

Integration of ICT for Transforming Education among the Non-Science Stream Pedagogical Learners

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Abstract Education in the 21st century imparts personal talents, build competencies, overcome problems and enhance wellbeing of individuals. The advancement in the field of Information and Communication Technology (ICT) has carried extraordinary modifications, in addition to exaggerating the difficulties of contemporary civilizations. ICT becomes significant in every person's day to day life and in our education system. But students are expected to have sufficient knowledge to use ICT in learning and preparation. They need to enhance their learning strategies to meet the need and demands of the global technological world. This study gathered the Integration of ICT in Transforming Education among Non-Science Stream students. This will support the student in recognizing the need for ICT in their learning process. The present study is a descriptive research, involving survey technique. As many as 300 Non-Science Stream students of 4 colleges in Lebanese French University, Erbil, Kurdistan region of Iraq were selected as sample. This study reveals that non-science students also have adhered to the integration of ICT in transforming education.

Keywords Transforming, Information and Communication Technology, Non-Science Stream, Pedagogical Learners

it is a grave monetary tool for conveying about social, economic and political annexation and a hard-wearing combination of people, predominantly those 'excluded' from the convention of any social group [19].

In twenty-first century ICT has speedy progression in all the fields which have fetched extraordinary modifications, as well as fulfilled the needs of present civilized society [20]. In most of the developed countries, everyone in their daily lives uses ICT as a part of life in all extent particularly in the educational system. Nevertheless, the people never use ICT as much as its advancement. One of the main challenges that have emerged in the use of ICT is the digital divide (the difference between those who have access to the Internet and those who do not); this is because the lack of ICT infrastructure and heterogeneous technologies will increase the digital divide [13]. To overcome this drawback, necessary efforts are required, and resources will have to be devoted to the system to associate the digital boundary. Therefore, the development of awareness and skills among the students is insisted in educational institutions to use ICT in teaching and learning. In order to fill the existing technology gap in teaching and learning, the effect of ICT is added in everyday life, educational institution's curricula of today and classroom facilities [22]. These processes provide learners with knowledge in explicit subject areas to promote significant learning and to enrich specialized output which necessitates active adoption of tools of technology keen on the prevailing surroundings [1].

1. Introduction

In the contemporary world, education is possibly the only utmost significant means for individuals to explore personal talents, shape the ability levels, overcome constraints in the process and increase their available set of opportunities and choices for a continuous improvement in wellbeing [12]. It is not only a worth to improve human resources, efficiency and an reimbursement to workers, but also it is correspondingly imperative for empowering the method of getting hold of ICT, Integration, and Communication of information and understanding, which expands every human life as excellence. Further essentially,

1.1. Technological Transformation of ICT

The earliest civilization has formulated several techniques for the expression of people's own thoughts, needs, and wishes to others. And they created acceptance in a physically contained band in which statement was sufficiently accomplished through speech and written communications [14]. In a larger topographical area, the civilized people tried to use a variety of communication between far places with some approaches such as smoke signals, carrier pigeons, etc. Fire signal was one of the ancient known optical contacts by Greeks I the eight

century B.C. for distribution of agitations, appeals for getting supports or declaration of definite measures.

In 1938 F. B. Samuel discovered telegraphy to develop in the field of electrical telegraphy system which first programmed series of binary symbols manually transmitted and received. This progress changed later on electronic signals which lead to the birth of a telephone by Alexander Graham Bell. Then, these developed as radar and microwave links in the technological implementation. At present, these communication technologies have been loaded with the speech, writing, images and numerous additional kinds of information [3]. It became a fundamental part of unremarkable lifespan through the journey on both sides of the entire world. It began to recognize, not as much expensive and commonly accessible, which one makes individuals to further entice in linking them to the internet.

The Internet is a computer structure which consents masses of computer manipulators everywhere in the world for conversation of info with the usage of the Internet. This makes communication easier and faster, and everybody has jumped up to assist in the use of this technology [15]. Information and Communication Technology is concerned with the usage of technology in large establishments. ICT treaties with the consumption of supercomputers and software to transfigure accumulate; keep the progression, transfer besides recovering evidences.

The world wants to change the teaching and learning system in education with the application of digital equipment in all aspects that helped by Information and Communication Technology. At present, the growing of digitalized application is influenced in the field of education almost in all universities in advanced countries [7]. However, According to Busari [2], the advancement of science and technology is seen in life throughout the whole world. Every nation became either a powerful creator of technology or a power user of other nation's technology in all the fields particularly education. In fact, ICT has made a new landmark in education which has been globalized [6]. The practice of using ICT is becoming faster, gaining prominence of the utmost significant features in the essential usage among the undeveloped capabilities of the learners.

1.2. ICT in Education

In the technological era, Information Technology offers a variety of resources to improve the teaching and learning in the educational sectors, and the learning resources are being extended to provide education with audio and visual effects. Because of this significant development in ICT, that becomes a part in every curriculum in the field of education to enrich the learners to consider the computers as tools for their learning progress in everyday Knowledge [8]. Every individual must use this to learn new multimedia technologies that can help them transfer the ideas, create projects and other worldwide information in their work [2].

In the generation of the computer world, the networking offered proximity in education to improve the capacity of fast learning from anywhere at any time to get knowledge of all aspects of education [18]. All the people to get an education from a variety of options provided by this field could change the phenomena of human life as techno-communication in the word of knowledge.

1.3. Features of ICT

ICT is a hypothetically influential instrument for encompassing educational openings, both formal and non-formal, to provide unbelievable exposure in the learning for the previously underserved constituencies-scattered all groups of populations in rural areas, which groups are habitually left out from education due to their cultural or social causes such as indigenous minorities and women, people with disabilities, as well as all people who are in purposes of cost or because of time limits unable to enroll on society.

Anytime, anywhere: One definite feature of ICT is the capability to shine over space and time. It makes it possible to learn by a time break between the conversion of instruction and its response by the better listeners. Nowadays online course materials may be recovered every day and every minute in the universe by everyone from different parts of the world [5]. ICT has distributed the educational indoctrination transmission over radio or television, which is also a requirement for all initiatives and the trainers to be in one physical location. Moreover, the teleconferencing technologies enable instruction to receive promptly some types of ICT by various, geographically dispersed learners (i.e., synchronous learning).

Access to remote learning resources: In every educational institution, printed books and other physical resources like audio and visual Media are available in limited quantities in the libraries that do not extend for the need of better learning for the learners and teachers, but a multiplicity of learning materials are available only on the Internet and the World Wide Web, where almost all the subject knowledge and media resources can be retrieved by unrestricted number of individuals at anytime and anywhere around the globe [4]. Even though a number of schools, colleges, and universities in developing and developed countries have limited and outdated resources in their library, ICT facilitates the access of the resources by every student, teachers, specialists, research scholars, a person in the profession, commercial traders, and nobles from the whole universe [17].

1.4. ICT Transform the Education

The contemporary techno-world depends upon the emergence of telecommunication technology because the whole world is connected through internet and

communication. This technology has shined in all the fields in the civilized society as a non-stop process in human life [6]. ICT is performing the role of universalization in all the fields in the world. With the help of technology, we think that education transforms the human behavior but in the present scenario ICT transform the education. The teacher-centered education system is changed into student-centered learning which deals with self-learning in the educational curriculum. Nowadays, the curriculum of the worldwide universities follows the applications of the ICT in the teaching and learning process. Mostly science stream has more applicability in the use of technology of ICT in their learning and teaching but the growth of ICT shows its significant influence in non-science stream subjects as well. The majority of the students do not have any learning subject vice streams; they are updating the knowledge of information and communication in their live stream [21]. It is transforming education in the 21st-century world.

1.5. Objectives of the Study

- To assess the level of Integration of ICT in Transforming Education among Non-Science Stream students
- To find out the Level of Integration of ICT in Transforming Education among Non-Science Stream students with respect to background variables

1.6. Hypotheses of the Study

- 1 There is no significant difference between the Male and Female of Non-Science Stream students in their Integration of ICT in Transforming Education.
- 2 There is no significant difference among Education, IT, Law, Economics and Administration Stream students in their Integration of ICT in Transforming Education.
- 3 There is no significant difference between the Married and Single Non-Science Stream students in their Integration of ICT in Transforming Education.
- 4 There is no significant difference between the Non-Science Stream students in their Integration of ICT in Transforming Education and the Educational attainment of their parents
- 5 There is no significant difference between the Non-Science Stream students in their Integration of

ICT in Transforming Education and their parental income.

- 6 There is no significant difference between the Non-Science Stream students in their Integration of ICT in Transforming Education and their residential area.
- 7 There is no significant difference between the Non-Science Stream students in their Integration of ICT in Transforming Education and their age.
- 8 There is no significant difference between the Non-Science Stream students in their Integration of ICT in Transforming Education and their mode of stay.

1.7. Significance of the Study

The present study in the Integration of ICT in Transforming Education among Non-Science students resulted in the subsequent scopes [16]. Every student should have a basic understanding of using ICT in learning and preparation. There is a dire need to enhance their learning strategies to meet the need and demands of the global technological world. The application of ICT is to develop the competency of every student, because a positive assertiveness towards ICT should be appreciated from the prospective of ICT [10]. The teacher should be in a position to combine the technology with new teaching-learning approaches in order to improve the learning of students. In education system, the learners must have the aptitude to connect, produce, revolutionize and reason logically. This study gathered the Integration of ICT in Transforming Education among Non-Science Stream students. This will help the student to comprehend the need for ICT in their transforming of their educational learning process.

2. Materials and Methods

This study is a descriptive research, involving survey techniques. As many as 300 Non-Science Stream students from 4 colleges in Lebanese French University, Erbil, Kurdistan region, Iraq were selected as sample using a simple random sampling technique. An Integration of ICT in Transforming Education Questionnaire developed by the investigator which aims to assess the student's knowledge was used for the collection of data. The collected data were subjected to differential and descriptive statistical analysis.

2.1. Data Analysis

Table 1. Significant difference between the Male and Female of Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Gender	Male	144	15.7292	4.30030	.443	NS
		Female	156	15.5000	4.63716		
Use of Internet		Male	144	16.0972	4.31669	2.051	S
		Female	156	15.0513	4.49917		
Use of Communication Media		Male	144	14.9167	4.23852	-2.912	NS
		Female	156	16.3718	4.40266		
Use of computer application		Male	144	15.7083	4.37711	.308	NS
		Female	156	15.5513	4.45377		
Learning through Multimedia	Male	144	16.1181	4.25991	1.632	NS	
	Female	156	15.2821	4.58581			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students at Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Gender. But, the calculated 't' value 2.051 is higher than the table value of 1.96 at 0.05 level of significance in Use of Internet

Table 2. Significant difference among Education, IT, Law and Administration Stream students in their Integration of ICT in Transforming Education

Dimensions	Source of variation	Df	Sum of Squares	Mean square variance	Calculated 'F' value	Remarks at 5% level
Use of Electronic media	Between Groups	2	52.892	26.446	1.325	NS
	Within Groups	297	5928.478	19.961		
Use of Internet	Between Groups	2	76.690	38.345	1.961	NS
	Within Groups	297	5807.457	19.554		
Use of Communication Media	Between Groups	2	21.983	10.992	0.572	NS
	Within Groups	297	5710.003	19.226		
Use of computer application	Between Groups	2	82.644	41.322	2.140	NS
	Within Groups	297	5733.543	19.305		
Learning through Multimedia	Between Groups	2	10.325	5.163	0.260	NS
	Within Groups	297	5896.592	19.854		

(At 5% level of significance, the table value of 'f' ratio is 3.02)

It is evident that the Non-Science Stream students from Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their name of college.

Table 3. Significant difference between the Married and Single Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Marital Status	Married	82	15.7683	4.08943	.375	NS
		Single	218	15.5505	4.61611		
Use of Internet		Married	82	16.0122	4.21782	1.099	NS
		Single	218	15.3807	4.51286		
Use of Communication Media		Married	82	15.8293	4.48263	.378	NS
		Single	218	15.6147	4.34759		
Use of computer application		Married	82	14.9512	4.57827	-1.631	NS
		Single	218	15.8807	4.32914		
Learning through Multimedia	Married	82	15.9268	4.02087	.581	NS	
	Single	218	15.5917	4.59947			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students of Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Marital Status.

Table 4. Significant difference between the School level and College level Parental education of Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Parents Education	School Level	52	15.5962	4.80710	-.025	NS
		College Level	248	15.6129	4.40961		
Use of Internet		School Level	52	16.7885	4.25343	2.223	S
		College Level	248	15.2944	4.43829		
Use of Communication Media		School Level	52	15.1731	4.36888	-.906	NS
		College Level	248	15.7782	4.38197		
Use of computer application		School Level	52	15.2885	4.39847	-.608	NS
		College Level	248	15.6976	4.41855		
Learning through Multimedia	School Level	52	16.5192	3.86280	1.495	NS	
	College Level	248	15.5081	4.54487			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students from Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Parents Education. But, the calculated 't' value 2.223 is higher than the table value of 1.96 at 0.05 level of significance in Use of Internet.

Table 5. Significant difference between the below 1000\$ and above 1000\$ Parents income of Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Parents Income	Below 1000\$	132	15.5909	4.67567	-.065	NS
		Above 1000\$	168	15.6250	4.32052		
Use of Internet		Below 1000\$	132	15.4697	4.50858	-.289	NS
		Above 1000\$	168	15.6190	4.39080		
Use of Communication Media		Below 1000\$	132	15.6061	4.39944	-.236	NS
		Above 1000\$	168	15.7262	4.37426		
Use of computer application		Below 1000\$	132	15.9773	4.31660	1.221	NS
		Above 1000\$	168	15.3512	4.47634		
Learning through Multimedia	Below 1000\$	132	15.5227	4.53395	-.554	NS	
	Above 1000\$	168	15.8095	4.38281			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students from Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Parents Income.

Table 6. Significant difference between the rural and urban Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Native Place	Rural	128	15.3359	4.27459	-.915	NS
		Urban	172	15.8140	4.61630		
Use of Internet		Rural	128	16.0547	4.50775	1.694	NS
		Urban	172	15.1802	4.35783		
Use of Communication Media		Rural	128	15.5938	4.43578	-.271	NS
		Urban	172	15.7326	4.34728		
Use of computer application		Rural	128	15.2656	4.32259	-1.224	NS
		Urban	172	15.8953	4.46829		
Learning through Multimedia	Rural	128	15.4375	4.50852	-.826	NS	
	Urban	172	15.8663	4.40091			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students from Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Native Place.

Table 7. Significant difference between the below 30 and above 30 years age of Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Age	Below 30	262	15.5267	4.53142	-.846	NS
		Above 30	38	16.1842	4.05273		
Use of Internet		Below 30	262	15.5420	4.40003	-.116	NS
		Above 30	38	15.6316	4.73869		
Use of Communication Media		Below 30	262	15.6565	4.32983	-.175	NS
		Above 30	38	15.7895	4.75996		
Use of computer application		Below 30	262	15.8588	4.30885	2.413	S
		Above 30	38	14.0263	4.81825		
Learning through Multimedia	Below 30	262	15.7290	4.36977	.467	NS	
	Above 30	38	15.3684	4.98333			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students from Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Age. However, the calculated 't' value of 2.413 is higher than the table value of 1.96 at 0.05 level of significance in Use of computer application.

Table 8. Significant difference between the family and alone living with Non-Science Stream students in their Integration of ICT in Transforming Education

Dimensions	Variable	Category	Count	Mean	S.D	t' – value	Result
Use of Electronic media	Living with	Family	288	15.6250	4.50687	.284	NS
		Alone	12	15.2500	3.69582		
Use of Internet		Family	288	15.5868	4.42114	.640	NS
		Alone	12	14.7500	4.91981		
Use of Communication Media		Family	288	15.6979	4.36118	.476	NS
		Alone	12	15.0833	4.94439		
Use of computer application		Family	288	15.6528	4.41855	.502	NS
		Alone	12	15.0000	4.34846		
Learning through Multimedia	Family	288	15.6944	4.43030	.212	NS	
	Alone	12	15.4167	4.98102			

(At 0.05% degrees of freedom, the 't' value is 1.96)

It is evident that the Non-Science Stream students from Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their Living.

2.2. Results and Discussion

The analysis of the data revealed that male Non-Science Stream students of Lebanese French University have better Integration of ICT in Transforming Education than female Non-Science Stream students of Lebanese French University in the use of internet. Normally, Non-Science Stream students of Lebanese French University have a natural tendency to socialize easily with more friends in communication of knowledge, share information and gather information on the educational usage of technology. But the female Non-Science Stream students of Lebanese French University have the freedom to use the Internet even though they are using only for communication not for educational purpose. It is evident that the Non-Science Stream students of Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of wanted control with respect to their name of the college. Nowadays, education has become modernized and encouraged the students to utilize the information and communication for the integration to transform education. Non-science stream students in Lebanese French University also concentrate all to be integrated with ICT in teaching and learning process. The Marital Status, Parents income, Locality and living with of Non-Science Stream students of Lebanese French University significantly differ in their level of Integration of ICT in Transforming Education in the dimension of variables. It is due to the Kurdish culture. Here the people are expected to participate in the educational progress among all aspects of life, there is no difference in income due to social revolution and equality among the people's mind and also people living in rural or urban and family or alone is not a matter to use ICT for their transformation in education. But the parental education of the Non-Science Stream students from Lebanese French University is significant in their level of Integration of ICT in Transforming Education. It is because the educational knowledge of the parents in school and college level may have some influence on use of Internet among the students in the education aspects.

And there is a significant difference between the age group of below 30 years old and above 30 years old of Non-Science Stream students of Lebanese French University in their level of Integration of ICT in Transforming Education in Use of computer application. Because the computers are updated every year, the youngsters search for the use of computer application in their Transforming Education with the integration of information and communication technology as a part of that in developed countries, but the ICT infrastructure is not well embedded in developing countries for the reasons such as lack of internet, IT literacy, software packages, IT skills among non- science stream lecturers, IT green, IT awareness, and others.

3. Conclusion

Information and communication technology is a part of teaching-learning in the present educational world. The majority of people think that science students studying in universities have more influence on the integration of ICT in their chance of forming education in society. But this study reveals that non-science students also have lots of knowledge at present in the integration of ICT in transforming education. The 21st century makes everybody to be techno followers in all aspects in learning and communication through Google classes, video conferencing, teleconferencing, virtual lecturing, digital learning, email conversation, use of electronic and multimedia, computers, and computer applications, etc. so the non-science stream students of Lebanese French University have a better influence on the Integration of ICT in Transforming Education in their learning progress.

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