The Significance of ICT Usage in Sudanese Universities  
(Case study: Madani Ahalia University) 

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Abstract : The use of ICT in teaching-learning process is a relatively new phenomenon and it has been the educational researchers’ focus. Within education, ICT has begun to have a presence but the impact has not been as extensive as in other fields. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. This paper highlights the significance of ICT in Sudanese higher education. The paper argues the role of ICT in transforming teaching and learning and seeks to explore how ICT has positively have added new dimension in the language teaching in the higher education. Finally, the paper assesses how Information Technology has facilitated the growth in interactive learning and what has been its impact in the higher educational in the country. The findings of this study revealed that teaching staff as well students have a strong desire and interest to integrate ICT into teaching-learning processes. 

Key words: ICT, Sudan, Higher education. 

Introduction 
According to Daniels (2002) ICTs have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. However, there appears to be a misconception that ICTs generally refers to ‘computers and computing related activities’. This is fortunately not the case, although computers and their application play a significant role in modern information management, other technologies and/or systems also comprise of the phenomenon that is commonly regarded as ICTs. Pelgrum and Law (2003) state that near the end of the 1980s, the term ‘computers’ was replaced by ‘IT’ (information technology) signifying a shift of focus from computing technology to the capacity to store and retrieve information. This was followed by the introduction of the term ‘ICT’ (information and communication technology) around 1992, when email started to become available to the general public (Pelgrum, W.J., Law, N., 2003). According to a United Nations report (1999) ICTs cover Internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services, and other related information and communication activities. According to UNESCO (2002) information and communication technology (ICT) may be regarded as the combination of ‘Informatics technology’ with other related technology, specifically communication technology. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counselling, interactive voice response system, audiocassettes and CD ROMs etc have been used in education for different purposes (Sharma, 2003;Sanyal, 2001; Bhattacharya and Sharma, 2007). 

ICT provides a great deal of advantage in the delivery of equitable quality education thereby providing an opportunity to improve the lives of our people. The need to use new technologies to raise the quality and efficiency of education cannot be overemphasized. 

Statement of problem 
This paper tries to investigate the importance of ICTs in Sudanese universities setting with special focus on Madani Ahalia University. It has been noticed that many academic staff and Sudanese Universities do not seem to appreciate
this importance and as such appear not to use them in teaching and learning. However, the study is concentrated on reaching out how lecturers of Madani Ahalia University see ICT impact the way of presenting their lectures to the students.

**Purpose of the study**

The general purpose of this study was to find out the extent of lecturers use of ICTs in University education as a means of achieving national development. Specifically, the study sought to find out;

1-How the ICT usage influenced the way of teachers way of teaching in Sudanese University?.
2-Has the ICT usage any impact on the student language performance?.

**Significance of the study**

This study is considered significant for the following reasons;

1-findings obtained may reveal the significance of ICT usage by lecturers .
2- Findings reached may also reveal the impact of ICT usage motivating as well promoting students’ language performance .
3- Findings of this study may raise the awareness towards the need of ICT usage in Sudanese setting education.

**Questions needed to be answered**

This study is guided by the following research questions:

1. What types of ICT skills do teachers need?
2.- What is the greatest barrier to using ICT by the teachers?
3. What is the impact of ICT on teachers’ working conditions?

**Objectives of the study**

The specific objectives of the study are to:

- Present the concept of ICT as a tool for teaching-learning in higher institutions in Sudan.
- Identify the impact of ICT in teaching-learning process in Sudanese universities setting (Madani Ahalia University).

**Limits of the study**

The study is mainly devoted to investigate the significance of using ICT by tertiary instructors of Madani Ahalia University in the academic year 2016/2017 during the first semester. Questionnaire is employed as a tool for collecting data.

**Related literature review of ICT in Sudan**

Abderhman on study entitled "The State of ICT Implementation and Training at the University of Khartoum Library System (UKLIS)" states that the Sudan country report on ICT prepared by Hamdy (2007) reveals that the country has an established ICT policy. The Sudanese national ICT strategy was formulated in the year 1999. This strategy focuses on five major areas, namely; technology infrastructure, human resource development, software industry development, content (primarily in Arabic), and geo information. The national policy encourages the use of ICT in developing local policies to ensure the complete integration of ICT in education and training on all levels, including the development of school curricula, teacher training, and managing and organising educational institutions. The report highlights the fact that human resource development is a top priority for the ICT policy. Nevertheless, the report points out that lack of skilled trained staff who are well conversant with ICT tools is a major stumbling block for ICT in Sudan, where the few skilled manpower prefer to join the private sector rather than work for governmental institutions.

Satti (2014) has investigated the impacts of ICT in public and private Sudanese universities. She has come to the conclusion that from all universities academic teaching staff, support staff and students’ perspectives the Internet leads to many positive impacts, opportunities and advantages. From all universities academic teaching staffs’ perspective the Internet provides many opportunities and advantages for facilitating connection and transformation and enhancing the production, creation and transfer of knowledge. For instance, the top opportunities and advantages include increasing digital knowledge for academic and researchers by finding information that was earlier not available or accessible, rapid quantitative (in number) and qualitative (efficiency and speed) increase in transferring available information and development of a new model for disseminating and distributing electronic information, where the information moved towards the user. In addition to increase creation and transfer of knowledge, increase possibility of introduction of research outside academic fields, increase free access to electronic publications for academic purposes and create linkage and contact between people with common interests in different activities related to increase of knowledge. Other advantageous are improve intellectual capacity that was earlier not available, increase possibility of digital and electronic dissemination of old documents not only for dissemination of scientific culture, but also for preserving original and rare documents and preserve of heritage for future generations, encourage and increase process of integration in world and international knowledge, develop social capability and so acquisition of knowledge and learning new skills from others and facilitate preparation of unlimited copies with cheap price in the Internet instantaneously without having affecting the quality with the possibility of
rapid transferring copies to any place in the world. In addition to introduction of the use of new ways and modern techniques for improving quality and efficiency of education and scientific research and introduction of important change in techniques and technologies of distribution, dissemination, evaluation and storage of data and information electronically or digitally. In addition to increase the use of long distance learning, training and education, introduction of change in the role of libraries by the use of the digital documents, introduction of change in the role of workers in the libraries from the traditional roles in the traditional system to the new role to advice users for the use of electronic data, information and documents, save of time and easy performance of work related to production and transfer of knowledge, encourage knowledge about other cultures and facilitate contact between academic teaching staffs colleagues and students in academic institutions. Furthermore, it increases integration of higher education and research sector in implementation, assessment and regulation of ICT sector, facilitates introduction of the world for production of knowledge and academic works conducted by Sudanese and reduces the need for the users to use the services of information professional to have direct access to information/data. In addition it reduces monopoly in creation of knowledge earlier dominated by universities and researchers, increase possibility of electronic dissemination of academic documents and for commercial benefits and facilitate transfer of protected materials in the Internet and facilitate digital networks and the use of materials across borders. In addition to introduction of change by reducing the use of written paper, reduce the need for the users to go to a library or documentation centre to have direct access to information/data and facilitate management of Intellectual Properties Rights (IPRs) and preventing piracy. From the support staffs’ perspective the top opportunities and advantages, include increasing digital knowledge for academic and researchers by finding information that was earlier not available or accessible and rapid quantitative (in number) and qualitative (efficiency and speed) increase in transferring available information, improve intellectual capacity that was earlier not available. In addition all opportunities and advantages for facilitating and enhancing connection, transformation, creation and transfer of knowledge that highlighted above by academic teaching staffs are also highlighted by support staffs.

A study by Abdelrahman Ahmed and Izzeldin Osman (2016) explores the extent to which Information and Communication Technology (ICT) is integrated into the teaching and learning of mathematics and science in Sudanese secondary schools. Today, many Sudanese secondary schools (particularly the private ones) strive to integrate appropriate ICT tools into their classrooms. Despite the numerous investments in hardware, software, and supporting ICT resources, little is known about integration. Moreover, teacher training appears to be a constraint (Ahmed, 2015). Although the ICT implementation policy in Sudan was launched in 2002 and most schools have computers and Internet connectivity, the majority of teachers and students do not really understand what to do with the computers installed in their labs. This shows that the integration of ICT into schools was not carefully planned, and the implementation was a top-down initiative that did not take into account the involvement of local policies (Ahmed, Howie & Osman, 2013). The integration of ICT in teaching and learning is a new domain in Sudanese schools. The technology keeps changing, and there is very little literature and research regarding the integration of ICT into Sudanese secondary schools.

Hamdy (2007) The ICT policy for education was launched in 2002. The Information Directorate and Curriculum Centre and Training Directorate are the entities managing the implementation. In 2004, ICT was introduced in secondary education curricula. A number of computers were installed in schools (around 50% of secondary schools), at an average of 10 computers per school. In schools the connectivity is mainly through dial-up and ADSL. However, in higher education systems, it is through ADSL only. The country is planning to have computers available in all education levels by the year 2015 as agreed to at the ICT summit in Geneva.

Osman has carried out study on the Situation and variation of ICT use among Khartoum State Universities’ Staff Members. The findings that the study has reached indicated that while there is a high level of use of ICTs in general, there is low level of its use for teaching purposes among staff members. The most prevailing level of use of the Internet is found to be the supplemental level. The frequency and intensity of use of ICTs is also revealed. The findings revealed that staff members utilized ICT for different reasons and purposes. The study found that many staff members apply personal resources to a quire ICTs tools and services which proves their understanding of increasing importance of use of ICTs in academic and teaching activities. Survey revealed that moderate infrastructure of ICT are available in these universities but there is difference between private and public universities. Although staff members in average possess a good experience concerning the use of ICT, their need for additional
training was also reported by more than 20% of the respondents. The use of ICTs among staff members was tested using chi square test which indicated that use of ICTs vary with gender, age, academic rank, discipline, profession, experience, training and type of universities (public/private). However, the variation in ICTs use between staff members is found significant according to discipline, experience, training, and type of university for both computer and internet use.

Suliman, et-al (2007) have conducted study on ICT for higher education in Sudan: Issues and perspectives. The study has shown that despite the high tide of expansion in the field of ICT that shaped the international relations in today’s economic and social life, resulting in unprecedented human advancement though out history of mankind, yet the benefits of putting to use ICT is not evenly realized by developing countries in Africa. This is attributed to a number of reasons, to mention a few, the non-preparedness of most of the countries in terms of institutional and operational capacities for running ICT system. Sudan experience of the last two decades in building and capitalizing on ICT as a gateway for sustainable development is a landmark in Sudanese history. The experience tells how the institutional, legal and regulatory frameworks were reformed to advance ICT as tools for integrating the economy into the global market spheres. Moreover, staging a country, long been isolated and burdened by foreign debt, to new development horizons.

It is worth mentioning here that still the roles and functions of teachers in the standard classroom setting has not changed due to the traditional instruction methods used. The students are still taught through verbal instruction, and do not have the chance of autonomous hands-on execution of ICT possibilities. Moreover, as the curriculum undergoes frequent changes, the available software becomes insufficient, and the teachers are limited in terms of exploration possibilities. Development in ICT in Sudan is represented by a gallant expansion of infrastructure and capital investment including management systems and human capital. Still areas pertaining to expanding the ICT markets in terms of product, distribution, quality of ICT products measured by their suitability to broader use, and affordability of the services. Importantly establishing the link and measures with the economic and employment opportunities for individuals as well as society at large. These poses stubborn challenges to ICT advancement that would really support its expansions and reduce the risks of unguided competition that would probably lead to diminishing returns on investments and ultimately lead to crowding out effect of the actors adopting supply led strategy rather than demand pull strategies. In view of the above, the UNDP is intervening to assist the government through its ICT institutions to collectively part sharing the interventions that promote ICT for human development and education. A process, which will assist formulating national strategy involving all stakeholders within the UN ICTD programme framework.

**Research Method**

The study is an analytical study that adopted the descriptive survey design. The study was conducted in Madani Ahalia University. The study focused on finding out the lecturers’ views on using ICTs in university teaching and learning in the University.

**Population of the study**

The population of the current study is represented by English lecturers in the Madani Ahalia University.

**Sample of the study**

12 instructors have been chosen randomly to represent to the whole population (Madani Ahalia University teachers) to respond to the questionnaire.

**Tools for collecting data**

The study depend on questionnaire as a tool for collecting data.

**Data Analysis and Discussion**

In this part the questionnaire will be analyzed and discussed.

**Analysis of the questionnaire**

Here is a summary of the instructors’ responses to the questionnaire items. This questionnaire consists of three parts, each part will be analyzed and discussed separately.

### Part 1: The significance of ICT to the EFL university instructor:

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>P</td>
<td>F</td>
</tr>
<tr>
<td>1</td>
<td>I enjoy using the computer.</td>
<td>10</td>
<td>83.4%</td>
<td>1</td>
</tr>
</tbody>
</table>

- Note: F stands for frequency, P stands for percentage.

From the above-mentioned table, it could be inferred that 83.4% of the teachers enjoy using computer. While 8.3% of teachers do not enjoy using computer and 8.3% of them are not sure.
Using ICT in teaching and learning is essential to prepare students to live and work in the 21st century. 

The abovementioned table shows that 100% of the respondents have come to agree with the very same mentioned statements.

ICT devices are available in the university.

The abovementioned tale shows that 83.4% have come to agree with notion, while 8.3% do not agree with the very same notion, and 8.3% are not sure.

Using ICT makes you more encouraged, interested and involved in working with your students.

The above table illustrates that 75% of the teachers have come to agree with idea, whereas 16.7% do not agree and 8.3% are not sure.

Using ICT can raise working efficiency.

As for abovementioned statement the whole of the teachers (100%) enormously have come to agree with very mentioned notion.

The usage of ICT can increase teaching effectiveness.

100% of the respondents have come to agree with the very same mentioned statements.

ICT enhances lecturer's role, and makes him/her more professional.

The above mentioned table points out that 91.7% of the respondents are in agreement with notion, whereas 8.3 are not sure.

Using ICT makes the lectures more interesting, fun and diverse.

The abovementioned tale shows that 83.4% have come to agree with notion, while 0% do not agree with the very same notion, and 16.7% are not sure.
<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Using ICT facilitates teaching strategies.</td>
<td>11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>92.7%</td>
<td>0%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

The abovementioned table illustrates that 92.7% of the respondents come to agree with the notion, whereas 8.3% are not sure.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>ICT helps in producing varied teaching materials.</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>83.4%</td>
<td>8.3%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

The abovementioned tale shows that 83.4% have come to agree with the notion, while 8.3% do not agree with the very same notion, and 8.3% are not sure.

Part 3: The impact of ICT on EFL university students

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Using ICT devices in language teaching motivates students.</td>
<td>11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>91.7%</td>
<td>0%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

The abovementioned table illustrates that 91.7% of the respondents come to agree with the notion, whereas 8.3% are not sure.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>ICT positively changes the learning climate in lecture room</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>86%</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>

From the above-mentioned table, it could be inferred that 86% of the teachers believe that ICT positively changes the learning climate in lecture room, while 7% of teachers do not agree with the very same notion, and 7% of them are not sure.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>ICT supports various student learning styles and creates radical changes in language teaching</td>
<td>11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>91.7%</td>
<td>0%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

The abovementioned table illustrates that 92.7% of the respondents come to agree with the notion, whereas 8.3% are not sure.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Using ICT increases student interest when they use it as a learning tool</td>
<td>12</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The abovementioned table shows that 100% of the respondents unanimously have come to agree with the very same mentioned statements.
ICT makes communication easy through the internet e.g. E-mail, chatting, Skype, teleconferencing, video conferencing, etc.

The abovementioned table shows that 100% of the respondents have come to agree with the very same mentioned statements.

**Conclusions and Findings**

The rapid growth in ICT has brought remarkable changes in the twenty-first century, as well as affected its adoption and integration by teachers in teaching-learning process. The impact of using ICT in Sudanese higher education is highly considered. The findings of this study indicate that teachers have strong desire for the integration of ICT into education but they encountered many barriers to it. The findings has also indicated that the ICT has great significance in supporting university lecturer’s in their teaching process and the instructors attitudes levels towards the use of ICT had a direct relation with the use of ICT for educational purposes. Using ICT in teaching and learning is essential to prepare teachers and students to live and work in the 21st century. Using ICT create and encourage, and make the interest and involvement in working with the students. Moreover, the usage of ICT has the potential of raising the efficiency as well increasing the teaching process effectiveness. In addition, using ICT enhances lecturer’s role, and makes him/her more professional. Makes the lectures more interesting, fun and diverse, and the same time facilitates teaching strategies. Helps in producing varied teaching materials. Concerning the students the usage of ICT devices in language teaching motivates students, supports their various styles and creates radical changes in their language learning. Adding to that, increases their interest when they use it as a learning tool. It could be stressed that ICT makes communication easy through the internet e.g. E-mail, chatting, Skype, teleconferencing, video conferencing, etc.

**Suggestions**

Based on the findings, the study has reached, the following are some suggestions that may help and support the further implementation and integration of ICT in Sudanese universities:

1. Improve the quality and functionality of the ICT equipment in Sudanese universities.
2. Encourage and support the adoption of ICT devices in all level of education.
3. Spreading the benefits and the high potentialities of ICT in promoting and developing language learning and teaching.
4. Provide professional development support to school leadership teams, including principals, teachers, and computer coordinators, for strategic planning in managing change and to offer opportunities for staff development.
5. Support universities instructors ongoing training in ICT skills and ICT pedagogical knowledge.

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