

# Modified Khan eLearning Framework for the Iraqi Higher Education

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**Abstract-** Due to the Mar-April 2003 war period, Iraq lost much of its' infrastructure and would need time to return to normalcy via renewed plans and policies. The higher education sector was one that suffered the most damage although it was the first that return to work again after the silence of the war in 17 May 2003; to date no future solutions was forthcoming. Due to the limited budgets, the uses of information and communication technologies (ICT) are still hard to come by. The eLearning approach is seen as the new future of the teaching and learning solution for all the Iraqi higher education problems though no plans for implementation have been forwarded. A pre-survey showed us a very clear view that there exist no experienced human resource in ICT skills or infrastructures for adopting eLearning. A modified Khan's eLearning framework was proposed as an eLearning framework to address the much needed e-education framework for the Iraqi institutions of higher learning.

**Keywords-** eLearning, eLearning framework, higher education

## I. INTRODUCTION

Iraqi's current higher education system in the Federal Government comprises of 19 universities where 3 new universities were founded after 2003; two were commissioned for Medical Specialization and Computer and

Information. The Foundation of Technical Education consisted of 27 Technical institutes and 13 Technical colleges under the management of the Ministry of Higher Education and Scientific Research (MHESR) which are located in Baghdad and as shown in the Figure 1.

These universities and structures included more than 200 colleges, 800 departments and 28 research centers. The Iraqi Commission for Computers and Informatics offers specialized course for postgraduates in ICT.

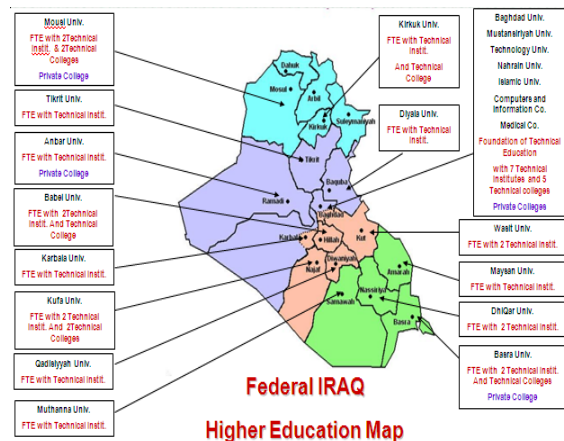


Fig. 1 IRAQI higher education map

There are in addition 15 private colleges offering programs in computer sciences, business administration, economics and management [1].

Of the 19112 academic university teaching staff, 56% are male and 44% female; 43% of the teaching force is concentrated in Baghdad. The average staff

student teaching ratio is 1: 13 being much more favorable than neighboring countries such as Jordan (1:30) and Saudi Arabia (1:20).

There are however extreme variations among Iraqi universities from 1:43 to 1:4 and in Technical Education are with 2837 teaching staff. In Iraq the minimum educational qualification for a theoretical teaching and lecturing in higher education is a PhD degree and in special cases they can accept a Master degree. However one third of the teaching staff lacks a master's degree; 28% of the staff has doctorates, 39% masters and 33% bachelor's degrees.

In Technical Education in Iraq - Technical Institutes (58540 students) and Technical Colleges (7368 students), there are a total of 65,908 students, 22% of whom are female. Thus there is wide range in the size of universities as well as a lack of geographic equity in their distribution across the country. There is at least one Institute in each of the 18 governorates.

As a summary of the Iraqi higher education;

1-Three great wars and heavily sanctions against Iraq in years from 1980-2003 that severely damaged higher education system, especially in the information and communication technologies.

2-No real or good achievements attained from 2003-2009 to rebuild Iraq higher education system, because of the huge internal violence that happen there and huge shortage in the university budgets.

3-Iraqi Universities still working with old and traditional education standards and regulations, and no real national strategies were adopted and Iraq is still far from changing into an institutional Iraq.

4-Implementing a university network infrastructure with broadband Internet is a prerequisite and the target for successful implementation of an eLearning system seems very difficult with a lot of challenges.

5-Most of the Iraqi University staff from presidents, academic, technical, administrative need to be trained outside Iraq with capacity building plan for human resources in ICT in the Iraqi higher education (IHE).

## II. ELEARNING BENEFITS FOR IRAQ HE

Iraq has been placed in the level that is characterized by poor use of ICT applications in Government, weakness or absence of e-commerce and related legislation, limited usage of ICT in education, inferior usage of ICT in health care, and barely perceptible use in the employment sector [2].

Also UNESCO report ( Education under Attack ) [3] stated that between March 2003 and October 2008, 31,598 violent attacks against educational institutions were reported in Iraq, at least 30 per cent of professors, doctors, pharmacists and engineers had fled the country since 2003.

Thus, the Iraqi higher education is in need for the eLearning for solving the problems of:

- Brain drain of the Lectures and Professors and the shortage of well-trained lecturers
- The huge shortage of educational materials like laboratory equipments, libraries, text books etc.
- Outdated traditional face to face methods of teaching and expand towards learner centered [4]
- Closing the knowledge gap that has existed since the 1980s between Iraqi universities and the rest of the world
- Use of new educational technologies in order to increase the efficiency of the learning process.
- Rebuild the university ICT infrastructures
- Addressing student related problems, like student absence, differences in cultures etc.

### III. OBJECTIVES OF THE RESEARCH

The main objective of our research is to propose an eLearning framework for Iraqi higher education system according to the universities desire to mobilize the subject matter expert in an attempt to leverage technology and knowledge to build quality eLearning system in a short period of time.

### IV. METHODOLOGY

The idea of this research is to investigate IHE academic staff experiences, opinions regarding the implementation of full scale eLearning system. The methodology that has been used by the researchers is the Analysis, Design, Development, Implementation, Evaluation (ADDIE) model for all the research parts. A special ADDIE instructional cascade format for the eLearning project has been designed and it is summarized with all its activities in the figure.2 below.

*The Analysis:* The study was based on two data sources: the previous studies about the Iraqi higher education sector [1, 5-7], interviews and all related documents. A clear set of contrasts has become apparent from these two data sources set out the framework of the research. A pre-survey was done to collect the data required and show us very clear that the weakness in Iraqi higher education is cover all this field area , but the most important to us was the technological and the human resources, as given in Table 1[8, 9].

*The Design and Development:* After analyzing the data, the Khan framework was considered with its octagonal eight dimensions of the eLearning process [10, 11]. The eight dimensions in this framework have then been grouped in three major domains: educational, technological and organizational [12, 13].

### V. THE ELEARNING MODEL

In Iraq now it is very difficult to change the traditional delivery styles directly. We

need to organize and prepare the ground for the changes first [14], this preparation will take place by adopt the eLearning as support activity to the face to face traditional learning method. The supporting approach will require that the teacher is present in the self-study [15-17].

#### 5.1 *Badrul H. Khan eLearning frame work*

The Khan framework is one of the most best and complete comprehensive theoretical eLearning models. eLearning can be defined now as Badrul H. Khan stated: An innovative approach for delivering well designed, learner-centered, interactive, and facilitated learning environment to anyone, anyplace, anytime, by utilizing the attributes and resources of various digital technologies along with other forms of learning materials suited for open and distributed learning environment [10, 18-20].

This framework can be divided into three major domains: first is the Educational Sector containing the elements of Pedagogical, Ethical and Evaluation. The second is the Technological Sector containing the elements of Technology and Interface Design) and the third domain is the Managerial Sector containing the elements of Institutional, Resource support and Management [12].

The emergence of this frame work made the greatest impact in the revolution of eLearning that take place in the all of the learning sector since this framework, for the last 13 years, described all the education and learning process. Further, the framework also offered the logical base for all the eLearning instructional designers on how to design and implement effective learning environment in the eLearning process using the interactions afforded via computers and internet, taking into consideration and stating all the factors that could affect the proposed designs. The Khan framework is still widely utilized until today.[12, 21, 22]

Nonetheless, from our point of view Khan Framework is a complete education system that can even be defined as an e-education or

framework for technology enhanced education. Re-defining the framework as e-education denotes that the Khan framework could be used for any other educational technologies in education.

## VI. KHAN FRAMEWORK MODIFICATION

Our stated differences with this framework is a trial to reinforced it only and for that we called it the modified framework and not new framework because we retained all the original dimensions

Inside Khan Frame work and these difference comes from our deeply investigation inside the eLearning process, environment, learning type, the new revolution of wireless technologies. (Prof. Dr. Khan on his last book and all his writing agrees that)[20].

In Khan Framework that consisted of eight dimensions. Our deliberations have resulted in the following considerations;

1-We rearranged the dimensions locations inside the octagonal such that the technology domain is located at the base, denoting the pivotal nature of technology.

2-A wireless technologies element was added as sub-components to the technological dimension as it relates to current communication modes and is an important factor in the total cost of the eLearning.

3-In the Khan's resources support dimension, we added the technological human resources capacity building which was missing from the frame work; human resources capacity building in ICT plays a critical role in supporting hardware's, software's and the instructors on new and emerging technologies. \*Content was given its own domain in light of the focus on learning objects and educational resources

4-Learner was given a central dimension moving towards learner-centered teaching and learning environment.

5-Khan does not take in to the consideration the time as a dimension or sub-dimension but if we want to use his frame work in blended learning we have to take this important factor in to consideration.

## VII. WHY THE MODIFICATION

There is no doubt that Khan frame work is an encompassing educational framework but our investigation and discovery of related researches portrayed a clear view that it is suitable and appropriate at the time that it was formulated and constructed. However, many factors and emerging trends have taken prominence that could gave way for an extended approach taking into account current focus and issues.

In a country like Iraq which there is no stability in all of the life conditions which start from its political system , new democracy concepts, infrastructure, learners, material resources; it would be difficult to wholly adopt the Khan framework as it stands. As a case in point in the Iraqi higher education, we found that Iraqi universities are still without any up to date technologies and it is very difficult to ask its academic staff to adopt e-leaning into its academic activities and more than 70% have not even heard about a Moodle , LAMS , ...etc.

Here we have to solve this problem which provided us the impetus to consider relevant the modification in the framework. Also in the Iraq we found that the government do not give due attention to the ICT infrastructures and currently wireless technologies could play a big role in the learning scenario. Naturally, pivotal issues will have to be included and the Khan framework in its original state will have to undergo modification to address impending local issues especially in designing the framework of the Iraqi higher education.

### VIII. NEW FRAMEWORK FOR THE ELEARNING

Most of the universities and eLearning institutions in the world's adoption of eLearning commenced in a hybrid of traditional face-to-face and online learning and the instruction occur both in the classroom and online, and where the online component becomes a natural extension of traditional classroom learning.

Our modified Khan 2009 framework was the base of our framework along with an exemplary eLearning system of the Universiti Sains Malaysia (USM) via the School of Distance Education; utilizing a blend of self-instructional text, state of the art video conferencing learning environment (VCLE) delivery system and an electronic portal including the Learning Activity Management System. Then we combined between the USM model with its VCLE with our modified Khan model we have a new framework that is customized for the need and purpose of the University of Mustansiriyah (UoMust) as it fulfilled all the university educational needs.

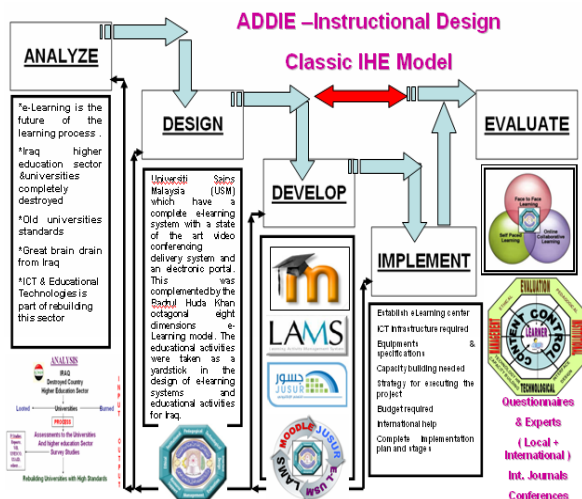


Fig. 2 ADDIE methodology model used

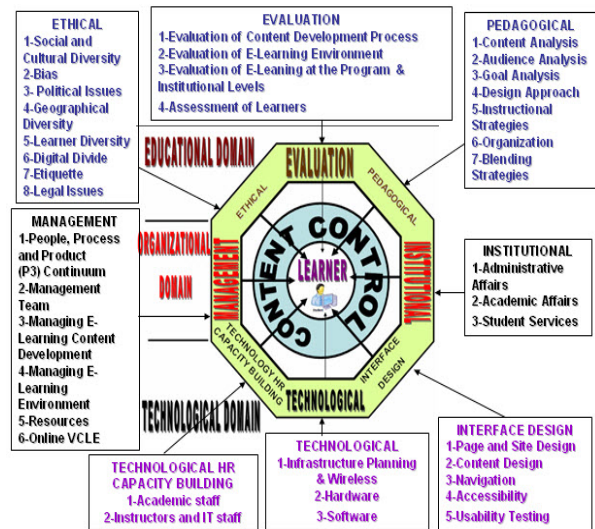


Fig. 3 IRAQI higher education framework

The combined framework has resulted in an eLearning system centralizing on the learner with content and time control. As a matter of fact, the combined framework can be deemed as an e-education system due to its comprehensiveness to cater for any impending changes in the environment. Since the University of Mustansiriyah and all of Iraq are lacking in an official eLearning policy or system, the new framework will serve as a functional framework in the technology enhanced learning landscape.

### IX. CONCLUSIONS

Many institutions have adopted the Khan framework in to, renaming certain dimensions while utilizing the eight dimensions in the octagon.

In essence, the design idea was employed under different names. In this paper we focus on the Iraqi case and all the mitigating factors in an educational environment such as the changing emerging technologies including wireless and the need for critical human resources across the board. The learner and content are given prominence as we move towards learner centeredness and the numerous learning resources available in the current digital era. Education and learning environments will continue to evolve as would models and frameworks to cater for the constant changes in the learning

environment. Our new e-education framework is testament to the considerations of functionality, scalability; modularity in eLearning framework as we strive for a stable electronic based educational setting.

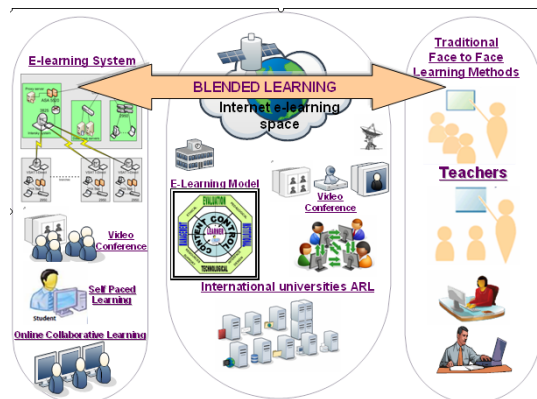


Fig. 4 Iraqi higher education e-learning map

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**TABLE 1**  
**SOME OF PRELIMINARY SURVEY RESULTS**  
**FOR THE ELEARNING AND ICT SKILLS**  
**RELATED TO 5.5**

<b>Statement</b>	<b>Mean</b>	<b>Percentage %</b>
I think the best way is to use the CAL with the face to face traditional learning methods at the beginning	<b>5.34</b>	<b>89% v.good</b>
I have a lot of information about e-learning networks	<b>2.65</b>	<b>44% Poor</b>
I know how to use all the MS Office	<b>3.38</b>	<b>56.3% Poor</b>
I know how to use MS Word	<b>5.58</b>	<b>93% excel.</b>
I know how to use MS PowerPoint	<b>4.83</b>	<b>80.6% v.good</b>
I know how to use MS Excel and MS Access	<b>3.16</b>	<b>52.7% Poor</b>
I know how to use Moodle software	<b>3.06</b>	<b>50.9% Poor</b>
I know how to use LAMS software	<b>3.06</b>	<b>50.9% Poor</b>
I know how to use JUSUR software	<b>3.06</b>	<b>51% Poor</b>
I have a connected in computer my office in university	<b>3.25</b>	<b>54.1% Poor</b>
I will use the educational technologies if it is offered in the class rooms	<b>5.53</b>	<b>92.1% excel.</b>
A lot of training ICT courses are offered for the academic staff	<b>3.49</b>	<b>58.2% Poor</b>
I use ICT to organize and manage my work	<b>4.88</b>	<b>81.4% v.good</b>
I use ICT to prepare lessons	<b>4.8</b>	<b>80% v.good</b>
I use ICT to find digital learning resources	<b>5.82</b>	<b>97% excel.</b>
I use ICT to design and produce my own digital learning resources	<b>4.35</b>	<b>72.5% Med.</b>
I use ICT to communicate with colleagues	<b>5.35</b>	<b>89.1% v.good</b>
I use ICT to communicate with your pupils	<b>5.35</b>	<b>89.1% v.good</b>
I use ICT to communicate with school management and educ. administrations	<b>3.14</b>	<b>52.3% Poor</b>