativity from the Management Point of View in the Sultanate of Oman".

FIRST: RESULTS RELATED TO THE FIRST QUESTION
What is the degree of employment of information technology in the directorates of education in the development of administrative creativity from the perspective of administrators? The mean, standard deviations, and relative importance of the "rank" were extracted for the estimates of the members of the study community in each of the areas of identification of the degree of IT employment in the development of administrative creativity. In order to calculate the length of the five-), And divide it on the scale categories to get the correct cell length (ie 4/5 = 0.80). This value was then added to the lowest value in the scale (or beginning of the scale, the correct one) to determine the upper limit of this cell. Thus, cell length became as Table (4).

Table (4)
The standard used to interpret the results of the IT employment rating average In the development of administrative creativity

Average arithmetic range	Employment Grade
5.00−4.20	Very large
−3.40 Less than 4.20	Large
−2.60 Less than 3.40	Medium
1.80 −Less than 2.60	Few
1.00 −Less than 1.80	Very few

In order to determine the degree of employment of each member of the sample on the questionnaire and its dimensions, the arithmetical averages and standard deviations were extracted as shown in Table (5)

Table (5)
Statistical averages and standard deviations of the estimates of the sample members on the study fields and the total instrument

Level	Number	Domain	Arithmetic mean*	Standard deviation	Employment Grade
1	2	**Improving managerial skills and capacities**	3.80	0.65	Large
2	3	**Administrative Contact**	3.78	0.73	Large
3	4	**Provide databases and information**	3.75	0.62	Large
4	1	**Administrative decision-making**	3.65	0.69	Large
5	5	**Follow-up and administrative control**	3.60	0.66	Large
		The overall tool	3.72	0.59	Large

** Great degree of (5)*

Table (5) shows that the degree of employment of the sample members on the tool and its areas was significant according to the criteria adopted in Table (4). The second category was "Improvement of managerial skills and abilities", which ranked first with an average of 3.80 and a standard deviation of 0.65. The third area of administrative communication was ranked second with an average of 3.78 and a standard deviation of 0.73. (3.66) and a standard deviation (0.66). The arithmetical average of the sample estimates for the total instrument (3.72) reached a standard deviation (0.59). Since each of the five fields obtained a high degree of employment by extracting the arithmetical averages and standard deviations of the estimates of the sample members on the degree of employment of information technology in the directorates of education in the development of administrative creativity from the point of view of administrators on the subjects of the fields of study, Paragraphs of the five areas, as shown below:

Field 1: Administrative Decision Making:
The statistical averages and standard deviations of the sample estimates were based on the degree of employment of information technology in the directorates of education in the development of administrative creativity from their point of view on the areas of administrative decision making as shown in Table (6).

Table (6)

The arithmetical averages and the standard deviations of the estimates of the sample members On the areas of administrative decision-making

Level	Number	Domain	Arithmetic mean*	Standard deviation	Employment Grade
1	1	Provide new and innovative alternatives and methods to solve the problems of working in the Directorate.	4.10	0.90	Large
2	9	Encourage the development of future plans for the development of administrative work.	3.84	0.93	Large
3	4	Encourage teamwork to access alternatives and creative solutions.	3.79	0.95	Large
4	3	Facilitates the process of making outstanding administrative decisions.	3.74	0.90	Large
5	10	Increase the efficiency of the administrative decisions taken.	3.76	0.94	Large
6	2	Remove obstacles to brainstorm and creative solutions.	3.63	0.88	Large
7	8	Encourage teamwork and team spirit among administrators	3.58	0.97	Large
8	6	Reduce the degree of overlap among the competencies of the administrators.	3.46	0.95	Large
9	7	Encourage employees to participate actively in determining the administrative problem	3.45	0.91	Large
10	5	Staff participation in administrative decision-making.	3.29	0.96	Medium
field as a whole			3.65	0.69	Large

** Great degree of (5)*

It is clear from Table (6) that the response of the members of the study sample to the paragraphs of the field of administrative decision-making in all the degree of employment was great and in light of the previous criterion. Paragraph (1), which provided "providing alternatives and new and innovative ways to solve the problems of the Directorate's work" The first with an average of 4.10 and a standard deviation of 0.90. Paragraph (9), which was to encourage the development of future plans for the development of administrative work, ranked second with an average of 3.84 and a standard deviation of 0.93.), Which stated that "the participation of staff in administrative decision-making" ranked last with an average sense (3.29) and a standard deviation (0.96) with a medium employment grade. The arithmetic average of the sample estimates for this field as a whole was 3.65 and a standard deviation of 0.69.

The second area: Improving managerial skills and capabilities:
The statistical averages and the standard deviations of the respondents' estimates were based on the degree of employment of information technology in the directorates of education in the development of administrative creativity from their point of view on the areas of improving the skills and administrative abilities as shown in Table (7).

Table (7)

The arithmetical averages and the standard deviations of the estimates of the sample members On the areas of improving management skills and capacities

Level	Number	Text of paragraph	Arithmetic mean*	standard deviation	Employment Grade
1	17	Reduce the time needed to complete business	4.10	0.90	**Large**
2	20	Increase the quality of service provided by the Directorate	4.09	0.77	**Large**
3	14	Increase the completion rate of administrative work	4.08	0.86	**Large**
4	15	Simplify action and reduce work errors.	4.02	0.92	**Large**
5	22	Increase technical and professional competence.	4.02	0.81	**Large**
6	11	Development of administrative staff capacity and skills.	3.94	0.91	Large
7	12	Increase the quality of employees ' performance and managerial creativity.	3.88	0.95	Large
8	21	Increase the ability to recognize and understand the dimensions of work.	3.84	0.77	Large
9	19	Reduce inappropriate redundancy in business processes.	3.73	0.91	Large
10	13	Knowledge of the needs and requirements of the Directorate's work.	3.62	0.98	Large
11	18	Make the work more complicated.	3.16	1.36	Medium
12	16	Increase the burden placed on the staff member.	3.09	1.30	Medium
field as a whole			3.80	0.65	Large

** Great degree of (5)*

It is clear from Table (7) that the response of the study sample members to the areas of improving all skills and administrative abilities was significant except for paragraphs (16), which stated that "the burden of the employee is increased" with an average of 3.09 and a standard deviation of (1.30) Paragraph (18), which stipulates "making the work more complex" with an average of 3.16 and a standard deviation of 1.36, with a medium employment level. Paragraph (17), which stipulated "reducing the time required to complete the work", ranked first with an average of 4.10 and a standard deviation of 0.90. Paragraph 20, which read "increase the quality of service provided by the Directorate" (4.09) and a standard deviation (0.77). The arithmetic average of the sample estimates for this field as a whole was 3.80 and the standard deviation was 0.65.

Third area: Administrative communication:

The statistical averages and the standard deviations of the sample estimates were based on the degree of employment of information technology in the directorates of education in the development of administrative creativity from their point of view on the administrative communication area as shown in Table (8).

Level	Number	Domain	Arithmetic mean*	Standard deviation	Employment Grade
1	23	**Improving the effective management communication process in the Directorate**	3.97	0.86	Large
2	24	**Helping to increase the effectiveness of coordination between different businesses**	3.93	0.83	Large
3	26	**Facilitate the process of administrative communication between the different administrative levels in the Directorate.**	3.85	0.90	Large
4	28	**contribute to strengthening the organizational climate within the Directorate.**	3.83	0.89	Large
5	27	**Provide effective communication channels between the Directorate and its external environment.**	3.82	0.93	Large
6	29	**Reduce misunderstanding between superiors and subordinates in the correspondence process.**	3.54	0.94	Large
7	25	**Encourage the use of administrative communications between employees after the end of their official work at the Directorate.**	3.54	1.07	Large
field as a whole			3.78	0.73	Large

** Great degree of (5)*

It is clear from Table (8) that the response of the study sample members to all aspects of the administrative communication field was highly employed according to the criterion. Paragraph (23) And a standard deviation (0.86). Paragraph (24), which read "Helping to increase the effectiveness of coordination between different works", came second with an average of 3.93 and a standard deviation of 0.83. Paragraph 25, The use of administrative communication between employees after their official term in the department "rank brother Rh arithmetic average (3.54) and a standard deviation (1.07), has reached the arithmetic average of the estimates of the sample on this area as a whole (3.78) and a standard deviation (0.73).

Field 4: Provision of databases and information:
The statistical averages and standard deviations of the sample estimates were based on the degree of employment of information technology in the directorates of education in the development of administrative creativity from their point of view on the fields of provision of databases and information as shown in Table (9).

Table (9)

The arithmetical averages and the standard deviations of the estimates of the sample members On the areas of provision of databases and information

Level	Number	Domain	Arithmetic mean*	Standard deviation	Employment Grade
1	33	To help exchange information and data between the different departments of the directorate.	4.06	0.94	Large
2	39	Assist Directorate technicians in providing the required assistance in case of software errors.	3.83	0.78	Large
3	35	Provide accurate information for the administrative development process in the Directorate.	3.81	0.87	Large
4	38	Assist in the implementation of appropriate training and development programs for the work.	3.81	0.76	Large
5	36	Provide the information the user needs to perform his or her administrative work easily.	3.80	0.87	Large
6	37	Help design innovative and appropriate training programs for administrators.	3.77	0.89	Large
7	42	Facilitate the information system for the use process which makes it a friend of the user.	3.77	0.81	Large
8	34	Secure the ability not to manipulate stored data and information.	3.73	0.96	Large
9	41	The difficulty of obtaining the necessary information is one of the obstacles to the presentation of ideas, proposals and creative solutions.	3.69	0.98	Large
10	32	Removing barriers to embracing new creative ideas.	3.67	0.92	Large
11	40	Minimizing access to information in a timely manner is an obstacle to the creativity of the Directorate's employees.	3.64	1.00	Large
12	31	Reduce the abundance of inappropriate information that confuses employees and thus their poor productivity in the directorate.	3.62	0.93	Large
13	30	Remove the obstruction of creative initiatives among employees.	3.55	0.96	Large
field as a whole			3.75	0.62	Large

** Great degree of (5)*

It is clear from Table (9) that the response of the sample of the study to the paragraphs of the field of provision of databases and information, all the degree of employment is large according to the standard, and paragraph (33), which provided "help to exchange information and data between different sections of the Directorate" With an average of (4.06) and a standard deviation (0.94). Paragraph (39), which reads: "Assisting the technicians of the Directorate to provide the required assistance in the event of program errors" ranked second with an average of 3.83 and a standard deviation of 0.78. Paragraph (30), which provides for "the removal of the obstruction of creative initiatives (3.65) and a standard deviation (0.96). The arithmetic average of the sample estimates for this field as a whole was 3.75, a standard deviation (0.62).

Fifth area: Follow-up and administrative control:
The statistical averages and the standard deviations of the respondents' estimates were based on the degree of employment of information technology in the directorates of education in the development of administrative creativity from their point of view on the areas of follow-up and administrative control as shown in Table (10).

Table (10)

The arithmetical averages and the standard deviations of the estimates of the sample members On the areas of follow-up and administrative control

Level	Number	Domain	Arithmetic mean*	Standard deviation	Employment Grade
1	**43**	**Contribute to the success of the administrative work done in the Directorate.**	**4.02**	**0.75**	Large
2	**44**	**facilitate follow-up procedures and administrative control.**	**3.86**	**0.88**	Large
3	**46**	**Encourage employees to try and support creative ideas.**	**3.73**	**0.81**	Large
4	**52**	**Develop effective management control methods and tools to achieve quality performance.**	**3.67**	**0.86**	Large
5	**45**	**helping to differentiate between competent and incompetent staff.**	**3.56**	**0.93**	Large
6	**48**	**Contribute to the identification of shortcomings in the implementation of the work.**	**3.51**	**0.88**	Large
7	**50**	**Contribute to giving employees opportunities to express their opinions and suggestions regarding the completion of work.**	**3.50**	**0.91**	Large
8	**51**	**Increase managers ' awareness of management oversight objectives and not limit them to error trapping.**	**3.48**	**0.92**	Large
9	**53**	**Reduce excessive administrative supervision of employees while performing tasks.**	**3.46**	**0.95**	Large
10	**49**	**Reduce reliance on inaccurate information to measure the level of performance of employees.**	**3.46**	**0.90**	Large
11	**47**	**Help discover the problems experienced by the Directorate's employees.**	**3.39**	**0.91**	**Medium**
field as a whole			**3.60**	**0.66**	Large

** Great degree of (5)*

It is clear from Table (10) that the response of the members of the study sample to the paragraphs of the field of follow-up and administrative control was all of the degree of employment is great according to the criterion, and paragraph (43) which stipulated "contributing to the success of the administrative work performed in the Directorate" (44), which was entitled "Facilitation of follow-up and administrative control", ranked second with an average of 3.86 and a standard deviation of 0.88. Paragraph 47, Discover the problems experienced by the staff in the Directorate "last rank with the degree of employment (3.91) and a standard deviation (0.91). The arithmetic average of the sample estimates for this field as a whole was 3.60 and the standard deviation was 0.66.

SECOND: RESULTS RELATED TO THE SECOND QUESTION

Are there differences of statistical significance from the point of view of administrators to the degree of employment of information technology in the directorates of education in the development of administrative creativity attributed to the variables of the study (type, job title, practical qualification, practical experience, Directorate)? To answer this question, statistically significant differences were calculated according to independent study variables as follows:

A) Variable type:

The T-test was used to calculate the statistical significance of the sample estimates by type variable for the fields of study and the total instrument, as they are shown in Table (11).

Table (11)

T-test results) for the differences between the averages for the estimates of the sample members Depending on the type variable on the study areas and the total instrument

Number	Domain	Sex	Number	Arithmetic mean	Standard deviation	Degrees of freedom	Value T	Statistical significance level
1	**Administrative decision-making**	**Male**	233	3.71	0.66	284	3.24	*0.001
		Female	53	3.38	0.76	71.28	2.98	*0.004
2	**Improving managerial skills and capacities**	**Male**	233	3.85	0.64	284	2.93	*0.004
		Female	53	3.57	0.63	78.40	2.97	*0.004
3	**Administrative Contact**	**Male**	233	3.82	0.71	284	1.60	0.111
		Female	53	3.64	0.80	71.56	1.48	0.144

4	**Provide databases and information**	**Male**	233	3.79	0.62	284	2.19	*0.030
		Female	53	3.58	0.59	80.17	2.26	*0.027
5	**Follow-up and administrative control**	**Male**	233	3.63	0.64	284	1.50	0.136
		Female	53	3.48	0.71	72.67	1.41	0.164
The overall tool		**Male**	233	3.76	0.59	284	2.61	*0.010
		Female	53	3.53	0.59	77.20	2.60	*0.011

Table (11) shows that there are differences between the averages of the sample estimates on the study fields and the total instrument. To determine the statistical significance levels of these differences, the T test was used for the independent samples. It was found that there were differences in statistical significance at the level of statistical significance Less than (0.05) for males in the answers to the total tool and in three areas (administrative decision making, improvement of skills and abilities, provision of databases and information), and showed no significant differences in other areas.

B - Variable job title

The analysis of the single variance was used to calculate the level of statistical significance of the estimates of the sample members according to the variable of the functional name of the fields of study and the total instrument, as shown in Table (12).

Table (12)

Results of the analysis of the variance of the differences between the average estimates of the sample members On the fields of study and the total tool according to the job title

Number	Domain	Source Variation	Total Squares	Degrees of freedom	Average Squares	Value P	Statistical significance level
1	**Administrative decision-making**	**Between groups**	3.21	2	1.60	3.399	*0.035
		Within groups	133.59	283	0.47		
		Total	136.80	285			
2	**Improving managerial skills and capacities**	**Between groups**	2.88	2	1.44	3.510	*0.031
		Within groups	116.15	283	0.41		
		Total	119.03	285			
3	**Administrative Contact**	**Between groups**	4.51	2	2.26	4.364	*0.014
		Within groups	146.37	283	0.52		
		Total	150.89	285			
4	**Provide databases and information**	**Between groups**	3.33	2	1.67	4.475	*0.012
		Within groups	105.37	283	0.37		
		Total	108.70	285			
5	**Follow-up and administrative control**	**Between groups**	2.23	2	1.12	2.619	0.075
		Within groups	120.50	283	0.43		
		Total	122.73	285			
The overall tool		**Between groups**	3.04	2	1.52	4.442	*0.013
		Within groups	96.79	283	0.34		
		Total	99.83	285			

** Statistical significance at the level of statistical significance less than (> α0.05)*

It is clear from Table (12) that there are differences in statistically significant averages at the level of statistical significance less than (> α0.05) due to the function variable in all fields of study and the total instrument, except the field of follow-up and administrative control, the differences are not statistically significant, Those differences were used as a test (LSD) as shown in Table (13).

Table (13)

The results of the LSD test for the differences between the average estimates of the sample members On the fields of study and the total instrument according to the variable of the job title

Dependent variables	Job Title		Department Manager	Deputy Director of the Department	Head of Department
Domain		Arithmetic mean	3.35	3.65	3.70
Administrative decision-making	Department Manager	3.35		0.3	*0.35
	Deputy Director of the Department	3.65			0.05
	Head of Department	3.70			
Domain	Job Title	Arithmetic mean	3.54	3.74	3.85
Improving managerial skills and capacities	Department Manager	3.54		0.2	*0.31
	Deputy Director of the Department	3.74			0.11
	Head of Department	3.85			
Domain	Job Title	Arithmetic mean	3.42	3.79	3.83
Administrative Contact	Department Manager	3.42		0.37	*0.41
	Deputy Director of the Department	3.79			0.04
	Head of Department	3.83			
Domain	Job Title	Arithmetic mean	3.47	3.69	3.81
Provide databases and information	Department Manager	3.47		0.22	*0.34
	Deputy Director of the Department	3.69			0.12
	Head of Department	3.81			
Domain	Job Title	Arithmetic mean	3.43	3.68	3.77
Average total instrument	Department Manager	3.43		0.25	*0.34
	Deputy Director of the Department	3.68			0.09
	Head of Department	3.77			

** Mean differences in statistical significance were less than (α0.05)*

It is clear from Table (13) of the LSD test that there are statistically significant differences at the statistical significance level (> α0.05) for the average job title estimates (department manager) on the one hand and average job title estimates (Administrative decision making, administrative communication, provision of databases and information, improvement of managerial skills and abilities) and the overall tool for study in favor of the job title (head of department).

C - Variable scientific qualification:

The analysis of the single variance was used to calculate the level of statistical significance of the estimates of the sample members according to the scientific qualification variable for the fields of study and the total instrument, as shown in Table (14).

Table (14)

Results of the analysis of the variance of the differences between the average estimates of the sample members On the fields of study and the total instrument according to scientific qualification

الرقم	المجال	مصدر التباين	مجموع المربعات	درجات الحرية	متوسط المربعات	قيمة ف	مستوى الدلالة الإحصائية
1	**Administrative decision-making**	**Between groups**	**0.046**	**2**	**0.023**	**0.047**	**0.954**
		Within groups	**136.749**	**283**	**0.483**		
		Total	**136.795**	**285**			
2	**Improving managerial skills and capacities**	**Between groups**	**0.141**	**2**	**0.071**	**0.168**	**0.845**
		Within groups	**118.885**	**283**	**0.420**		
		Total	**119.029**	**285**			

3	**Administrative Contact**	**Between groups**	**0.097**	**2**	**0.049**	**0.091**	**0.913**
		Within groups	**150.788**	**283**	**0.533**		
		Total	**150.885**	**285**			
4	**Provide databases and information**	**Between groups**	**0.138**	**2**	**0.069**	**0.179**	**0.836**
		Within groups	**108.560**	**283**	**0.384**		
		Total	**108.697**	**285**			
5	**Follow-up and administrative control**	**Between groups**	**0.329**	**2**	**0.165**	**0.381**	**0.684**
		Within groups	**122.402**	**283**	**0.433**		
		Total	**122.731**	**285**			
The overall tool		**Between groups**	**0.125**	**2**	**0.062**	**0.177**	**0.838**
		Within groups	**99.707**	**283**	**0.352**		
		Total	**99.832**	**285**			

Table (14) shows the absence of differences of statistical significance at the level of significance less than (> α0.05) due to the variable of scientific qualification in all fields of study and the total instrument.

D - Variable years of experience:

The analysis of the single variance was used to calculate the level of statistical significance of the estimates of the sample members according to the variable years of experience for the study fields and the total instrument, as shown in Table (15).

Table (15)

Results of the analysis of the variance of the differences between the averages for the estimates of the sample members on the fields of study and the total instrument by the variable years of experience

Number	Domain	Source Variation	Total Squares	Degrees of freedom	Average Squares	Value P	Statistical significance level
1	Administrative decision-making	**Between groups**	1.960	**2**	0.980	2.06	0.130
		Within groups	134.835	**283**	0.476		
		Total	136.795	**285**			
2	Improving managerial skills and capacities	**Between groups**	2.997	**2**	1.499	3.655	*0.027
		Within groups	116.029	**283**	0.410		
		Total	119.026	**285**			
3	Administrative Contact	**Between groups**	4.512	**2**	2.256	4.361	*0.014
		Within groups	146.374	**283**	0.517		
		Total	150.885	**285**			
4	Provide databases and information	**Between groups**	1.838	**2**	0.919	2.434	0.090
		Within groups	106.859	**283**	0.378		
		Total	108.697	**285**			
5	Follow-up and administrative control	**Between groups**	1.645	**2**	0.822	1.922	0.148
		Within groups	121.086	**283**	0.428		
		Total	122.731	**285**			
The overall tool		**Between groups**	2.116	**2**	1.058	3.064	*0.048
		Within groups	97.716	**283**	0.345		
		Total	99.832	**285**			

** Statistical significance at the level of statistical significance less than (> α0.05)*

Table (15) shows that there are differences in statistically significant averages at the level of statistical significance less than (> α0.05) due to the variable years of experience in the area of improvement of skills and administrative abilities, administrative communication area and the total tool. To determine the sources of these differences, LSD) as shown in Table (16).

Table (16)

The results of the LSD test for the differences between the average estimates of the sample members On the fields of study and the total instrument according to the variable years of experience

Dependent variables	Years of experience		5 −1years	10−6years	11 year − and more
Domain		**Arithmetic mean**	**3.56**	**3.80**	**3.85**
Improving managerial skills and capacities	5 −1Years	3.56		0.24	*0.29
	10−6Years	3.80			0.05
	−11and more	3.85			
Domain	**Years of experience**	**Arithmetic mean**	**3.49**	**3.84**	**3.84**
Administrative Contact	5 −1Years	3.49		0.35	*0.35
	10−6Years	3.84			0.0
	−11and more	3.84			
Domain	**Years of experience**	**Arithmetic mean**	**3.52**	**3.70**	**3.76**
Average total instrument	5 −1Years	3.52		0.18	*0.24
	10−6Years	3.70			0.06
	−11and more	3.76			

** Mean differences of statistical significance were less than (α0.05).*

It is clear from Table (16) of the LSD test that there are statistically significant differences at the statistical significance level (> α0.05) for the average estimates of years of experience (11 years and above) on the one hand and average estimates of years of experience (1-5 years) (In terms of the skills, administrative abilities, administrative communication, and the mean of the total tool of the study in favor of the average estimates of the years of experience (11 years and over). In other fields, the differences are not statistically significant.

E - variable work place (Directorate):

The analysis of the single variance was used to calculate the level of statistical significance of the estimates of the sample by the variable of the place of work (Directorate) for the fields of study and the total instrument, as they are shown in Table (17).

Table (17)

Results of the analysis of the variance of the differences between the average estimates of the sample members On the study areas and the total tool according to the work location

Domain	Source Variation	Total Squares	Degrees of freedom	Average Squares	Value P	Statistical significance level
Administrative decision-making	**Between groups**	6.497	10	0.650	1.371	0.193
	Within groups	130.297	275	0.474		
	Total	136.795	285			
Improving managerial skills and capacities	**Between groups**	8.348	10	0.835	2.074	*0.027
	Within groups	110.679	275	0.402		
	Total	119.026	285			
Administrative Contact	**Between groups**	10.315	10	1.031	2.018	*0.032
	Within groups	140.570	275	0.511		
	Total	150.885	285			
Provide databases and information	**Between groups**	8.531	10	0.853	2.342	*0.012
	Within groups	100.167	275	0.364		
	Total	108.697	285			
Follow-up and administrative control	**Between groups**	5.019	10	0.502	1.173	0.309
	Within groups	117.712	275	0.428		
	Total	122.731	285			
The overall tool	**Between groups**	6.659	10	0.666	1.965	*0.037
	Within groups	93.173	275	0.339		
	Total	99.832	285			

** Mean differences in statistical significance were less than (α0.05)*

Table (17) shows that there are statistically significant differences due to the variable of the place of work (Directorate) in all fields of study and the total instrument at the level of statistical significance less than (> α0.05), except for administrative decision making, To determine the sources of these differences, the LSD test was used to identify the differences as shown in Table (18). Table (18) of the LSD test shows that there are differences in

statistical significance at less than (0.05) for the average of the work place estimates at Dhofar, Musandam, (The field of improving the skills and administrative abilities, the field of administrative communication, the field of provision of databases and information, and the mean of the total tool of the study) for the work place in the administration (Dhofar, Musandam, With statistical significance.

SECOND: THE RESULTS OF THE OPEN QUESTION:

The researcher analyzed the responses of the sample members to the open question about the proposals that help to employ information technology in the development of administrative creativity through the calculation of repetitions of similar answers.

The most frequent answers were the following:

1. Holding continuous training courses for administrators to give them skills necessary.
2. Link the directorates and the ministry with a central network of databases.
3. To provide the directorates with integrated solutions including the work of the departments.
4. Increase the use of the Internet among the administrative community.
5. The use of electronic communication in the completion of administrative transactions.

5 CONCLUSIONS & RECOMMENDATIONS

SUMMARY OF THE RESULTS OF THE STUDY

The study reached several conclusions that can be summarized as follows:

1. Information technology helps to centralize managerial decision-making

The study found that the use of information technology greatly helps to centralize administrative decision-making and thus can be one of the administrative decision makers. The decision-making board came in the penultimate level. Respondents responded very much to it. The respondents in the field study were asked about the "participation of employees in administrative decision making". They obtained the lowest average score of 3.29 and obtained the last rank No. (10). This result was supported by the findings of the supervisor's study (2004) IT leads to Increased capacity of the Organization to control central management decision-making.

2. The employment of information technology contributes to the passing of appropriate information to provide alternatives to problem solving

The study found that the employment of information technology contributes to the provision of information and data that will provide alternatives to solve problems of work in an innovative way, and thus can be one of the axes of administrative innovation for educational administrators. The respondents answered a question about "providing alternatives and new and innovative ways to solve work problems In the same direction, the respondents' responses to the rest of the terms of the decision-making area, where their responses were large, and the paragraph "Encouraging the development of future plans for the development of administrative work" St 3.84 came in second grade.

3. IT employment reduces the time required and increases the rate of business completion.

The study found that the employment of information technology reduces the time required to accomplish the work and increase the rate, and thus can be one of the attempt to create administrative administrators of educational respondents have answered the questions on "reduce the time required to complete the work" and "increase the rate of completion of administrative work" (4.10). The second question came in third place with an average of (3.08) and a large employment rate, as well as the rest of the respondents' responses to the rest of the areas of improvement of skills and administrative abilities.

4. Information technology improves the process of effective administrative communication in the directorates.

The study also found that the use of information technology helps to improve the administrative communication process, which encourages administrative innovation. The responses of the sample members in the field of administrative communication came in second place and with a high degree of employment. (3.97). The answer of the respondents to the paragraph "Helping to increase the effectiveness of coordination between different works" came in second place with a high employment rate with an average of 3.97. (2003) in a positive relationship between information technology and administrative facilities.

5. Information technology provides accurate information and data for the management development process.

The study reached a large extent. Information technology provides accurate information and data for the process of administrative development. This is in line with the availability of modern administrative systems to adapt to the work environment through effective economic means to store and retrieve information and data processing and thus enhance administrative creativity. The field of provision of databases and information The paragraph "providing accurate information for the process of administrative development in the Directorate" ranked third with an average of (3.80) and a large degree of employment.

6. Information technology facilitates follow-up and administrative control procedures.

The study found that the use of information technology greatly facilitates the follow-up and administrative control procedures, which greatly supports administrative innovation by providing time and effort in the follow-up and management control, where the field of "follow-up and administrative control ranked last compared to other areas; "The facilitation of follow-up and administrative control procedures came in second place among the fields of the field with a large employment level and got an average of (3.86). However, the large number of administrative controls that are not required may hinder the process of administrative innovation I on employees while performing their work.

RECOMMENDATIONS

In the light of the findings of the study, and by analyzing the responses of the sample to the open question, the

researcher concludes by presenting a set of recommendations and proposals that he hopes will contribute to the employment of information technology in the development of administrative creativity in the Ministry of Education. Derived from the responses of the survey respondents to the open question in the tool, as follows:

1. Raising the level of the use of the Internet at work with the administrators of the Ministry of Education helps in the recruitment of information technology more efficiently and effectively.
2. Holding continuous training courses for administrators for the need to possess the necessary skills to activate information technology helps to develop administrative innovation.
3. The provision of programs and integrated solutions and databases help to provide information appropriate to the various administrative functions in the Ministry of Education and work to provide alternatives to solve problems at work.
4. The provision of appropriate technology, hardware, software and the Internet reduces the time required for work and increases the rate of achievement, thereby enhancing managerial innovation.
5. Adopting a clear plan for the ministry and directorates to employ information and communication technology by providing accurate information and data for the administrative development process and linking the directorates with a central network of administrative and technical works that supports creativity.
6. The recruitment and use of modern means of communication improves the process of effective administrative communication in the departments and encourages administrative creativity such as e-mail and communication through internal networks and the Internet.
7. The activation of computer departments in the directorates of education and urged them to provide more technical support in order to raise the degree of employment of information technology, helps administrators to employ them in various administrative practices.
8. The dissemination of the culture of quality associated with the employment of information technology facilitates the follow-up procedures and administrative control required by the directorates.

The researcher suggests some studies that help to develop the employment of information technology such as:

1. Appropriate technological programs for the functions and roles of educational administrators.
2. Evaluation of the educational portal from the perspective of administrators.
3. Evaluation of modern technology in the school management program.

6 ACKNOWLEDGEMENTS

Thanks and appreciation
Praise be to Allah, the Lord of the Worlds, and prayers and peace be upon the Most Merciful of our Messengers Muhammad and his family and companions.
After ,,,,,
I would like to extend my sincere thanks and appreciation to the Department of Assets and Educational Management at Sultan Qaboos University, which gave me the opportunity to research and study in this field, especially the head of the Department and all members of the faculty. By judging the study tool, until it reached the desired shape.

I would also like to extend my sincere thanks to Dr. Mohamed Ali Ashour, the first supervisor of the thesis, Dr. Rashid bin Suleiman Al Ghafri, the second supervisor, and Dr. Abdelhamid Saeed Hassan, statistical supervisor for their efforts, time, advice, For this level of work; and thanks to the discussion committee represented by Dr / Mohamed Aburhama as President, Dr. Said bin Nasser Al Farsi external examiner, and Dr / Mohsen Labib Abdulrazq internal discussion to kindly agree to discuss this study and approval.

Finally, I would like to extend my thanks and appreciation to the Ministry of Education, which gave me the opportunity to continue my master's studies. I would like to thank Dr. Salim bin Saeed Al-Bahri, Director General of the Directorate of Education in Al-Buraimi Governorate, and all the colleagues and colleagues. And everyone who helped me accomplish this work.

May Allah reward everyone for me the best reward ,,,,,,

People who contributed to the work but do not fit criteria for authorship should be listed in the Acknowledgments, along with their contributions. It is advised that authors ensure that anyone named in the acknowledgments agrees to being so named. Funding sources that have supported the work should also be cited.

7 APPENDICES

A writer places in the appendices additional information that supports or illustrates points in the paper. Items in the appendices allow the reader to go deeper or gain a clearer view of what is being said in the main text. Appendices are important but they are not a “dumping ground.” For example, not all data goes in the appendices; however, a log of data sets may be appropriate. Not all student work would be placed in the appendices, but a sample that clarifies an assignment would be appropriate. List each appendix as “APPENDIX A,” “APPENDIX B,” etc.

Possible inclusions in the appendices include:

- a log of data sets or specific items from a data set;
- assessments;
- surveys, questionnaires, and interview questions;
- letters home (including how you gained permissions);
- lesson plans;
- artifacts.

8 REFERENCES

Arabic References:

[1]. Ibrahim, Magdi Aziz (2007), Encyclopedia of Educational Knowledge, Volume I, First Edition, World of Books, Cairo.

[2]. Ibrahim, Majdi Aziz (2004), Encyclopedia of Teaching (Part I-A), First Edition, Dar Al-Masirah for Publishing, Distribution and Printing, Amman.

[3]. Abu El-Nasr, Medhat Mohamed (2008), Innovative and Creative Thinking Your Way to Excellence and Success, First Edition, Arab Group for Training and Publishing, Cairo.

[4]. Abu Mughayadh, Yahya Mohammed Ali (2004), e-Government Revolution on Traditional Administrative Work, First Edition, Publisher (BID), Riyadh.

[5]. Aaraji, Aasem; Araji, Amer (2006), The Harmonization of Contemporary Information Technology and Higher Education: A Field Study, Journal of Management, 28 (107), 30-48, Institute of Public Administration, Muscat.

[6]. Al-Ali, Reza Sahib; Al-Moussawi, Sinan Kazem (2001), Contemporary Organization Functions, General Panorama, First Edition, Al-Warraq Publishing and Distribution, Amman.

[7]. Ayoub, Nadia Habib (2000), Factors Affecting Administrative Behavior of Managers in Saudi Commercial Banking Sector, Journal of Public Administration, 40 (1), Institute of Public Administration, Riyadh.

[8]. Burhan, Mohamed Nour and Raho, Ghazi Ibrahim (1998), Information Systems, Mahwah Sabha, First Edition, Dar Al-Maaishah for Publishing and Distribution, Amman.

[9]. Burhan, Mohamed Nour (1999), Information Technology and Challenges of Arab Public Administration in the 1990s, Arab Journal of Management, 19 (1), 1-23, issued by the Arab Organization for Administrative Development, Amman.

[10]. Paul Coyle, Paul Gamble (March 2004), Third Millennium Director and Strategy for Effective Use of Information Technology, Publisher, Director, 39: 14, Riyadh.

[11]. Betty, Jayukri (2002), How to Develop Your Ability to Think Creativity, Translated by: Salman, Sami Tayseer, House of Ideas International, Riyadh.

[12]. Al-Jabri, Moza Obaid (2003). Organizational Development in Soil Departments, Education and Administration in the Sultanate of Oman: Field Study, Unpublished Master Thesis, Sultan Qaboos University, Sultanate of Oman.

[13]. Gerges, Michel Gerges (2005), Dictionary of Education Terms, First Edition, Dar al-Nahda al-Arabiya, Beirut.

[14]. Jarwan, Fathi Abdul Rahman (20002), Creativity, First Edition, Dar Al Fikr for Printing, Publishing and Distribution, Amman.

[15]. Gelda, Selim; Abboui, Zaid (2006), Innovation and Creativity Management, Dar Knouz Knowledge for Publishing and Distribution, Amman.

[16]. Haremi, Mona (2003), Obstacles to Administrative Creativity in Secondary Education Schools in the Sultanate of Oman, unpublished Master Thesis, Sultan Qaboos University, Sultanate of Oman.

[17]. Hassania, Salim (2006), Management Information Systems (NAMA), Third Edition, Al Warraq Publishing & Distribution, Amman.

[18]. Al-Hamran, Mohammed Khaled (2006), field study on the reality of information and communication technology in exploratory schools in Jordan, unpublished PhD thesis, University of Jordan, Jordan.

[19]. Hawamdeh, Bassem Ali (2003), Organizational Climate in the Directorates of Education and its Relation to Administrative Creativity among Educational Leaders in Jordan, unpublished PhD thesis, Amman Arab University for Graduate Studies, Jordan.

[20]. Hawamsha, Basem Ali; Harrachah, Mohamed Abboud (2006), level of administrative creativity among educational leaders in the directorates of education in Jordan, King Saud University Journal, Educational Sciences and Islamic Studies (18) 2, 493-543, Riyadh.

[21]. Al-Kharousi, Abdullah (2001), an assessment study of the educational information management system in the Ministry of Education and its educational directorates in the Sultanate of Oman, unpublished master thesis, Sultan Qaboos University, Sultanate of Oman.

[22]. Al-Kholi, Shukr; Al-Kutb, Mohieddin (2007), The Effectiveness of Management Information Systems and their Impact on Crisis Management, Jordan Journal of Business Administration, 3 (1), University of Jordan, Jordan.

[23]. Khatib, Ahmed and Maiaa, Adel (2006), Creative Management of Universities Modern Models, First Edition, World of Modern Books, Irbid.

[24]. Khatib, Mounir Mohammed (September 2006), The Role of ICT in Motivating Change in Institutions,

International Journal of Administrative Sciences (Arabic Version), 11 (3), 255-307.

[25]. Khandakji, M. Abdul-Jabbar (2005), The Relationship between the Use of Management Information Systems and Administrative Creativity from the Management Point of View of Jordanian Universities, Unpublished PhD Thesis, University of Jordan, Jordan.

[26]. Khawaldeh, Riyadh Abdullah (2005), The Effect of Information Technology on Administrative Innovation in Jordanian Public Institutions, Unpublished Master Thesis, University of Jordan, Jordan.

[27]. Darker, Peter (January, 1996), Administration Part II: Director, Translation by Mohamed Abdelkarim, Review by Nadia El Hadi, First Edition, International Publishing House, Cairo.

[28]. Rasmi, Mohamed Hassan (2004), Fundamentals of Educational Management, First Edition, Dar Al Wafaa Printing and Publishing, Alexandria.

[29]. Reza, Hatem Ali (2003), administrative innovation and its relationship to job performance (applied study on the security apparatus at King Abdul Aziz Airport in Jeddah), unpublished master thesis, Naif Arab Academy for Security Sciences, Riyadh, Saudi Arabia.

[30]. Sulaiman, Sana Muhammad (2005), How to educate ourselves and children to develop creativity, first edition, World of Books, Cairo.

[31]. (2003), Factors Affecting Creativity in Public Organizations, Field Study on Public Organizations in Jeddah Governorate, Unpublished Master Thesis, King Abdulaziz University, Saudi Arabia.

[32]. Sindi, Talaat Bin Abdul Wahab (2000), Technological Development and its Impact on Employees: An Analytical Presentation of Scientific Contributions, Journal of Management, 22 (82), Institute of Public Administration, Muscat.

[33]. Suweidi, Jamal Sanad (2001), Leadership and Management in the Information Age, First Edition, Emirates Center for Strategic Studies and Research, Abu Dhabi.

[34]. Al-Shathri, Hossam Saleh (2003), Administrative Recruitment for e-mail in the security services, unpublished Master Thesis, Naif Arab University for Security Sciences, Riyadh, Saudi Arabia.

[35]. Sabah, Abdul Rahman (1998), Management Information Systems, First Edition, Dar Zahran Publishing, Amman.

[36]. Al-Damour, Fayrouz Musleh (2003), The Effect of Information Technology on Organizational Innovation: An Empirical Study on Jordanian Industrial Joint Stock Companies, Unpublished Master Thesis, University of Jordan, Jordan.

[37]. Tayeb, Essam Ali (2006), Methods of Thinking (Contemporary theories, studies and research), First Edition, World of Books, Cairo.

[38]. Azmi, Mohamed Bazig Hamid (2006), Transformational Leadership and its Relationship to Administrative Creativity, Unpublished MA, Naif Arab University for Security Sciences, Saudi Arabia.

[39]. Amer, Tariq Abdul Raouf (2005), Creativity (Concepts - Methods - Theories), First Edition, International Dar, Cairo.

[40]. Abdul Jawad, Ghada Yasser (2005), The Impact of Information Technology on the Performance of Employees in Government Agencies in Jordan, Unpublished Master Thesis, University of Jordan, Jordan.

[41]. Abdullah, Saad Eddin Khalil (2001), Creativity in Peace and War, Center for Professional Experiences of Management (PMIC), Cairo.

[42]. Assaf, Abdul Muti (1995), Elements of Administrative Innovation in Contemporary Organizations, Journal of Management, 17 (62), Institute of Public Administration, Muscat.

[43]. Alimat, Saleh Nasser (2006), Administrative Operations in Educational Institutions, First Edition, Dar Al Shorouk for Publishing and Distribution, Amman.

[44]. Anakra, Fatima Nawaf (1990), creative administrative organizations as conceived by the administrative leaders, unpublished master's thesis, Yarmouk University, Jordan.

[45]. Awwad, Abdullah bin Mohammed (2005), The reality of administrative innovation and methods of development in the security forces apparatus (from the point of view of the officers of the special security forces in Saudi Arabia), unpublished master thesis, Naif University for Security Sciences, Saudi Arabia.

[46]. Al-Ghuraibeh, Khalid (2003), Administrative Knowledge and its Impact on Administrative Creativity among Administrative Supervisors in Jordanian Public Shareholding Companies in the South Region, unpublished Master Thesis, Mutah University, Jordan.

[47]. Faoury, Rifaat Abdel Halim (2005), Department of Organizational Creativity, Arab Organization for Administrative Development, Cairo.

[48]. Faleh, Farouk Abdo and Al-Zaki, Ahmed Abdel-Fattah (2004), Dictionary of terms of education for the term and the term, Dar Al-Wafaa Printing and Publishing, Alexandria.

[49]. Al-Kurdi, Manal Mohammed and Al-Abd, Jalal Ibrahim (2001), presented in Management Information Systems, University House, Alexandria.

[50]. Clibi, Mohammed Ahmed Abdullah (2007), Modern Technologies and their Implications for the Organizational Structure of the Security Services (Survey Study on Public Administration of Safe Patrols), Unpublished Master Thesis, Naif Arab University for Security Sciences, Riyadh, Saudi Arabia.

[51]. Kanani, Mamdouh Abdel-Moneim (2005), Psychology of Creativity and Methods of Development, First Edition, Dar Al-Massirah for Publishing, Distribution and Printing, Amman.

[52]. Al-Kilani, Osman and Al-Bayati, Hilal and Al-Salami, Alaa (2003), Introduction to Management Information Systems, Second Edition,

[53]. Mursi, Nabil Mohammed (2006), Skills and Administrative Functions, First Edition, Modern University Office, Alexandria.

[54]. Mishri, Hassan Ali (2004), The Role of Information Technology in Problem Analysis and Decision Making in Industrial and Service Organizations, Administrative Journal, 26 (97), 47-69, Institute of Public Administration, Muscat.

[55]. Al-Mudayyun, Khalid Mohammed (1994), Manager's Approach to Information Systems in Saudi Business Enterprises, Unpublished Master's Study, Gulf Arab University, Bahrain.

[56]. Al-Mousawi, Ali (2006), The Concept of the Electronic Portal, Journal of Education Letter, 13: 28-31, Ministry of Education, Sultanate of Oman.

[57]. Najem, Aboud Najm (2004), Strategic Electronic Management, Functions and Problems, First Edition, Dar Al-Marikh, Riyadh.

[58]. Nasr, Azza Galal (2008), Administrative Innovation and Self-Renewal of the General Secondary School, Strategic Vision, First Edition, Modern University Office, Alexandria.

[59]. Al-Huwaidi, Zaid (2007), Creativity (What-It-Discover-Development), Second Edition, University Book House, Al Ain.

[60]. Hagean, Abdul Rahman (1999), Creative Approach to Problem Solving, First Edition, Center for Studies and Research, Naif Arab Academy for Security Sciences, Riyadh.

[61]. Ministry of Education (2007), Yearbook of Educational Statistics, Department of Educational Statistics, Sultanate of Oman.

[62]. Ministry of Legal Affairs (2001), Legislation issued in 2001, Volume XXX, Directorate General of the Official Gazette, Muscat.

Foreign Reference:

[63]. Abra, Jock (1988). Assaulting Parnassus: Theoretical View of Creativity; University press of America; Lanham/Boston.

[64]. Alavi, Maryam & Gallupe, R. Brent, (2003 June), "Using Information Technology in Learning: Case Studies in Business and Management Education Programs", Academy of Management Learning & Education, 2(2),139-153, EBSCOhost Databases,Business Source Premier, Retrieved Date: 19/04/2008, from http://search.epent.com.

[65]. Bakewell, K. G. B.(1994). Information: The Seventh management Function? Library Management 15 (3), 28-33.MCB University Press.

[66]. Blenkinsopp, Jhon; Zdunozyk, Kasia (2007). Do Organizational Factors support Creativity and Innovation in Polish firms? European Journals of Innovation Management, 10 (1), 25-40, Emerald Group Publishing Limited.

[67]. Breslar, Zoey L. (2000).Harnessing the Potential of Information Technologies in Education: Finding innovation and Adaptability in Mali and Ghana. Master of Arts Monograph, Stanford University. Retrieved Date: 13/05/2007 from (ERIC Document Reproduction Service No. ED 455 164).

[68]. Daintith, John and Martin Elizabeth (2005). Oxford Dictionary of Science, fifth edition, Oxford University.

[69]. Donnelly, James H.; Gibson, James L. and Irancevich, John M. (1990). Fundamentals of Management, Seventh edition, Home wood, Boston.

[70]. Gera, Surendra and GU, Wulong (2004). The effect of Organizational Innovation and Information Technology on Firm Performance, Statistics Canada, Catalogue No.11-622-MIE No. 007, Ottawa, Canada, Retrieved Date:25/06/2007, from www.Statcan.ca,

[71]. Gharavi, Hosein; Love, Peter E.D. and Cheng, Eddie W.L. (2004). Information and communication Technology in the Stock broking Industry: an Evolutionary Approach to the Diffusion of Innovation. Industrial Management & Data Systems, 104 (9), 756-765. Emerald Group Publishing Limited.

[72]. Hargado, Andrew; Sutton, Robert I. (1997).Technology Brokering and Innovation in a Product Development Firm, Administrative Science Quarterly, 42(4), 349-394.

[73]. Hihazi, Sámi & Smith, M. Leigh (2004). Creative Problem-Solving Software and Portals, Proceeding of the 2004 ASCUE Conference ,June 6-10,Myrtle Beach , South Carolina, Retrieved Date: 25/06/2007 from http://www.ascue.org

[74]. Hinostroza J.E; Guzman A. and Isaacs S. (2002). Innovative uses of ICT in Chilean School. Journals Of computer Assisted Learning. 18, 459-469. Blackwell Science Ltd. http://www.emerldinsight.com/1367-3270.htm, Date 25/12/2007.

[75]. Johannessen, Jon-Arild, (1994). Information Technology and Innovation: Identifying Critical Innovation Factors , Information Management & Computer Security 2(2) , 4-9, MCB University Press Limited,

[76]. Johannessen, Jon-Arild; Olaisen, Johan; Olsen, Bjorn (1999). Strategic use of information technology for increased innovation and performance , Information Management & Computer Security , 7 (1) , 5-22 , MCB University press Limited,

[77]. Kreitner, Robert (2004). Management, Houghton Mifflin Company, Ninth edition, Boston.

[78]. Lumsden, Gay and Lumsden, Donald (2004). Communicating in Group and Teams: Sharing Leadership; Fourth edition; Wadsworth/Thomson Learinig.

[79]. Markides, Constantinos; Aderson, Jamie (2006). Creativity is not enough: ICT- enabled Strategic innovation. European Journal of Innovation Management, 9 (2), 129-148. Emerald Group Publishing Limited.

[80]. Martins E. C. and Terblanch F. (2003). Building Organisational Culture that Stimulates Creativity and Innovation. European Journal of Innovation Management, 6 (1), 64-74. Emerald Group Publishing Limited.

[81]. Mentz, Elsa and Mentz, Kobus (2003). Managing technology integration into schools a South African Perspective. Journal of Educational Administration 41 (2) , 186-200 .MCB UP Limited

[82]. Mische, Michael A. & Bennis, Warren, (1996 Summer), “Reinventing through Reengineering” Information Systems Management,13,(3),58-65, EBSCOhost Databases, Computer Source, Retrieved Date17/03/2007.from http://search.epent.com,

[83]. Norton, David (1995). Managing benefits from Information Technology; Information Management & Computer Security, 3 (5), 29-35. MCB University Press Limited.

[84]. Oded, Nov; Matthew Jones (n.d.).Information Systems and Creativity Management in The Media and Advertising Industries: A Critical View, University of Cambridge, and Retrieved Date: 14/1/2008, from site: jims.cam.ac.uk.

[85]. Ozar ,Mirac ; Askar, Petek (1997).Present and Future Prospects of the Use of Information Technology in Schools in Turkey, Educational Technology Research and Development, 45(2) ,117-123

[86]. Pinsonneault, Alain; Kraemer Kenneth L. (1993).The Impact of Information Technology on Middle Managers. Management Information System Quarterly, 3 (22),1-38

[87]. Pyoria, Pasi (2005). Information technology, Human relations and Knowledge work team, Team Performance Management, 11(3, 4), 104-112, Emerald Group Publishing Limited.

[88]. Rahm, Dianne (1997). The Role of Information Technology in Building Public Administration Theory .Knowledge and Policy: The International Journal of Knowledge Transfer and Utilization, 10(3), 71-80.

[89]. Reitz, Joan M. (2004). Dictionary for Library and Information Science, First edition, Libraries Unlimited, Connecticut.

[90]. Rodan, Simon (2002). Innovation and Heterogeneous Knowledge in Managerial Contact Networks. Journal of Knowledge Management, 6(2), 152-163. MCB up Limited.

[91]. Shin, Namchul (1999). Does Information Technology Improve coordination? An Empirical Analysis, Logistics Information Management, 12, (1, 2), 138-144, MCB University Press.

[92]. Storey, Colin (1995). The impact of Information Technology on Management and Organization: The Case of Hong Kong Polytechnic University. Library Management, 16 (2), 22. MCB University Press.

[93]. Zain, Muhammad; Atan Hanifa &Indrus Rozahn (2004). The imapc of Information and Communication technology (ICT) on the Management Practices of Malaysian Smart Schools, International of Educational Development, (24), 201-211, Retrieved Date 8/8/2008 from www.elsevier.com /locate/ijedudev.