

The Relationship between the Use of Modern Educational Technology and Quality of Education in Zahedan University of Medical Sciences

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Abstract

The present study aimed to investigate the relationship between the use of modern educational technology and the improvement of the quality of education in universities. The research was a descriptive-survey study. The statistical population were all faculty members of Zahedan University of Medical Sciences in the academic year 2017-2018 (336 people). Sample of study, based on Morgan table, was 200 faculties that selected as simple random sampling method. The research tools were three standard questionnaires: application of technology in education, quality of education, and Teacher Self-Efficacy. Validity & reliability of the questionnaires evaluated and confirmed. Descriptive statistics including frequency distribution tables, mean, standard deviation and charts were used to analyze the data. Pearson correlation coefficient and regression analysis were used for statistical analyses. The software used to data analyze was SPSS ver. 16. The study findings indicated a significant relationship between modern educational technology and quality of education in Zahedan University of Medical Sciences. Considering the results of data analysis, it can be argued that the use of modern educational technology can ultimately predict the quality of education. Therefore, if the authorities seek to improve the quality of education at the university, the use of modern educational technology can play a major role in this regard.

Keywords: Faculty Self-Efficacy; Modern Educational Technology; Quality of Education; University.

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1. Introduction

Quality in both its formal and informal form has always been one of the human concerns. Today, the quality domain has a special place for institutional and academic thinkers. Indeed, it is not possible to improve the quality of education at the university, regardless of the factors affecting it. One of the most important factors affecting the quality is educational facilities and tools, or, in other words, the use of educational technology in teaching. Experiences in this regard confirm that if university faculty members use educational technologies in their teaching, they can transform and enhance the quality of their education and also learn better and more effectively in learners. On the other hand, scholars believe that faculties are the most important and influential player in student learning, which has an indisputable effect on students' learning;

In fact, even if all conditions and facilities are available in some way, but there is no well-educated teacher to use these facilities properly, cannot expect to improve the quality of education. One of the challenges that the management of organizations is faced with it; it is a matter of quality; therefore, quality is at the top of most affairs, and improving services is one of the most important tasks of any university [1].

The review of existing literature suggests that improving the quality of higher education has been presented in various ways [2], and several factors have been identified to improve the quality of education at universities [3]. For example, various studies have shown that factors such as the characteristics of the professors [3], the content of the course [3-5], courses facilities and teaching methods [3], educational achievement evaluation methods [6, 7] and some other factors affect the quality of educational activities. Acknowledging that the quality of higher education is not independent of the resources used in education and the success of the courses depends on the precise allocation of resources, accordingly, the availability of sufficient resources and facilities such as library, lecture hall, classroom, etc. are essential for improving the quality of education. The classroom is as effective as the subject of the lesson and the teacher teaching method in terms of the quality of learner learning [8].

These statements indicate that the quality of facilities in higher education is an important factor in the desirability of curriculum and can have an undeniable role in students' satisfaction. Educational technology is always considered as one of the most important aspects of educational facilities that doubles the effectiveness of teaching.

The term of "EDUCATIONAL TECHNOLOGY", as a Greek term, means a systematic approach, and educational technology means the use of knowledge for scientific purposes [9]. Educational technology has three aspects or dimensions that the first aspect focuses on the new media and its use in education and learning, and it can be called the hardware dimension. The second aspect is the learning outcomes or methods of designing software or teaching materials that lead to better learning, and finally, the third aspect, emphasizes on the problem-solving features [10].

Higher education is a system that involves professors, students, employees, with a variety of processes, has related with stakeholders who have different needs, and meeting their needs requires to high quality teachers and quality processes. Teachers' educational practices and the ways in which they teach the subject, will have an

important impact on students' learning and knowledge. Therefore, faculties who are confident in their abilities and skills in teaching, so, insist on their work, will create more scientific emphasis in the classroom and perform different performance from faculties who display lower performance expectations [10].

Educational technology intends to use all the scientific phenomena to make the sweet learning faster and to go away later. On the other hand, one of the most important forces and arms that can strengthen the institution of education is the presence of competent and efficient teachers. The success and failure of educational programs at the level of universities in each country depends on the staff and, more importantly, on the faculty members of the universities. In fact, it is a teacher or faculty who uses the available facilities to improve the quality of education; therefore, without any competent and efficient faculties at universities, all efforts to improve the quality of education are maintained as sterility. Therefore, attention to improving the quality of education is a very important subject and needs to special attention. The present study was conducted to investigate the relationships between the variables of modern educational technology and improving the quality of education in Zahedan University of Medical Sciences.

2. Material and Method

The present study is descriptive and survey type. The statistical population of this research is all faculty members of Zahedan University of Medical Sciences (336 faculties). The sample was 200 faculties based on Cochran statistical formula and Morgan table with 95% Coefficient of confidence. Since some of the questionnaires may not be completed or incompletely and may not be used in data gathering, Accordingly, the researcher distributed 230 questionnaires among faculty members of Zahedan University of Medical Sciences in a simple random sampling.

The method of data collection in this study was fieldwork and the research tools consisted of three standard questionnaires: Questionnaire on Attitude toward the Application of Technology in Education of Yavuz [11] with 50 questions, Teacher Self-Efficacy Questionnaire of Tschannen and his colleagues [12] with 24 questions, And teaching quality questionnaire with 38 questions. Respondents ranked their response to each item as five Likert scale (from 1 = high Disagree to 5 = high agree).

Since the questionnaire used in this research was standardized and used in many researches, in this research, in order to adapt the questionnaire to the research environment (Zahedan University of Medical Sciences) Formal and content validity for assessing the validity, and computing of Cronbach's alpha coefficient for Questionnaire on the application of technology in education (0.892/0), teacher self-efficacy questionnaire (0.912) and teaching quality questionnaire (0.886) were sufficient to assess the reliability of questionnaires.

Descriptive statistics including frequency distribution, mean, standard deviations and charts, and also Pearson correlation coefficient and regression analysis were used to analyze the data. The software used to analyze the data is SPSS software version 16.

Regarding the fact that researchers were working in Zahedan University of Medical Sciences, research was carried out without any limitations.

3. Findings

The results showed that 62% of the participants were male and in the age groups, 31-40 group had the highest participation (43%), and also In terms of qualifications, Specialist group (30/5%), the master (29/5%), Ph.D. (29/2%) and Super Specialist (11.11%) were participated.

According to the data analyses, Pearson correlation coefficient between educational technology variables and education quality was 0/154, which indicates a meaningful relationship between variables ($P < 0/05$). This relationship is positive and directly, so, by increasing use of modern educational technology, the quality of education increases (Table 1).

Table 1: The relationship between modern educational technology and teaching quality

Variable	Modern Educational Technology			Direction	R2	N
	Pearson Correlation	P-Value	Relation type			
Educational Quality	0/154	0/015	Positive	Direct	0/02	200

The value of Pearson correlation coefficient between the dimensions of modern educational technology and the dimensions of the quality of education showed that in the dominate of content dimension with the advantages of application of technology in education was calculated 0/133, and with the ineffectiveness of technology in education was - 0/166, which indicated There is a significant relationship between the degree of Dominate the content of the dimensions of the quality of education with the dimensions mentioned by the modern educational technology variable ($P < 0.05$). Correlation Coefficient was significant (0/151) only between dimension the formulation of the lesson plan of the dimensions of the quality of education with the dimension of the imagination about the use of technology in education of dimensions of modern educational technology ($P < 0.05$) (Table 2).

The correlation coefficient in the teaching skills dimension of the quality of education dimensions with the advantages of using the technology in education was 0/161, with the perceptions about the application of technology in education was 0/142, and with the lack of influence of technology in education was calculated - 0/206, which shows a significant relationship between the teaching skills dimension of the quality of education dimensions only with the mentioned dimensions of modern educational technology ($P < 0.05$) (Table 2). The correlation coefficient between the classroom management dimension of the quality of education dimensions with all dimensions of the modern educational technology is significant ($P < 0/05$). The correlation coefficient between the guidance and counseling dimension of the quality of education with the advantages of using the technology in education was calculated 0/237, with the perceptions about the use of technology in the education was 0/191, and with the effectiveness of the technology equipment in education was 0/197, however, there is a meaningful relationship between the guidance and counseling dimension of the quality of education dimensions only with the mentioned dimensions of modern educational technology ($P < 0.05$) (Table 2).

Table 2: Relationship between the dimensions of modern educational technology and the quality of education

Dimensions of modern educational technology →		Advantages of using technology in education	imagination about the using technology in education	The lack of impact of technology in education	Early knowledge of technology in education	Effectiveness of technology equipment in education
Dimensions of quality of education ↓						
Dominance in the content/material	Pearson Correlation	0/133	0/088	-0/166	0/029	0/107
	P-value	0/030	0/108	0/009	0/342	0/066
	R2	0/02	0/01	0/03	0/0009	0/01
Lesson plan	Pearson Correlation	0/093	0/151	-0/096	0/048	0/078
	P-value	0/096	0/016	0/088	0/251	0/136
	R2	0/01	0/02	0/01	0/003	0/007
Teaching skills	Pearson Correlation	0/161	0/142	-0/206	0/084	0/068
	P-value	0/011	0/022	0/002	0/119	0/170
	R2	0/03	0/02	0/04	0/01	0/005
Classroom management	Pearson Correlation	0/254	0/171	-0/146	0/147	0/152
	P-value	0/000	0/008	0/020	0/019	0/016
	R2	0/06	0/03	0/02	0/02	0/02
Consultation	Pearson Correlation	0/237	0/191	-0/056	0/113	0/197
	P-value	0/000	0/003	0/216	0/055	0/003
	R2	0/06	0/04	0/004	0/01	0/04
Assessment of learning performance	Pearson Correlation	0/331	0/217	-0/154	0/099	0/278
	P-value	0/000	0/001	0/015	0/082	0/000
	R2	0/11	0/05	0/02	0/01	0/08
Communication skills of faculty with Student	Pearson Correlation	0/245	0/145	-0/274	0/202	0/139
	P-value	0/000	0/020	0/000	0/002	0/025
	R2	0/06	0/02	0/08	0/04	0/02
Observe Ethical issues in education	Pearson Correlation	0/202	0/122	-0/282	0/190	0/166
	P-value	0/002	0/043	0/000	0/004	0/010
	R2	0/04	0/01	0/08	0/04	0/03

The correlation coefficient between the assessment of learning performance of the quality of education with the advantages of using technology in education was 0/331 as the highest relationship, with the perceptions about the application of technology in the education was 0/217, and with the lack of impact of technology in education was 0/154, and with the effective of technology equipment in education was 0/278, indicates that there is a significant relationship between the assessment of learning performance of the quality of education dimensions only with the mentioned dimensions of the modern educational technology variable ($P < 0/05$).

The correlation coefficient between dimensions of communication skills of the faculties with the students, and the ethical issues in the education of the dimensions of education quality, were significant with all the dimensions of the variable of modern educational technology ($P < 0/05$). The lowest correlation coefficient (-0/282) was found between the dimension of ethical issues in education of the dimensions of the quality of education with the dimension of the technology's ineffectiveness in education of the dimensions of the modern educational technology variable (Table 2).

4. Discussion and conclusion

The main purpose of this study was to investigate the relationship between the variables of using modern educational technology and improving the quality of education. The results of data analysis indicated that the relationship between all variables and most of their dimensions was significant based on Pearson correlation coefficient. Some dimensions of the variables did not have a meaningful relationship with each other. It is worth noting that in the case of some correlations, the correlation coefficient was higher, that indicating a stronger relationship between the variables of the research.

Ultimately, The Pearson correlation coefficient between modern educational technology variables and education quality indicated a significant relationship between these variables. The results of this research are in line with the research by [13]. Their research title was the virtual education and new educational technology in Farhangian University. They expressed that one of the main missions of today's universities is synonymous with technological advances. As well as, study by Ghaznavi and his colleagues [14] was to examine the components of the development of virtual education in the higher education system of Iran from the viewpoint of the universities professors, showed that the attention to strengthening the infrastructure of the Information technology, professors' proficiency in teaching and using information and communication technology, adherence to world standards of virtual education, supporting institutions from volunteers through virtualization, strengthening resources and educational content, and implementing process evaluation in virtual education, are effective in developing virtual education in universities.

Also, Reference [15] concluded that the application of information and communication technology has a positive and meaningful effect on changing attitudes, stabilizing content of lessons, increasing skills and creativity, and ultimately the active learning in mathematics. It should be noted that, considering the great benefits to the use of information and communication technology in teaching and learning, it is necessary and essential for faculties to use such technologies for the consolidation of learning and Or more effective and lasting learning in their students. Consequently, when professors use educational technology, they will definitely

have a deeper and more durable learning.

These positive and provocative emotions are induced to the professors that they have a high level of self-efficacy in their work and are effectively in charge of teaching duties. Ultimately, this impact has the effect of improving the quality of education; as a result, when modern educational technology used in the classroom, in turn, the quality of education can be expected. Also, when faculties have a high degree of self-efficacy in their teaching, they will definitely have a great impact on improving the quality of education. Because critical duties of professors require them to be considered as one of the most effective and key factors in improving the quality of education.

In particular, considering the missions of Zahedan University of Medical Sciences, it can be stated that the faculties of the medical universities due to the special nature of the discipline and its applicability, need more use of modern educational technology in their teaching and therefore they should consider the use of information and communication technology as a basic element in their teaching.

5. Recommendations

It is recommended that the authorities of Universities:

- Organize workshops and conferences for faculties to use modern educational technology in aspects of engaging students, self-efficacy in educational strategies and self-efficacy in classroom management.
- Introduce the faculties to various aspects of using new modern educational technology.
- Increase the quantity and quality and improve the teaching aids and educational equipment in order to improve the quality of education in the university.
- Provide advanced courses and also invite experienced faculties to improve the faculties' ability.

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