



**ASSESSMENT OF INFORMATION TECHNOLOGY AWARENESS AND USAGE IN
HIGHER EDUCATION IN SAUDI ARABIA: SAMPLE STUDY IN JAZAN AND KING
FAISAL UNIVERSITY KSA**

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Abstract: *We all agree that information and Communication Technology (ICT) sector is a stimulus for creativity and innovation in the world. It developing innovative products and methods, as well as increasing literary creation with modern teaching methods. The Saudi Government has implemented a multi-stage plan for restructuring the ICT sector with the objectives of encouraging effective competition, attracting private and public sector, as well as increasing the computer awareness for public and student community. Now a days ICT is a core element of Educational sector, the old universities fully utilized ICT structure in Administration, Cloud data, e-learning and coordinating students and faculty communication etc., The challenges to the new Universities in Saudi Kingdom, reportedly, lie mainly in the general lack of awareness of information sharing and usage among the students, faculty and administration not in the effective way.*

The objective of this study is to assess the level of awareness and use of this technology in Saudi universities. In addition, this study will identify the problems Faced by Saudi universities' students, faculty and staff in using IT tools and systems.

The Research survey conducted with sample questionnaire. The study questionnaire was built and judged according to the study questions and purposes. In this research, we are trying to provide better solution for implementation plan and increase the ICT usage among the students, faculty and staff.

Key words: *ICT, Infrastructure, Development, New universities etc.*

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INTRODUCTION

Information and communication technologies are fast and automated, interactive and multimodal, and they support the rapid communication and representation of knowledge to many people and its adaptation in different contexts. Information technology is impacting all walks of life all over the world. ICT developments have made possible a transition in information storage, processing, and dissemination, from paper to virtual and from atoms to bits, which are now setting new standards of speed, efficiency, and accuracy in human activities. Computerized databases are extensively used to store all sorts of confidential data of political, social, economic or personal nature to support human activities and bringing various benefits to the society [3].

ICTs encompass a range of rapidly evolving technologies and they include telecommunication technologies (telephony, cable, satellite, TV and radio, computer-mediated conferencing, video conferencing) as well as digital technologies (computers, information networks (internet, World Wide Web, intranets and extranets) and software applications [3][6].

Internet users in the Middle East have been continuously increasing in the past few years. The high number of internet penetration and credit card use growth, fueled by advances in the internet technology, has led to a significant increase in the number of online transactions, electronic data, and smart mobile devices [1].

Table 1.

	Social Network	Services	Entertainment	News	Retails	Others
Latin America	33	14	15	4	2	32
Middle East	29	17	13	3	1	36
Europe	26	13	12	4	3	42
North America	13	17	15	5	4	46
Asia-pacific	8	13	13	4	7	54
World Wide	18	14	13	4	4	46
Source: www.emarket.com						

Currently, about 1 million students are enrolled at Saudi universities and colleges, compared to 7,000 in 1970 – a dramatic improvement. Of those, over half are female. Women attend



all major universities, as well as numerous all-female colleges and private women's universities.

Saudi students also have the opportunity to pursue specialized graduate and postgraduate degrees abroad. Supported by government scholarships, thousands of Saudi students enroll in universities outside the Kingdom. The Eastern Province's King Faisal University, founded in 1975, offers a range of programs, including medicine and architecture, at its campus in Dammam.

Thus, the purpose of this review article is to discuss the benefits of ICT use in education, in the enhancement of student learning and experiences of some countries in order to encourage policy makers, school administrators, and teachers pay the required attention to integrate this technology in their education systems. In so doing, it highlights the benefits of ICT in education, existing promises, and the limitations and challenges of integration to education systems.

LITERATURE REVIEW

Fisseha Mikre (2011) this article discusses the Roles of ICT in education. Information communication technologies (ICT) at present are influencing every aspect of human life. They are playing salient roles in work places, business, education, and entertainment. Moreover, many people recognize ICTs as catalysts for change; change in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research, and in accessing information. Therefore, this review article discusses the roles of ICTs, the promises, limitations and key challenges of integration to education systems[2].

Fadi A. Aloul (2012) In this paper, he discussed about need for security awareness programs in schools, universities, governments, and private organizations in the Middle East by presenting results of several security awareness studies conducted among students and professionals in UAE in 2010. Another study focuses on evaluating the chance of general users to fall victims to phishing attacks which can be used to steal bank and personal information. Furthermore, a study of the user's awareness of privacy issues when using RFID technology is presented. Finally, we discuss several key factors that are necessary to develop a successful information security awareness program [1].



Saeed Q. Al-Khalidi Al-Maliki (2013) The main objective of this research proposal is to identify the impact of ICT investment in Saudi Arabia and the role that the government has played through its series of 'five year plans'. The current circumstances in Saudi Arabia relating to IT usage and development as well as the factors affecting economic growth are examined and analyzed. This research also assesses the strategies and policies relating to ICT and its investment in Saudi Arabia, and discusses [4].

Muna D. Alsuraihi , Heba Omar Bashraheel (2013)The goal of this study is to explore the Saudi household use of ICT 'Information and Communication Technology one the Saudi household clearly depends on nowadays. Most Saudi households have access to ICTs like mobiles and Internet connections. It is important to analyze to what extent are they used, the goals of their use, and its impact on the households. This paper focuses on five questions related to the ICTs use, awareness and effects as well as investigating the correlation between some households' characteristics and the raised issues. The sample was an accidental sample, and the study questionnaire was built and judged according to the study questions and purposes [5].

NEED OF ICT IMPLEMENTATION IN HIGHER EDUCATION

Recent development of ICT has been the convergence of technology concerned mainly with the processing of information with that which deals mainly with its communication. This is clearly seen in the emergence of the Internet, whereby the processing power in each office and colleges can be connected and communicate with corresponding systems anywhere else in the world. The better this integration is realized, the more blurred the distinctions become. We can reach the point where the user does not know whether the information resource being accessed is held on the local machine – and (more significantly) does not *care* where it comes from.

Education is concerned with the imparting of information – not just the simple acquisition of declarative facts, but also procedural information such as how to do things, even how to learn. Technology to aid in the processing and communication of information is not new; it is at least as old as writing. However, in the past 50 years, the development of that technology has accelerated exponentially, mainly due to the invention of digital electronics. The application of ICT in Educational institution such as Video conferencing, Video



broadcast, Audio broadcast, Webcast, Telephone, Telephone conference, Web portal application, chat, E-mail, Bulletin board etc.,

Convergence of telecommunications and computing can enable the ability to disseminate information efficiently and at reduced costs Advent of ICT is changing the long-acquired conventions about the economic parameters of competitiveness and development, as it becomes the core driver behind the new technology-driven global education. The Significance of ICT implementation in new universities facing lot of problems. This research article tries to evaluate the following problems on the existing ICT structure.

- To assess the extent of the use of ICT in Main campus and other girls campus.
- To evaluate the impact of ICT on teaching and learning.
- To assess the ICT skills of students in the education system.
- To obtain the views of principals and teachers about their ICT skills and their opinions about the impact and future role of ICT in education.
- To assess the extent to which ICT is used to support students with special educational needs.
- To make recommendations that will inform the development of Department of Education and Science policy.
- To assess capital investment in ICT Administration.
- To establishing broadband/wireless connectivity for colleges and other centres of learning.
- Provision of technical support for the education system.
- Integration of ICT in the curriculum.
- To review of ICT in teacher education, both pre-service and in-service.

Table 2. Percentage of Internet users in KSA

Year	% No. of Internet user
2009	10.3
2010	11.4
2011	13.6
2012	15.8
2013	16.2
Source: Communication and Information Technology commission, KSA.	

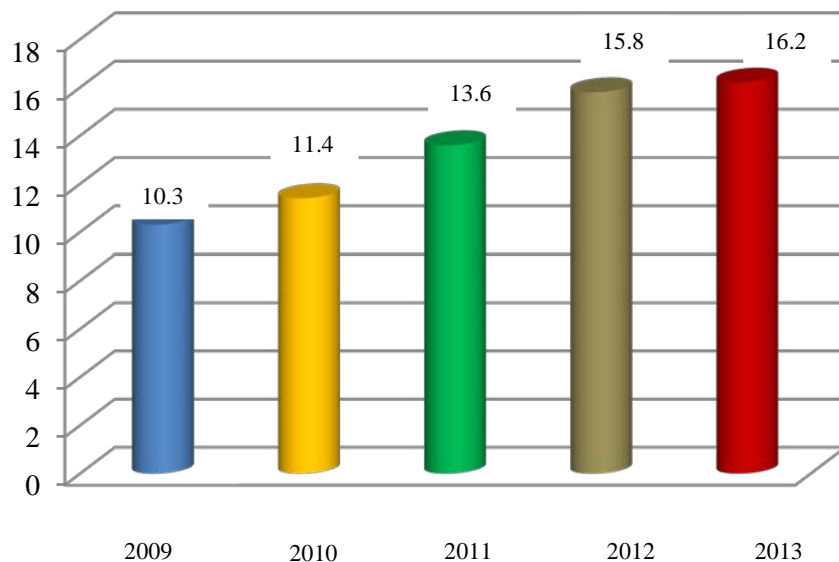


Figure 1. Internet users last 5 years

RESEARCH FINDINGS

The problems associated with the lack of technical support and maintenance were commented upon strongly in the survey responses from faculty and students. These respondents' comments provided an insight into the complexities faced by some colleges regarding this issue. The key elements of constructing good ICT infrastructure in University were as follows:-

The key players of ICT in Higher education

- 1) Administration -28%
- 2) IT Department-22%
- 3) Faculties-25%
- 4) Students-10%
- 5) Infrastructure-15%

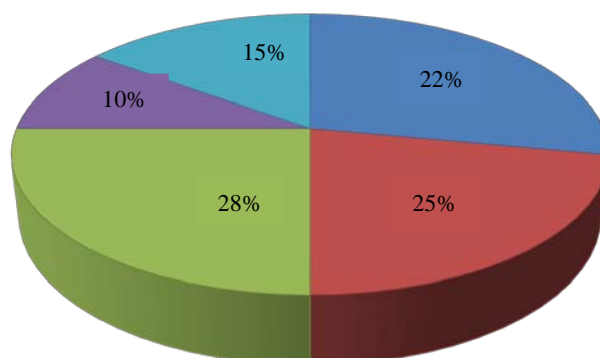


Figure 2. Key elements of ICT in Education



In this research article, We chosen two universities for comparing ICT performance and its output result. First university new university just started before 7 years i.e. Jazan University, Jazan and second well established university King Faisal University. The ranking position of Saudi university mentioned below table which includes jazan university ranking No.16 and King Faisal Ranking No.6

Table 3.

Saudi Ranking	World Rank	University
1	236	King Saud University
2	544	King Fahd University of Petroleum & Minerals
3	701	King Abdulaziz University
4	1165	Umm Al-Qura University
5	1392	Al Imam Mohammed Ibn Saud Islamic University
6	1701	King Faisal University
7	2404	King Khalid University
8	2898	Najran University
9	3407	Taibah University
10	3792	College of Technology at Riyadh
11	4292	King Abdullah University of Science & Technology
12	4667	Taif University
13	4689	Naif Arab University for security services
14	4722	Islamic University of Al Madinah
15	4958	Institute of Public Administration
16	4994	Jazan University

Sources from:www.webometrics.info

All of the IT equipment in the Computer lab, Web portal, message delivery and is constantly giving trouble. We have not technical expertise amongst the staff so maintenance is a problem. Faculties are discouraged and frustrated and the use of ICT becomes a negative experience for both faculties and Office staff. All case-study universities consistently reported that the maintenance, upgrading and technical support of their ICT equipment was a cause of great strain, and that these were areas that consumed significant amounts of their budget.

Sample survey data distributed and collected from staff members and students, according to survey report, we summarizing their observations about ICT supportive material in Jazan University. The table No. discussed about the percentage of utilizing computer in home,



class room, University campus by the students and faculties. Table No. discussed about working condition and utilization of ICT supportive materials.

Table 4.

**Computer Accessed by the students, Staff, Others at home, office, class room
diagram and table**

	Home	Class Room	Office /Campus
Office Staff	55%	N.A%	45%
Student	95%	0%	5%
Faculty	40%	5%	55%

Table 5.

ICT facilitate device availability and usage in Jazan

	Faculty	Student	Staff Admin
Printer	2	1	2
Photocopy machine	1	1	2
Scanner	1	1	2
Digital camera	1	1	1
Audio/Video device	1	1	1
Smart board	1	1	1
Hardware accessories	1	1	2
Software availability	2	1	2
Internet facility	3	2	3
I.T Team support	2	1	2
Web portal facility	1	2	2
Video conference facility	1	1	1
E-learning centre ICT support	2	2	1
1- Poor, 2-Average, 3-Good			

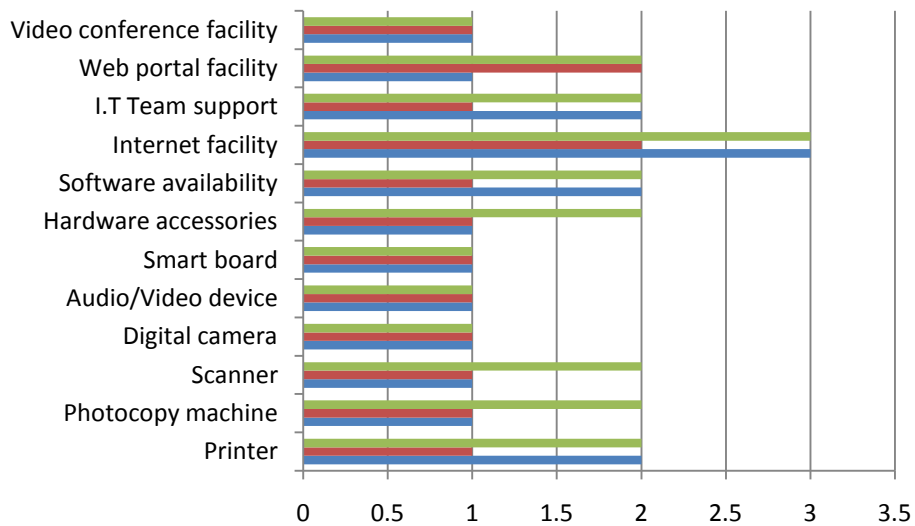


Figure 3.Jazan University ICT availability and usage by Faculty, student, Staff-Admin

KFU has a powerful ICT infrastructure. Infrastructure is the foundation on which University portal is built. Infrastructure, which includes technical infrastructure, software and hardware, smart classrooms and all web accessible technologies are needed to support and enable e-learning in institutions. The infrastructure has to be reliable and secure for students to access and summits e-learning resources. The e-learning infrastructure is given potential care by the university management to provide the student and instructor with suitable and powerful learning environment.

Table 6. KFU ICT facilities

	Faculty	Student	Staff Admin
Printer	3	1	3
Photocopy machine	2	2	3
Scanner	2	1	3
Digital camera	2	2	2
Audio/Video device	2	2	2
Smart board	3	2	2
Hardware accessories	2	2	3
Software availability	3	2	3
Internet facility	3	2	3
I.T Team support	2	2	3
Web portal facility	3	3	3
Video conference facility	2	2	2
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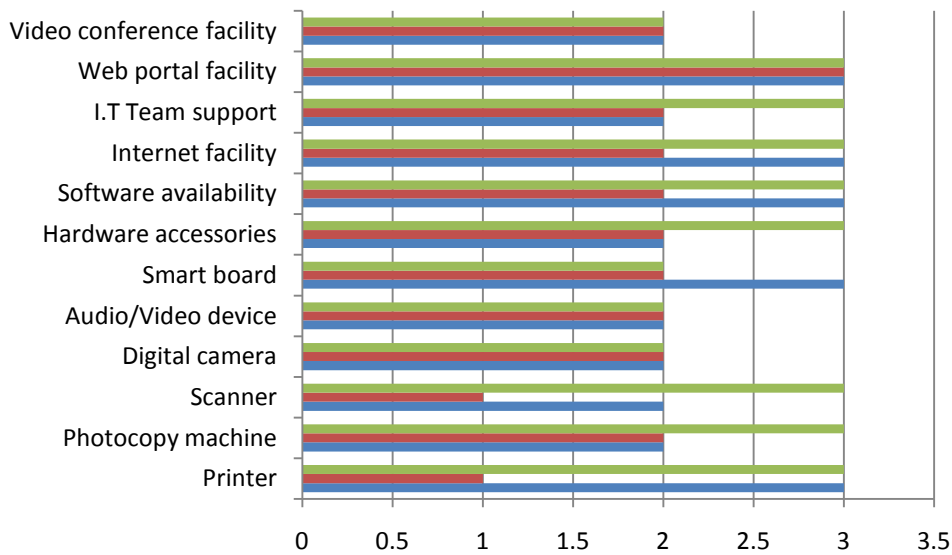


Figure 4. KFU ICT availability and usage by Faculty, student, Staff-Admin

The following table and figure describe about comparison of King Faisal University and Jazan University ICT facility available and usage. It is calculated from sample data collected from the Faculties, Students and Staff-Admin of both Universities. The average weightage given by the Faculty member of Jazan mentioned 17 out of 36 i.e, It is less than 50% ICT performance. KFU average weightage mentioned by the Faculty members 29 out of 36, i.e., It is nearly 80% of ICT performance. Similarly, Student and Staff-Admin also mentioning that the performance of Jazan ICT structure need more implementation in order to fulfill the efficient learning centre.

Table 7 Comparison of table of Average use of ICT

	Staff	Student	Admin
Total	39	39	39
Jazan University	19	16	22
KFU	32	26	35

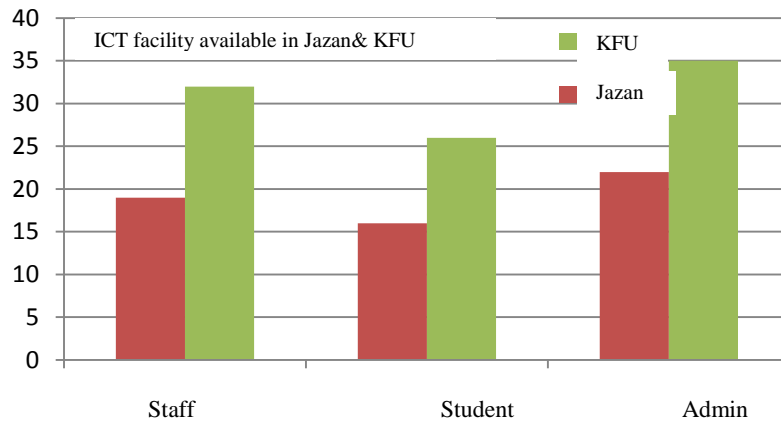


Figure 5. Comparison of ICT facility in Jazan and KFU

ROLES AND RESPONSIBILITY OF ADMINISTRATION

- Responsibility for ICT in universities/colleges can lie with an ICT steering committee, Lab Administrator/ ICT co-coordinator, or a combination of these personnel. Greater efficiency is achieved where a named person has responsibility for ICT within a campus and where their role is clearly defined.
- There is not standard implementation plan for maintaining existing ICT structure. These plans tend to concentrate more on infrastructural issues than on how ICT can be used to enhance teaching and learning.
- Most departments/colleges/universities were found to have an acceptable-use policy. This is a product of the requirements of the Schools Broadband Access Programme and the safety-awareness initiatives of the NCTE. It is also an indication of the seriousness that colleges attach to the risks associated with the use of the internet.
- The majority of Engineering/Computer Science faculties make some use of ICT in lesson planning and preparation. Newly qualified staff are more likely to use ICT for this purpose than their more experienced colleagues. However, fewer staff were found to plan for the use of ICT in teaching and learning. Staff members of these programmes regularly reported that their involvement also encouraged them to use ICT in their teaching with other class groups.
- IT co coordinator and maintenance personnel identified the provision and maintenance of hardware in departments/colleges/universities and the provision of professional development opportunities in ICT as being strategically important for the development of ICT in their campus.



- Where ICT is used in primarily it predominates in core curricular areas, such as Engineering, Computer Science and Information Technology and Scientific Education (SESE).
- Computer rooms, where they exist, should be used to maximum effect. Staff members and students should be provided with adequate access to the internet.

ROLES AND RESPONSIBILITY OF FACULTIES

- A designated staff member should be responsible for ICT development. An ICT plan should be developed, using a consultative process, and an appropriate-use policy should also be established.
- Faculty members should endeavour to integrate ICT more in their planning and preparation for teaching.
- To advise and support Faculty members in their region in integrating ICT in their teaching and in their students' learning
- To build a knowledge base on all matters relating to the use of ICT in their University colleges and departments.
- The need for more training for teachers
- The need for more funding (equipment and computers, maintenance, support)
- The need for more support (technical support, encouragement to use ICT).
- Further integrate ICT in teaching and learning
- Enhance professional development opportunities for faculty members conducting with useful workshop.

ROLES AND RESPONSIBILITY OF STUDENTS

- Students' active involvement in their own learning
- The development of students' higher-order thinking skills
- Students' learning in authentic environments
- Students' interest and engagement in learning
- Differentiated learning for all students
- Collaborative learning
- Assessment of and for learning.



ROLES OF INFRASTRUCTURE

- The student-computer ratio in the entire department should be 10:1
- The lack of technical support and maintenance is a significant impediment to the development of ICT in Jazan University colleges.
- Colleges were found to use a limited range of ICT peripherals, mainly printers, scanners, and digital cameras. Digital projectors were found in post-primary schools. At primary level, interactive whiteboards were present in a small number of schools.

BENEFITS OF THE RESEARCH

Universities utilize the resources of ICT infrastructure to promote their technical activities, making the academic environment of the students expand to their relevant working environment and can hopefully develop a type of education program for learning effectiveness. The aim of ICT infrastructure in education is to find various factors of behavior, understanding and reasons that govern such behavior. Here, we are providing such factors which have been involved in ICT development structure.

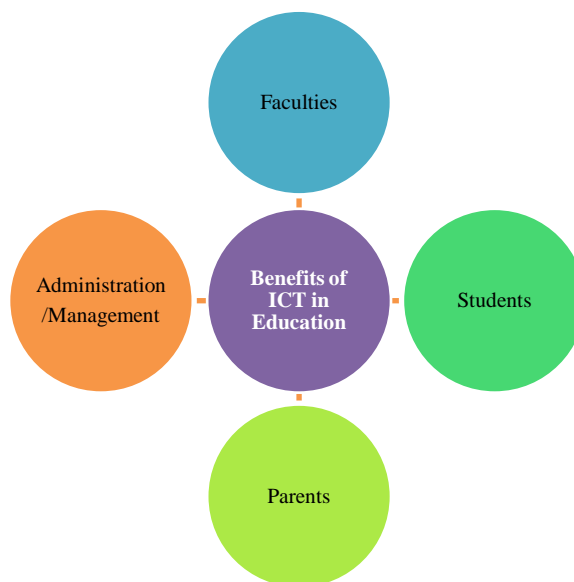


Figure 6. Benefits of ICT

BENEFITS FOR FACULTIES

An effective learning platform can enable teachers to

- Create and share teaching materials that can be accessed online, printed out, or used with an interactive whiteboard or data projector



- Put their resources on line page by page, lesson plan by lesson plan, so that colleagues can access them both in school and from home, thus facilitating collaboration within their subject area
- Obtain access to a wide variety of learning materials that they can customise for the exact needs of their students
- Obtain access to lesson plans from colleagues to facilitate cover for teacher substitution
- Assess, monitor and track individual and group progress
- Receive submissions of work from students in one area that is easy to manage
- Manage, within personal desktop space, their timetables, diary, e-mail, and discussions
- Increase their ICT competence and confidence.

BENEFITS FOR STUDENTS

An effective learning platform can enable students to

- Obtain access to learning materials created by their teachers and others, outside lesson time and from locations such as their local library or home
- Store their work and notes on line for use in assignments, homework and revision, outside normal school hours
- Work at their own pace and with a wider choice of learning styles, through a more personalized curriculum
- Create an on-line portfolio, including digital photographs and videos of performance, as well as Text
- Improve their ICT skills and on-line management of materials
- Submit homework and assignments for marking and assessment
- Communicate by e-mail and participate in live discussions and forums with other students and with teachers.

BENEFITS OF LEARNING PLATFORMS FOR PARENTS

An effective learning platform can enable parents to

- Play a greater part in their child's learning, where they have access to the learning platform from home



- Support children in learning that takes place outside school
- View reports, attendance data, and scores in assessment activities
- Communicate effectively with teachers, school administrators and others supporting their child's learning
- Engage with wider school issues through on-line communication tools
- Become active partners with the school.

BENEFITS OF LEARNING PLATFORMS FOR ADMINISTRATION AND MANAGEMENT

- Provide up-to-date management information on attendance and attainment
- Track the progress of individuals and groups of students
- Collate summative and formative assessments
- Reduce the administrative burden on teachers by using transferable data
- Enable communication within school and beyond, one to one, one to many, or many to many
- Increase communication with parents.

CONCLUSION

This study contributes to the understanding of user acceptance of ICT supportive structure devices in Educational environment. . ICT-enhanced learning environment facilitates active, collaborative, creative, integrative, and evaluative learning as an advantage over the traditional method. In other words, ICT is becoming more appropriate in the realization and implementation of the emerging pedagogy of constructivism that gives greater responsibility of learning for students There are more findings of implementation of this research articles. First, it will establish ICT resources between the students, faculty members, and deanship. The Kingdom of Saudi Arabia is taking strident steps in the field of ICT by leaps and bounds, either in public education or private education, including university education. Also, this study investigated factors responsible for the poor use of information and communication technologies in the new university like Jazan Region. Survey was reviewed extensively. From the finding it is evident that lack of commitment by institutional management; lack of ICT strategy; lack of qualified staff to manage the ICTs and low skill level of the maintenance personnel librarians dominated the reasons for the poor



use of the ICTs in new university campuses. Finally, Our findings suggest that the impacts of ICT is significant, is education. ICTs are making major differences in the teaching approaches and the ways students are learning.

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