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# Distance Teaching and Learning in Higher Education: A Conceptual Model

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## 1. Introduction

Learning is the beginning of a need for perfection. It is evident that the more science and knowledge is developed; the more need for change in learning and its mechanisms are required. Distance learning is one of the alternative approaches which can be replaced with 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, p. 25), defines distance education, as a non contiguous communication. It means that, with respect to the time and place, the learner and instructor are separate from each other. Keegan (1993, p. 75) consider 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".

Garrison (2003) also stated three characteristics for defining distance learning as the followings:

1. Distance education implies that the majority of educational communication between a teacher and his/her student(s) occur non-contiguously.
2. Distance education must involve two-way communication between (among) teacher and his/her student(s) for the purpose of facilitating and supporting the educational process.
3. Distance education uses technology to mediate the required two-way communication.

Distance learning provides a far better situation for the students rather than the traditional learning because the learning can occur everywhere at anytime outside the university. Distance learning prepares 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. 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. 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 strategies.

UNESCO (2001) reports that an application for expansion the variety of higher education will be increased during the two next decades and universities compete closely with each other for attracting the students, break national borders, moving toward globalization and cooperating throughout the world (Cerf & Schutz, 2002, p.3) Rapid economical, social and technological changes have affected the nature of life and the individuals' occupations. Individuals should continuously learn and educate for dealing with such changes and these features in the present decade have caused a constant increase in the number of candidates for entering to the higher education (Groff & Mouza, 2008). 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. Europe Union Research & Industrial Development Commission describes in its report that Europe needs an extensive and flexible structure for electronic learning (Mendenhall, 2001, p. 37). 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. Researches 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. This chapter represents our most recent research into an effective distance learning model in higher education.

## 2. Background

Many studies have been performed in relation to the effective distance education plans. These researches have shown that distance education can have either positive or negative effects on proficiency and attainment to the goals. Consequently, making an assurance for

planning effective learning patterns is necessary. Matrink (2002) performed 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 student is, the more successful they will be in distance education courses. Lastly, 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 the lack of relationship between the professor, student and peer groups. A key factor for overcoming such problem is to have a chance for regular self-assessment, online and offline communication. Brawn et al (2005) study aimed to evaluate the elements of planning an effective electronic learning. From their view point, 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.

Mendenhall (2003) made a research which aimed to plan an effective distance education model based on the internet in Brigham Yang University. The fundamental principles of this model are to emphasize individual learning, active learning approaches, and a communication associated with the flexibility of time and place and making the learning societies.

Researches show 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 pupils' needs. Therefore, he considered the social features of the students, the way of communicating, cognitive ability and their academic matters (p.162).

Garrison (2003) evaluated in his study the theoretical shortcomings of distance education in the 21<sup>st</sup> century in his study . These shortcomings are an understanding of educational opportunities, limitations and learning with different developing approaches and technologies. He planned a concept model entitled "the model of learning society". According to this model, every effective educational experience is the result of distance education and needs the presence of three evident factors: social, cognitive and educational presence.

- Social presence: The teacher should make the educational environment in such a way in which the students can easily complete assurance communicate with each other. He must activate in the students the grounds of associating the viewpoints, searching the differences, similarities and a confidence feeling towards the peers and instructor.

- Cognitive presence: For making effective learning, the teacher should provide a situation which could develop the main skills of concept and thought in the learner. He can provide the cognitive by presenting content and activities that reinforce the critical thought, problem solution and high level of concept in the students.
- Educational presence: It makes all the social research elements practical and keeps them in balance to become proportionate to all needs and capabilities. Educational presence should be powerful in effective planning of learning environment based on the technology (p.49).

Evaluation of the performed 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 right facilities and capabilities associated with the related learning theories. These theories should encourage active learning-teaching strategies, cooperation, and flexibility and based on the learner in distance education, have the ability to admit new methods and technologies and form future functions.

### **3. The characteristics and features of effective distance teaching and learning**

For determining effective distance teaching- learning features, effectiveness should be defined at first. Effectiveness is defined differently; Sasson (1987) refers to it as “the right actions”, Patsula (2001) defines it as the degree to which a project attains the predicted objectives got by the organization duty, qualitative standards or other matters.

Effectiveness 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 a continuous procedure and does not happen at once. Boettcher (2007) says 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 cases 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, its capabilities should be recognized thoroughly corresponding and a learning theory should be applied. Therefore, distance education theoretical basics, information communication(ICT) based education, learning theories, higher education mission, 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.



### 3.1 The theoretical bases of distance learning

Distance learning is a complicated global phenomenon that is associated with various terms, meanings, theoretical concepts and models. With studying the distance learning theories, the independence theory of Moore & Wedemeyer and the interaction and communication theory of Moore & Garrison are more relevant to the present theories.

- Independence and autonomy: Moore & 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 quickness 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 types of the 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 theory makers (Grison & Anderson, 1991, 2000; Holmburg, 2003; Moor & Kearsley, 1996; Gamson & Chickering, 2003) called the communication as an important criterion of the quality.

Therefore, the learner should take the responsibility of learning and regulate his learning activities for attaining to the goals at the right time and place, and also have communicate and react with the elements of academic milieu to improve learning and help create a the personalized concept.

### 3.2 ICT based education concepts

Using information and communication technology is a symbol of a new period for distance teaching (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 & 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 learning was provided for those who were not able to register in normal classes, but through progresses in information and communication technology everyone can be a distance learner. The progressive technology is learning 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 the six following features: telepresence, flexibility, communication, active learning, Collaboration and motivation. Thus, using information and communication technology transforms and changes mental models of distance education, enriches the present educational models more than before and

makes new models. Consequently, new models with different pedagogies and features are presenting. These models share the features of an education based on technology and suggest modern educational and learning approaches in which the learner plays an important role and emphasize on self-directed, independent, flexible and communicative learning.

### 3.3 Learning theories

Regardless of whether learners learn individually or in groups, distance 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 learning is necessary. Through studying various schools of thought, the cognitive constructivist theory and social constructivist theory can be regarded as the foundation of effective learning.

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

### 3.4 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 & 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 rapid social and industrial changes (Miguel & Mc Pherson, 2004, p.78). Also, the results of the previous studies (Wegerif, 1998; Vonderwell, 2003) on distance learning 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.

Therefore, universities should currently emphasize on the importance of the promotion of learning and the learner, try to provide an environment which is learner- based and increase the feeling of the learner's responsibility toward learning. Moreover, they should reinforce learning at high cognitive levels in the learners and prepare an active learning environment. Finally, universities should undertake the learner's success.

### 3.5 Advantages and disadvantages of distance learning

For determining the features of effective Distance learning, its advantages should be raised and there should be an attempt to eliminate its disadvantages. Distance learning provides access to a 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 (Institute for Higher Education Policy, 20007). On the other hand in traditional distance education, since the students act independently and learning is individual, they hardly understand learning activities and follow a special time table. Although it reduces the anxiety and stress in the students, it decreases their challenge and effort (cho, 2002). One of the other shortcomings of distance education is that there is not enough class discussion. In education that students must participate and their presence in class is obligatory, to show the importance of learning activities, a model of social expectations is presented which determines the significance and quickness of learning activities. These expectations are mostly disregarded in distance education which decreases the price of completing the course compared to normal traditional education (American Federation of Teachers, 2000). As a result, in desired distance education, the objectives should be clarified, the quickness of learning should be suitable and group activities should be provided. By using high capabilities and right planning for the course, most of the traditional distance education shortcomings will be removed.

3.6 Case studies

Many organizations have distributed guidance for effective distance learning. These are a reflection of various viewpoints in diagnosing effective factors and better distance education performance. In table 1, the features of effective distance education and their theorists makers of them have been presented.

theorists	Effective Distance Education Principles
Chickering and 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, Communication 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, Program design, Program presentation, student development and support, Student communication and presentation, student assessment
University of Massachusetts-Lowell (2003)	selection of course 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 information, Individualization, flexibility, clear feedback
Bransford (2002)	learner-centered, assessment-centered; knowledge-centered; and community-centered

Table 1. The features of effective distance education and their theorists.



With respect to the common elements in effective distance education guidelines and principles, and fundamental learning theories and for removing present barriers and lacks of current distance education, the following features of distance education should be considered in order to improve the learning:

1. Learner- centered: The learner should be at the center of the learning environment.
2. Interaction: The key of learning is the exchange of information between the students, professors and students, students and content and participation in learning. For learning effectively, by evaluating the types of interaction and regarding their fundamental schools of thought, eight types of interaction in educational environment planning were considered in this study:
  - Learner- content: Communication of the learner, 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 motivating the learner (Moor, 2003, P.22).
  - Learner-learner: This type of interaction is a new dimension in Distance education and points out the learner centric 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 increase the learners' motivation and interest (Brown & 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 continue duration the course 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. Moore and Anderson (2003) recognize the close instructor coworkers and not the experts as the first and most important source of information and are helpful for encountering 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 instructors who can support other instructors.
  - Learner-technical supporter: Technical supporter has a significant role in ICT based 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 of the learners: If we generally define education as providing an area for development in various dimensions for learners, this

is not possible without regarding individual differences and not considering them in education will lead to the traditional model of learning. 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 an environment independent from time and place and assist the learner to acquire the learning sources as soon as he can (Aggarwal and Bento, 2000).
5. Encouraging active learning: Distance education should support an 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 encourages (Devoy, 2006, p.80, Farajollahi et al, 2009). For making a successful learning, there should be the right 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 an environment that asks 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 information and communication technology: 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 ((Mendenhall, 2003). 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: Evaluation provides relevant information for further developments and expansions of any program. For any project, or initiative, evaluation provides useful data and information on the degree to which the initiative/project is meeting the objectives. Evaluation, therefore, is conducted to "examine and report on the strengths and weaknesses of programs, policies, personnel processes, products/outcomes, and

organizations to improve their effectiveness” (Thompson & Irele, 2003). The evaluation of the qualifications of distance education is not different with the evaluation of a class. The evaluation of an 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: Formative evaluation refers to an on-going process, which can be conducted at any stage. The purpose of formative evaluation is to assess and monitor progress with intentions to make adjustments and improvements to the project (Nguyen & Kira, 2000). 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. Summative evaluation, on the other hand, focuses on the end results of a project in terms of its success or failure (Thompson & Irele, 2003).

Therefore, from the view points of the researchers, effective leaning environment briefly should contain the following features: to be learner centric, 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(Table 2).

to be learner centric 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.
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Table 2. Principles for Effective distance learning.

4. An effective distance education model

The proposed model has been formulated on the basis of studies conducted on different issues related to distance learning and the above- mentioned characteristics. The model has been made in accordance with the systemic theory of distance (Figure: 1). by definition, a system is a set of connected components which are aimed at achieving a specific goal. The basic components should interact with the peripheral environment such that inputs result in

the expected output subsequent to entering the teaching- learning environment and going through the process of appropriate transform.

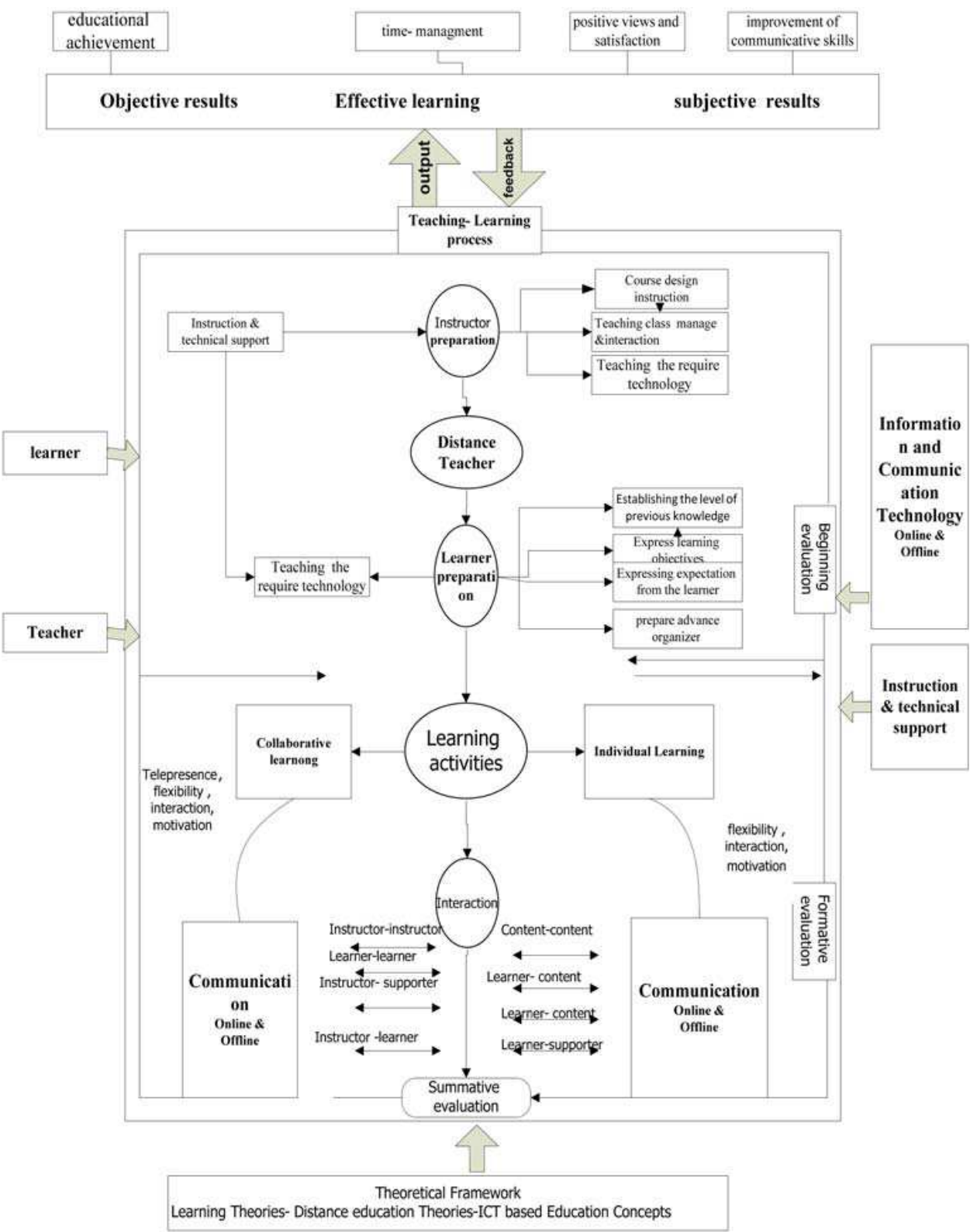


Fig. 1. The effective distance learning model.

The components of this model are as follows:

#### 4.1 Input

- The educational framework for the proposed model: The educational framework enters the system as input and influences the educational process. The basis for the proposed model rests on the following:
  - cognitive and social Constructivism theory and metacognition
  - Independence theory of Moore & Wedemeyer and the interaction and communication theory of Moore & Garrison
  - ICT based Education Concepts
- The Learner:

The model lays emphasis on the learner and fulfillment of his/her requirements. It situates the learner at the center of the learning environment. The model rests on the assumption that there is more variety among learners as compared with their traditional counterparts. To be successful, the learner should be capable of establishing communications and interactions with the teacher, other students and content via technology, flexible learning and access to the learning environment in any place and any time.

The learner should follow the learning activities in accordance with the course structure and goals. He / she should believe in learning on every occasion and every where. Likewise, she/ he should be willing to and able to learn deeply and participate actively in learning activities taking charge of her / his own learning. The learner's motivation and views are also of paramount importance in her/ his success (Colakoglu & Akdemir, 2010; Watson, 2010; Cutshall, 2002). In this regard, the ideal learner should, in this model, possess a positive view of distance education and learning. She/He should have the motivation for learning and be willing to and able to perform group tasks. The Desirable characteristics of distance learner are summarized in (Table 3).

In this regard, upon entering the learning environment, students have to be ready for the learning environment. Learner readiness consists of the following; the first four being performed by the instructor and the teaching of the required technologies are performed by the technical assistant:

1. Establishing the level of previous knowledge
2. Express learning objectives
3. Expressing expectations from the learner
4. Presenting the advanced organizer to activate the cognitive structure
5. Teaching the required technologies

- The instructor:

The success of the distance learning courses depends to a large degree on the instructor. Instructors involved in distance learning face specific challenges. The change of direction from traditional course to online ones cannot be easily performed a part from clear changes. One of which is technology, education takes new dimensions. In this model the instructor should be actively and tangibly present in the virtual learning environment. For this purpose, she/he should possess the capability and the tendency to establish



characteristic	Variables
Establishing relations and interactions	<ul style="list-style-type: none"><li>- Willingness to establish relations with the instructor</li><li>- Willingness to establish online and offline relations with other students</li><li>- Ability to express opinions and raise questions.</li><li>- Ability to express views in writing</li><li>- Ability to work with online and offline learning technologies.</li><li>- Willingness to interact with content</li><li>- Ability to interact with content</li></ul>
Ability to undertake flexible learning	<ul style="list-style-type: none"><li>- Ability to have access to the learning environment on any occasion , any where</li><li>- Ability to follow learning activates at appropriate time</li><li>- Belief in learning on any occasion anywhere.</li><li>- Ability to use educational material and autonomous learning.</li></ul>
Responsiveness and active participation	<ul style="list-style-type: none"><li>- Willingness to get involved in deep learning</li><li>- Willingness to actively participate in learning activities.</li><li>- Ability to participate in active learning</li><li>- Accepting responsibility for his/her own learning.</li><li>- The problem solving skill.</li></ul>
Motivation & Feedback	<ul style="list-style-type: none"><li>- Positive view about education and distance learning</li><li>- High Motivation for learning</li><li>- Achievement of educational goals</li><li>- Feeling at ease to ask questions</li><li>- Consulting the instructor</li><li>- Consulting the classmates</li><li>- Ability to accept the instructor as facilitator</li></ul>
Group Activity	<ul style="list-style-type: none"><li>- Tendency to undertake group or team work</li><li>- Ability to perform group work virtually</li></ul>

Table 3. Desirable characteristics of distance learner.

communications with students via technology. S/H should provide a supporting, warm, welcoming and unofficial atmosphere. The instructor should clearly express learning expectations and goals for students. The instructor should also design and encourage group and individual active learning, with respect to various talents and methods of learning. She/He should provide learning activities at higher cognitive levels and encourage students to undertake research.

She/He should be willing to make innovations in etching (McLaughlin, 2002; Gilbert, 2002; White, 2000). One of the assumptions of the present model is to design an active learning environment for students. Supporting students to take an active part in learning requires the instructors who facilitate learning. The instructor should encourage the learner such that she/he understands and accepts her/his responsibility for learning and informational search. Desirable characteristics of distance teacher are summarized in (Table 4)

Instructor characteristic	Variables
Establishing relations and interactions with students	<ul style="list-style-type: none"><li>- Tangible attendance in the online and offline learning environment</li><li>- Willingness to establish online and offline relations with learners</li></ul>
	<ul style="list-style-type: none"><li>- Creation of supporting, warm, welcoming and unofficial atmosphere</li><li>- Ability and Willingness to create interactive content</li><li>- Ability to write clear and purposeful messages</li><li>- To express learning expectations and goals clearly</li></ul>
Encouraging individual active learning	<ul style="list-style-type: none"><li>- Ability to design individual learning activates</li><li>- Students' individual management</li><li>- Tendency and ability to design interactive courses</li><li>- Employment of learners' previous knowledge and experience</li><li>- Planning learning activates together with self- assessment and feedback</li><li>- Encouraging students to search and undertake research</li><li>- Preparing opportunities for activities on higher cognitive level</li><li>- Willingness to make innovations in the teaching style</li><li>- Investigating the characteristics and styles of learning among students</li></ul>
Development of mutual cooperation and relations among students	<ul style="list-style-type: none"><li>- Ability to design and administer student discussion</li><li>- Encourage students in participation in discussion</li><li>- Encourage students to solve problems</li><li>- Willingness to lead and facilitate rather than teaching</li><li>- Creating opportunities for student group</li><li>- Ability to manage work groups</li></ul>
Provision of prompt feedback and creation of motivation to the student	<ul style="list-style-type: none"><li>- Provision of prompt and appropriate feedback to the student</li><li>- Evaluation of students' achievement during and at the end of the course</li><li>- Willingness and ability to review courses based on student feedback and course outcome</li><li>- Positive views towards education and learning using technology</li></ul>
E-skills and commitment	<ul style="list-style-type: none"><li>- Ability to work with the required technologies</li><li>- Willingness to cooperate with design and technology experts to prepare learning content in multiple presentation</li><li>- Ability to investigate student activities via technology</li><li>- Responding to emails at the appropriate time</li></ul>

Table 4. Desirable characteristics of distance teacher.

The views, readiness level and eagerness of the instructor for distance learning projects secure the success of the course. Thus, in this model, the distance instructors need to be ready under the following conditions as they enter the learning environment. This readiness can be achieved by the eLearning design and production team:

- Teaching how to perform the educational design of the course
- Teaching how to manage the class and how to interact
- Teaching the required technology
- Information and communication technology

Technology- based teaching falls down into two categories: online and offline communications. Online communications of the student with the instructor, other students and other learning materials prepare an environment for she/he that will lead to make him/her feel the community spirit and membership for better. She/he can benefit by the prompt and timely feedback via the instructor and the classmates such that s/h can keep abreast of curriculum in coordination with others (Boils& Bradly, 2001. Nguyen & Kira, 2000). On the other hand, offline connections also assist students to have access to the curriculum in accordance with their job and family status on any occasion. Using these facilities, students have more time for thinking, participating in discussion, designing questioned, responding and performing the assignments. They can apply their acquired knowledge in real situations.

- Technology support and design group

Technological support and design play an important part in distance learning based on Technology. This assists the learner in the course of learning activities and removes his/her technological difficulties. It assists the teacher in designing and producing electronic courses, removing his/her technical problems during teaching.

#### 4.2 The teaching- learning process

The teaching – learning process comprises of design and regulation of evaluation and learning activities. Learning activities refer to the set of opportunities which solidify and deepen learner's acquired knowledge in the course. Of the curriculum (Ajorgren and Fay, 2002) . Teaching- Learning activities and process in this model are based on an educational framework. These include: active learning, interactive learning and flexibility. This will provide feedback to promote the system at all stages of evaluation. In case students fail to do something, learning does not take place (Strauss, 2002). Thus active teaching-learning approaches are employs in individual and group fashion. In the active process, learners needs to act rather than study. The needs to write, discuss, solve problems and get involves in higher level activities such as analysis, synthesis and evaluation of thoughts. The more time learners spend on active learning, the better the learning will be. In the period of a course, there must be enough time for learners to search for concepts and fundamentals and hidden principles to explore their relations with previous experience and knowledge. If students lack the relevant previous experience, introducing the concept and principles will be far more difficult. Thus, the other issues emphasized in this model are consideration of previous knowledge, preparation of advance organizer and focusing on the learner and the main learning style. In addition, this model aims at creating an active learning environment and learner- centered orientation contemplating eight types of interaction which we discussed in earlier sections. Learners follow different learning styles. Research has shown that learning style is from among the design challenges and of distance learning presentation (Draves, 2000). Consideration of individual differences is one of the basic aspects in distance learning. This must be taken into consideration while designing and

curriculum planning. Thus, group and independent activities have been considered for students. Likewise, interactive educational packages have multiple presentations which cover most appropriately the various learning styles. Students are capable of stopping lectures, taking notes, reading comprehension. The ability of online students to self-assesses and repeats the educational material, eradicates the course failure rates problem and reducing it significantly. Computer recording and saving allows students to follow the program individually and make progress in this regard. The ability to process responses which is constructs using evaluations and computer-aided education allows students to continuously provide feedback in the course of the program (Grush, 2002). Active learning should also promote learning at the level of metacognition. At this level, the learner is conscious about the learning process. S/he understands the educational goals. She/he can recognize her/his abilities and weakness in the course of attaining the learning goals and is capable of monitoring progress towards these goals. Likewise, evaluation of the learner, in this model, falls down into three parts: initial, formative and summative evaluation.

#### 4.3 Educational output

Effective distance learning outputs in the present model include:

- Objective results: educational success
- Psychological results: improvement of communicative skills, positive views and satisfaction, time management abilities, development of thinking skills.

#### 4.4 Feedback

Results of the outputs of system provide feedback for review and promotion of teaching-learning processes.

### 5. Discussion & 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. This model was formed on the basis of the systemic theory of distance education. The main components of the model are as follow: input (educational framework, the learner, the instructor, the Inputs including the educational framework, the learner, the teacher, the content development group and the Information and communication technology), The teaching-learning process (learner readiness, teacher readiness, learner activities and evaluation), Output (effective learning in the learners) and feedback.

This model places the learner at the center of the learning environment. Educational practitioners and professors should be committed to make each learner succeed. This is done to create deep and active learning which is from among the priorities of the current century higher education and theoretical educational principles of distance of distance learning and structuralism.

Thus, the atmosphere and the environment for the main learner should be created and learner responsiveness for self-learning should be enhanced. For this purpose, upon entering the learning environment, learners need to be ready. In this model, active teaching-

learning approaches were designed using information technology and communication. These include: writing, discussion, problem solving, and higher level cognitive activities as analysis, synthesis, evaluation and timely feedback. Online and offline connections provide the opportunity for feedback. Student interacts mutually with others, professors and experts. Most of the research and models designed for distance learning focus to a large extent on active – learning approaches (procedures (Miguel Batista & Maria Martinez, 2006, Zarifsanayei, 2010). Education should proceed by more access to information and content. Interaction with others is paramount important in the in the gradual development personal understanding of the learner. Interaction with human and non human factors of the environment is from the integral parts of the high quality educational experiences. Thus, considering the theoretical foundations and the present missions of universities eight types of interaction are designed. This is indicative of the significant of crating learning and group learning communities in the world of information age being supportive of theoretical foundations selected in designing the learning model.

For the purpose of effective distance education, it is necessary to allow and accept the individual differences among learners. The proportion between learning styles and teaching methods improves the learning outcome. Therefore, the present model contemplates the inclusion of group and individual activities and educational packages in multiple presentations. From among other issue emphasized in the present model, one can refer to initial, formative and summative evaluation. In the distance learning environment, evaluation should be considers as part of learning process and its feedback should be applied for the purposes of improving learning.

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 center: The learner should be at the center 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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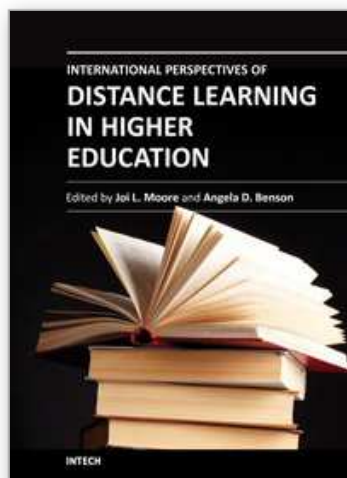
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This book, written by authors representing 12 countries and five continents, is a collection of international perspectives on distance learning and distance learning implementations in higher education. The perspectives are presented in the form of practical case studies of distance learning implementations, research studies on teaching and learning in distance learning environments, and conceptual and theoretical frameworks for designing and developing distance learning tools, courses and programs. The book will appeal to distance learning practitioners, researchers, and higher education administrators. To address the different needs and interests of audience members, the book is organized into five sections: Distance Education Management, Distance Education and Teacher Development, Distance Learning Pedagogy, Distance Learning Students, and Distance Learning Educational Tools.

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