The Role of Teaching Methods Based e-learning Technologies in Iraq Higher Education Institutes

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\textbf{Abstract:} Currently, the world witnesses a major revolution in the world of communications and information technology, where technology permeated all aspects of social, learning and military life in both phases: public and private. This paper measures the rate of using teaching methods of e-learning technology in higher education Iraqi institutes; university of Fallujah is a sample of such institute. This paper used the descriptive analytical approach (DAA) in collecting, classifying gathering information for five colleges by taking 30 measurement coefficients that are compatible with teaching operation. The obtained results demonstrate that a number of lecturers and students have used the e-learning applications in the class management are extremely low rates. Finally, this study has resulted in a novel concept, usually called “change –resistance”.

\textbf{Keywords:} E-learning, teaching methods, traditional education, Iraqi universities, higher education.

1. Introduction

With the rapid and growing development of Internet communication Technology (ICT), educational institutions have revised their goals and practices. Accordingly, all universities looked for the most suitable methods and the best styles through which they can provide educational experiences to their students, instead of the methods adopted on memorization and indoctrination.

New trends in technology led to the emergence of new patterns of learning and education and new teaching methods using the techniques of e-learn, which in turn increase the knowledge rate and support traditional education. So, universities have sought to continue the scientific plans for the availability of an interactive learning environment, which further entrenches the concept of individual or subjective education. The learner continues to learn according to his capacity, ability and speed of learning and according to his previous experience and skills. E-learn is one such evolving pattern of so-called general distance learning and computer-based education in particular[7]

Generally, university members believed and considered that the traditional education style (face-to-face) and classroom interaction as effective and useful method, according to 95% of teaching staff believe that the traditional education style based face to face style is still the most effective way and they use it tends to start with less complex activities [2].

E-Learning is new emerging phenomena of information technology, internet family and computing, it presents a technical achievement for the education sector and adds smoothly technical roles in the lecture management, deliver, discussion and examination. This paper presents a scientific philosophy view of the effecting of e-learn in the universities and the educational process. Also, this paper classified and analyze gathered information using the descriptive analytical approach (DAA) [16], for five colleges by taking 30 measurement
coefficients that are compatible with the teaching operation in the university of Fallujah. This context provides a holistically view for the role of e-learning in the Iraqi higher institutes. The student has become the focus of the educational process such as individual learning, programmed learning and self-learning. E-learning has become a reality and the need for it urgently needs. Therefore, universities must improve its employment and incorporate it into teaching methods [3].

The rest of the paper is organized as following. Section 2 presents the methodology and objectives of the study; the concept of E-Learning is featured in Section 3. Section 4 shows the E-Learning elements, while, E-learning patterns and tools are depicted in Section 5. Section 6 illustrates the research community of the paper. Statistical Trend is showed in Section 7. Section 8 presents a result and analysis. Finally, conclusions and future work are illustrated in Section 9.

2. Methodology and Objective

This study adopts the descriptive analytical approach (DAA) that is describing the collected data in quantity and dynamic scalable style for the gathered information. DAA is a statistical method that is used to search and summarize historical data in order to identify patterns or meaning and its completely depends on two basic techniques, data aggregation and data mining. These techniques are used in descriptive analytics to discover historical data and activity pattern. Data is first gathered and sorted by data aggregation in order to make the datasets more manageable by analysts. While, the data mining describes the next step of the analysis and involves a search of the data to identify patterns and meaning. Identified patterns are analyzed to discover the specific ways that learners interacted with the learning content and within the learning environment [16].

DAA helps the author to reveal the relationship between the user's activities and data collected to interpret them. Additionally, the main objectives of this study listed as below: -

1- To identify the challenges of e-learning which are faced by faculty members at the University of Fallujah in the practice of e-learning.
2- To provide feedback to university leaders and higher education policymakers.
3- To help the university leader address all obstacles in order to successfully implement the e-learning system.
4- To identify which faculty members use the e-learning system and their attitudes towards its use.
5- Supporting traditional education through e-learning.

3. E-Learning Concept

E-Learning is a modern method of teaching that is employing a progressive communication mechanism from computers, networks, multimedia, graphics, electronic libraries, as well as Internet portals, whether remotely or in the classroom [8]. E-learning depends primarily on computers and networks to deliver knowledge and skills. E-learning is characterized by flexibility and positive adaptation to events to achieve the desired objectives and it becomes a reality and the need is dire. Accordingly, all universities should improve their staff in order to convertibly integrating into new teaching methods. A lot of features associated with adoption of e learning technology, like following [9]:-

i. Providing interactive educational content with explanations, exercises, interaction and follow-up in a partial or comprehensive manner in the classroom or remotely through advanced programs stored in the computer or over the Internet.
ii. Providing an integration educational system that uses technologies to strengthen and expand the educational process.
iii. Providing a new method for the lectures delivering and explanation based modern techniques of the computer and the World Wide Web and their multimedia, such as:
Software and CDs, educational, dialogue and discussion arenas, e-mail, dialogue and discussion arenas.

3.1 E-Learning Elements

The educational environment for e-learning consists of the following elements [4]; [11]:

i. Instructor: the most important element of e-learning technology and serves as a source of education, also, the teacher should have a good knowledge of computer use and technology like Internet and e-mail. Furthermore, a teacher should be having the ability to teach using modern teaching techniques or open learning systems like Moodle, Google for education, etc.

ii. Learner: learner receives through the practice and self-research (i.e.) develops a self-learning skill. The learner should be hearing about a group of students and interacts with others in a manner independent of them, like as an instructor the learner must have an experience in the computer usage, Internet and e-mail.

iii. Computer Experts: a group of specialized persons in computer, software, Internet components, and provide help in creation and design steps.

3.2 E-Learning Patterns and Tools

This section explains the main idea of E-learning: patterns and categories. Generally, E-learning divided into three main patterns, synchronous, Asynchronous, and Blended e-learning.

Synchronous e-learning (Simultaneous) is the type of education in which the teacher and the learner are required to be present in the same educational environment and at the same time and place, with simultaneous contact with text, voice, and video or electronic encounters [6]; [12]. Chat engine, audio conferences, video conferencing (video conferences), white board, and satellite programs (satellite programs) are well-known tools of the synchronous pattern.

While, a synchronous e-Learning in which education is indirect since the teacher and the learner are not required to be present in the educational environment at time and the student is often not obliged to have a certain time or place and the teacher can put the content with a teaching plan and a calendar on the site tutorial, then enters the learner of the Web site at any time. A lot of examples of this pattern such as E-mail, Textile Network (World wide Web), Mailing lists (Mailing list), Discussion groups (Discussion Groups), Transfer files (file Exchange), Interactive video (Interactive video), and CD-ROMs [13].

The integrated education (Blended learning) is the type of education defined as a mixture of traditional and e-learning, and used the e-learning tools as part of traditional education.

In addition, the sources of e-learning evolve day by day including: electronic books, databases, Encyclopedias, periodicals, educational sites, E-mail, digital libraries, virtual classroom, video conferences, Self-education, and online educational (sites Internet Sites).

4. Research Community

This paper focuses on the University of Fallujah as a sample of higher education Iraqi institute, it consists of 5 colleges: college of Medicine, college of Veterinary Medicine, college of law, college of Islamic Sciences, and college of Administration and Economics. With relevance to human resources, 210 as a teaching staff, this study takes 50% as a sample. The measurement process completely depends on five basic steps that are preparation, honesty, rearrangement, guidelines, and persistent steps, see Fig. 1.
Fig. 1 Measurement Process Steps

1. **Preparation**: generally, this paper depends on the [11], research, after optimized it by adding some criteria and increase it to 35 measurement coefficients.

2. **Honesty**: in this step, author divided the mentioned 35 measurement coefficients in to five-tiered scales of approval (5, 4, 3, 2, 1). This classification includes of a group of experts and specialists from the Universities of Fallujah and University of Anbar in psychology, education philosophy, and teaching methods. The selection process is very complex and accurate. Usually, it measures the rate of suitability coefficient or not and check if its need to be modified or not. Consequently, about 80% of the mediators fully agreed and adopted such coefficient with new optimization criteria. According to our questionnaire, this paper reflects that the honesty step is more important step, due to show the appropriation and agreement between the test samples of people and specialists.

3. **Rearrangement**: regarding opinions and suggestions of the nominated experts, author followed and adopted 80% from the experts’ recommendations that are related to measurement coefficients. So, according to [10] this paper follows the right methodology and analysis.

4. **Measurement Guidelines**: the guidelines have been prepared for the scale of the samples answer, and what is meant according to the study survey, especially in preparation step to produce the accurate results.

5. **Persistent**: author going to change and optimize the research sample elements (teacher and students), also, this step explains the clarity and originality of measurement coefficients. Then, author returned a new modification to the experts and teachers to find the correlation coefficient. Furthermore, author test the measurement coefficients with 20 teachers (research community sample), then, explores the formulation and new
guidelines after some minor modifications. Finally, author deploy a standard mining tool in order to use with 30 optimal coefficients for a five-tiered scale of approval).

5. Statistical Trend

In this stage, the scale has been distributed to the research sample and calculation the final score for each coefficient in the theory and weighted mean. The computation of weight has been achieving by the following equations:

\[ TM = \frac{atw}{an} \]  
\[ WTM = aw \times \frac{ai}{sn} \]  
\[ TC = \frac{wc}{hw} \times 100 \]

Where:

- \( TM \): Theoretical mean,
- \( atw \): alternatives total weights;
- \( an \): alternatives number;
- \( WTM \): Weights Theoretical mean;
- \( aw \): alternative each weight;
- \( ai \): alternative each iteration;
- \( sn \): sample number of individuals;
- \( TC \): Theoretical Center;
- \( wc \): Weighted center;
- \( hw \): higher weight.

According to eq. (1, 2, and 3), each coefficient has \( WTM \) equal to (3) or greater than. Thus, this is one of the reasons why e-learning applications are not practiced from the university's point of view. The following section (Sec.6) shows the analytical analysis for the obtained results.

6. Results and Discussions

This section shows the obtained result after received the answer from the selected persons (community samples). The questionnaires show that the only 10% of the college members used the E-learning applications. Table 1 shows the value of the weighted mean and weighted center for each measurement coefficient (9-coefficients) and shows the order in descending style. This computation has been made on administrative departments.

| NO. | Measurement Coefficient                                      | WM    | WC    |
|-----|-------------------------------------------------------------|-------|-------|
| 1   | Unavailability of computers.                                | 4.465 | 89.3  |
| 2   | Problems related to the availability of electric power.    | 4.431 | 88.62 |
| 3   | Lack of room equipment with the necessary tools for e-learning practice. | 4.428 | 88.56 |
| 4   | Non-training of faculty members to use e-learning applications. | 4.396 | 87.92 |
| 5   | The mainstream educational system does not allow the use of e-learning | 4.362 | 87.24 |
| 6   | Lack of material resources for e-learning programs          | 4.328 | 86.56 |
| 7   | Internet vulnerability and interruptions.                   | 4.324 | 86.48 |
| 8   | Not suitable for the halls environment when introducing any | 4.30  | 86   |
technological educational method.

Lack of cooperation between universities in the exchange of experiences in the field of e-learning

As showed in Table 1, the type of administrative style is directly effects of the delay or prevent the practice implementation of the e-learning in the teaching operation. In addition, change - resistance is the one of big challenges with current administrative staff in the university. With relevance to the teaching and the student samples, Table 2 shows the value of the weighted mean for each measurement coefficient (13-coefficients)- teaching aspects, also, it shows the order in descending style for weighted mean and weighted center.

**Table 2: Weighted mean and weighted center of the measurement coefficient on the teacher and student side**

| No | Measurement Coefficient                                                                 | WM  | WC   |
|----|----------------------------------------------------------------------------------------|-----|------|
| 1  | The teaching feeling that e-learning reduces the power and control of the educational process. | 3.34 | 66.8 |
| 2  | E-learning is an additional burden on the staff's assigned workload                      | 3.28 | 65.6 |
| 3  | Increases the cost of education to the university.                                       | 3.25 | 65   |
| 4  | The feeling that e-learning lacks confidentiality and security for content and exams.    | 3.22 | 64.4 |
| 5  | Low degree of interaction and social coexistence between the student and the teacher.   | 3.18 | 63.6 |
| 6  | Not to be convinced of the importance of using e-learning in teaching courses.          | 3.16 | 63.2 |
| 7  | Lack of capacity and efficiency in the use of e-learning by students.                   | 3.12 | 62.4 |
| 8  | Lack of capacity and competence of the teaching staff to use the English language       | 3.11 | 62.2 |
| 9  | Lack of information and technological skills required for e-learning.                   | 3.9  | 78   |
| 10 | Students do not respond to the new style of learning.                                   | 2.88 | 57.6 |
| 11 | Lack of teaching staff who are proficient in the technological skills required for e-learning. | 2.79 | 55.8 |
| 12 | E-Learning weakens students ' faith in the educational attitudes and values that the university is working to give them. | 2.67 | 53.4 |
| 13 | Poor students ' ability to differentiate between what is better to receive and what does not improve their reception. | 2.54 | 50.8 |
Table 2 shows that the measurement coefficient of the aspects of teaching and student is significantly similar to administrative side expectation of four coefficients, (19, 20, 21,22). Moreover, Table 3 shows the value of the weighted mean for each measurement coefficient (13-coefficients) and focuses on the e-learning criteria.

**Table 3**: Weighted mean and weighted center of the measurement coefficient on the e-learning

| No | Measurement Coefficient                                               | WM  | WC  |
|----|-----------------------------------------------------------------------|-----|-----|
| 1  | Difficult to apply in some materials that need practical skills.      | 4.41| 88.2|
| 2  | High cost of preparing good software in e-learning style.             | 3.68| 73.6|
| 3  | Scarcity of specialists in the design of e-learning learning materials| 3.54| 70.8|
| 4  | Its applications are not available in Arabic.                         | 3.44| 68.8|
| 5  | Lack of interaction and direct contact between the teacher and the learner. | 3.24| 64.8|
| 6  | Lack of incentives (moral or material) necessary for the e-learning environment. | 3.20| 64  |
| 7  | Does not focus on all senses, but on the sense of hearing and sight.  | 2.24| 44.8|
| 8  | The ambiguity of the philosophy of e-learning and its objectives.     | 2.15| 43  |

As shown in Table 3 the measurement coefficients of the aspects of e-learning is significantly similar to administrative side and teaching side, expect of two coefficients, the results are consistent with the results of many similar studies such as [14] as well as the study [13]; [3], which addressed the role of e-learning in the development of traditional education and raise the level of students and professors on Both.

### 7. Conclusions and Future Work

From the experience of the authors and their work as a faculty member in the university of Fallujah and use e-learning applications in the teaching operation. This paper focus on the harmony of using the e-learning technology in the university colleges comparing to tradition way. This paper used analytical descriptive approach (ADA) in collecting, classifying the gathered information, and analyzing it. Also, this study takes 30 measurement coefficients that are compatible with teaching operation in the university of Fallujah. The obtained results show that the low ratio of university lecturers and students utilize the e-learning applications in the lecture management and presentation. Finally, this study explores the concept, usually called “change –resistance” and depicts the obtained result compatibles with a lot of surveyed studies like [5]; [13]; [12].

At the future, the author going to deploy the motivational guide for all university staffs to use the e-learning applications. Furthermore, recommend the quality assurance departments in Iraqi universities to determine a score in performance evaluation for all lectures.

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