

# Prioritizing Influential Factors on the Promotion of Virtual Training System

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**Abstract**—In today's world where everything is rapidly changing and information technology is high in development, many features of culture, society, politic and economy has changed. The advent of information technology and electronic data transmission lead to easy communication and fields like e-learning and e-commerce, are accessible for everyone easily. One of these technologies is virtual training. The "quality" of such kind of education systems is critical. 131 questionnaires were prepared and distributed among university student in Toba University. So the research has followed factors that affect the quality of learning from the perspective of staff, students, professors and this type of university. It is concluded that the important factors in virtual training are the quality of professors, the quality of staff, and the quality of the university. These mentioned factors were the most prior factors in this education system and necessary for improving virtual training.

**Keywords**—Training , Virtual Training, Strategic Positioning, Positioning Mapping, Unique Selling Proposition, Strong Brands, Indoors industry

## I. INTRODUCTION

**T**HIS study explores rapidly changes and developments in information technology, many of the features in the fields of culture, society, politics and economy has changed. In the current business environment, From this change the topic of virtual training derives. With entering to the twenty-first century which is called the era of information technology, the definition of educational concepts has been changed enormously.

The training system should adapt with other changes in the society, in order to meet, appropriate and acceptable manner of change. On the other hand, the advent of information technology and electronic technology and the concept of "global village" have the tremendous effect on the growing process, negligence and a short opportunity to leave the countries mentioned in the background. New information and communication technologies, plays significant role in providing effective training and learning. One of these technologies, training and virtual learning[6] electronic educational systems, modern and artistic approach and comprehensive solution for institutions that want to move in the direction of change of technology in teaching methods and their environments, so that access to new methods of teaching to provide comprehensive and best way to learn in a good manner.

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The things we are sure about is the technology and educational institutions provide us to be equipped with virtual training, for the other meaning using virtual training system would be a necessity. This kind of learning system can be found in the realm of opportunities that enrich the learning process and perhaps with advanced audio-visual teaching aids at the disposal of the facilities of this type of training, courses and presentations to be very attractive.

"Rvzabt Kanter," has proposed three types of challenges in relation to the Internet in electronic culture:

1. In the Internet to connect people and isolate them in that role.
2. The growth of the Internet community, and while they could use to attack others.
3. Internet business can be created or caused its destruction. [12]

Human quest for acquiring capabilities to live in the twenty-first century which is full of information and communication technology, should work to increase knowledge and technology is increasing. With new technologies that are offered to transfer the Third Wave civilization, are also opens new possibilities.

The development of each country, based on production, distribution and consumption of information shows us the extend each country has. [6] So that virtual training is a tool that helps people reach this goal. Using virtual training can be quickly and easily self-pay. Virtual education opportunities can be found in the presentation of concepts and materials. Using the advanced audio-visual facilities, educational assistance, the very rich and attractive. This type of flexibility in training, makes appropriate educational environment for people due to occupational or personal commitments are not able to participate in a formal class, provides. The use of technology in education and training and utilization of experienced teachers' effective steps can be taken in the field of public education and promotion of a knowledge society.

Increasing information and communication technology, the occurrence of extensive and profound changes has been in all aspects of human life; One of the fundamental way in which educational systems route has changed. Specialization of science has caused day to day needs of higher education in the world today more than 50 percent of young people under 25 years of age. It is predicted that the number of students studying at universities in the world between 2010 to 2025 will reach from 100 million to 160 million people. [15] and it is necessary that the attention devoted to classical education meet the huge demand for higher education is globally and one way to respond to the needs of universities with distance education system is the virtual university; The use of

information technology and communication This is the best option for development in a society. [4] The main purpose of distance education system that is based on information and communication technology, Partly or completely eliminate the borders for education services available for benefits of the opportunities; not only for researchers but also for groups who are in different situations. In other words, quality of opportunity in education and training system. [3]

However, the increase in personal and social change in education and training structure causes a large increase in education spending is the cost of training, demand for distance education in the world has begun. [8]

Thus increasing the demand for education, removing the limits to the use of existing services in education and large increases in education spending and the cost of traditional educational system has resulted in technology-based distance education system to develop information and communication.

Certainly the traditional education system, educational system, based on information and communication technology is very different and there are many differences. The education system is based on the technology but what is important in the output from the two educational systems that should be the same; Information and communication should be efficient and useful way  $\rightarrow$  a minimum output and efficiency that is similar to the traditional education system.

The quality of the virtual university and  $\rightarrow$  is very important for this type of educational system; Given the quality of the education system so that it causes the output and efficiency is far lower and weaker than the traditional education system is. Therefore, this study will try to introduce the factors that may affect the quality of virtual university and also where it is possible to prioritize.

To investigate the factors affecting the quality of virtual training, these factors are classified into four categories: the quality of university, faculty staff, professors and students. These factors are shown in Figure 1.

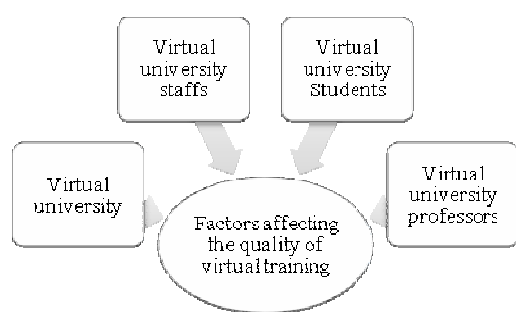


Fig. 1 Factors Affecting the Quality of Virtual Training

## II. LITERATURE REVIEW

### A. Quality

Quality is a common and familiar word that has taken the concept and its application to various interpretations. But common to all definitions of "goods or services consistent with the expectations and needs of customers" is. In other words, quality is obtained when the product or service, customer expectations (both internal and external) needs.

The quality of the customer starts any given good or service, regardless of the customer need not necessarily lead to quality. So you must ask your customers and was well aware of their needs and provide product or service needs to comply with it.

It can be said about the importance of quality, technology and industry is also one important reason is based on the principal that man was never satisfied with status quo and has always tried to improve the situation; So now the only company in the competitive position of the core activities of an institution wishes to provide its customers and satisfy their needs with minimal cost and have the maximum quality. [1]

Definitions of quality can also be said about the different conditions that can be offered numerous definitions and in fact anyone can be a single definition of quality is the quality that is offered in the following two definitions:

The quality of any meaning except what the customer really wants, no. In other words, when a quality product that the customer wants and needs to be adapted. Quality should be defined as product compliance with customer requirements. [1]

Another definition of quality, international standards organizations, the quality can be defined: Integrity of the product or service features that have the ability to meet customer requirements. [1]

Deming and the quality of Baum also defined as: Quality is a broad concept that all parts of the organization was committed to its and aims to increase the total efficiency is set so that the emergence of disruptive factors are quality and its ultimate goal of full compliance with customer requirements with least cost to the organization that is leading to increased satisfaction. [1]

### B. Virtual university

In presented several definitions in the virtual university and each of these definitions to a particular aspect of this implies universities. The definition of a virtual university has been: Environment using multimedia tools and having a good communication infrastructure (such as computer, network, Internet, fax, camera, software facilitating online communication, etc.) e-learning and e-learning service provider is and a form other than the traditional method and is done face to face and capable students from any place and at any time they wish, many of the services provided by the Internet and multimedia tools and technologies with the aim of raising the level of scientific culture and society, prevent removal of material resources and scientific capital of the country and widespread distribution of knowledge, benefiting from the expertise and capabilities are available in the universities, the virtual university administrators and professors can provide tools that allow the Internet to do their tasks, for the director of management tools such as courses, choice of master, course scheduling, financial management and ... Provides. The professor also has tools that can make information and knowledge with minimal costs to the appropriate manner in the form of multimedia content, if electronics to produce test, test scores, students may enter. [15]

### C. Structure of virtual university

About the structure of the virtual university will be considered in two parts, first virtual university of users and the second is components of the virtual university. They have too many parts like virtual university of users, including administrators, teachers, learners and directors. University will perform administrative tasks. Tasks such as deleting and adding courses, courses offered for next semester, marking and registration. Teachers, as the provider of such courses have the tools to take the exam in each course, provide course content, post messages and learn. Learners, unlike traditional universities that are in my volunteer, virtual university class can cover more people. [15]

Components of the virtual university are as follows, Info box contains all the information that students can be in various areas such as academic qualifications, training, tutoring lessons over seasons, services and facilities offered by the university. Examples of the contents of this section are the following. The case of teachers, learners' record and catalog. All administrative matters relating to university students and professors, such as registration, course selection, exam, score are provided. However, it should be told that the principle of virtual university exams in this type of education system does not accept either, exams via the Internet. In this way the teacher to specify a time limit to try and refer students to the exam questions will receive and within the specified time period to answer the questions answered over the Internet returns. There are problems in this approach like disconnected or busy calls through modem lines for Internet use, lack of sufficient mastery of students typing. Examine the possibility of fraud. Exams in a specific location. In this way for final exams, a special place in some centers are considered and the test will be held in its place.

Research center through this facility will provide students with the researchers. In addition, students should be informed of all research activities conducted in different fields.

*Teaching unit*, in all virtual methods, teaching rooms with features such as video camera for recording, microphone, white board or regular mail, video projectors, sound insulation, and other audio-visual equipment is available. Through this unit, all matters relating to student learning such as courses, seminars, laboratories, theses, and test programs are offered and include parts that are stored in the archive of courses offered, and it can surround to go.

*Virtual Lab*, virtual laboratories and workshops with high quality and low cost requirements of learning that can be easily planned and implemented. Very expensive laboratory equipment and laboratory outstanding teachers and public access to them is low.

*Students in the class room (virtual classroom)*, virtual class as the main component of the Virtual University allows students and teachers to communicate on the network platform and the Internet allows and the two can be done concurrently and asynchronously. In the same way, if the class room as a student, have features such as microphone, speaker, projector or a computer for every student, video camera, electronic white board or is not provided.

*Communication platform*, environment in which data is transferred between two points in general, to three circuit switch, packet switch, leased line is split. For the transmission of sound or images can be used for all three lines.

*Library*, it is necessary to raise the scientific level and to update teachers and students to online resources is provided to them. Search in this issue and listing of facilities such as libraries, access and view to read books in digital form is provided.

### D. Research Hypothesis

Since this study aims at surveying the priority of factors affecting on the quality of virtual training, below are the three hypotheses were proposed and tested.

-Professors' quality has impact on the quality of the virtual university, -Staff quality has impact on the quality of virtual universities, -Virtual university has impact on the quality of virtual training.

## III. RESEARCH METHOD

### A. Data collection instruments

Three questionnaires were employed in this study as the main instruments for data collection. The first questionnaire consisting mainly of the criteria in the quality of staff. Those criteria were obtained via Delphi Method. Accordingly, a sample of 15 experts, including professors in marketing and experts familiar with the virtual training were selected.

The second questionnaire was designed on the basis of the main criteria regarding the first questionnaire. The second questionnaire was considered as the main instrument of the research and composed of university student quality and professor quality variables. Also, this questionnaire was based on a five-point Likert Scale. Accordingly, of 131 customers were selected as the sample. To collect the staff, students and professors perspectives, the second questionnaire was designed and employed. The questionnaire composed of such primary variables as students, staff, professors and virtual university.

### B. Participants

180 university students were randomly selected. Since it is always possible that some of the completed questionnaires do not contain the required information, the sample size was increased to 30 percent more than the primary sample size. As a result, 170 questionnaires were distributed to students. Finally, from the completed questionnaires, 131 ones were analyzed.

### C. Reliability and Validity

The face validity of the major questionnaire was confirmed by 15 experts in the science of assistant professors in the university. A pretest was run by a sample of 20 students, who were selected from the population based on the method of simple random sampling.

Cronbach alpha for the four sets of variables of this study was calculated and its average was 0.89. Cronbach's alpha is a measure of the reliability or internal consistency for a sample of variables for which one might ask 'to what extent do they measure the something [15].

#### IV. SUMMARY STATISTIC

To determine the priority of virtual training services from the university students' perspective the statistical techniques like T, Friedman, Kolmogorov and ... were used. At this stage, the mean of the secondary variables (belonging to each primary variable) was used to. The secondary variables which were attributed to data sets were determined by experts and then were used in major questionnaire [22].

In table I with test of Kolmogorov-Smirnov test it is shown that all the data included in this survey have the normal distribution, the finding shows that the P value is more than .05, so it is concluded that the data have the normal distribution and if our data have this kind of distribution it is clear that, other statistical test can be use for the data in this research.

In table II another statistical test have been used. This test is used in order to understand weather the hypothesis is valuable or not. The table below shows that the entire hypothesis at the probability value is less than 5 percent. It is concluded that all hypothesis are valuable. So the quality of staff, students, professors and the university itself have logical impact on the quality of virtual training services. But the main question of this research is not answer and tested yet. That question is the prioritizing the different factors in virtual training.

Result of table II indicates that the variable and factors have different mean value. Before comparing value of variables and prioritizing them it is needed to test the data with Friedman test, if the probability value is significant then the factors are comparable. Below in table III are the data of Friedman test.

The result of table III shows that the factors and variables are comparable, because the probability value is less than 5 percent. Based on the result of table III comparing the mean of variable are possible, in table IV the final priority of different elements in this research are shown.

#### V. DISCUSSION AND CONCLUSION

Based on the Friedman test and the result of research it is concluded that the variables are different in the mean. The result of prioritizing the variables show us the first priority in determining the virtual training quality is the quality of professors in the university, the second priority based on the Friedman test is the quality of university staff. This element was the second hypothesis and the rank of this variable in the ranking based on Friedman test is the second rank. This can mean us that the quality of staff is very important in the quality of virtual training but at second position. The third important rank in assessing the quality of virtual training is the quality of students in the virtual university. So the results shows us the third priority in the quality of virtual training is that to what extend the university accept the students, with more qualitative student we can expect more quality in the training services and more productivity. The last and the forth priority in virtual training services is the quality of university itself.

Finally the data shows that for having a better educational system it is recommended that this ranking should be absorb.

It is proposed that virtual universities should highly notice to this matter. They should notice that the first priority based on this research is the quality of professors, the second is the quality of staff and the third is the students in the university and finally is the university itself, but the most important variable among them is the quality of professors.

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TABLE I  
 NORMAL DISTRIBUTION TEST  
 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST

	students	professors	Staff	university
N	1	1	1	1
Normal <sup>a,b</sup> Mean	4.137	4.3	4.3	4.1
Std. Deviation	.48	.41	.54	.44
Most Absolute	.0	.1	.1	.1
Positive	.0	.0	.1	.0
Negative	-	-	-	-
Kolmogorov	1.1	1.2	1.7	1.1
Asymp. Sig. (2-tailed)	.1	.0	.0	.1

<sup>a</sup> Test distribution is Normal

<sup>b</sup> Calculated from data

TABLE II  
 ONE-SAMPLE TEST

	Test Value = 3					95% Confidence Interval Difference	
	t	d	Sig.	Mean	Difference		
					Lo	Up	
Students	26.	1	.0	1.1	1.0	1.2	
Professors	38.	1	.0	1.3	1.3	1.4	
Staff	27.	1	.0	1.3	1.2	1.4	
University	29.	1	.0	1.1	1.0	1.2	

TABLE III  
 NPAR TEST FRIEDMAN TEST  
 TEST STATISTICS

N	131
Chi-Square	52.228
df	3
Asymp. Sig.	.000

a. Friedman Test

TABLE IV  
 FINAL PRIORITY OF VIRTUAL TRAINING FACTORS

Factors(Hypothesis)	Mean
Third Hyp-Quality of Professors	2.97
Second Hyp-Quality of Staff	2.80
First Hyp- Quality of Students	2.25
Forth-Hyp-Quality of University	1.99