

## Effective Distance Teaching and learning in Higher Education

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### **Abstract**

Nowadays, Universities have come across a main transformation. Lack of budget, an increase in the number of university students, a change in the student population, up-to-date and various educational needs of each society require fundamental changes that are coordinated with recent needs. This study aimed to evaluate the features of effective distance education in higher education. Findings of this research showed that an understanding of the technological capabilities and learning theories, especially constructive theory and independent learning theory and communicative and interaction theory in distance learning is an efficient factor in the planning of effective distance learning in higher education. For validating the specified features, the opinions of distance learning experts in Payamenoor, Shiraz, Science and Technology and Amir Kabir Universities have been used which verified a high percentage of the statistical sample of the above mentioned features.

**Keywords:** Distance teaching and learning, Learning theories, Interaction, Information and Communication Technology (ICT)

### **Introduction**

Education and distance learning is one of the substitution approaches which can be replaced with the face to face or traditional learning and is one of the key factors in the development of higher education (Taylor, 2001). One of the pioneer scholars, Holmberg (1983) defines distance education, as a non contiguous communication. It means that,

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with respect to the time and place, the learner and instructor are separate from each other. Keegan (1993, p.75) considered the separation of the instructor and learner at the learning time as a main feature of distance education. From his point of view, distance learning refers to: “A programmed educational system for establishing the teaching-learning procedure by the use of an organization and not a teacher whose object is to select and apply proper techniques for using new technologies in education, facilitating the mutual relationship between the learner and instructor, providing independent learning situations and evaluating the learning outcomes by the learners themselves”.

Distance education provides a far better situation for the students rather than the traditional learning since the learning can occur everywhere at anytime outside the university. Distance education and educational technology prepared the way for that most of educational goals like independent learning, self-directed learning, learning in every place and not dependent to a specific time, participation learning and education, self-assessment and fast presenting of the feedback from previous studies manifested to be more ascertainable.

Regarding that the process of higher education is highly significant in any society, nowadays Universities have come across a main transformation. Through distance learning, the feasibility of “learning with no time limitation” proportionate to the students’ requirements has been brought about. In comparison to the traditional learning that disregards the students’ requirements and addresses a group of students at a specific time and place, this method is a basic strategy.

UNESCO (2001) reports that an application for expansion and variety of higher education will be increased during the two next decades and universities compete closely with each other for attracting the university students, break national borders, moving toward globalization and cooperating throughout the world (Cerf & Schutz, 2002, p.3). In most countries, numbers of candidates for entering to the universities are more than their capacity. Therefore, in most countries electronic universities have been developed to respond the educational needs (Buford & Harper, 2005, p. 3).

Under these circumstances, the view of educational experts and politicians toward the distance learning subject has changed a little. For example, public report of Norway higher education specifies that distance learning, based on new communications technology, will be an important factor in future higher education strategies. Although globalization, development of information technology and other above mentioned factors have led to rapid changes in higher education, permanent and consistent matters also exist in such a matter. One of these subject matters in the area of distance education is the presence of patterns or models proportionate to this type of education. Success and progress of distance education is possible just by the development of appropriate educational models, realistic strategies and proper pedagogy approaches of the twenty first century.

With regarding the fact that distance education is growing rapidly in higher education, clarifying learning strategies which can assist the university students to be successful in this ground is more needed. Researchers have shown that there is a separation between the knowledge related to learning theories, distance education concepts and the application of this knowledge for using in distance education and higher education. Therefore, there is a need of providing theoretical basics which can reinforce effectively the development and presentation of distance education.

The general goal of this research is to determine the features of effective distance education in higher education. In this study, the following questions have been raised and evaluated: What are the features and characteristics of effective distance teaching-learning in higher education? Do these features have enough validity from the authorities and experts' point of view?

### **Research Background**

Many studies have been performed in relation to the effective distance education plans. These studies have shown that distance education can have either positive or negative effect on proficiency and attainment to the goals. Consequently, making an assurance for planning effective learning patterns is necessary. Matrink (2002) conducted a study to examine the values and effectiveness of distance education. He

evaluated the characteristics of an effective professor, a successful student and effective learning strategies in his study. The findings of this research showed that the success of professor and student in the online course is only possible if they are ready.

Facilitating is an appropriate learning strategy for distance education and the more motivated the students are, the more successful they will be in distance education courses. Finally, this research emphasizes that the communication between instructor, student and peer groups plays an important role on being successful in distance education courses.

In distance education, motivation plays an important role especially for adult learners. One of the main shortcomings of distance education is that, there is no relationship between the teacher, student and peer groups. A key factor for overcoming such problem is to have a chance for regular self-assessment, and online and offline communication. Brawn et al. (2005) aimed to evaluate the elements of planning an effective electronic learning. From their viewpoint, providing communicative learning activities, making motivation and interest in the learner, providing the right technologies for presenting, the learners' educating in the social and individual ground were as the required principles in an effective planning.

Research findings also showed that there is an interest in using the constructive learning theory for planning learning environment (Morphew, 2000; Naidu, 2003). Gillani (2000) presented a social research educational model. His online learning environment was based on the cognitive theory of Vigotsky, based on the learner and according to the learners' needs. He introduced three main shortcomings for the online learning environment: overloading data, the variety of the learners and the presence of web as a media for presenting the education. For solving this problem, he suggested an individualized curriculum as the students' needs.

Garrison (2003) evaluated in his study the theoretical shortcomings of distance education in the 21<sup>st</sup> century. These shortcomings are an understanding of educational opportunities, limitations and learning with different developing approaches and technologies. He planned a conceptual model entitled "the model of

learning society". According to this model, each effective educational experience is the result of distance education and needs the presence of three evident factors: social, cognitive and educational presence.

Evaluation of the previous studies in distance education suggests that in recent decades, the attention toward distance education has increased in most universities. It caused that new models on the ground of distance education are used. Improving the quality of the curriculum of distance universities depends on the combination of the suitable facilities and capabilities associated with the related learning theories. These theories should encourage active learning-teaching strategies, cooperation, and flexibility. The theories should be based on the learner in distance education, having the ability to admit new methods and technologies and form future functions.

### **Research Methodology**

This research is a qualitative study including several stages and in each stage, its specific materials and methods have been used. (1) Studying related sources and descriptive-analytical method has been used for identifying the features of effective distance education; (2) The features of effective distance education have been classified and studied through case-study method by valid institutions; (3) The features and criteria of effective distance education have been determined; (4) The specified features become valid in such a way that the views of distance education planners and authorities have been taken in this connection using a close and open questionnaires and have been analyzed and interpreted qualitatively and quantitatively. In this stage of the study, our samples were 15 distance education authorities and experts of Amir Kabir, Science and Industry, Payame Noor and Shiraz Universities. The research sample was selected through nonrandom selection based on the principles such as having writing or translation on the ground of distance education, planning and establishing the course, presenting an article and figurative or traditional distance education. Finally, in stage (5), these features were reviewed.

**Data Analyzing**

As mentioned earlier, two questions have been raised in this study: (1) what are the features and characteristics of effective distance teaching-learning in higher education, and (2) Do these features have enough validity from the authorities and experts' point of view.

For determining effective distance education features, the word "effectiveness" should be defined at first. Sasson (1987) refers to it as "the right actions", Patsula defines it "as the degree to which a project attains the predicted objectives got by the organization duty, qualitative standards or other matters". It also can be regarded as the viewpoint of learning and the learner's satisfaction, the profits of educational organization and attaining to the organizational goals or the satisfaction of faculty members.

Certainly, the learner and learning are the bases of distance education institutions. Effective educating and learning is an ongoing procedure and does not happen at once. Butchar (2007) states that planning an effective learning environment needs a conception and understanding of mental procedures, knowledge and pedagogic principles and basic learning theories that define the effectiveness and its value.

Learning-teaching is a process that has passed a developed and complicated history and change. Basic elements of this process are the teacher and learner. These two, make an active relationship by using educational intermediates such as oral discourse and speech, written and printed texts and today distance education wares to transfer the main contents of teaching that is knowledge, skill and advantage from one to the other or exchange during a communication procedure (Ebrahimzadeh, 2009). For specifying the features of effective distance learning-teaching environment, its capabilities should be known well and use a suitable learning theory.

Therefore, distance education and its theoretical bases, education which is based on technology, learning theories, higher education message, and researches related to the advantages and shortcomings of distance education have been evaluated. Also, through case-study, the features of effective distance education presented by valid institutions

have been classified and analyzed that we describe them briefly as the followings:

### **1. The Theoretical Bases of Distance Education**

Distance education is a complicated global phenomenon that is associated with terms, meanings, theoretical concepts and various models. With studying the distance education theories, independence theory of Moore and Wedemeyer and the interaction and communication theory of Moore and Garrison are well relevant to distance education in this era.

-Independence and autonomy: Moore and Wedemeyer refer to the independent study as an individual activity and say that learning does not happen until the learner involves himself in study and learning activities. From their point of view, the learners are free to choose the time, place and speed of their study.

-Interaction and communication theory: one of the sub-branches concepts of this research is communication. It is a complex concept in all educational approaches. Learning should be communicative to improve to a higher level and be helpful in the construction of individual concept. According to Heinze et al. (2006), learning is the production of knowledge, skill and new attitudes which are obtained by the communication of the learners in the academic milieu and with data. Communication is essential for making a feeling of being in the society and the transformation of learning in learners.

Learners get the learning content through technology and process them, then personalize the data and use them in any grounds they wish. In this process, the learners communicate with the content, professors and other learners to test and approve their ideas and use what they have learned. Distance education theorists (Grison & Anderson, 1991, 2000; Holmburg, 2003; Moor and Kearsley, 1996; Gamson and Chickering, 2003) called the communication as an important criterion of the quality. Therefore, the learner should take the responsibility of learning and regulates his learning activities for attaining to the goals at the suitable time and place and have communication and reaction with the elements of academic milieu to improve learning and help make the personalized concept.

## **2. ICT-Based Education Concepts**

Using the information and communication technology is a symbol of a new period for distance education (Peters, 2002). The reports of the eighteenth, nineteenth and twentieth Global Commission of International Distance Education Society and most of the written articles by the pioneer researchers like Michael Moore (2003), Holmberg (1995, 2001, 2003), Garrison and Anderson (2000, 2003) and Peters (2000, 2002, 2003) show that the development and an interest in distance education is increasing. All of these pioneers emphasized that using information and communication technology transforms distance education.

Traditionally, distance education was provided for those who were not able to register in traditional courses, but through progresses in information and communication technology everyone can be a distance learner. Learning is the progressive technology and its facilities should be adapted to the nature of learning in human beings (Keppell, 2003, p. 634). Education which is based on information and communication technology contains six following features: Telepresence, flexibility, communication, active learning, collaboration and motivation. Thus, using information and communication technology transforms and changes psychological models of distance education, enriches the present educational models and makes new models. Consequently, new models with different pedagogies and features are presenting. These models share the features of education that is based on technology and suggest modern educational and learning approaches in which the learner plays an important role and emphasizes on self-directed, independent, flexible and communicative learning.

## **3- Learning Theories**

Regardless of whether learners learn individually or in groups, electronic or with presenting, it is widely known that individuals learn differently. Individual learners think and perceive differently. Therefore, knowing learning theories for getting a better understanding of distance education is necessary. Through studying various schools of thought, cognitive constructivist theory and social



constructivist theory can be regarded as the foundation of effective learning.

Constructivist theory recognizes the learner as an active individual. The learner is central to learning and the instructor has the role of a facilitator and a counselor. The learner should be open to form knowledge himself rather than acquire it through education. Constructivism teachers are inclined to the educational programming that is based on cooperative and group learning and reinforce active learning in the learner. Active learning, cooperation and working in the group are also the important features of learning through technology. As a result, combining these features in distance education determines effective learning environment that was mentioned in this research.

#### **4. Mission of Higher Education**

The most important mission of higher education from the beginning has been to give information, knowledge and skills to the students (Morss and Murray, 2005, p. 5). But, higher education is at the beginning of a revolution regarding information and communication power. Nowadays, the universities should educate those who have the ability for grouping, analyzing and combining information, problem solving & communicative skills, discussions, talks, technological and management skills instead of preserving and saving data to be able to adjust themselves to the rapid social and industrial changes (Miguel and Mc Pherson, 2004, p.78). Also, the results of the previous studies (Wegerif, 1998; Vonderwell, 2003; Starr and Dezhi, 2004) on distance education environment emphasize that a distance university contributes more than the learning environment with the students' presence to raising objectives such as getting problem-solving skills, critical thinking, and management and make a decision in difficult situations, lifetime learning, and discussion and make the social communications.

Also, in the Iran fourth plan for development the following educational issues have been pointed out: educational goals of higher education; the promotion of cultural, national and religious values; development of skills and the innovation spirit in the students;

reinforcing an understanding of the civilization; making a strong national unit; introducing the national and religious culture and values to the world; knowing the cultures of different natures; best use of educational technology; reinforcing the software and research movement (Shariatmadari, 22, 1993).

Therefore, the universities in the present era should emphasize on the importance of the promotion of learning and the learner; try to provide an environment which is based on the learner and increase the feeling of the learner's responsibility toward learning. What is more needed is that the universities should reinforce high learning cognitive levels in the learners and prepare an active learning environment. Finally, universities should undertake the learners success.

### **5. Advantages and Disadvantages of Distance Education**

For determining the features of effective distance learning-teaching, its advantages should be raised and there should be an attempt for removing its disadvantages. Distance education makes an access to the learning independent from time and place and it has the potential to provide an educational environment which is based on the learner and individual and personal communication. On the other hand, in the traditional distance education, since the students act independently and learning is individual, they hardly understand learning activities and get along according to a special time table. Although it reduces the anxiety and stress in the students, it decreases their challenge and effort. One of the other shortcomings of distance education is that there is not enough discussion in the class. To show the importance of learning activities, in the traditional distance education that the students must participate and their presence in class is necessary, a model of the social expectations is presented which determines the significance and speed of learning activities. These expectations are mostly disregarded in distance education that decreases the price of completing the course rather than the traditional education. As a result, in desired distance education, the objectives should be clarified, the speed of learning should be suitable and group activities should be provided. By using the high capabilities and the right planning for the

course, most of the traditional distance education shortcomings will be removed.

### 6. Case Studies

Many organizations had some guidance for effective distance education. The guidance is a reflection of various viewpoints in diagnosing effective matters and better distance education operation. In the following table, the features and the theorists of effective distance education have been presented.

<b>Theorists</b>	<b>Effective Principles of Distance Education</b>
Chickering & Gamson (1996)	Student-faculty interaction, collaboration, active learning, prompt feedback, time on task, high expectations, diverse talents and ways of learning.
The Sloan-C Framework (2003)	Interaction, communications and community building, appropriate media, learner-centered, feedback, flexibility.
The Institute for Higher Education Policy (2000)	Student-faculty interaction, student-student interaction, feedback, proper methods of instruction, valid evaluation and assessment, student support, proper technology.
The Quality Assurance Agency for Higher Education (1999)	System design, programmed design, programmed delivery, student development and support, student communication and representation, student assessment.
University of Massachusetts -Lowell (2003)	Selection of courses and programs; faculty development, support and incentives; technology and infrastructure; redesign of student services; program and course evaluation.
Boettcher (2007)	Interaction, learner-centered, collaboration, active learning, learner preparation, time on task, considering the learners' individual differences.
Nikolz (2002)	Interaction, student assessment, communication, quality of information, individualization, flexibility, clear feedback.
Bransford (2002)	Learner-centered, assessment-centered; knowledge-centered; and community-centered.

Regarding the common elements in the effective distance education guidelines and principles, the fundamental learning theories and for improving the present barriers and lacks of current distance

education, the following features of distance education should be considered to improve the learning:

### **1. Learner- Centered**

The learner should be at the learning environment.

### **2. Interaction**

A key of learning is the exchange of information between the students, teachers and students, students and content and participating in learning. For learning effectively with the evaluation of types of interaction and regarding their fundamental schools of thought, eight types of interaction in planning the learning environment were taken in this study:

- Learner-content: Communication of the learner and content is as a cognition interaction which is associated with the content that leads to the learner and learning constructive-cognitive changes (Moor, 2003, P.20).

- Teacher-learner: Communication of the learner and teacher is an important factor in preserving interest and making the motivation in the learner (Moor, 2003, p. 22).

- Learner-learner: This type of interaction is a new dimension in distance education and points out the learner centrality in learning. The learners' interaction is necessary for making deep learning and constructing knowledge. The relation and sharing the opinions and ideas with other students cause an increase to the learners' motivation and interest (Brown and Dugu, 2000; Anderson, 2003).

- Content-content: In this type of interaction, the content updates automatically through different entrances of receiving data and learning sources constantly develop through the learner's communication with intelligence factors (Moore & Anderson, 2003).

- Learner-content: Content development and planning is one of the important roles of the instructor. Educational planning process has a significant role in the communication of the learner and content. This procedure should keep on the course duration and the instructor should be able to communicate content regularly based on the learners' need or updating of the subjects (Tuovinen, 2000).

- Instructor-instructor: This type of communication and interaction form the learning societies of the instructors. Anderson (2000) considers knows the close instructor coworkers colleagues and not the experts as the first and most important source of information and helpful for encountering the technical and pedagogical problems. These problems occur much more when the instructors do not communicate with each other. As a result, there must be a group of the instructors who can support the other instructors.

- Learner-technical supporter: Technical supporter has a significant role in ICT base education; it supports learners during the learning procedures and solves their technological difficulties.

- Instructor-technical supporter: The supporter assists the learner in planning and production of electronic courses and removes his technical difficulties during the instruction.

### **3. Paying Attention To Individual Differences**

Defining the educating as the providing of an area for developing in various dimensions for learners is possible with regarding individual differences and counting them in education. In planning learning activities, the learners' educating style should be notified and various learning activities and communicative learning sources should be programmed by a multiple presentation to adapt with various learning methods.

### **4. Flexibility**

In planning a desired learning environment, you should select it independent of time and place and assist the learner to get the learning sources as soon as he can (Aggarwal and Bento, 2000).

### **5. Encouraging Active Learning**

Distance education should support active learning environment and allow the learners to share their ideas actively. Consequently, the learner becomes acquainted with the others opinions and ideas and learning from each other encouragements (Devoy, 2006, p. 80). For making a successful learning, there should be a suitable pedagogy and an educational plan coordinated with the learning method. Hitlz (2004) states that instead of representing all the answers and solutions

to the students, we should plan an environment for asking the student, motivating him for finding and sharing the answer to the others and the role of a professor should be to facilitate learning.

Another important element in planning educational materials for encouraging active learning is designing an environment that encourages the student to relate the concepts with real situations and experiences. The activities of the course should be planned in such a way that they can reinforce the active role of the learner. In an active process, the learners need more to do something rather than to read something. They need to write, discuss, solve the problem and get involved in the high level of cognitive abilities such as analyzing, combining and evaluating. Active learning should also encourage learning in a learner. In this level, the learner is aware of his learning process, understands educational goals, knows his capabilities and weaknesses in attaining to the learning objects and is able to control the progress toward the objectives. Bransford (2002) suggested that the activities of learning along with self-assessment and feedback encourage the learner in educating and learning and the learners can actively get involved in learning activities.

### **6. Using Capabilities of ICT**

ICT-based education is divided into online and offline communication. Online communication of the student with the instructor, other students and through other learning materials, reinforce a spirit of belonging to a group, use exact and early feedbacks of the classmates and progress in coordination with others in the curriculum (Boil and Bradley, 2001). On the other hand, an offline electronic communication also helps students access to the curriculum any time in proportionate to their family or occupational situation. By using these facilities, the students have much more time to participate in discussions, raising questions, answering and doing the homework's and thinks about them and they can use what they have learned in real situations.

## **7. Evaluation**

the evaluation of the qualifications of distance education is not different with the evaluation of a class. The evaluation of electronic learner can be divided into three parts:

- Beginning evaluation (assessment of learning acquirements): Learning should be connected to a more extensive social area including home, at work and social learner. In this approach, the professor evaluates the knowledge, skills, attitude and cultural areas of the learner and establishes his learning experiences on it and communicates with the student. The most effective education will be obtained only when it is coordinated and related with the developed learning requirements. The beginning evaluation must primarily regulate the learning environment based on the learners' features.

- Formative evaluation and immediate feedback: It aims to review, correct learning splits and understanding the learner's mistake. The professor is able to use the formative evaluation results for adjusting content and learning activities, regulating and setting the stages of learning process in a balance with the real requirements of learners and answering the learning needs of students in the best way.

-Summative evaluation: Final evaluation is equal to the total evaluation of effective education that provides a feedback for the whole system. Therefore, from the viewpoints of the researchers, effective leaning environment briefly should contain the following features: to be learner-centered, to be interactive, proportionate to the individual differences of the learners, to be flexible, to encourage active learning, to use the capabilities of the information and communication technology, to evaluate all the learning stages.

For answering to this question that whether from the viewpoint of distance education authorities and experts, these features contain the required validity, the specified features obtained by combining the findings resulted from theories, studies and the answer was obtained in the first research question and presented to fifteen distance education authorities and programmers of Payamenoor, Shiraz, Science and Technology and Amir Kabir Universities. Then, with setting a time, the semi-structured questionnaire was given. The evaluation of the questionnaire showed that most experts have pointed out to specific

cases and aspects and there were some agreements between them. As a result, according to the following specifications, the viewpoint of the experts were analyzed and mentioned in the primary correction and validity part. These specifications includes: common points or the frequency of cases that the experts have mentioned, other cases which were added to the mentioned ones.

The raised questions and conclusions are as the followings:

1. Whether the research area in this study contains the essential qualifications or is it necessary to add other areas to it? Almost 97% of the authorities know the research areas and aspects of this research sufficient and stated that almost all the areas such as “theoretical bases of distance education, learning theories, ICT based education concepts and features, face to face and distance education and the objective of higher education” in the planning of effective distance learning-teaching approach in universities have been presented.

2. Does the theoretical bases of this research (social and cognitive constructivism theory, independent learning theory of Moore and Wedemeyer, Interaction theory of Moore & Garrison and ICT based concepts) are appropriate? Almost 90% of the experts know the defined theoretical bases sufficient.

3. Do the mentioned characteristics and cases for the desired distance learning-teaching features are enough or it is necessary to add or drop other cases to it? Totally, almost 80% of the experts stated that the called features contain the necessary universalities. For analyzing these features more exactly, their ideas were made toward each item which is briefly as the followings:

1. Learner center: almost 85% of the experts know the learning center as one of the effective Distance education features.

2. Interaction: Totally, 91.5% of the research samples were agrees with the types of planned Interaction.

3. Regarding the individual differences of the learners: almost 95% of the experts are agreeing that considering the learners’ individual differences in planning and presentation of the courses.

4. Flexibility: 100% of the research samples know the flexibility as one of the features and criteria of Distance education effectiveness.



5.Active learning: almost 80% of the experts were agree with learning approaches such as learning based on problem solving, taking the responsibility, group discussion, seminar, cooperative and research projects.

6.Using online and offline information and communication technology: 100% of the research samples were agrees with information and communication technology in Distance education students.

7.Evaluation: the results showed that 100% of the research samples know the beginning or diagnostic, formative and summative evaluation and assessment as the requirements for effective and successful distance learning-teaching.

### **Conclusion**

Learning principles and theories transforms Distance education model, enriches the present models and creates new ones by the use of capabilities of information and communication technology. It also suggests new learning-teaching approaches in which the learner plays an important role. In this research, the features of effective distance learning-teaching features were identified and became valid by the experts' viewpoints that their most important results are as follows:

Study background:Different study backgrounds like Distance education and theoretical basics, education based on the technology and the learning theories are those in which are encountered as the ICT based Distance education and the results of these studies will have an important role in determining and planning an effective learning environment that most of the experts are agree with that. After the evaluation and analysis of different theories, constructivism theory and independent learning theory of Moore and Wedemeyer and the exchanging information theory of Moore & Garrison were selected as the theoretical basics of this research.

About the specified features, one of the matters which have been emphasized very much is the learner base approach. The learner is one part of education process. Most educational plans fail just for the reason that the authors and planners make it according to their personal idea and do not consider the learner. For making a deep and

successful learning which is of the priorities of the higher education in present era and also professors and experts should be responsible for the success of each learner. Therefore, the learner base environment should be formed and increase taking the responsibility in the learner toward his learning. In this approach, the learners use education proportionate to the learning approach and their individual needs and situations.

One of the other features is flexibility; it means that the learner can select the time, place and quickness of learning. Through using the capabilities of offline information and communication technology, the students can learn during anytime and in everyplace with their learning quickness. The learner can follow his studies in spite of difficulties in job, family, defectiveness and the geographical distance and to have enough time for reading, understanding and answering that it encourages his motivation. This causes a reduction in the central role of the instructor and gives them independent sources to the students. The results of this subject are coordinated with the findings of other present researches on this ground (Mendenhall, 2003; Goodyear, 2005; Aggarwal and Bento, 2000). Also in this research, from the experts' point of view, the flexibility of time, place and learning quickness are important factors that should be considered in E-learning.

Distance education paradigm changes learning environment. In this environment, the learner reacts differently rather than in the traditional classes. Regarding effective Distance education features, an environment should be planned in such a way that students take much more responsibility for their learning. If the learner doesn't do something, the learning won't take place. Therefore, with regarding the object of higher education in this decade, it is suggested to use active learning-teaching strategies in the planning of a course. In a successful process, the learners more need to do something rather than to read something. They need to write, discuss, solve the problem and get involved in the high level cognitive activities such as analyzing, combining, early evaluating and on time feedback. Online and offline communication provides feedback chances in which the student reacts with others, professors and experts. Most of the planned researches

and models on the ground of distance education also emphasize much on the successful learning procedures (Miguel Batista and Maria Martinez, 2006; Brown,2005; Teo &Williams, 2005). Also, the successful learning is one of the important educational features based on the constructivism and technology that was considered in this study.

Education should be higher than just to access the data and content. Interaction with others plays an important role in the gradual development of the learner's understanding. Communicating through human being and non human being factors of the environment is one of the inseparable parts of a learning experience with quality. In this research, regarding theoretical fundamentals and the objectives of present study, 8 types of interaction has planned that most experts are agree with that. This reveals the importance of forming learning societies and group learning in the world of information technology and it is an approval on selected theoretical fundamentals in distance education environment.

It is necessary for us in the effective distance education to accept the learners' individual differences. The proportionate between learning, learning approaches and teaching method improves the learning results. Therefore by identifying the learning approaches of students and using the capabilities of information and communication technology, we can plan the personalized learning environment which leads to deep learning in them.

Other cases that the research emphasizes on them are starting, creation and completeness assessment. In an effective distance education environment, the assessment should be regarded as one part of learning process and the resulting feedback is used for the learning improvement that is agreed by most of the experts.

Finally, regarding the present study, considering the followings are recommended for the improvement of learning-teaching procedure in educational distance education planning of the universities:

1- Learner-centered: The learner should be at the context of learning environment and curriculum planning should be coordinated with their features and needs.

2- Communication: A key for effective learning that is interaction between students, professors and students, between students and content and participating in learning.

3- Flexibility: In planning a suitable learning environment, it should be independent of time and place and help the learner find the learning sources sooner.

4- Encouraging to active learning: Instead of presenting data, the students should actively participate in high cognitive learning activities such as discussion, problem solving, analyzing.

5- Regarding individual differences: In planning the learning activities, the styles of learning for students should be taken into consideration and various learning activities and communicative learning sources should be planned by multiple presentations to adjust these different styles.

6- Using online and offline information and communication technology.

7- Assessment in all the learning-teaching stages.

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