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STUDENTS WHO TRAINING IN THE WEB BASED DISTANCE LEARNING ENVIRONMENT PERCEPTIONS AGAINST MANAGEMENT PROCESS

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ABSTRACT

This research, carried out in order to identify detection level of management process of associate degree students who training in the web based distance learning system. In his work titled "Evaluation and analysis of web based learning effectiveness" made by Chang (2001) in order to collect data an application carried out to understand whether web based learning system increase learning products and students' the ability to comprehend. The applied survey in scope of work includes four different opinion. These include: system functions, interface, the use of system and the effects of the learning process. Formed factors as a result of conducted factor analysis in this study the system design, system functions and teaching process in accordance with literature given the name. With obtained data has been revealed whether different according to gender, success, the registry willingness, school type, education type, computer knowledge and university variables of students' perception which include in the study. The obtained results in order to test whether different depending on gender, success, the registry willingness and school type variables of students who include in the survey is the independent groups t test, in order to determine whether different depending on the variable of success is the analysis ANOVA of one way variance, differences that regarded meaningful in result of ANOVA test to determine between which groups is the Post – Hoc Tamhane T2 ve Post – Hoc Scheffe analyzes were conducted. While determining the statistically meaningful differences ($p < 0,0,5$) in between sub groups of belonging to some demographic variables in the result of the difference tests of conducted, in a portion of wasn't determine statistically meaningful one difference.

Key words: Distance Education, Web Based Education, Web Based Distance Education, E-Learning, Web Based Education Scale, Management Process Detection

Introduction

Fast changing in the world, taking effect of the performed innovations on social, political and economic fields are observed in the recent years. The changing and innovation of information and communication technologies which gain speed by the concept of globalization effect on societies' economic and social lives considerable. For example; we are living in a new term in which the changing have occurred in all filed in information and communication (informatics) as gathering, handling, transferring, using of information and producing new information. Obliging some changing in educational understanding in parallel with general changing in our social life is the feature of the term because, individual's expectations from education changed by information based changing movements in the hard process to reach information society. Planning radical innovations on curriculums and some kind of conversions in the targets of education policies, structure and operation of the educational foundations appear as an obligation in the nowadays in which traditional education approach is adequate (Arslan, 2003).

Education is the main vehicle in the way of reaching success individually, environmentally and socially; reaching peace, freedom, social justice and the ideas of universal coherence. Moreover, education affects all sectors as social and economic progress as driving power. Education provides chance for individuals to compose their individual targets, survival responsibility, all ability and creating potentials. So, a constant individually, nationally and globally progress and changing is needed in education (Alkan, 2001). New opportunities are supplied to educational milieu of fast progresses operated in information technologies.

Information age caused to change the roles of students and instructors in universities. Educational milieus have to be arranged to educate the individuals of information society who can think, produce information, question while learning, analyzing sophisticated except from simple relation of cause-reason, creative, self-confident. Education states of higher education programs oblige to pass a new approach from traditional approach. These expectations are stated in the report of Turkey's Higher Education Strategies which is published by Higher Education Commission like this (Şubat 2007) (Ozan ve Özarlan, 2009):

1. Supplying education to more students and wider age groups in other words "massification"
2. Enlarging programs to compose new information which are produced quickly and all

information field of new information fields (academic expansion),

3. Finding job for graduates in education, fronting application along with information in research (relevance),
4. Contributing more to regional and national progress by building strong bridges with society,
5. Developing management models which can give account to partners and which is clear and pure (accountability),
6. Affording all the expectations by governmental sources which are decreasing day by day.

Universities which squeeze between increasing expectations and decreasing governmental sources are in search of new seeking to increase and vary their income sources and develop more productive management models by getting more autonomy. Developments on the fields of information and technology not only oblige social structures to a suitable transformation but they also cause harmonization problem of individuals to the fast changing. Thus, the individuals' requirement of having needed knowledge, ability and manner appeared to continue their lives stably and participation to the society as a creative member. Traditional process and methods of education, self-enclosed classes and schools, strict programs, traditional utilization ways of teachers oblige to use new technologies and especially the technologic progresses of computer in the process of modern education to solve the problems in the educational milieu.

The inadequacy of traditional education foundations to educate the increasing population in the world is admitted by people from almost all strata. The reality has influence on searching the ways of presenting economic and quality education about different subjects to so wide masses. Today, Web Based Education's opportunities (WBE) is one of the ways which is used to meet the demands (Keser, 2000:23;Eryılmaz, 2009:27;Şahan,2005:45).

WBE got changed by a quick development and entered the education world as a continuation of computer based education. Its main reasons are the increasing demands of students, requirements for better teaching techniques and the new technologies used in education (Bonk, Kim ve Zeng, 2005).

The students' interests on WBE are increasing day by day. The workers who work in information economy and foundations need education constantly to protect competitive power in their

sectors. Meeting the demands by present capacity of higher education foundations and training the workers by leaving their working places are not possible. Moreover, the persons use the internet and computer very well most probably. When all the factors are handled, web based education is so suitable vehicle to supply people a constant education.

One of the most important reasons of WBE's attracting attention is developing new technologies which are supported to education process. Researchers have made so many searching about integration of the developing technologies to education milieu. The progressing technologies increase the quality of web based education and make its usage more common. The developing technologies can be used in web based education are explained below.

Extreme information uploading of WBE decrease the expenses of labor force, written materials, travelling, class and establishment Wang, Xu, Chan & Chen, 2002; Welsh and the others, 2003; Zhang & Nunamaker, 2003). Web Based Education requires important investments such as equipment costs, software licenses, developing learning materials, maintenance of equipment and the technologies as education (Childs, Blenkinsopp, Hall & Walton, 2005; Welsh and others, 2003). Welsh and the others (2003) the costs can be decrease by Web Based Education when it is compared to traditional education. Despite the advantages, Web Based Education has got a higher separation rate than traditionally given education (Bell & Kozlowski, 2002; Brown, 2001; Zhang ve diğ. , 2004).

Web Based Education contains being increased advantages information access, presenting better content, personalized education, content standardization, responsibility, demand situation, arranging for herself /himself , interaction, confident and easiness for learners. Learning makes contributions as decreasing costs, easiness of providing and pursuit of regular content distribution (Kruse, 2002; Ruiz, Mintzer & Leipzig, 2006; Welsh, Wanberg, Brown & Simmering, 2003; Zhang, Zhao, Zhou & Nunamaker, 2004).

Web Based Education student experiences (Gilbert, 2007), attendance interaction in online milieu (Arbaugh & Fich, 2007), e-learning activity (Douglas & Vyer, 2004), student-teacher satisfaction (Liaw, Huang & Chen, 2007) and technology based components (Islas ve diğ. , 2007) are analyzed in developed countries. For example, student attitudes, education/trainer quality, system quality, information (content)

quality, service quality and support are important factors to learner's satisfaction (Ozkan & Koseler, 2009). Fuller, Vician and Brown (2006) suggest that technology, pedagogy and individualism are the address of each effective e-learning application. Lee (2008) explains different factors to adopt e-learning along with perceived benefit and perceived usage easiness. One of the researches searches the perception of students who take part in Web Based Education system about management process. How is the perception of students who have education in Web Based Distance Education System to management process?

1. What is the perception of students on site design (Clarity, easy usage, writing design, picture, animation, graphic etc.) in Web Based Distance Education System?
2. What is the perception of students on system functions (Registry Term, Information, Technique Support, Communication, Guidance etc.) in Web Based Distance Education System?
3. What is the perception of students on teaching process (Course, Course Teacher) in Web Based Distance Education System?

Do the perceptions of the students differ from the factors such as their Sexes, Success States, Interests and Tendency on Informatics Technologies, high school from which they graduated?

Aim of the Research

Three ways are used in usage of information technologies in education milieus. The first one is that teachers' computer usage to be able to make plan and transfer the content of the subject to students. The second one is that students' computer usage to be able to discover, exercise, communicate, and course homework and presentations. The third one is that teachers' and managers' computer usage to be able to execute managerial activities such as evaluation, registration and management (Duffy ve McDonald, 2008).

Students are important factors of WBE. Students' interests, expectations and requirements show big differences from traditional education approach (Frith ve Kee, 2003; Glenn, 2001). For that reason, producing similar solutions to the students' problems can cause unhealthy results for the system's future. Students' active participation is essential in Web Based Education milieu and the education is carried out more individually. There is a consensus on the subject that learning can reach the top point by student's active participation in the environment (Collins, 1998; Horton, 2000).

The main aim of knowing students' attitudes toward WBE is helping to the students in the way of arranging and using WBE milieus effectively. So, knowing students' affective features such as their interests, expectation and attitude carries great importance to get effective results in web based educations applied in higher education foundations (Erdoğan, 2005).

Students' attitudes toward web based education chance education programs about learning environment, learning and teaching methods, student and teacher's roles.

The research is important to determine the possible management problems of WBE system which is applied as a teaching method in universities through the students' eyes and thus, education foundations which want to apply or apply web based distance education can take needed precautions. The findings which will be achieved are important to compose an idea of what can be done by moving where we are.

Distance Education: The term of "Distance Education" which is written in the catalogue of Wisconsin University in 1892 firstly used in a writing written by William Lighty as the same university's manager in 1906. Then, the term (Fernunterricht) is introduced by German Trainer Otto Peters in 1960s and 1970s to Germany and the name of distance education foundations is applied as (Teleenseignement) in France (Kaya, 2002).

According to Alkan, distance education is a method in which education is supplied though a center by means of various environments and teaching units prepared communication and interaction between the ones who plan and apply the education activities and students as special in the cases of there is no possibility of in-class activities execution because of limitedness of traditional teaching-learning methods (Alkan, 1987).

According to Yalın (2008:2) internet based learning, internet leaned learning, web based learning and distances learning ...etc. are used as synonymous with interned based education. There are small differences among the terms and they can be used interchangeable.

WBE is using web technologies as education aimed deliberately (Horton, s.6; Alessi ve Trollip, s.378) and it affects traditional education environment in a large extent so maybe it has got the potential of being the biggest reform in education experienced so far. An arrangement which makes access easy by solving the problem of instructor and capacity and finish all the present

place and time limits in the way of utilization of education services by composed electronic campuses (Schutle, 1997,s.2).

Personal pages prepared to support distance education on web and the action composed by the pages are called "Web Based Education" (Horton, 2000:83). WBE is a new door which opens to distance education along with the starting of developing and generalization of internet. Distance education gained a new dimension with WBE. Interactivity of distance education increased and synchrony or asynchrony argues made by students and teachers were possible by means of WBE. WBE is a big chance to catch the technology which has fast progress because just way to follow the innovations in our world where so many new technologies are appearing is WBE (Horton, 2000:92).

WBE changed teachers the way of teaching (Horton, 2000:107). WBE converted each house into a school, a faculty, a course by means of getting internet easily. A pedagogically qualified course can be prepared by utilize all benefactions of internet and computer technologies.

WBE became more productive, more functional, more interactive and more accessible by help of developing computer and web technologies. WBE models in which animations and simulations are used give chance of repeating the course so many times to students to make the lesson more understandable and it can reach the success in classic education systems.

As a result, the concepts of walls, borders, time and place disappeared totally by WBE. Education gains an international dimension. Distance education can be executed by globally with courses, certificate programs, education seminars and course notes which are handled out in classic system on internet (Kaptan, 2001:3). Moreover, it is observed that internet based education supplies active learning except from passive learning and it is more effective that face-to-face education in developing students' abilities of searching, writing, computer using and cooperation.

Learning Management Systems (EMS)

Online learning which is seen as the most preferred way of e-learning is seen as a system which composes learner and teacher technically and socially (Khan, 2000). Online learning environment is an environment which does not admit any time and place make cooperation with the other learners and teachers simultaneously or not simultaneously, can make interaction with visual and auditory reactions supplied by computer technologies, remove the socio-economic statute complications,

supplies a lifelong learning chance to individuals on internet web.

Learning Management System (LMS) is a software system which has functions in it such as defining and managing of users, managing course contents, homework system, exam application system, following students' behaviors, evaluating student success situations and managing communication vehicles (Al ve Madran, 2004). Software components which provide students to access content or course to students; manage, follow, report and distributed the interaction between student and teacher are in the LMS. In other words, Learning Management Systems have the functions of enrolling and storing students' registry, following students' attendances to courses and their progresses, recording exam results and supplying end to course and following and evaluating students' performances by trainers (Bayram ve diğerleri, 2009).

In Turkey, there are web based higher education programs in so many universities which are in level of two year degree, degree and post graduate. In the table below, the universities and departments are showed in which web based distance education applied in level of two year degree, degree and post graduate (YÖK, 2010).

Learning management systems is generally used as common term for course management systems (CMS), personal learning environments (PLE), virtual learning environments (VLE) which are known as online learning environments (Moore, Dickson-Deane ve Galyen, 2011). However, while it is stressed that there are differences between course management systems and learning management systems in the researches (Simonson, Smaldino, Albright ve Zvacek, 2006; Watson ve Watson, 2007), but in some other researches it is stressed that the terms of course and learning can be used in exchange to prevent confusion on the concepts of content management systems and course management systems (Pina, 2010). Course management system can be thought as a component or a piece of LMS (Watson ve Watson, 2007) because LMS stresses on all learning and teaching activities more than course management.

While course management system is stressing on the content and distribution of the course, LMS is stressing on the requirement of learning and success. Content management system defines composing, publishing, sharing and storing progresses of foundational information. The systems which are taken place in database structure and contain sources and vehicles as onboard which are used to make easy and standardize the processes. CMS provides management of shared

files in system and content by controlling different numbers, size and form of the files and content. Composing content, content management, content publishing and content presentation are the basic factors which determine the success of CMS (Gülbahar, 2009). There are so many various content kinds such as pdf, excel, word and multimedia files as animation, picture, voice and video in learning materials and simple web pages and dynamic pages which are database sourced are among the contents that are controlled by CMS (Morrison, 2003).

Learning content management system (LCMS) is a system which provide composing, storing, combining and distributing individualized e-learning content as learning materials. LCMS stress on content by overcoming the difficulties such as composing, reusing, managing and distributing of content. On the other hand, LMS stress on learner and management by dealing with students and learning activities of a foundation (Oakes, 2002). In other words, while LMS is defining the rules, LCMS provide content (Connolly, 2001). Although LMS and LCMS stress on different items, they can combine very well by LMS's management of learning process and LCMS's providing composing and distribution of learning objects (Greenberg, 2002).

The reality that the most comprehensive technique substructure and trainers who can meet the increasing demand of education and increasing information makes higher education councils as the best foundational structure which can solve the problem. The increasing demand on distance education programs in level of two year degree, degree and post graduate in universities of our country is drawn attention in recent years in the direction of changed demands depending on present life conditions. There are 222 programs in 47 universities which supply the opportunity of having distance education which is chosen mostly by workers and the ones who do not have the possibility of having formal education in today.

There are 86 distance education two year degree programs in 41 different education programs of Turk Universities. When we look to distance education degree programs, there are totally 28 distance education program in 22 different programs of our universities. When the higher education distance programs are analyzed, it is determined that there are 82 distance education for 60 different programs. Moreover, when the web pages of universities are analyzed except from the program, it is determined that there are 80 different programs together with distance education certificate programs. The facts which can be estimated that the programs will increase and

become diversify supporting by internet (Balaban, 2012).

It presents web based education applications to meet the changing demand and by doing this an individual can continue her/his education in which he/she wants. Distance education as an applicable education model for programs which do not require practicing confronts some limitations on the programs which require practicing in laboratory and arena. Blended learning activities which supply opportunity of face-to face education along with online education to increase productivity of education presented last years are started to apply to overcome the limitations. It is estimated that distance education can be generalized by increasing the activities in the programs which require practicing. Maybe, our universities cannot remain insensitive to the increasing demand on distance education.

Distance education center (DEC) project which is improved in National Education Ministry has the characteristic of a platform which meets the education demand of 700.000 teachers. DEC is an internet based distance education system which uses portal infrastructure of Education Informatics Web (EIW). DEC is a project which serves a lifelong e-learning opportunity to all teachers to meet their different demands. It is built on LMS as one of the methods of web based distance education.

Education became the important part of service sector and the situation effected the distance education too. Investments on distance education depending on increasing demand along with the success of distance education applications which lead by formal foundations and company increased and new project and distance education programs are beginning to increase day by day by the quick increasing of commercial activities in that filed. We can define similar works to the research in that way.

While Akça (2006) was analyzing the communication problems of distance education students in the research made in Sakarya University, he consulted to perspectives of students as the main item of communication. So, the research was applied on 378 students.

In the research of Patricia C. Borstorff ve S. Keith Lowe (2007) on students' perceptions about distance education, the result that female students have more contradictions in communication with trainers than male students occurred. By the research, it is determined that the students who are 30 or above years old have more problem about asking question and arguing than younger students. On the other hand, it is seen that students who are below 30 years old pay attention on communication

with the other students in the class. In the same research, it is get that degree students have more problems about utilization of education than master students. So, it can be said that distance education is more suitable for the post graduate students who improve the skills such as searching, commenting and analyzing than degree students (Toker, 2008).

University students' computer skills and their attitudes on internet based education as a kind of distance education are analyzed in the research in two levels by Brinkerhoff ve Koroghlanian (2005). It was seen that the attitudes of students were neutral or intermediate. But, it was stressed that the attitudes of students who used internet before were more positive. In the second level of the research, students' skills of computer using and the changing on their attitudes on internet based education were analyzed. According to the findings, it was defined that students' attitudes and skills changed sometimes in the four year education term. What is more, it was declared that students preferred internet based courses more when the choices were compared in 1999 and 2003 (Ateş, Altun, 2008).

Chang ve Tung (2008), analyzed the tendency of students' online distance education environment usage by adding the factor of computer self-sufficiency and system qualification together with the theory of generalization of innovation. According to this, students' self-sufficiency perception, being suitable, helpful, usable of courses website to her/his choices are the important factors of online distance education environment choices. Similar to this, Venkatesh and Davies (1996) declared that students' easy usage of the environment was important to the students' perception on distance education environments as helpful (Ateş, Altun, 2008).

Method

In this part; research model, universe and sample, used measure vehicle, gathering data and solving the data are handled and defined.

Research Model

The research is a surveying model research because it aims to identify the present situation. Surveying models are research approaches which aim to define the situation in past or present just as in present. The event, individual or object is tried to be defined within its own situations and just as in present. Associative surveying model is a research models which aim to determine presence and/or degree of two or more factors' changing together (Karasar, 1999).

In the research, the correlation between perception and attitudes of Distance Education Vocational High School (VHS) students who have web based

distance education in Gazi University about web based education process and various demographic features are exposed as suitable for associative surveying model.

Universe and Sample

The universe of the research is composed by students who have registry on the relevant departments of Gazi University Distance Education VHS. Data are obtained by the group stated in sample in the years 2011 and 2012. Research group is composed by students who have distance education on internet. The sample's representation degree of universe is important. The main rule is that how big the universe the sample should be the same size. How big heterogeneity does universe have, the sample should be composed much more persons according to a different sample which is in the same size (Balçı, 2005).

The questionnaire was announced to the students by Gazi University Distance Education VHS Learning management Systems (LMS) and made them attend the questionnaire; a web page was prepared because of difficulty in reaching totally the students who have WBE in a physical arena. Guilford (1954) declared that sample numbers should be at least 200 in the workings of measure improving but Aleamoni (1976) declared the number as 400. Nunually (1978) declared the number of the sample should be 10 times more than object numbers in factor analyze; Gorusch (1983) declared the number as 15 times; Tavşancıl (2002) declared the number between 5 times and 10 times. Approximately 1400 students registered to school in the 2012-2013 school term and 482 students from these students answered to the questionnaire.

Data Gathering Vehicle

Attitude cannot be measured directly but it can be measured indirectly by behaviors (Kağıtçıbaşı, 2005) because in the measuring of attitude behaviors is leading (Yıldız, 1998). The behavior which is used in measuring attitudes is answering the questions or stating an idea (Kağıtçıbaşı, 2005).

The "Web Based Education Scale" which is improved for the research is a kind of Likert Scale. The data handled from the first level as data gathering vehicle and Web Based Education Scale which is developed by Güzel (2010) are used in the evaluation of perception of Web Based Education Process. Web Based Education Scale is a data gathering vehicle which contains totally 28 materials belongs to 3 sub dimensions. WBES reliability coefficient is counted as 0,926

(Cronbach alpha 0,926 Guttman 0,832 ve Spearman brown 0,834).

Analyzing and Commentary of Data

The data which are obtained by data gathering vehicle in researches are analyzed by using SPSS 15,0 packet program. First of all reliability and validity working of Web Based Education Scale is made by using the data belong to the questionnaire and difference tests are applied depending on the same sample group's data by using the WBES which is obtained at the end of reliability and validity working results. The demographic distribution tables which belong to students who take part in research are presented below.

Table 1. Frequency results about sex factor

Sex	f	%	%gec	%yıgım
Male	315	65,4	65,4	65,4
Female	167	34,6	34,6	100
Total	482	100	100	

As it is showed in Table 1, the 65, 4 (315 male) percent of the students who attend the research is male, the 34, 6 percent (167) is female.

Table 2. Frequency results about success factor

Grade Point	f	%	%gec
0-44	32	6,6	6,6
45-54	84	17,4	17,4
55-69	182	37,8	37,8
70-84	132	27,4	27,4
85-100	52	10,8	10,8
Total	482	100,0	100,0

As it is showed in Table 2, according to the last success situations of the 6,6 percent (32) students who participate in the research have among the note of 0-44; 17,4 percent (84) have 45-54; 37,8 percent (182) have 55-69 ; 27,4 percent (132) have 70-84 and 10,8 percent (52) have 85-100.

Table 3. Frequency results about willingness to register factor

Willingness to Register	f	%	%gec
Yes	397	82,4	82,4
No	85	17,6	17,6
Total	482	100	100

As it is showed in Table 3, 82,4 (397) percent of the students who participate in the research register voluntarily, 17,6 (85) students register reluctant.

Table 4. Frequency results about computer using skill factor

Computer Using Skill	f	%	%gec
Good	210	43,6	43,6
Normal	175	36,3	36,3
Mediocre	97	20,1	20,1
Total	482	100	100,0

As it is showed in Table 4, 43,6 (210) percent of students who participate in the research state that they are good in computer skills, 36,3 (175) students are normal; 20,1 (97) students are mediocre.

Table 5. Frequency results about the factor of high education type

High Education Type	f	%	%gec
Normal High School	145	30,1	30,1
Vocational HS	241	50,0	50,0
Super HS	0	0	0
Open HS	96	20	20
Total	482	100	100

As it is showed in Table 5, 30,1 (145) percent of students who participate in the research state that they graduated from normal high school; 50 percent (241) from vocational high school and 20 percent (96) from open high school.

Findings

Values Which Belong to the Factors of Web Based Education Scale

Naming the factors: Chang (2001) executed an application to find the answer whether web based education system increases learning products and students' comprehension skills in the working named as "Evaluation and Analyzing of Web Based Education Effectiveness". The applied questionnaire within working contains four different perspectives. These are system functions, interface and effects on processes of system using and learning. The factors which are obtained as results of factor analyzing are named as system design, system functions and teaching process as suitable for literature.

At the end of factor analyzing the factors of 10, 11, 12, 13, 15, 18, 20 and 21 are collected under the 1st factor. The factors are called as System Design as suitable for literature because they are the materials who measure the perception and attitudes toward web based education site design such as clarification, easy usability, writing design, picture and animation.

The factors of 25, 29, 30, 32 and 33 are collected under the 2nd factor. The factors are called as

Teaching Process as suitable for literature.

The factors of 4, 6, 9, 19, 26, 27 and 31 are collected under 3rd factor. The factors are called as System Functions as suitable for literature.

Web Based Education Scale which is developed as likert type is composed by 5 ranked answers to each item. 8 items collect in the first factor (sub dimension of system design) and the point of the factor is counted as $8 \times 5 = 40$. 5 items collect in the second factor (sub dimension of teaching process) and the point of the factor is counted as $5 \times 5 = 25,7$ items collect in the third factor (sub dimension of system functions) and the point of the factor is counted as $7 \times 5 = 35$. The minimum total point of the three factors is $20 \times 1 = 20$ and the maximum is $20 \times 5 = 100$. Web Based Education Scale which is composed by 20 items has value of 100 point.

Table 6. Variance and Reliability of Sub Factors (Appendix 1)

The results of factor analyzing which takes place in the scale. According to Table 6 both explained variance rate and reliability of dimension' parameters are high. The correlation at a level of $p < 0,001$ among sub factors is confirmed.

Table 7. Correlative Relations of WBES Sub dimensions (Appendix 2)

Data numbers belong to points which are obtained from Web Based Education Scale's sub dimensions (N), the minimum and maximum values, arithmetic average (X_{ort}), standard deviation (SS) and standard error value of arithmetic average (Sh_x) are presented in Table 8.

Table 8. Test Statistics of WBES Sub dimensions (Appendix 3)

Analyzing and Commenting of Data

The results of t-test which was applied to in depended groups to test whether measurements which are obtained by web based education scale change or not according to sex factor.

One of the sub targets of the research is examining that WBES' sub dimensions arithmetic average has differences according to sex factor. To test the hypothesis, Independent Sample t test is used to compare two independent arithematic averages and it is presented in Table 9.

Table 9. Showing whether points belong to WBES's System Design sub dimension change according to sex factor. (Appendix 4)

Before testing the difference between arithematic averages, it is searched whether two distributions' variances is homojen by Levene's test, it is stressed

that the variances are not homojen ($LF = 140,147$; $p > 0,05$). After the operation, it is runned the operation of testing differences between variances.

As it can be seen in Table 9, the difference of arithmetic averages between female and male students is found meaningful statistically as a result of independent group t test which is applied to test changing of WBES System Design factors's arithmetic averages according to sex fator.

Table 10. Showing whether points belong to WBES's Teaching Process sub dimension change according to sex factor. (Appendix 5)

Before testing the difference between arithchmetic averages, it is searched whether two distributions' variances is homojen by Levene's test, it is stressed that the variances are not homojen ($LF = 119,756$; $p > 0,05$). After the operation, it is runned the operation of testing differences between variances.

As it can be seen in Table 10, the difference of arithmetic averages between female and male students is found meaningful statistically as a result of independent group t test which is applied to test changing of WBES Teaching Process factors's arithmetic averages according to sex fator.

Table 11. Showing whether points belong to WBES's System Functions sub dimension change according to sex factor. (Appendix 6)

Before testing the difference between arithchmetic averages, it is searched whether two distributions' variances is homojen by Levene's test, it is stressed that the variances are not homojen ($LF = 47,316$; $p < 0,05$). After the operation, it is runned the operation of testing differences between variances.

As it can be seen in Table 11, the difference of arithmetic averages between female and male students is found meaningful statistically as a result of independent group t test which is applied to test changing of WBES System Functions factors's arithmetic averages according to sex factor.

One-way Analysis of Variance (Anova) test results applied to examine whether measurements made by Web Based EducationScale change statically according to Success Situation factor.

One-way analyses of variation test (ANOVA) is used to test difference between three or more independent arithmetic average in big sample to test of WBES' sub dimensions arithmetic average has differences according to last term success situations factor of students as one of the sub targets of the research. Results are presented in Table 12.

Table 12. One-way analyses of variation test (ANOVA) results which are applied to examine whether the points of WBES's System Design sub

dimensions change according to Success Situation factor. (Appendix 7)

As it can be seen in Table 12, the difference between arithmetic averages of success situations is found meaningful statistically as a result of one-way analyses of variation test (ANOVA) which is applied to test changing of WBES System Design sub dimension according to success situation factor ($F=13,438$; $p < 0,001$). After the operation, supplementary post hoc analyse tecniques are appllied to find the meaningful difference's sources which are determined from ANOVA test.

To determine which post hoc multi comparison test tecnique will be used after ANOVA test first of all it is exaimed whether group distribution variances are equal by means of Levene's test and it is found that the variances are not equal ($X_F=42,439$; $p < 0,05$). So, Tamhane's T2 multi comparison tecnique which is used mostly inthe case of inequality of variances was preffered. The reason of choosing Tamhane's T2 test is that it is more sensitive toward alpha type fault. The results of applied Tamhane's T2 multi comparison analyse are given in Table 13.

Table 13. Results of Post-Hoc Tamhane's T2 test which is applied to find in which sub groups the points of WBES' sub dimension System Design change according to Success Situation factor. (Appendix 8)

As it can be seen in Table 13 it is found that the source of the meaningful difference between 55-69 and 78-84 is in ($p=0,000$), 55-69 and 85-100 is in ($p=0,052$) $p < 0,05$ in the result of Post-Hoc Tamhane's T2 test which was applied to find the meaningful diffrence source statically $p < 0,05$ obtained as result of one way analyses of variance ANOVA applied to determine whether points of WBES system desing sub dimension change according to success situation factor.

Table 14. Results of one way analyse of variance (AOVA) test which is applied to find whether the points of WBES' sub dimension Teaching Process change according to Success Situation factor. (Appendix 9)

As it can be seen in Table 14 it is found that difference between success situation arithmetic variance meaningful statically ($F=8,129$; $p < 0,000$) as reult of one way anylse variance ANOVA test which was applied to determine whether points of WBES Teaching Process sub dimension change according to success situation factor. After the operation, supplementary post hoc analyse tecniques are appllied to find the meaningful difference's sources which are determined from ANOVA test. To determine which post hoc multi

comparison test technique will be used after ANOVA test first of all it is examined whether group distribution variances are equal by means of Levene's test and it is found that the variances are not equal ($X_F=3,351$; $p<0,019$). So, Tamhane's T2 multi comparison technique which is used mostly in the case of inequality of variances was preferred. The reason of choosing Tamhane's T2 test is that it is more sensitive toward alpha type fault. The results of applied Tamhane's T2 multi comparison analysis are given below.

Table 15. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES Teaching Process sub dimensions change according to success situation factor. (Appendix 10)

As it can be seen in Table 15 it is found that the source of the meaningful difference between 55-69 and 85-100 is in ($p=0,06$) $p<0,05$ in the result of Post-Hoc Tamhane's T2 test which was applied to find the meaningful difference source statically $p<0,05$ obtained as result of one way analyses of variance ANOVA applied to determine whether points of WBES system design sub dimension change according to success situation factor.

Table 16. Results of one way analysis of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Functions change according to Success Situation factor. (Appendix 11)

As it can be seen in Table 16 it is found that difference between success situation arithmetic variance meaningful statically ($F=18,627$; $p<0,000$). Result of one way analysis variance ANOVA test which was applied to determine whether points of WBES Teaching Process sub dimension change according to success situation factor. After the operation, supplementary post hoc analysis techniques are applied to find the meaningful difference's sources which are determined from ANOVA test. To determine which post hoc multi comparison test technique will be used after ANOVA test first of all it is examined whether group distribution variances are equal by means of Levene's test and it is found that the variances are not equal ($Z_F= 18,627$; $p>0,00$). So, Tamhane's T2 multi comparison technique which is used mostly in the case of inequality of variances was preferred. The reason of choosing Tamhane's T2 test is that it is more sensitive toward alpha type fault. The results of applied Tamhane's T2 multi comparison analysis are given below.

Table 17. Applied Post-Hoc Tamhane's T2 test result which is applied to find in which sub groups the points of WBES System Functions sub

dimensions change according to success situation factor. (Appendix 12)

As it can be seen in Table 17, it is found that the source of the meaningful difference between 55-69 and 45-54 is in ($p=0,05$), 55-69 and 70-84 is in ($p=0,00$), 0-44 and 70-84 is in ($p=0,00$), 55-69 85-100 is in ($p=0,00$) $p<0,05$ in the result of Post-Hoc Tamhane's T2 test which was applied to find the meaningful difference source statically $p<0,05$ obtained as result of one way analyses of variance ANOVA applied to determine whether points of WBES System Functions sub dimension change according to success situation factor.

Independent Groups T Test results applied to examine whether measurements made by Web Based Education Scale change statically according to willingness to register factor.

Independent Groups T test is used to test difference between two independent arithmetic averages in big sample to test of WBES' sub dimensions arithmetic average has differences according to willingness to register factor as one of the sub targets of the research. Results are presented in Table 18.

Table 18. Test statistics on willingness to register factor of WBES (Appendix 13)

Before testing the difference between arithmetic averages, it is searched whether two distributions' variances is homojen by Levene's test, it is stressed that the variances are not homojen. After the operation, it is runned the operation of testing differences between variances.

As it can be seen in Table, the difference of arithmetic average between the students who are willing to register and not willing to register meaningful statically as a result of independent t test applied to determine whether arithmetic averages of WBES System Design and System Functions factors change meaningfully according to the willingness to register factor.

It is determined that the difference militate in favor of students who are willing to register.

System Design perceives of students who are willing to register is more positive than the others. It cannot be found a meaningful difference as result of independent t test which is applied to find whether arithmetic average of WBES Teaching Process factors change meaningfully according to willingness to register factor.

Table 19. Test statistics which show whether WBES differs according to Willingness to Register factor (Appendix 14)

One-way analyse of variance (ANOVA) test results applied to examine whether measurements made by Web Based Education Scale change statically according to computer using factor.

One-way analyse of variance (ANOVA) test is used to test difference between three or more independent arithmetic averages in big sample to test of WBES' sub dimensions arithmetic average has differences according to computer using skill factor as one of the sub targets of the research. Results are presented in Table 20.

Table 20. Test statics according to computer using skill factor of WBES (Appendix 15)

As it can be seen in Table 20, the difference of arithmetic average between computer using skill factors meaningful statically as a result of **One-way analyse of variance (ANOVA)** test applied to determine whether arithmetic averages of WBES System Design and System Functions factors change meaningfully according to the computer using skill factor.

Table 21. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Design change according to Computer using factor. (Appendix 16)

One-way analyse of variance (ANOVA) test results applied to examine whether measurements made by Web Based Education Scale change statically according to High school type factor.

One-way analyse of variance (ANOVA) test is used to test difference between three or more independent arithmetic averages in big sample to test of WBES' sub dimensions arithmetic average has differences according to high school type factor as one of the sub targets of the research. Results are presented in Table 22.

Table 22. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Design change according to High school type factor. (Appendix 17)

As it can be seen in Table 22, it is found that difference between success situation arithmetic variance meaningful statically ($F=8,510; p>0,05$). *Result of one way analyse variance ANOVA* test which was applied to determine whether points of WBES System Design sub dimension change according to high school type factor. After the operation, supplementary post hoc analyse techniques are applied to find the meaningful difference's sources which are determined from ANOVA test. To determine which post hoc multi comparison test technique will be used after

ANOVA test first of all it is examined whether group distribution variances are equal by means of Levene's test and it is found that the variances are not equal ($X_F=56,481; p<0,05$). So, Tamhane's T2 multi comparison technique which is used mostly in the case of inequality of variances was preferred. The reason of choosing Tamhane's T2 test is that it is more sensitive toward alpha type fault. The results of applied Tamhane's T2 multi comparison analyse are given in table 23.

Table 23. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES System Functions sub dimensions change according to high school type factor. (Appendix 18)

As it can be seen in Table 23, it is determined that the meaningful difference is seen all sub groups source of the meaningful difference between 55-69 and 45-54 is in ($p=0,05$), 55-69 and 70-84 is in ($p=0,00$), 0-44 and 70-84 is in ($p=0,00$), 55-69 85-100 is in ($p=0,00$) $p<0,05$ in the result of Post-Hoc Tamhane's T2 test which was applied to find the meaningful difference source statically $p<0,05$ obtained as result of one way analyses of variance ANOVA applied to determine whether points of WBES System Functions sub dimension change according to success situation factor.

Table 24. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension Teaching Process change according to High school type factor. (Appendix 19)

As it can be seen in Table 24, it is found that difference between success situation arithmetic variance meaningless statically ($F=2,220; p>0,05$). *Result of one way analyse variance ANOVA* test which was applied to determine whether points of WBES Teaching Process sub dimension change according to high school type factor. After the operation, supplementary post hoc analyse techniques are applied to find the meaningful difference's sources which are determined from ANOVA test. To determine which post hoc multi comparison test technique will be used after ANOVA test first of all it is examined whether group distribution variances are equal by means of Levene's test and it is found that the variances are not equal ($X_F=28,687; p<0,05$). So, Tamhane's T2 multi comparison technique which is used mostly in the case of inequality of variances was preferred. The reason of choosing Tamhane's T2 test is that it is more sensitive toward alpha type fault. The results of applied Tamhane's T2 multi comparison analyse are given in table 25.

Table 25. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups

the points of WBES Teaching Process sub dimensions change according to high school type factor. (Appendix 20)

As it can be shown in Table 25, meaningful difference is seen all sub groups as result of Post-Hoc Tamhane's T2 test which is applied to determine in which group the meaningful difference is which is appeared as statically $p < 0,05$ as a result of one way analyses of variance ANOVA applied to determine whether points of WBES System Design sub dimension change according to success situation factor.

Table 26. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Functions change according to High school type factor. (Appendix 21)

As it can be seen in Table 26, it is found that difference between success situation arithmetic variance meaningless statically ($F=6,509; p > 0,05$). Result of one way analyse variance ANOVA test which was applied to determine whether points of WBES System Functions sub dimension change according to high school type factor. After the operation, supplementary post hoc analyse techniques are applied to find the meaningful difference's sources which are determined from ANOVA test. To determine which post hoc multi comparison test technique will be used after ANOVA test first of all it is examined whether group distribution variances are equal by means of Levene's test and it is found that the variances are not equal ($X_F=27,920; p < 0,05$). So, Tamhane's T2 multi comparison technique which is used mostly in the case of inequality of variances was preferred. The reason of choosing Tamhane's T2 test is that it is more sensitive toward alpha type fault. The results of applied Tamhane's T2 multi comparison analyse are given in Table 27.

Table 27. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES Teaching Process sub dimensions change according to high school type factor. (Appendix 22)

As it can be shown in Table 27, meaningful difference is seen all sub groups as result of Post-Hoc Tamhane's T2 test which is applied to determine in which group the meaningful difference is which is appeared as statically $p < 0,05$ as a result of one way analyses of variance ANOVA applied to determine whether points of WBES System Design sub dimension change according to success situation factor.

Results

The results stated below which were obtained from

the research made by Web Based Education Scale were delivered to province.

It can be said that sex factor does not affect on students' attitudes and perceives on sub dimension of System Design, Teaching Process and System Functions.

It can be said that students' attitudes and perceives on sub dimension of System Design, Teaching Process and System Functions are increasing while the students' successes are increasing according to points about sub dimension of WBES.

It can be said that WBES's sub dimension's computer using skill does not affect on students' students' attitudes and perceives on System Design, Teaching Process and System Functions.

It can be said that the points of WBES's sub dimensions about high school type factor does not affect on students' students' attitudes and perceives on System Design, Teaching Process and System Functions.

It is seen that the attitudes on System Design, Teaching Process and System Functions of the students who register to the program voluntarily are more positive than the students' attitudes who do not register the program voluntarily. So, we can say that while the level of being volunteer for registry is increasing, the students' attitudes and perceives are changing in positively.

Comment and Advices

Legal basis should be composed to solve the problems of establishing departments in WBE higher educational foundations, system functions and etc. Learning Management System (LMS) which is used to content presentation as the most important and complex process of Web Based Education should be suitable with international standarts, in harmony with the other learning management systems and supportive to different vehicles which are used in composing content.

The students' attitudes are negative who registered the departments reluctant.

Students should be informed about the department and the distance education system. Designing web based education depended on communication requires composing supportive mechanisms to execute communication processes actively.

In Web Based Distance Education, face to face communication possibilities should be created in determined times by meeting them in the same arenas. Process should be recorded by regular reporting workings, more active following on effectiveness of course content and teacher, organizing evaluations and improving systems by

feedbacks.

Scaling student' satisfaction is important in improving of Web Based Education. University management should increase education effectiveness by applying students' views, provide updating in courses and programs. Researches can be done to analyse the vocational self-confidences and abilities of graduated students from the departments which provide Web Based Distance Education.

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APPENDIX

Appendix 1

Table 6. Variance and Reliability of Sub Factors

Factor	Items belong to Factor	Load of Factor	Explained Variance	Cronbach's Alpha
System Design	10, 11, 12,13, 15, 18,20, 21	5,577	69,716	,937
Teaching process	25, 29, 30,32, 33	3,071	61,422	,834
System Functions	4, 6, 9, 19,26, 27, 31	3,728	53,252	,819

Appendix 2

Table 7. Correlative Relations of WBES Sub dimensions

		System Design	Teaching Process	System Functions
System Design	Pearson Kor. K.	1	,813**	,812**
	Sig.(2-tailed)		,000	,000
	N	482	482	482
Teaching Process	Pearson Kor. K.		1	,810**
	Sig.(2-tailed)			,000
	N		482	482

Appendix 3

Table 8. Test statistics of WBES Sub dimensions

Sub Dimension of WBES	N	Min	Max	Xort	SS	Shx
System Design	482	8,00	38,00	25,8112	,38703	8,49701
Teaching Process	482	5,00	24,00	16,2925	,21810	4,78819
System Functions	482	7,00	27,00	17,6494	,27455	6,02761

Appendix 4

Table 9. Showing whether points belong to WBES's System Design sub dimension change according to sex factor.

Factor	Sex	N	Xort	SS	Shx	t	sd	P
System Design	Female	167	30,1737	5,28579	,40903	8,841	480	,000
	Male	315	23,4984	8,96326	,50502	10,271	474,69	,000

Appendix 5

Table 10. Showing whether points belong to WBES's Teaching Process sub dimension change according to sex factor.

Factor	Sex	N	Xort	SS	Shx	t	sd	P
Teaching Process	Female	167	18,8084	2,89148	,22375	9,083	480	,000
	Male	315	14,9587	5,05463	,28480	10,629	477,291	,000

Appendix 6

Table 11. Showing whether points belong to WBES's System Functions sub dimension change according to sex factor.

Factor	Sex	N	Xort	SS	Shx	t	sd	P
System Functions	Female	167	20,0539	4,57634	,35413	6,658	480	,000
	Male	315	16,3746	6,31493	,35581	7,329	435,627	,000

Appendix 7

Table 12. One-way analyses of variation test (ANOVA) results which are applied to examine whether the points of WBES's System Design sub dimensions change according to Success Situation factor.

System Design		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	2701,083	3	900,361	13,438	,000
	Within Groups	32026,737	478	67,002		
	Total	34727,820	481			

Appendix 8

Table 13. Results of Post-Hoc Tamhane's T2 test which is applied to find in which sub groups the points of WBES' sub dimension System Design change according to Success Situation factor.

System Design	(I) success	(J) success	Mean Difference (I-J)	Std. Error	Sig.
	2 [45-54]	3		-3,59330	1,55053
4			1,04210	1,59955	,987
5			4,51587	3,10852	,642
3 [55-69]	2		3,59330	1,55053	,140
	4		4,63540*	,71427	,000
	5		8,10917	2,75944	,052
4 [70-84]	2		-1,04210	1,59955	,987
	3		-4,63540*	,71427	,000
	5		3,47378	2,78728	,789
5 [85-100]	2		-4,51587	3,10852	,642
	3		-8,10917	2,75944	,052
	4		-3,47378	2,78728	,789

Appendix 9

Table 14. Results of one way analyse of variance (AOVA) test which is applied to find whether the points of WBES' sub dimension Teaching Process change according to Success Situation factor.

Teaching Process		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	535,334	3	178,445	8,129	,000
	Within Groups	10492,419	478	21,951		
	Total	11027,753	481			

Appendix 10

Table 15. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES Teaching Process sub dimensions change according to success situation factor.

Teaching Process	(I) success	(J) success	Mean Difference (I-J)	Std. Error	Sig.
	2 [45-54]	3		-1,35133	,70090
4			-,62914	,67199	,926
5			4,25397	1,53548	,063
3 [55-69]	2		1,35133	,70090	,300
	4		,72219	,46496	,539
	5		5,60530*	1,45682	,006
4 [70-84]	2		,62914	,67199	,926
	3		-,72219	,46496	,539
	5		4,88311*	1,44313	,019
5	2		-4,25397	1,53548	,063

	[85-100]	3	-5,60530*	1,45682	,006
		4	-4,88311*	1,44313	,019

Appendix 11

Table 16. Results of one way analyse of variance (AOVA) test which is applied to find whether the points of WBES' sub dimension System Functions change according to Success Situation factor.

System Functions		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	1829,171	3	609,724	18,627	,000
	Within Groups	15646,574	478	32,733		
	Total	17475,745	481			

Appendix 12

Table 17. Applied Post-Hoc Tamhane's T2 test result which is applied to find in which sub groups the points of WBES System Functions sub dimensions change according to success situation factor.

	(I) success	(J) success	Mean Difference (I-J)	Std. Error	Sig.
System Functions	2 [45-54]	3	-4,05233*	1,13339	,005
		4	-,64000	1,12398	,994
		5	3,44444	1,60557	,206
	3 [55-69]	2	4,05233*	1,13339	,005
		4	3,41233*	,54500	,000
		5	7,49677*	1,26948	,000
	4 [70-84]	2	,64000	1,12398	,994
		3	-3,41233*	,54500	,000
		5	4,08444*	1,26108	,024
	5 [85-100]	2	-3,44444	1,60557	,206
		3	-7,49677*	1,26948	,000
		4	-4,08444*	1,26108	,024

Appendix 13

Table 18. Test statistics on willingness to register factor of WBES

		N	Mean	Std. Deviation	Std. Error Mean
System Design	Yes	418	26,2512	8,19057	,40061
	No	64	22,9375	9,87521	1,23440
Teaching Process	Yes	418	16,2871	5,10361	,24963
	No	64	16,3281	1,62378	,20297
System Functions	Yes	418	17,9282	6,13357	,30000
	No	64	15,8281	4,94912	,61864

Appendix 14

Table 19. Test statistics which show whether WBES differs according to Willingness to Register factor

	Willingness to Register Factor	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	Df	Sig. (2-tailed)
System Design	Yes	17,044	,000	2,928	480	,004
	No			2,553		76,841
Teaching Process	Yes	77,938	,000	-,064	480	,949
	No			-,128		295,555
System	Yes	6,235	,013	2,611	480	,009

Functions	No		3,055	95,319	,003
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Appendix 15

Table 20. Test statics according to computer using skill factor of WBES

	Computer Using Skill	N	Mean	Std. Deviation	Std. Error Mean
System Design	Good	394	24,7411	8,91344	,44905
	Normal	88	30,6023	3,44594	,36734
	Mediocre	0			
Teaching Process	Good	394	15,7995	5,09332	,25660
	Normal	88	18,5000	1,88155	,20057
	Mediocre	0			
System Functions	Good	394	16,6701	6,09783	,30720
	Normal	88	22,0341	3,01890	,32182
	Mediocre	0			

Appendix 16

Table 21. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Design change according to Computer using factor.

	Computer Using Skill	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Df	p
System Design	Good	130,551	,000	-6,064	480	,000
	Normal			-10,103	362,233	,000
Teaching Process	Good	98,647	,000	-4,896	480	,000
	Normal			-8,292	379,678	,000
System Functions	Good	71,232	,000	-8,030	480	,000
	Normal			-12,057	268,453	,000

Appendix 17

Table 22. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Design change according to High school type factor.

System Design		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	1191,617	2	595,809	8,510	,000
	Within Groups	33536,202	479	70,013		
	Total	34727,820	481			

Appendix 18

Table 23. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES System Functions sub dimesions change according to high school type factor.

	(I) type of high school	(J) type of high school	Mean Difference (I-J)	Std. Error	Sig.
System Design	Normal High School(0)	1	1,62100*	,41822	,000
		3	-5,26923*	,29643	,000
	Vocational High School(1)	0	-1,62100*	,41822	,000
		3	-6,89024*	,51262	,000
	Open High School(3)	0	5,26923*	,29643	,000
		1	6,89024*	,51262	,000

Appendix 19

Table 24. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension Teaching Process change according to High school type factor.

Teaching Process		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	101,293	2	50,646	2,220	,110
	Within Groups	10926,460	479	22,811		
	Total	11027,753	481			

Appendix 20

Table 25. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES Teaching Process sub dimensons change according to high school type factor.

	(I) type of high school	(J) type of high school	Mean Difference (I-J)	Std. Error	Sig.
Teaching Process	Normal High School(0)	1	1,69635*	,23792	,000
		3	3,07692*	,37590	,000
	Vocational High School(1)	0	-1,69635*	,23792	,000
		3	1,38058*	,44487	,010
	Open High Shool(3)	0	-3,07692*	,37590	,000
		1	-1,38058*	,44487	,010

Appendix 21

Table 26. Results of one way analyse of variance (ANOVA) test which is applied to find whether the points of WBES' sub dimension System Functions change according to High school type factor.

System Functions		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	462,362	2	231,181	6,509	,002
	Within Groups	17013,382	479	35,519		
	Total	17475,745	481			

Appendix 22

Table 27. Applied Post-Hoc Tamhane's T2 test results which is applied to find in which sub groups the points of WBES Teaching Process sub dimensons change according to high school type factor.

	(I) type of high school	(J) type of high school	Mean Difference (I-J)	Std. Error	Sig.
System Functions	Normal High School(0)	1	1,69635*	,23792	,000
		3	3,07692*	,37590	,000
	Vocational High School(1)	0	-1,69635*	,23792	,000
		3	1,38058*	,44487	,010
	Open High Shool(3)	0	-3,07692*	,37590	,000
		1	-1,38058*	,44487	,010