Opción, Año 34, No. 85 (2018): 2107-2121
ISSN 1012-1587/ISSNe: 2477-9385

Technology of Education and Actual Application using Smart board in Schools Wasit Governorate WORK DATA

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Astract
The economic development with multidimensional growth of the country depends on the intellectual property and education system so that the scientific implementations can be adopted for the cumulative growth. The overall augmentation in the nation depends on providing the appropriate as well as smart education environment with the technology based infrastructure and advanced solutions. These include high performance application software, electronic education and digital content to simulate the patterns of audio, sensory, dynamic and analytical education in the escalation and support of intellectuals in the country. This research manuscript focus on the implementation scenarios of smart education in Iraq with the growth of technology based devices to promote and support the existing education system. The secondary education was chosen in the General Directorate for the Education of Wasit Governorate, Iraq to analyze and predict the readiness to apply the technology of education. The work is descriptive as well as analytical with the interpretation of data from primary and secondary sources. The data is collected accurately from their original sources in the General Directorate for the Education of Wasit-Iraq for the academic year 2016-2017 through technology workers Information and teachers concerned with this area and the principals of schools and all the parties that contributed to this educational project in the province (virtual laboratory project) and conducted the analysis and sorting and statistical operations and the results of this study was full and complete readiness of everyone, especially Teachers and employees to use technology in education and the process of the actual application of both teacher and learner of this technology and continue to

observe the extent of the difference in terms of significant impact on the actual process and the provision of time and effort and different types of education in one makes the school environment attractive to students. The impact of the use of the idea Virtual labs have a great role in raising the scientific level of students and clear marketing and interaction with the professor, but need infrastructure and continuous support and legislation to encourage investment in this vital sector. And the continued efforts to unite and unite The educational proceeds in the field of education technology and provide the best conditions for its application and continuity, especially in light of the availability of a structure of human greeting good need to the will of the decision makers to keep pace with modernity and development.
Keywords: Education Technology, Information Technology, Communication, E-learning, Smart Education, Smart Learning.

Tecnología de educación y aplicación real utilizando Smart Board en las escuelas Wasit Governorate DATOS DE TRABAJO

Resumen

El desarrollo económico con crecimiento multidimensional del país depende de la propiedad intelectual y del sistema educativo para que las implementaciones científicas puedan ser adoptadas para el crecimiento acumulativo. El aumento general en la nación depende de proporcionar el entorno de educación apropiado e inteligente con la infraestructura basada en la tecnología y las soluciones avanzadas. Estos incluyen software de aplicación de alto rendimiento, educación electrónica y contenido digital para simular los patrones de audio, educación sensorial, dinámica y analítica en la escalada y el apoyo de los intelectuales en el país. Este manuscrito de investigación se centra en los escenarios de implementación de la educación inteligente en Irak con el crecimiento de dispositivos basados en tecnología para promover y apoyar el sistema educativo existente. La educación secundaria fue elegida en la Dirección General de Educación de la Gobernación de Wasit, Irak, para analizar y predecir la disposición para aplicar la tecnología de la educación. El trabajo es descriptivo y analítico con la interpretación de datos de fuentes primarias y secundarias. Los datos se recopilan con precisión de sus fuentes originales en

la Dirección General de Educación de Wasit-Iraq para el año académico 2016-2017 a través de los trabajadores de tecnología de la información y los maestros interesados en esta área y los directores de escuelas y todas las partes que contribuyeron a esto proyecto educativo en la provincia (proyecto de laboratorio virtual) y llevó a cabo el análisis, la clasificación y las operaciones estadísticas, y los resultados de este estudio fueron una preparación total y completa de todos, especialmente los maestros y empleados para usar la tecnología en la educación y el proceso de la aplicación real de tanto el profesor como el alumno de esta tecnología y continúan observando el alcance de la diferencia en términos de impacto significativo en el proceso real y la provisión de tiempo y esfuerzo, y los diferentes tipos de educación en uno hacen que el entorno escolar sea atractivo para los estudiantes. El impacto del uso de la idea Los laboratorios virtuales tienen un gran papel en elevar el nivel científico de los estudiantes y lograr una clara comercialización e interacción con el profesor, pero necesitan infraestructura y apoyo continuo y legislación para alentar la inversión en este sector vital. Y los continuos esfuerzos para unir y unir los ingresos educativos en el campo de la tecnología de la educación y proporcionar las mejores condiciones para su aplicación y continuidad, especialmente a la luz de la disponibilidad de una estructura de saludo humano que necesita la voluntad de los tomadores de decisiones para Mantener el ritmo de la modernidad y el desarrollo.

Palabras clave: tecnología de la educación, tecnología de la información, comunicación, aprendizaje electrónico, educación inteligente, aprendizaje inteligente.

Education is one of the important segments to escalate the overall growth in any country so that the intellectuals can be promoted as well as generated. Iraq is one of the leading countries spending significant funds to promote the education and technology based products so that the population can be part of the international growth. Earlier during the times of Gulf War, the education system was not effectual [1], but now days the government of Iraq is giving higher glance to the education system and implementation of smart products in teaching and learning [2]. The employment status of the country is also dependent on the education because more talented intellectuals have higher degree of employability. Figure 1 illustrate this.

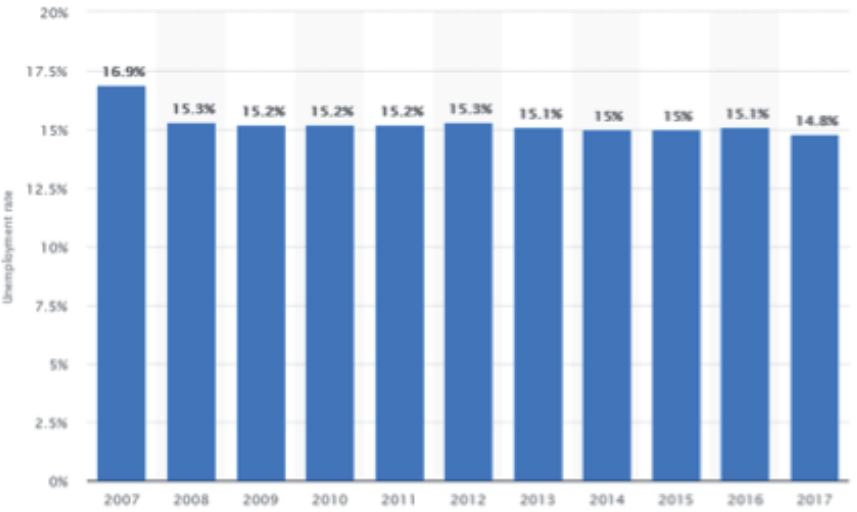

Figure 1. Unemployment rate from 2007 to 2017.

(Source: Statist, the Statistics Portal)

As per the reports from United Nations International Children's Education Fund (UNICEF), following table 1 is the data on Iraq about the education scenario.

Table 1: Literary and Education Status in Iraq as per UNICEF

Youth (15-24 years) literacy rate (%) year 2008-2012, male	84.1
Youth (15-24 years) literacy rate (%) year 2008-2012, female	80.5
Secondary school participation, Net attendance ratio (%)year 2008-2012, male	52.5
Secondary school participation, Net attendance ratio (%) year 2008-2012, female	44.6
Primary school participation, Net attendance ratio (%) 2008-2012, male	92.7
Number per 100 population in year 2012,	79.4
mobile phones	
Number per 100 population in year 2012, Internet users	7.1

United Nations Educational, Scientific and Cultural Organization (UNESCO) defines the Education Technology as a systematic curve for the design, implementation and evaluation of the educational process in accordance with the specific objectives of research in human education and communication using human and non-human resources to provide more effective learning (or access to better and more effective learning) [3].

The American Education Technology Committee (AETE) defined this concept as the curve of the educational system that goes beyond all means and tools, i.e., it is not limited to a specific method or technological apparatus, but is all for the development of the educational program [4].

Educational technology is the study and ethical practice to facilitate education and improve performance through the creation, use and management of appropriate technology processes and resources. The word technology is to draw on the theories and results of research in different fields of science for practical purposes to serve humanity. The ultimate goal of education technology is to bring about learning and to emphasize learning outcomes. Learning is the goal, and education is the means to do so. This concludes that education technology is complex, complex and interrelated. Methods, methods and practices to solve problems, innovate, apply, evaluate and propose the best solutions to educational problems, and manage the processes and resources of the teaching and learning process.

The challenges faced by both students and teachers in their use of Information and Communication Technology (ICT) are mostly in the context of administrative implementation and infrastructure [5]. The school inspector is more concerned with the content of the course and the test scores, as opposed to the use of ICTs.

II. Components of Education Technology

There are assorted elements or components of the education technology as per Hawkridge [6] which includes Methods of Learning, Evaluation Criteria, Learning Media, Learning Environment and Objectives for learning. Figure 2 explain this.

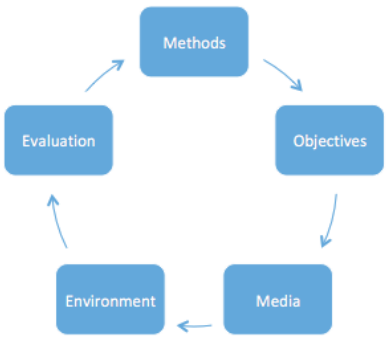

Figure 2: Components of Education Technology.

Resources are used to support education, including individuals, physical facilities, budget, materials, devices, etc. that support education [7, 8]. The educational methods passed through many stages and designations, including visual education. This stage in education depended on the sense of sight by presenting a visual model or a picture of the object to be understood. Studies showed that 80-90% of the individual's experiences were obtained by sight.

The audiovisual stage: Visual and audiovisual aids were used to contribute to enriching the learning process such as murals and educational songs as a way of presenting and facilitating the lesson.

The Communication Stage: At this stage, the concept of education has evolved, and modern teaching methods have been used to take into consideration the good and fruitful communication between the teacher and the learner.

The System Approach and the Development of Learning Systems: The concept of the system is defined as a set of organized components that work in an integrated way to achieve a specific goal. This concept is considered very important in the development of the education process in order to be able to absorb all ideas of materials to be taught, integrating traditional education with modern collective and individual learning.

Behavioral science is the science that deals with the behavior, the response shown by the learner, and the transformation from materials that introduce instructional materials to programmed learning.

The educational technology stage is a stage where emphasis has been placed on thinking on problem solving, goal setting, focusing on the use of hardware, and linking it to materials and software. It is expected to develop continuously based on needs with changes in their professional employment, educational resources, and managerial capabilities. This development must take place alongside tertiary developments to bring them back to a world characterized by information and communication technologies. Learning resources are the ideas, theories, values, and attitudes that are formulated in the form of pictures, words, or animations. The materials are the means of learning, including the teachers, the teachers' assistants, the supervisors, and the persons employed by the teacher in the educational process which transmit learning to the learner. Equipment's are the devices used to produce and display other sources in smart education scenario including cameras and computers. Places are the environment in which the learner interacts with learning resources, such as the school building, the laboratory, and the library.

III. Importance of Education Technology

The importance of educational technology is to improve the educational process and activate the role of effective participation between the teacher and

the learner by using the various technological means[9]–[11]. The diversity of the experiences offered to the learner. The educational means provided to the learner enable him to diversify the experiences offered to him through observation, listening, practice and meditation. The learning material will be remembered for as long as possible. The use of educational technology in the learning process ensures the continuous and effective introduction of continuous updates to ensure greater effectiveness of the process.

IV. Use of Education Technology in Iraq

In Iraq, we need to develop and activate the role of computers[12]–[15] in modern teaching techniques and methods because of the obvious negligence and great in the real laboratories and the lack of materials and the absence of any real application of the experiments by students as well as the contradiction between the planning and implementation at the level of information technology for several reasons, the most important of which is the armed conflict, The country in different ways, and the lack of seriousness in the implementation of plans by decision-makers and the absence of decisions on the innovations of technology education[14], [16], [17]. Moreover, most e-learning projects in the education sector are intermittent projects, and a comprehensive plan is needed that will help to reduce the time and costs associated with them. However, there are a number of computer labs, In the secondary education through the availability of smart blackboards and electronic educational programs and the rapid spread of technology among the different social media, especially for students and researchers have become here as hypothetical alternatives to chemical and physical laboratories as well as the biology of the application form or electronic learning program facilitates the Fled the broad imagination that we need to teach chemistry, physics, biology, and these programs Crocodile Chemistry program 605 is called Virtual Laboratory which is based on the principle of simulation in the implementation of traders full physical and biology, which may depend upon the material or student teacher or researcher. This system is implemented in the Arabian Gulf schools.

V. Methodology:

Data were collected from works published in this area to understand the latest developments in the field of information and communication technology, especially with regard to Iraqi school education. This study uses the data collected from the Directorate General of Wasit-Iraq Education for the academic year 2016-2017 by conducting a questionnaire as well as interviewing key stakeholders in the transformation process for the use of ICT in Wasit Education Directorate. (SPSS) This study used three sources of study of documents, survey, interviews of informants and decision makers, and outlined these steps as

shown in the results.

The number of primary schools is 894, the number of the population is 8132, the number of peoples is 259552, the number of pupils in the division is 32, and the number of teachers is 13422, and the number of schools in secondary education is 336, the number of students is 2915. The number of population is 107516. The average number of students in one division is 37 students. The number of teachers is 6266. The use of educational technology is much better than primary education because there are certain factors that encourage it. The truth about the teaching staff for the purpose of using the best methods in education, the table shows this Table 2:

Table 2: Data from Primary and Secondary Stages in Iraq.

Stage	Number of schools	Number of people	Number of teachers	Number of students	Average Number of Students Per division
Primary	894	8132	13422	259552	32
Secondary	336	2915	6266	1071516	37

The availability of computers and other materials that assist the use of technology in education in the culture of Wasit and according to the census 2016 - 2017 is according to the following Table 3:

Table 3: Data on Technology Implementation in Iraq

Number of smart blackboards	Number of computers	Number of laptops	Number of scanner	Number of printer	Data Viewer Number	Number of nano
123	3070	985	150	2500	188	200

Computer labs and smart boards are availability in secondary education in Wasit Education according to the following Table 4:

Table 4: Growth of Schools with Computers in Iraq

School years	Number of schools covered by computer	Number of computers in schools	Number of computer teachers
2000	13	250	13
2001-2005	33	375	30
2006-2010	93	1148	107
2011-2015	111	1173	152
2016-2017	116	2070	136

Correlation Analysis between No. of Schools and Number of Computers

There is high correlation between the variables and depicted in the results. Table 5. A, B illustrate this.

Table 5: Statistical Analysis from Primary Data.

Statistic	Variable X	Variable Y
Mean	73.2	1001.8
Biased Variance	1778.56	426982.16
Biased Standard Deviation	42.172977129911	653.438719391497
Covariance	31310.3	
Correlation	**0.908946016158547**	
Determination	0.826182860290494	
T-Test	3.77617765783992	
p-value (2 sided)	0.0325281968027362	
p-value (1 sided)	0.0162640984013681	
95% CI of Correlation	[0.13469952193059, 0.994050770128192]	
Degrees of Freedom	3	
Number of Observations	5	

(A)

Correlation Coefficient	Analytics
+1	Perfect Positive Correlation
-1	Perfect Negative Correlation
0	No Correlation

(B)

In our data interpretation, the correlation value is 0.908946016158547 which depicts the higher degree of correlation in the variables. We can use the covariance to determine the direction of a linear relationship between two variables. If both variables tend to increase or decrease together, the coefficient is positive. If one variable tends to increase as the other decreases, the coefficient is negative. Figure 3 explain this.

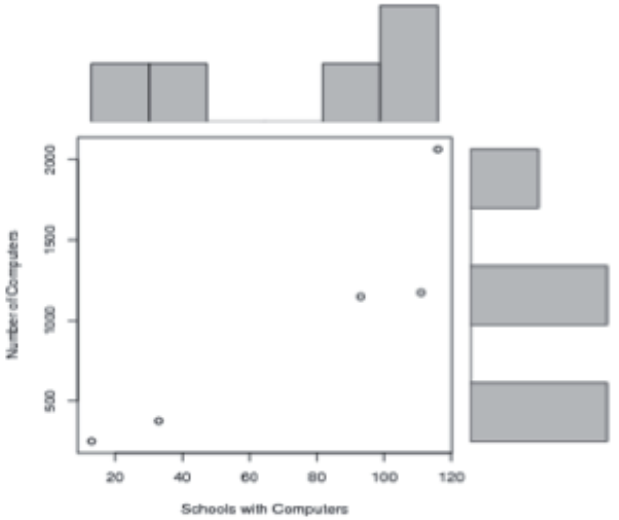

Figure 3: Correlation Analysis between Number of Schools and Schools with Computers.

Following figure 4 & 5 is the representation of Quantile-Quantile (Q-Q) Plots of each variable. The Q-Q plot depicts the distribution pattern of the variable.

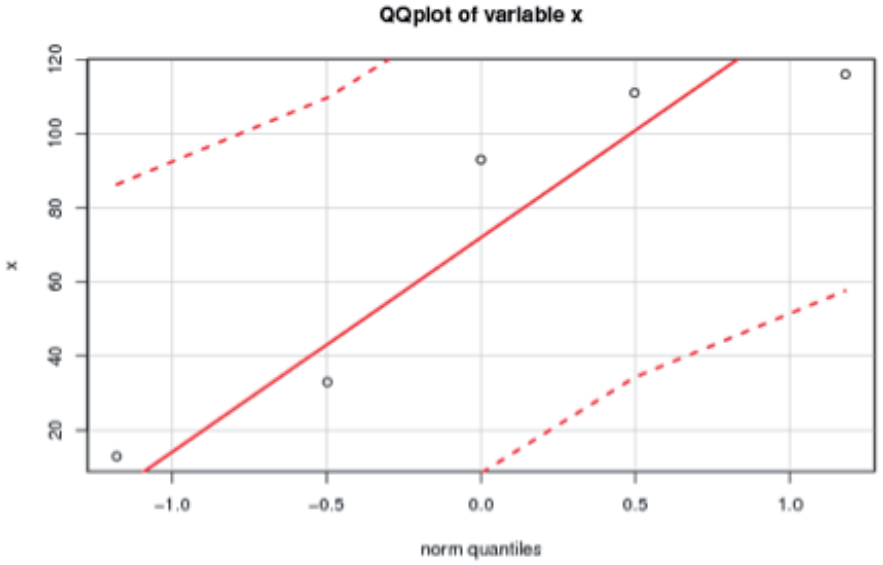

Figure 4: QQPlot of Schools with Computers

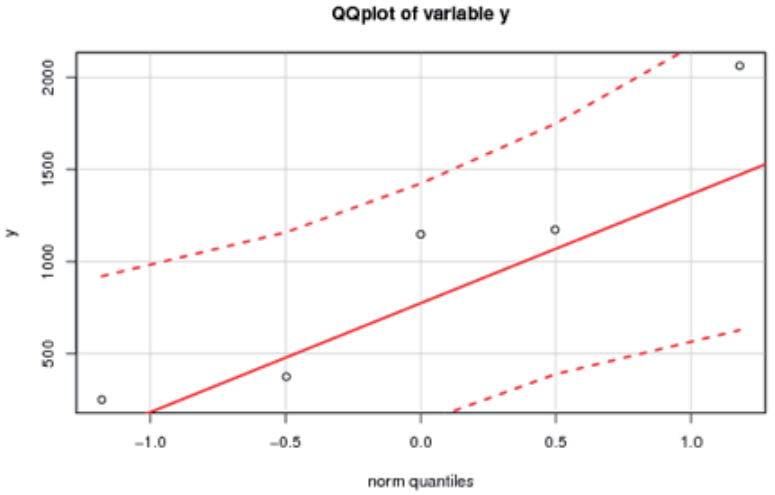

Figure 5: QQPlot of Number of Computers

Time Series Analysis

Following figure 6 & 7 is the interpretation and analysis of the data using time series method. Using this method, the upcoming values or patterns can be predicted with the mathematical equations and it is found from the following graphical representations that the overall growth is in the positive direction in terms of the integration of computers in schools in Iraq.

Figure 6: Growth of Schools with Computers and the Devices.

Figure 7: Depiction of Time-Series Method.

Training of teaching staff on the use of smart boards and application programs according to the specialization according to the following table 6 & 7

Table 6: Analysis of Subject based Data.

	Chemistry	Physics	Biology
Center	285	255	287
Total districts	167	216	219
total summation	452	471	506
Total trainees	350	420	506
Mean Value	1.291429	1.121429	1

Table 7: Descriptive statistics of teachers' readiness to use the smart boards in Iraq.

Q	Statement	Rate	Mean
1	The desire to learn Office applications	91.80	4.99
2	The desire to learn the Internet	99.80	4.99
3	The desire to learn e-mail	91.80	4.44
4	There is a connection to the Internet	93.60	4.38
5	The need for a smartboard in schools	49.00	2.45
6	There is a prior knowledge of learning technology	94.80	4.84
7	Using Smartboard in Education is a fun,	49.00	2.45

	fun and easy lesson		
8	Using Smartboard if adopted in teaching	94.40	4.67
9	There are many courses in the field of education technology	99.40	4.67
10	Use of educational technology in the preparation of courses	59.40	2.45
11	Use in education technology to communicate with colleagues	49.40	2.47
12	Use in education technology to communicate with students	59.00	2.95
13	The desire to learn Windows and the use of smart board	49.00	2.45
14	The desire to learn Office applications	49.00	2.45
15	Use in education technology to communicate with the school administration and educational administration	89.40	4.74
16	The use of SmartBoard changes the way students learn their subjects	93.40	4.67
17	The smart blackboard helps teachers to teach better and more effectively.	99.80	4.99
18	You have become able to apply the program and use the Smart Whiteboard	70.45	3.51
19	Were the tests sufficient and clear application	59.00	2.95
20	Was it time to implement the program?	94.60	4.73
21	The large number of students in the Division impedes the application of the program	99.80	4. 99
22	Would you like to know more about the program?	92.60	4.63
	Cumulative Value	1728.45	85.86
	Mean	78.56591	

One Sample t-Test.

One sample t-Test is used to compare the means from the sample data to a predicted or known value. In this research scenario, the predicted or known value is considered as 60. Using t-Test, the results of data collected can be compared using One-Sample t-Test as follows:

$$t = \frac{\overline{X} - \mu}{\frac{s}{\sqrt{n}}}$$

n=22

X=78.56591
μ=60
Standard Deviation (S) = 20
t= (78.56591-60)/(20/4.69) = 4.35371
From t-Table, the Degree of Freedom (DF) is 22-1 = 21 and Alpha (A) =1.721
Calculated t-Value 4.35371 is greater than 1.721 and out of this range. It presents the result that the null hypothesis is rejected and it depicts the higher performance of the smart board based education in Iraq.

Conclusion:-
The results indicate that the government of Iraq is spending and focusing on the escalation of education and more specifically to the smart education using technology based devices a lot. With the integration and analysis from the primary and secondary data, it is found that the expenditure on smart board based implementation is presenting effectual results along with the higher degree of performance and results in the education system of Iraq.

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