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Development of the Professional Competence of Teaching Staff Members and the Essential Skills that Activate E-Learning in Sudanese Universities in Khartoum.

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Abstract: *This study aims to detect the standard efficiency of professional teaching staff members, as well as their skills in activating the E-learning teaching in Sudan universities; through the answers feedback of twenty five questions of various measures by using the Analytical Descriptive method and the programme of Human Science for data analysis and processing (SPSS). Excel Programme was used to exhibit graphical drawings. The study community consisted of teaching staff members of Sudanese universities in Khartoum State. Samples study was formed from random samples consisting of two hundred (200) teaching staff members of five Sudanese universities; namely :University of Khartoum, Sudan University of Sciences and Technology, Elneelain University, Elrebat Elwatany University and University of Sciences an Technology, of various colleges. The study concluded many finding results, some of which are: most of Teaching staff members have their own computers, acquainted with basic E-Learning programmes that enables them to activate the E-learning teaching, and the insufficient training programmes, rare usage and scarcity of specialised computer systems, as Blackboard, virtual classrooms, their restricted usage of general systems such as introducing presentations and photos processors. The study recommended the importance of conducting training courses in usage of teaching methods techniques and computer systems for all teaching staff members. The knowhow of E-Learning systems such that each staff member learns his main role in the E-learning teaching environment.*
Keywords*: Training, Technical media, Computer systems*.

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I. Introduction

There is a global interest in achieving professional growth for faculty members in different universities. The importance of the role of the faculty member was to achieve the objectives of university education. The teaching staff members have spread in many universities and have seen evolution in the concept seek to provide the faculty member with the necessary skills that enable him to perform his work efficiently [(1)].University education in the fourth decade of the twentieth century saw limited attempts; Harvard University taught members of the teaching staff specialized material in university teaching from 1947 to 1948. In 1962 the subject of professional preparation did not take great care until the middle of the 1960s, due to several reasons [(2)].

1. The belief that the holder of a doctorate degree has a degree of knowledge enabling him to perform his duties.
2. Considering university education as a stage that does not require the teaching staff member to have an educational knowledge like this; they need pre-university teachers.

Since 1965, Europe has endeavored to improve teaching and education in universities through professional development of faculty members through programs and seminars. They held seminars and conferences under the auspices of the European Research Centre for the period from 1978 to 1983. Cooperation was held between the European Universities under the auspices of the European Conference; and the auspices of the German Association of the Higher Education , to deal with Professional development of faculty members[(3)]. In the United States, some institutions of higher education were seen. The enrollment of a member of the Training Commission for development courses was compulsory; success in it contributes to an increase in the member's salary. Education authorities have to provide facilities for the teaching staff members to attend development courses. Tuition for a full year has to be settled to attend programs at a university to encourage them [(4)]. Because of the importance of this topic the UNESCO has been interested in promoting the professional development of the faculty members by advocating the establishment of the inter-university networks worldwide, for the purpose of providing joint activities on educational training and vocational development in a

document UNESCO 1984-1985[5]. In Sweden, a special committee was established to prepare the curricula for the students and University teaching bodies; focusing on evaluation, research, teaching methods and counseling; and all teachers must have adequate training in the teaching methods and their participation in training courses before starting university teaching[6]. At the Arab level, there had been a growing interest in professional development for members. The Arab Network for Professional Development was established for the members of the teaching staff in 1991,with the assistance of the United Nations Educational, Scientific and Cultural Organization (UNESCO), with a view to strengthening the national capacities; and facilitating exchange expertise and experience among universities participating in the network; and conducting research and joint studies , as held in the United Arab Emirates University in Al Ain City from 30 March to 2 April 1993 Regional Seminar , for the professional development of faculty members at the GCC universities .Definition of concepts and perspectives in the development of the members of the teaching body and exchange of expertise and experiences[7]. As some Arab Universities stated laws and regulations that promoted the development of faculty members;in1983 a symposium was held at King Saud University during which twenty-four studies were conducted in the fields of selection, to develop and define the responsibilities of the teaching staff members. All these studies emphasized the need for each university to develop special training programs for the teaching staff members who have not previously received such teaching methods that encourage the faculty members in each section to hold periodic meetings for the exchange of experiences; and the establishment of institutes programs for the educational qualification required for each member of the faculty in each university [8]. In 1983, the conference was held in Baghdad The third of the ministers responsible for higher education and scientific research in the Arab world under the slogan (Development of Competencies Arab Humanity in Higher Education and Scientific Research), and presented to the Conference several researches that discussed the situation regarding the problems of the teaching staff member, and the ways of preparing and developing it. The Conference recommended the appointment of the duties of a faculty teaching member, prioritizing these duties (teaching tasks, academic guidance, participation in university committees, and Community service). Two years later, in Damascus, the fourth conference of the ministers was responsible for higher education and scientific research , and suggested several recommendations[9] .As for the experiences of the Arab universities in the field of training and development, the researcher had found that Cairo university was a pioneer in this field. The university had established a center for the development of university professors. Its programs included lectures, seminars, theoretical and practical workshops in the technical, educational, and teaching methods and strategies[10].During the review of the Arab efforts in the field of development and qualification of the faculty member, these efforts were inadequate and education outputs are still weak, contrary to the global efforts, despite the agreement of scientists .Education in the importance of developing the abilities and skills, and the directions of the faculty member, and their definition of the goals of university education, the methods of assessment and testing; the methods of curriculum building and development Researches Capabilities[11][12]

Research Problem:

This research was an attempt to identify the extent of professional competence development for faculty members and to identify the necessary skills of the teaching staff members, to activate E-learning in Sudanese universities in Khartoum state.

Research Questions:

1. What is the development of the professional competence of the faculty members in the use of technical media?
2. What is the use of teaching staff for computer systems in the requirements of the educational process?
3. What are the necessary skills for the faculty members to use E-learning?

Research Objectives:

1. Disclosure of the development of professional competence for the members of the teaching body.
2. To identify the extent to which faculty members use computer systems in the requirements of the teaching process.
3. To reveal the skills necessary for the faculty members to use E-learning.

Research Importance:

The importance of this research was to cast light on the development of professional competence of the teaching staff members in using technical and computer technology; and identification of the skills necessary for the faculty member to use E-learning teaching.

Research Limits:

These are objective limits, time limits and spatial limits:

1. Objective Limits: The research limits were limited to the study of the development of the professional competence of faculty members, the extent to which faculty members used computer systems; and the disclosure of their skills to use E-learning.

2. Time Limits: this research was done during the period from July, 2016 to July, 2018.
3. Spatial Limits: this research was done with teaching staff members of five Sudanese universities, of various colleges, in Khartoum State.

Curriculum and Research Procedures:

1. Research Curriculum:

The Descriptive Analytical Curriculum was used to describe and analyse the data, by using the Statistical Packages of Social Sciences, SPSS; and by Excel programme to clarify the charts.

2. Research Community:

This consisted of teaching staff members of five Sudanese universities in Khartoum State.

3. The Sample:

A random sample of 200 staff members, of various academic grade scales, and education expertise, in five Sudanese universities of various colleges in Khartoum State, were selected.

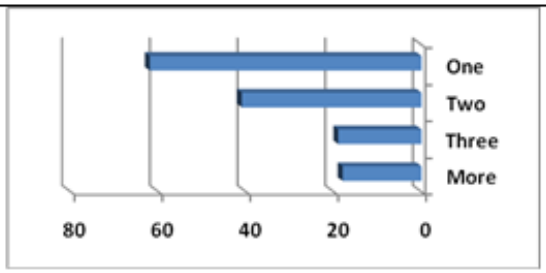
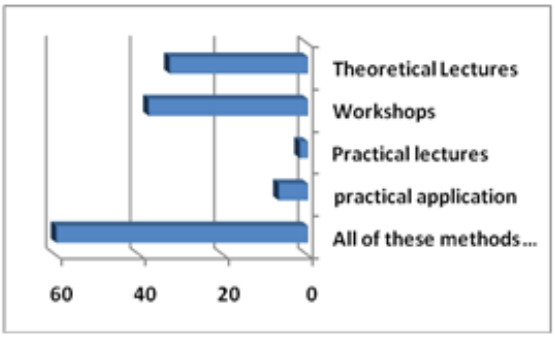
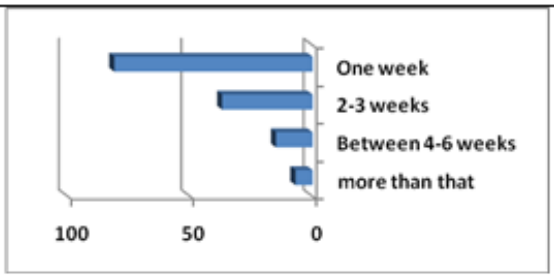
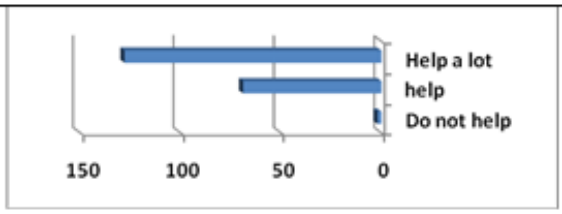
4. Research Tools:

The research data was obtained from the teaching staff members through their questionnaire feedbacks, mainly.

II. Results & Discussion

1. Development of Professional Competence in the Use of Technical Media

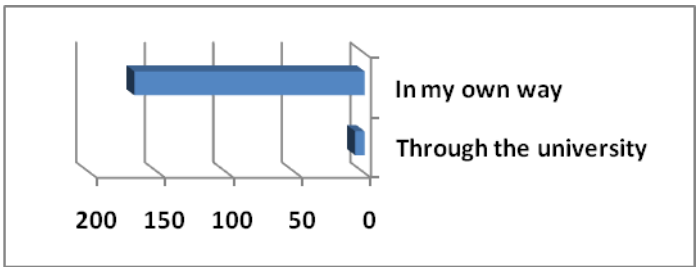
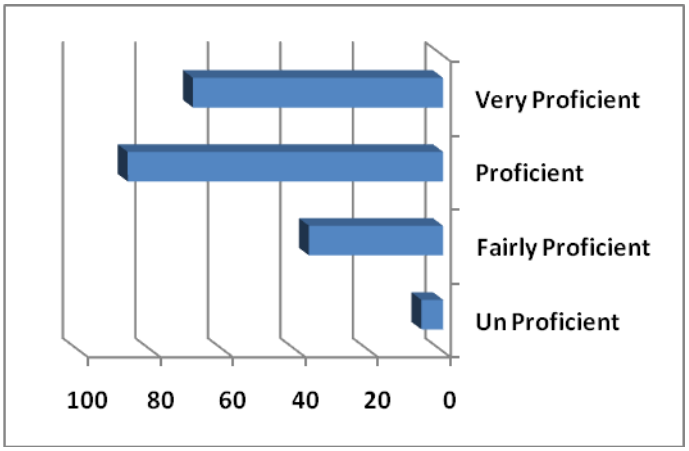
Table & Figure (1): Training Courses for Faculty Members:

Phrase	Alternatives	Number of Respondents	Percentage	Graph of Number of Respondents
Number of Training Programs	One	62	44.3	
	Two	41	29.3	
	Three	19	13.6	
	More	18	12.8	
Method of Implementation of Training Programs	Theoretical Lectures	33	23.6	
	Workshops	38	27.1	
	Practical Lectures	2	1.4	
	Practical Application	7	5	
	All of these methods combined	60	42.9	
Duration of the Training Programs	One week	81	57.9	
	2-3 weeks	37	26.4	
	Between 4-6 weeks	15	10.7	
	more than that	7	5	
Evaluation of Training Programs	Help a lot	128	64.3	
	Help	69	34.7	
	Do not help	2	1	

Source: prepared by the researcher using EXCEL programme

From Table &Figure (1), 70% of the respondents were enrolled in training programs to enable them to use the technical media for computer applications in the teaching process at the rate of one cycle to two cycles, with rates ranging from 44% to 29%; while the lowest rates of 3 or more courses were recorded. These training programs in one week were 58% and 26% for training programs, in 3 weeks; while the percentage of the respondents did not exceed 11% for recipients of courses of more than 3 weeks, has been implemented. 24% of these programs were through theoretical lectures, and 27% by workshops; while recorded, only 6% for the operational presentations and practical applications, it was varied in ways of implementing them, using these methods combined by 43%. The researcher concluded that the overall ratio of training to teaching staff members in a few Sudanese universities; however, despite the use of various methods of implementation, were not sufficient in number .As for training courses received by the respondents or in terms of their duration, 99% of the respondents believed that these training programs help and greatly help to enable the teaching staff to use all the technical media and knowledge in computer teaching applications , which confirm the desire of the teaching staff members in more training courses.

Table &Figure (2): The Efficiency of Faculty Members in the Use of Technical Media and Computer:

Phrase	Alternatives	Number of Respondents	Percentage	Graph of Number of Respondents
Way Respondents Get A Computer	In my own way	168	96	
	Through the University	7	4	
Evaluation of Respondents' Abilities to use Computers	Very Proficient	69	34.7	
	Proficient	87	43.7	
	Fairly Proficient	37	18.6	
	Un Proficient	6	3	

Source: prepared by the researcher using EXCEL programme

In Table &Figure (2), the researcher found that 87% of each respondent had a computer, and 96%of them received it by their own ways, without the university financing. In addition, 78% of respondents rated their abilities to a degree Proficient and very proficient in using technical media and applications in teaching which he appreciated. Such researches are essentially necessary in the light of the global technical development, and the requirements of electronic life. The computer and Internet are an integral part of the educational, practical, and recreational teachings in all areas of life.

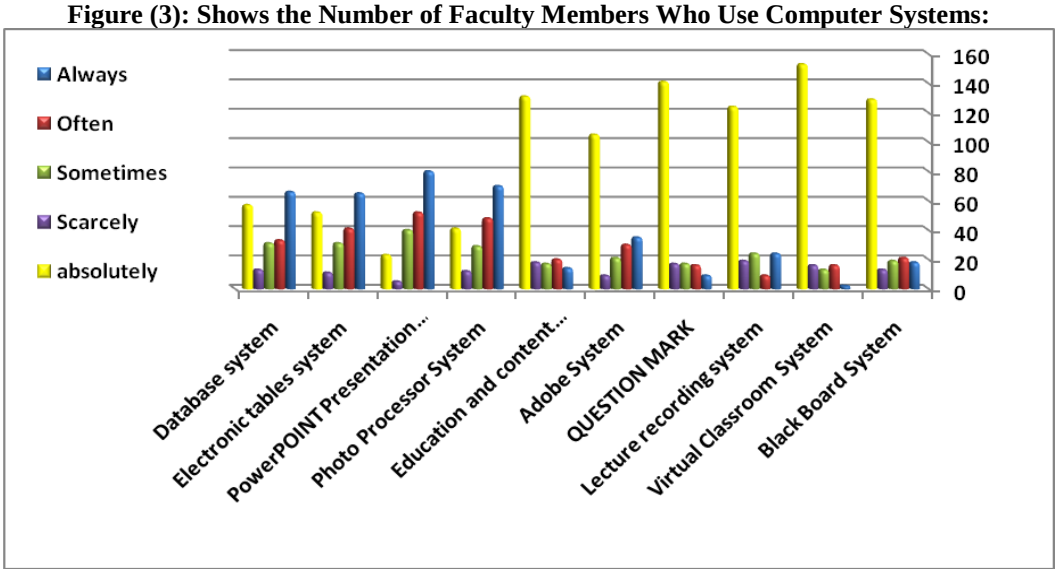
2. The Extent of the Use of Faculty Members for Computer Systems in the Requirements of the Teaching Process

Table (3): Clarifies the Extent of the Computer Systems Usage by the Faculty Members in the Requirements of the Teaching Process:

No	Phrase	Always		Often		Sometimes		Scarcely		Absolutely	
		F	%	F	%	F	%	F	%	F	%
1	Black Board System	18	9	21	10.5	19	9.5	13	6.5	129	64.5
2	Virtual Classroom System	2	1	16	8	13	6.5	16	8	153	76.5
3	Lecture Recording System	24	12	9	4.5	24	12	19	9.5	124	62
4	QUESTION MARK	9	4.5	16	8	17	8.5	17	8.5	141	70.5
5	Adobe System	35	17.5	30	15	21	10.5	9	4.5	105	52.5
6	Education and Content Management System	14	7	20	10	17	8.5	18	9	131	65.5
7	Photo Processor System	70	35	48	24	29	14.5	12	6	41	20.5
8	PowerPoint Presentation System	80	40	52	26	40	20	5	2.5	23	11.5
9	Electronic Tables System	65	32.5	41	20.5	31	15.5	11	5.5	52	26
10	Database System	66	33	33	16.5	31	15.5	13	6.5	57	28.5

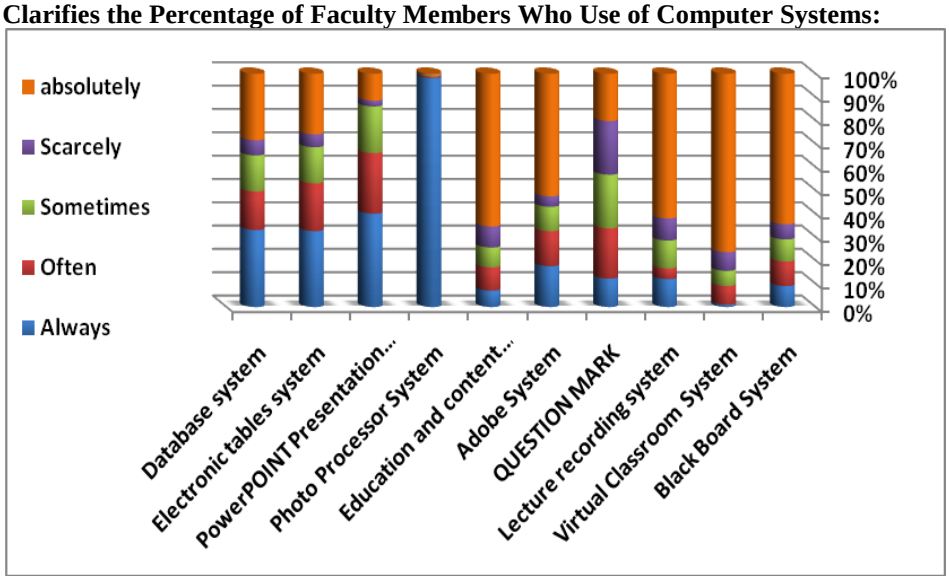
Source: prepared by the researcher using SPSS programme

Figure (3): Shows the Number of Faculty Members Who Use Computer Systems:



Source: prepared by the researcher using EXCEL programme

Figure (4): Clarifies the Percentage of Faculty Members Who Use of Computer Systems:



Source: prepared by the researcher using EXCEL programme

Table (3), Figure (3) and (4) illustrate the extent to which faculty members use the systems in the teaching process; high percentages of respondents were observed ranging from 53% to 77%.6 of the 10 computer systems included in the research are: Blackboard, the Recording System, the Adobe System, and the Education and Content Management System, are recorded with the highest negative ratios; 71 % never used the Mark Question System, 77% of respondents did not use the Classroom System at all; While respondents indicated that they should use the remaining systems permanently or predominantly in the educational process ; With rates ranging from 50% to 66% for electronic spreadsheet system, database system, image processor system, are registered with the highest percentage of use of the PowerPoint presentation system. The faculty of computer systems ; in general , in the teaching process is that their use is rarely or not by more than 48% of the respondents, and only 12% referred to their occasional use of these systems in teaching, While the remaining percentage of respondents confirmed their use of computer systems permanently or predominantly in teaching in effect , using general systems such as image processor, presentations and spreadsheets. The knowledge required for specialized teaching programs, which are reliable in the lecture system, such as classes and registration of lectures, and without knowledge of test systems such as the Question Mark System, Black Board, which he relies on , to communicate with students to record lectures for the organization tests ,subsequent correction, monitoring of grades, follow-up of students in training, activities, etc.

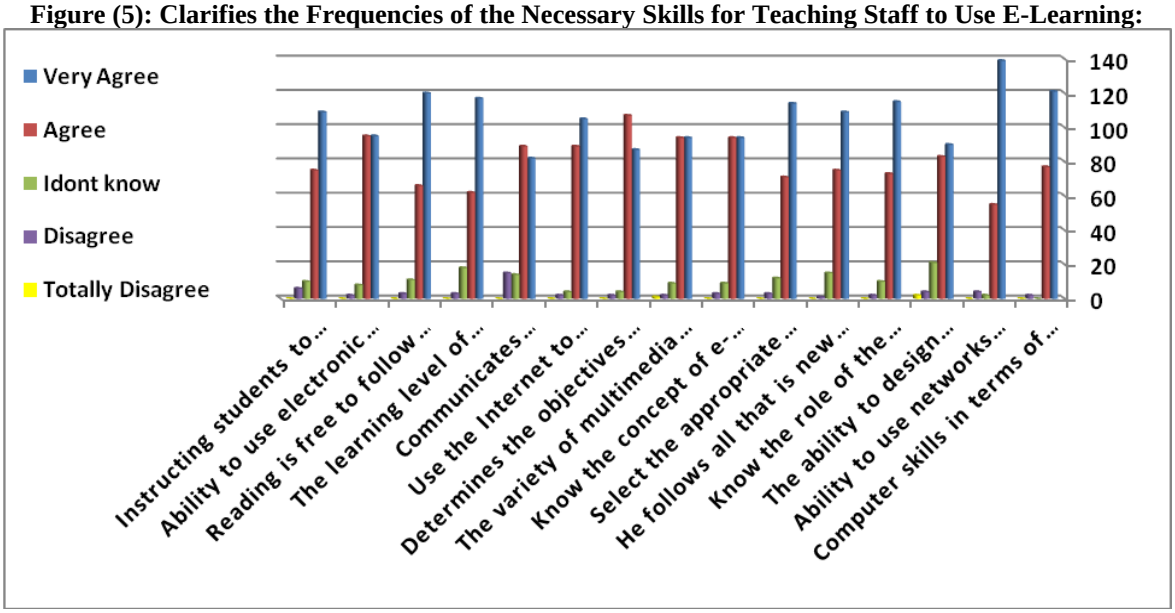
3. The Necessary Skills for the Faculty Member to Use E-Learning

Table (4): Shows the Frequencies and Percentages of the Necessary Skills for the Teaching Staff Member to Use E-Learning

No	Phrases	Very Agree		Agree		I don't Know		Disagree		Totally Disagree	
		F	%	F	%	F	%	F	%	F	%
1	Computer skills in terms of hardware and software	121	60.5	77	38.5	0	0	2	1	0	0
2	Ability to use networks and the Internet in the educational process.	139	69.5	55	27.5	2	1	4	2	0	0
3	The ability to design electronic curricula on the web.	90	45	83	41.5	21	10.5	4	2	2	1
4	Know the role of the faculty member in the E-learning environment.	115	57.5	73	36.5	10	5	2	1	0	0
5	He follows all that is new in E-learning.	109	54.5	75	37.5	15	7.5	1	0.5	0	0
6	Select the appropriate Electronic Content to achieve the Curriculum objectives.	114	57	71	35.5	12	6	3	1.5	0	0
7	Know the concept of E-learning Systems.	94	47	94	47	9	4.5	3	1.5	0	0
8	The variety of multimedia used in providing Electronic Content.	94	47	94	47	9	4.5	2	1	1	0.5
9	Determines the objectives of the Electronic Curriculum according to scientific standards.	87	43.5	107	53.5	4	2	2	1	0	0
10	Use the Internet to develop and improve the content of the scientific material.	105	52.5	89	44.5	4	2	2	1	0	0
11	Communicates Electronically with learners.	82	41	89	44.5	14	7	15	7.5	0	0
12	The learning level of learners is Electronically continuous.	117	58.5	62	31	18	9	3	1.5	0	0
13	Reading is free to follow up what is new in university teaching using E-learning.	120	60	66	33	11	5.5	3	1.5	0	0
14	Ability to use Electronic interaction tools with students.	95	47.5	95	47.5	8	4	2	1	0	0
15	Instructing students to deal with Electronically Programmed teaching / teaching units.	109	54.5	75	37.5	10	5	6	3	0	0
Total Percentages		53%		40.20%		4.90%		1.80%		0.10%	

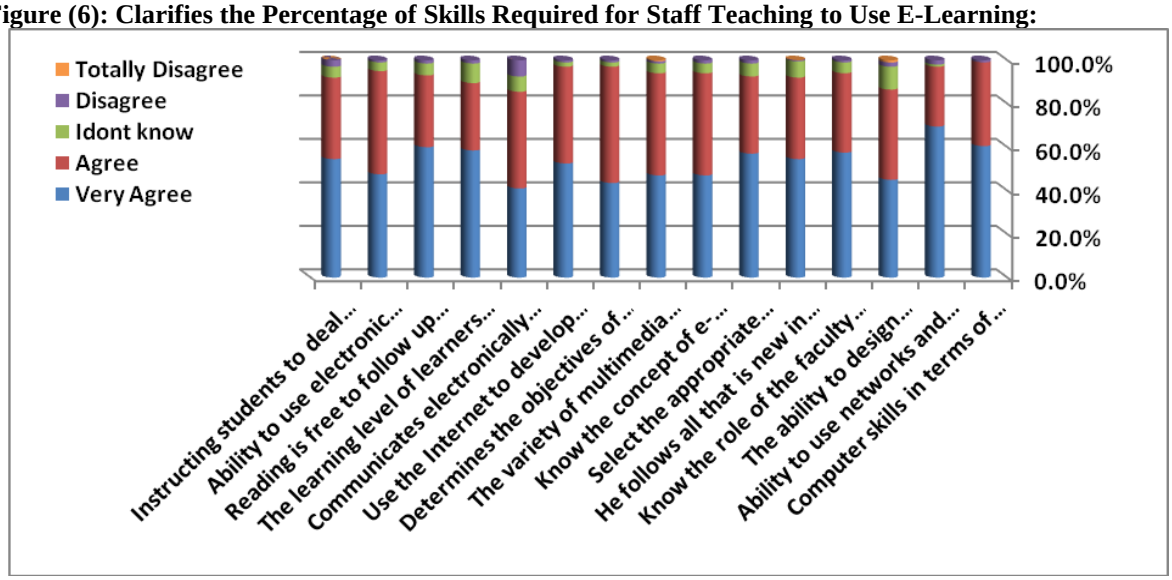
Source: prepared by researcher using SPSS programme

Figure (5): Clarifies the Frequencies of the Necessary Skills for Teaching Staff to Use E-Learning:



Source: prepared by the researcher using the EXCEL programme

Figure (6): Clarifies the Percentage of Skills Required for Staff Teaching to Use E-Learning:



Source: prepared by the researcher using the EXCEL programme

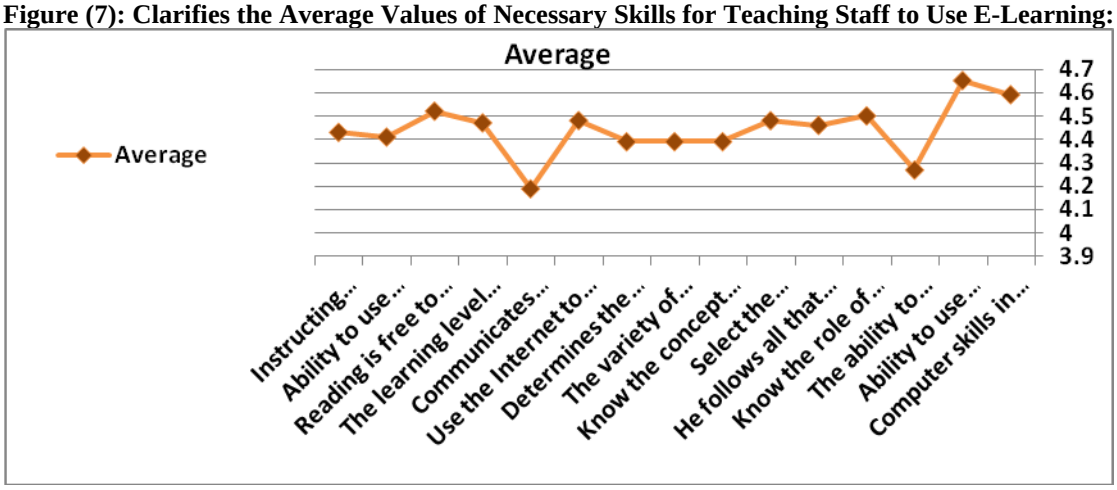
Table (4), Figure (5), (6), show the frequency, percentages of respondents opinions towards the necessary skills and the requirement that the faculty member is able to use E-Learning. Where 93% of the respondents agreed with all 15 skills offered by the researcher. These phrases are certain that the faculty member should be available at very high rates ranging from (40.2% to 53%),for Agree and Very Agree; pointing to the importance of the availability of computer skills, networking, and the Internet as a member of the organization Teaching, in addition to his ability to design electronic curricula, knowledge of his role in the E-Learning environment, and follow-up everything new in E-Learning, a variety of multimedia use, communication, and learner support Electronically, and be able to use electronic interaction tools with students , and guide them to deal with modules Curriculum should be electronically programmed, and must understand the concepts and systems of E-Learning, and choose the appropriate content to achieve the objectives of the electronic curriculum according to scientific standards, and to use the Internet; as well as free reading for improving the content of the academic material.

Table (5): Clarifies the Average Value, Standard Deviation and Chi Square of Necessary Skills for Teaching Staff to Use E-Learning:

No	Phrases	Average	Standard Deviation	Chi Square	Freedom	Probability Value
1	Computer skills in terms of hardware and software	4.59	0.552	108.610	2	0.000
2	Ability to use networks and the Internet in the Educational process.	4.65	0.609	247.320	3	0.000
3	The ability to design Electronic Curricula on the web.	4.27	0.808	186.250	4	0.000
4	Know the role of the Faculty Member in the E-Learning environment.	4.5	0.642	173.160	3	0.000
5	He follows all that is new in E-Learning.	4.46	0.656	154.640	3	0.000
6	Select the appropriate Electronic Content to achieve the Curriculum objectives.	4.48	0.680	163.800	3	0.000
7	Know the concept of E-learning Systems.	4.39	0.649	155.240	3	0.000
8	The variety of multimedia used in providing Electronic Content.	4.39	0.671	243.950	4	0.000
9	Determines the objectives of the Electronic Curriculum according to scientific standards.	4.39	0.584	180.760	3	0.000
10	Use the Internet to develop and improve the content of the scientific material.	4.48	0.593	179.320	3	0.000
11	Communicates Electronically with learners.	4.19	0.865	101.320	3	0.000
12	The learning level of learners is Electronically continuous.	4.47	0.722	157.320	3	0.000
13	Reading is free to follow up what is new in University teaching using E-Learning.	4.52	0.672	177.720	3	0.000
14	Ability to use Electronic interaction tools with students.	4.41	0.620	162.360	3	0.000
15	Instructing students to deal with Electronically Programmed teaching / teaching units.	4.43	0.727	152.840	3	0.000
Total Average		4.44				

Source: prepared by researcher using SPSS programme

Figure (7): Clarifies the Average Values of Necessary Skills for Teaching Staff to Use E-Learning:



Source: prepared by the researcher using the EXCEL programme

Table (5), shows the values of the mean; the standard deviation, and chi square of the necessary skills, which is required by the faculty member to use and activate E-Learning .The researcher found statistically significant differences that were derived from the values of the high Chi Square; the Zero Probability Value; which tended to be positive towards all the phrases; to register values higher than the mean (3); as shown in figure (7); with a mean average 4.44 and the standard deviation of the phrases terms ranging from 0.55 to 0.87 indicating a very low variance between the responses of the respondents and confirmed by the Degree of Freedom of more than 87% of the phrases, where it was lower than 4 degrees freedom; pointing to the strong

homogeneity between the responses of respondents who used only four alternatives instead of five alternatives. The respondents achieved the highest degree of homogeneity only 2 Degree of Freedom in the first statement of the phrases. This indicated to the importance of availability of computer skills from where equipment and software are part of the teaching staff to use E-learning.

The researcher concluded that providing these skills to the faculty member is an urgent necessity for the member to work on its development, and the university must be encouraged and urged to constantly train. View and provide everything new.

Based on a description of the current professional competence of the faculty members of the Sudanese Universities, the study presented proposals for Improvement is summarized as follows:

1.Establish training courses for the use of technical media and computer systems in teaching; on a regular, permanent basis for the members of the teaching staff; in order to stand with them, and follow up on any developments that hampered their effective application of the systems, and focus with them on introducing all new computer programs specialized in E-Learning.

2. Develop a comprehensive plan for training on all computer systems and all types, according to an integrated training schedule for each member of the teaching staff; is determined according to its actual capabilities in the use of the computer, and the special needs in accordance with the specialization of the faculty member, and the scientific material that they submit.

The study also found that the necessary skills must be provided by the faculty member to enable him to activate the E-Learning and is summarized as follows:

1. The skill of using the computer, and the ability to use the networks and the Internet in the educational process.
2. Knowledge and full knowledge of its role in the E-Learning environment.
3. Follow up everything new in E-Learning, and its usage to provide electronic curricula.
4. Ability to use electronic interaction tools with students; and to guide them to deal with programmed modules electronically.

III. Recommendations

1. Training courses for the use of technical media and computer systems in teaching.
2. The faculty member should know the concepts of E-learning and choose the appropriate electronic content to achieve objectives of the curriculum.
3. The faculty member should know his / her role in the E-Learning environment.

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