Presentation of blended learning conceptual pattern based on individual and social constructivism theory

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Abstract

This investigation aims at studying capabilities and characteristics of blended learning and individual and social constructivism theory qualitatively and the presentation of conceptual pattern of blended learning based on these theories. The methodology of the present study is Mayring qualitative content analysis. First, some fundamental questions about blended learning pattern and individual and social constructivism have been asked. They include: 1. What are characteristics and capabilities of blended learning as a relatively new approach? 2. What are characteristics and components of blended learning based on individual and social constructivism theory? 3. How are blended learning models which are derived from individual and social constructivism theory? Then, analysis aspects, main categories and subcategories of answers were determined by using theoretical foundations relating to various views about blended learning and constructivism theory. Finally, main categories were differentiated from sub categories and learning conceptual patterns were designed according to individual and social constructivism theory based on the research findings. The findings of the analysis resulted in the recognition of the components of the blended learning model based on constructivism. They were presented in nine main components including: 1. Learning 2. Different kinds of learning 3. Factors influencing learning 4. The role of the learner 5. Learner's activities 6. The role of the teacher 7. Teaching guidelines 8. Group activities 9. Evaluation.

Keywords: blended learning, individual constructivism, social constructivism, conceptual pattern.
1-Introduction

Blended learning generally means using more than one method, guideline, technique or media in teaching and learning for offering teaching content and materials. This method of teaching was introduced by Marsh et al. in 2003 as the second wave of virtual teaching. It is considered as a new approach in curriculum planning in which a combination of electronic equipments, face to face interactions in class and a combination of student-centered and teacher-centered methods are used. In other words, this approach is able to create distinct multilateral structures by coordinating all factors of educational collection along with using modern teaching techniques and theories, teaching softwares, web and so on in order to create virtual cooperative teaching-learning collections. Regarding the problems, limitations and weaknesses of traditional curricula and on-line learning, in most of the universities of the world, the tendency is toward blended learning-based curriculum.

Purposes such as developing and strengthening critical thinking, creative thinking, self-confidence, human relation and communication, mutual understanding, respect for people, deep learning, self reliance, problem solving skills, (Uvaybu and Kikas, 2008) learning, self direction, interactions, social cooperation (Lindsay 2004) learning ways, production and evaluation of knowledge, lifelong and independent learning (Fok and others 2005) can be achieved better through compound learning. Therefore, Van Hang, Ma (2008), Hivic Buzic, Vernar and Butiki Zehang (2009) Bulis, Gudir and Alis (2007) Hang and Zu (2005) believe that by blended learning, we don’t mean inserting on-line learning simply into traditional face to face learning. Using blended learning is not considered as the entrance of a mere tool into higher education, rather it is considered as the fundamental confrontation with educational system. Therefore, by blended learning learning, we mean redesigning curriculum to reach the goals which cannot be achieved through on-line and virtual learning or by face to face learning separately. In other words, blended learning is considered as the source of information for curriculum in order to achieve educational goals better. On this basis, Sing and Rid (2001) and Hang, et al (2008) believe that blended learning is the optimization of achieving learning objectives by using proper learning technologies which suit proper individual learning style in order to transfer educational skills to appropriate person at suitable time. Accordingly, such a definition is beyond surface and procedural level and it is considered as the basis of blended learning.

The important point is the discovery of ways for proper combination of media so that we can provide a design for effective protection of learners individually or collectively through formal or informal methods. Therefore, today, early advocates of electronic learning reject the confrontation of on-line learning against face to face learning and believe that the third solution entitled on blended learning brings the most satisfactory results. Lovrilard believes that in order to gain influential teaching-learning process, we must achieve a media balance; therefore, the information technology can play an effective role in 50 percent of the whole process.
In fact, blended learning system makes educationalists think about the entire conditions of teaching and learning and consider human element in education as a vital element in any technology-based interference. Blended learning can develop answering to learners’ needs by knowledgeable choice of intervening strategies (online or face to face). Educational system can improve the capabilities and self-direction of creative and critical learners since traditional educational system has high potential to use distant education and distant education has high potential to apply face to face methods. This condition can be seen in most of the educational systems of developed and even developing countries.

Regarding the abovementioned materials that support blended learning model or learning through blended approach and introduce it as proper, influential and successful for teaching on one hand and constructivism as the prevailing and popular theory of the last decade that roots in philosophy, psychology and cybernetic on the other hand, the author tries to fully elaborate on general blended learning and constructivist’s blended learning from different aspects. In this study, the researcher tries to answer the following questions: What are characteristics and capabilities of blended learning as a relatively new and influential approach? What are characteristics of blended learning based on individual and social constructivism? How are on blended learning models derived from individual and social constructivism theories?

2. Research Methodology

The method of the present study is Mayring qualitative content analysis. First, some fundamental questions were asked about on blended learning pattern and social and individual constructivism, then, analysis aspects, main categories and subcategories of answers were determined by using theoretical foundations relating to various views about on blended learning and constructivism theory. Finally, main categories were differentiated from subcategories and learning conceptual patterns were designed according to individual and social constructivism theory based on the research findings.

3. Blended learning Conceptualization

Blended learning is relatively new but its concept has existed in areas such as virtual learning for several decades. (Akoyanlu, et,al 2008). Generally blended learning refers to the third generation of distant education. The first generation involved written teaching in which one-way educational tools such as e-mail, radio and television were used; the second generation of distant education involved technologies such as web-based and computer-based learning; the third generation which is blended learning is described as a method for maximizing the benefits of face to face education and multimedia technology for learning. (Akuz and Semsa 2009). Therefore, blended learning is developing in both industry and education rapidly and most educational institutions are using blended learning approaches for providing better services to the learners. (Bank and Graham 2009) blended learning is also referred to as hybrid learning or mixed learning ( Yerasmo, 2010). There are various definitions for this expression; Garison and
Vazhen (2007) defined blended learning as knowledgeable combination of electronic learning and face to face learning. Science and technology encyclopedia defines blended learning as an approach which combines different educational methods such as on-line learning and traditional learning. (Khosropoor, 2009).

Blended learning can be described as a learning program in which more than one method of presentation is used with the purpose of optimizing learning results and effectiveness of expenses. (Sing Verd 2001). Moreover, based on the Valitan (2002) blended learning is used for describing learning activities based on different events such as face to face education, electronic learning and self-centered learning. (Valitan, 2002) Also, it is defined as influential combination of technologies, techniques and the method of presenting various learning activities in order to satisfy the students’ requirements such as special relations, sharing knowledge and information. (Akoyan, Lu, et.al, 2008) Students can access the information on the web at any time of the day and use them whenever needed. Roozet and Frazeh(2006) believe that blended learning combines superficially opposite approaches such as formal and informal, online and face to face, guided and self-directed, digital resources and college communications to reach organizational and individual goals. Bersin (2004) defined blended learning as a combination of various media (technologies, activities and different events) for creating an optimal educational program for special addressees. Other researchers, also, defined compound learning based on the amount of on-line and face to face educational content, for example, Slon Kansertom stated that on-line educational content that is provided must be between 20 to 79 percent. (Alen, Siaman and Garlet, 2007)

Procter (2003) offered a relatively comprehensive definition of blended learning by adding teaching aspect and learning styles. From his point of view, blended learning consists of an effective combination of different presentation methods, teaching models and learning styles (Procter, 2003). Since this definition involves teaching aspect and learning styles, it is a relatively comprehensive definition of compound learning but Deriskul (2002) offered the widest definition of blended learning. According to him, blended learning has four different definitions based on different purposes. They include: 1. Combining web-based technological methods to achieve educational goals. 2. Combining various pedagogical approaches to produce optimum learning output with or without educational technology. 3. Combining each form of educational technology with face to face education. 4. Blended learning educational technology with real professional tasks to create coordination between learning and profession. (Deriskul, 2002)

Underlying philosophy of blended learning is that not all people learn in the same way. Therefore, using different methods for teaching is essential. (Karmang, 2002 blended learning is wise combination of electronic teaching like internet and multimedia teaching and so on with face to face, class teaching. This modern approach is applied in many successful corporations such as IBM (IBM Corporation 2002). As it can be seen from the above definitions, blended learning programs may contain various shapes and tools of learning such as virtual classes, real classes, using teaching aids in teaching process, self-improvement methods, web-based
educational programs, electronic systems for supporting performance, combining work place with knowledge management responsibilities and system. However, in its most general form, it can be said that on blended learning consists of a combination of two kinds of traditional and virtual teaching. (Graham, 2009).

4. Characteristics and Capabilities of on blended learning

1. The development of education: one of the most important characteristics of blended learning is pedagogical development. In blended learning, (Sel Leurir 1910) more influential pedagogical experiences are created. It is clear that richer learning experiences of the students result from using both on-line and face to face learning, blended learning increases the level of student-student learning strategies, learner-centered learning strategies, self inspiration, self direction, sense of responsibility, critical thinking and creativity. (Graham 2005, Bati, et,al 2009, Turen 2003, Jons, et,al 2003, Gebra 2010, Kadrlic, Lan and March 2009)

2. Emphasis on active learning: among other features of blended learning is encouraging active learning in students. (Lindsay, 2004) An influential learning experience requires active involvement of the students. (Alberts , et,al 2010) As Huvis Bazic, et,al (2009), Suren(2003), Stacy (2009), Rooset, Doglis and Frazy (2003) and Graham (2005) stated that successful and comprehensive learning requires active participation in learning process. The most important feature of blended learning is that the students are actively involved in learning content and materials individually and collectively through on-line and face to face methods.

3. Development and Variety of the amount of Interactions and Communications: another feature of blended learning is the expansion and variety of interactions and communications in curriculum. Creatiteraction is one learning condition that results in constant interaction and communication between the students themselves, students and professors and the students and learning content. ( Deziban, Hartman and Muskal 2005; Vingard, 2005) Simultaneous communication and interaction styles which are electronic or face to face and those which are electronic but asynchronous provide more opportunity and time for reflection and thinking; students can share their knowledge and evaluate their idea and thoughts ( Manson, 2010).

4. Access to content and educational materials and flexibility: according to Jonson (2002), Mak (2000), Fung (2007), Orbich ,et, al (2011) and Hang, Zoo and Vang Kary (2006) in blended learning, the students use different on-line and face to face methods and strategies; therefore, they benefit from various presentation methods that exist in a learning purpose.

5. The possibility of getting timely feedback: in blended learning, the quality and quantity of feedback can play an important role in the success of the students since feed back can be provided on line and face to face. (Albertso, et, al 2010) blended learning environment can provide the possibility of fast and timely feedback for the teacher. The teacher has the
opportunity to provide feedback and guidelines through communication devices clearly and coherently. (Kushi, 2010 as quoted by Seragi and Ataran 2011)

6. Supporting various learning: blended learning increases the power to choose appropriate communication devices. Therefore, students can interact and communicate with classmates, professors and educational content in different ways. From this point of view, blended learning plays an important role in attracting the students and making them active through different learning and communication styles. (Pip 2010)

7. Being multimedia (richness of learning environment): Mackdonald (2008), Orbich, et al (2011) and Lindsay (2004) stated that since in compound learning, we have asynchronous sessions, face to face interaction, web content, on-line evaluation and tests, e mail, video conferencing, power point slides, telephone, audio, video equipments, printed materials, virtual and face to face lectures, digital whiteboards, these different multimedia equipments are in more conformity with individual differences and learning styles. This results in more attempt and development and brings about meaningful and constant learning.

8. The possibility of lifelong study: blended learning tries to make the students have self-study. The preliminary activities are provided in on-line and face to face learning environment. Therefore, by acquiring essential skills and qualifications, they have constant learning during the term and even after graduation. (Deziban, Hotman and Muscal, 2004, Bunk, Kim, 2005)

Figure 1: Features and Capabilities of blended learning

5. Individual constructivism learning theory blended learning

Constructivism is the prevailing theory of the last decade which roots in philosophy, psychology and cybernetic. (Karajiurgi, et, al 2005) Although constructivism has been popular recently, this idea can be found in the activities of Socrates, Plato and Aristotle when they talked about the formation of knowledge. Researchers such as Piaget, Bruner and Vigatsky had the most influential role in the development of constructivism theory. However, the first clear form of constructivism theory by Jam Batisa Vico created a new development in cognitivism. From his
point of view, truth can be recognized just by God since He created the world and its creatures. People have a limited recognition of the phenomena since they are not creator.

The truth is recognizable so far as we create it; in other words, human recognition is limited and relative. (Ghaderi, 1383, P 63) Epistemological approach relating to constructivism theory is somehow critical epistemological approach (Rezaee, et, al, 2008). In this approach, epistemology is subjective knowledge rather than objective one. Critical theorists put utmost importance on the kind of learning that emphasizes and encourages different kinds of learning in learners and it stems from their personal, family and social experience. Constructivism comes from the word construct or construction and reflects its critical epistemological view. (Rezaee, et, al, 2008) Gobern (1994) stated that philosophical foundations of constructivism rely on the principle that recognition is subject to error. Based on this view, all scientific recognitions are potentially subject to error because of the lack of accuracy and understanding (Shabani, 2003). Constructivist theorists refer to cognitive psychology for consolidating their theoretical foundation. Dofee and Johnson (1991) believe that the structure of knowledge is not something that exists outside the students’ mind; rather it is the result of continuous interaction with the existing structures and their mental examination and purification for finding a better understanding of outside world. Therefore, the students’ learning activities must be the center of attention not teaching process. (Fardash, 2005)

Constructivism has several kinds but two kinds of them are discussed here: individual and social constructivism. Bruner (1986) stated that learning is an active process in which new ideas are constructed by the learner through processing current knowledge and the past experience. Individual constructivists emphasize on constructing knowledge by the learner; therefore, they offer a paradigm change from teacher centered to student centered activities. (Chan, et, al 2010) Individual constructivists asserted that knowledge is constructed individually, based on this view, knowledge is formed by the learner in the desired context. (Chen, 2007) According to Salmon (1994) while the person is trying to have an understanding of the world based on experiences, purposes, curiosity, and personal beliefs, knowledge is constructed. (Karajurgio, et, al 2005)

Extreme constructivists such as Van Gliserzofeld (1984) believe that no objective reality is independent of subjective mental activities. Individual world is constructed by the mind; therefore, no world is more real than the other. Constructing meaning is not based on its conformity with the outside world; rather, it depends on the individuals’ perception of it. (Fardansh, 2008)
According to Kub (1994), Janasen (1992) and Filips (1995) philosophical and epistemological theories of constructivism include: 1. Multilateral realities exist about the reality. 2. The world is constructed in the mind through interaction with it and interpreting it. 3. Symbols are the result of culture and they are used for constructing reality. 4. Mind introduces symbols by understanding and interpreting the world. 5. Meaning is the result of an interpretation process and it is based on learners’ experiences and understanding (Verasidas, 2000, P 346). As a learning theory, individual constructivism refers to active processes in which learners construct new ideas and concepts based on current and previous knowledge. According to Gris (2000) the focus of constructivism is the way knowledge is formed in human; on this basis, learning is the result of mental construction in which learners learn by adjusting the current conditions and collecting information. (Yadegarzadeh, et, al 2008, P74)

Constructivists believe that the structure of knowledge does not exist outside the learners’ mind; rather, knowledge is constructed as a result of continuous interaction with the existing structures and the examination and purification of mental reflections for finding better understanding of the outside world and based on this the activity of the learner must be considered not teaching process. Therefore, meaning is formed based on individual experiences, knowledge is formed in the learners’ mind by them and it is not received from outside world. Constructing meaning is not based on its conformity with the outside world; rather, it depends on the person’s perception of it. Mind has an instrumental and fundamental condition for interpreting events, objects and views of outside world and these interpretations form the basis of the person’s knowledge that is individual and unique. Therefore, instead of creating similar and predetermined learning results for all the learners, we pay attention to creating special and unique learning experiences for each learner. (Fardansh 2008)

On-line learning emerged when constructivism became popular in higher education. This is not by accident. According to individual constructivists, logical thinking is a key activity which produces knowledge. Asynchronous identity in compound learning (that is, the second level of compound learning) enables learners to partially control the time and place of learning and encourages them to think critically. (Bitz and Pool, 2003) According to figure 2-5, at the second level of compound learning approach, it is more probable to achieve better learning due to the use of asynchronous on-line technology, interaction with the content and personal experience; therefore, it can be designed based on the individual constructivism. In other words, at the second level of compound learning approach, individual constructivism theory can be achieved for curriculum planning. (Chan, et, al 2010) Using constructivism in curriculum planning at the second level of compound learning approach doesn’t mean that we cannot use cognitivism and
behaviorism theories at this stage; rather, with respect to the characteristics of the second level of compound learning approach, individual constructivism theory is in more conformity with cognitivism and researchers mostly use it in designing the second level of compound learning and it is the prevailing learning theory.

In designing compound learning environments in individual constructivism framework, the emphasis is not on teaching; rather, it is on the learning backgrounds and environments. In traditional approaches, designers decided what the students should learn; in which contexts they should learn which strategies they should use to achieve knowledge, and which evaluation tools they should apply. Individual constructivism replaces these concepts with more flexible concept of learning which means learning process is not predetermined. At the second level of compound learning, students construct individual experiences through asynchronous on-line communication with learning content, electronic and printed texts and eventually they learn. (Inu, 2010)

6. Individual constructivism approaches for designing blended learning program

Learners should construct their knowledge themselves. Constructing knowledge by interactive teaching based blended learning is easy since students have opportunity for learning and interaction with written and on-line content and they control the process of learning themselves. In blended learning approach, instead of getting filtered information from teachers that have different methods, experience and background, the students get first hand on-line or face to face information themselves and work in their favorite field. (Sovan, 2010)

Students should be able to control learning process. There must be a form of guided discovery so that the students can decide on the purposes of learning by their professors’ guidance. Learning must be meaningful for the students and teaching materials must include related examples so that the students can understand teaching materials. Exercises and projects let the students choose their meaningful activities and help them in the application and personalization of the information. (Anderson and Alomi, 2006, No, 11)

- Emphasis on learning in context means emphasis on learning environments.
- Familiarity with the students depends on the application of different instruments and constructed learning environments. (Vilson and Modsen Miers, 2003, quoted by Schemit, 2007)
**Figure 2: on blended learning model based on individual constructivism theory**

- **Learners’ activities:** Activity in a predetermined environment based on personal experience, interaction with written and online content, reflecting on the subjects with respect to context, solving real problems and doing related and real projects individually, attention to personal learning activities which create thinking, discovery, interpretation and construct of knowledge in the learner.

- **Evaluation:** Emphasis on self-evaluation, evaluation as part of teaching, the evaluation of real outputs of learning, evaluation based on higher levels of cognitive aspect, dynamic and qualitative evaluation, evaluation of individual learning activities.

- **Group activities:** Attention to group activities

- **Teaching strategies:** Emphasis on active, student-centered and individual teaching strategies, emphasis on various views in online and face-to-face environments.

- **Learning:** The discovery of personal knowledge based on intuition, creating meaning out of personal experience, thinking about physical contexts based on textbook, thinking about online contexts.

- **Different kinds of learning:** Problem solving

- **Factors influencing learning:** Individual, environmental factors and interaction between them.

- **The role of the learner:** Active, self-directed and thoughtful, student-centered the students’ control over learning and information phenomenon.

- **The role of the teacher:** Director and facilitator, offering no information, as an analyzer of problem solving strategies and observer, encouraging the students, organizer of online and face to face environment for individual search and research.
We face two kinds of constructivism: social and individual. (Ghaderi, 1141383) Kaningham and Dufee (1996) recognized two important similarities which are the foundations of all constructivism views: 1. Learning is the process of constructing knowledge not gaining knowledge, 2. Teaching supports this process and it doesn’t transfer knowledge. (Yadegarzadeh, et, al 2008, P74)

The difference between social constructivism and individual constructivism is in the construction of knowledge of learners through social interactions and environment. In social constructivism, students construct knowledge through the interaction with social learning environment and the interaction between group members. Students construct meaning when they are involved in critical thinking and the evaluation of learning materials and resources so that they can discover new patterns and aspects of information. Social constructivists support a kind of learning which emphasizes on analysis, combination and evaluation of learning materials and related information in the learning community as the instruments of gaining new knowledge. (Okagi, Okagi Balder and Balder 2008) Epistemological approach relating to constructivism learning theory is a critical epistemological approach. (Rezaee, et, al 2008) According to Fradnesh (2008) relating constructivism to relativism is a mistake. Pure relativism (mentalism) advocates the notion that there are different worlds and the worlds are different and personal and nobody has the right to express their idea about other people’s world. Maybe, the basis of extreme constructivism is relativism, but the foundations of moderate constructivism and social constructivism is collectivism. In constructivism approach in education, mentalism and relativism do not exist.

The realities of education and humanities are analytical realities; therefore, the existence of realities outside of the mind is acceptable; therefore, the foundation of social constructivism approach, in education, is collectivism. If we consider a continuum, one end is relativism and the other end is objectivism and the foundations of social constructivism or collectivism are in the middle. In the learning process, a social and collective moral is achieved, not a collection of learning experiences by a person. Joint learning is achieved in society through interaction and discussion with people; therefore, we face a learning environment in which external representations are acceptable. In educational systems, a collection of purposes which are objective are pursued; however, methods of reaching these goals are different.

One of the first researchers who talked about social constructivism is Vigotsky (1978). In his theory of social development, he emphasized on constructing knowledge by the learner through interaction and cooperation with the others. In the present decade, social constructivism
learning theory is the prevailing approach in teaching and learning environments around the world. (Chan, et, al 2010)

For most of the professors, social context of learning is important and essential. Ideas are evaluated not only by the professors but also by peer friends and students. Moreover, knowledge is gained by social institutions such as schools and universities and what is considered as valid knowledge is constructed socially. Therefore, knowledge is not just content; rather, it involves values, values which are achieved through the learning society. One of the consequences of social constructivism theory is that each person is considered unique since the interaction of different experiences and the search for individual meaning construction result in differences between the people.

The main point is that learning is necessarily a social process and requires interaction between students, professors and others. This social process cannot be effectively replaced with on-line technologies; rather, they may facilitate it. (Bitz and Pul, 2003) Therefore, blended learning approach provides more social exchange of learners’ ideas, experiences and views with each other and the formation of learning communities especially at the third blended learning level through on-line and face to face learning sessions. (Vang and Song, 2008)

Accordingly, the third level of blended learning approach can be designed based on social constructivism learning theory since at advanced level of blended learning approach which involves optimal use of interactive facilities of on-line technologies and face to face real learning, learning can be achieved socially in the best way possible. The emphasis is on a set of face to face and on-line synchronous and asynchronous social interactions. Using social constructivism theory for designing curriculum at advanced level of on blended learning is more appropriate. (Abiren 2010, Watt, 2010, Mosavar Rahmani and Larson Dagreti 2007, Chan, et, al, 2010)

In social constructivism, the emphasis is on the ways that individual and group knowledge are formed in social context. Individuals and groups are involved in dynamic and constant group processes and redefine their knowledge and their interpretations of the reality. In social constructivism, the emphasis is on knowledge construction through cooperative learning; therefore, social and group dynamisms result in the growth and development of knowledge. (Lin and Kelsy, 2010)

At advanced level of compound learning approach, according to social constructivism, the construction of new knowledge by the students is expanded to face to face and on-line learning
environment where groups of the students construct their knowledge together collaboratively and reach a joint meaning of new knowledge. When the students enter blended learning process as a part of a group, learning becomes more constant and stable. Planning curriculum for blended learning at advanced level based on social constructivism results from this presupposition that students’ learning is the product of social and cognitive interaction of the students with each other and with the professors. (Watt, 2010)

Recently, blended learning has developed the students’ learning experiences through the use of multimedia equipments such as on-line video conferencing, virtual classes, and audio-visual meeting halls. These instruments play an important role in developing social interactions beyond classroom. Accordingly, the third level of blended learning based on social constructivism learning theory is supported. (Mosavar Rahmani and Larson Dogerty, 2007)

In blended learning approach, due to the expansion of wireless internet network, students can have group work in college, in workplace or at home together with other students. In this way, the social construction of knowledge is possible. (Rirdan, 2010) Social constructivists assert that knowledge is constructed individually and it is reconstructed socially by the learners based on their interpretation of real world experiences. Based on this view, knowledge is formed by the learners in the context of the real world through social cooperation and discussion. (Chen, 2007, P73)

In blended learning curriculum, the possibility of learning and learners’ development based on Vigotsky’s approximate growth regions are more probable. (Kadrik, Lan and Marsh, 2009) Based on Vigotsky, the inside world of a person is understood by the help of the other people. This action and interaction between a person and others is described by Vigotsky as approximate amplitude of growth. According to this definition, approximate amplitude of growth is the person’s intellectual ability that creates development. Through this helpful process, a person is directed by peers or other adults. In this way, one can move by a series of stages that result in self direction and intellectual growth. For social constructivists, the process of knowing stems from social interaction, that is, the knowledge of the person from the world-that is limited to personal experience of the world-is acquired through interaction with others. (Sheikhi, 2002)

Therefore, the third level of blended learning approach is designed based on social constructivism learning theory. Thus, at third level, that is, at advanced level of blended learning, social constructivism is used for the design of a curriculum. (Abiren, 2010, Chan, et, al, 2010) As Bitz and Bul (2003) also stated, learning is a social process and requires interaction between
the students, professors and others. This social process cannot be replaced influentially by on-line technologies although it is possible that on-line technologies facilitate it. However, at third stage of blended learning approach, learning can be achieved socially in the best way through the optimal use of real face to face and on-line interactive facilities.

One of the most important pedagogical principles that resulted in the formation of blended learning approach was loneliness that existed in university students due to learning in pure virtual environments. Therefore, at advanced level of blended learning, the emphasis is on the formation of learning communities under the supervision of an educational institution. One of the selected strategies is the possibility of multi-interaction of the students with each other under the teachers’ synchronous guidance in traditional face to face and on-line environment. The purpose of learning community that is inspired by Vigotsky’s work is the production and creation of contemplation and reflection in social environment with a group of people. Learning community where students work together face to face or online is the most important place for the development of conceptual thinking of the students. Students go ahead collectively as one or several groups through listening and discussion with each other or with the professors and construct their knowledge. In blended learning, group discussions must be carried out by all members instead of just one person. (Lindeston and Shild 2010)

In social constructivism, learners are considered as active people that are involved in the construction of meaning through social interaction. At third stage of blended learning, professors give short lectures, promote group discussions, and pay attention to small group work and advanced discussions. Meanwhile, professors must promote on-line and face to face multi-lateral interactions among the students and support student-student and teacher-student interactions to increase sociability feeling among the students. In this way, knowledge can form through social interactions. Therefore, the students should analyze, search and research together to learn, share information and build knowledge. (Inu, 2010, Abiren, 2010)
8. Relevance of social constructivism approach for designing on blended learning curriculum

- Emphasis on learning through cooperation and group work, (Okagi et.al, 2008) that is, the students are a member of group and learning society for a period of time and professors and students must cooperate and interact effectively together. (Segerav and Halt, 2003) Cooperation with others gives group work experience to learners in real life situation and lets them use meta-cognitive skills.

- Learners should be able to use other skills of learners and learn from others. While designing group work, experience level and learning style of group members must be considered so that team members can use each others’ capabilities. (Sovan, 2010)

- Learning must be interactive to improve social presence and help the production of individual meaning. (Anderson and Alomi, 2006, PP 48-49)

- Learners must build their own knowledge themselves. Knowledge construction is easy through interactive teaching based on technology since students have the opportunity to interact with other learners and professors and they themselves control learning process. In on-line learning environment, learners get first hand information without mediator instead of getting filtered information from teachers who may have different methods, backgrounds and experience. In traditional classes, teacher may personalize the information that may not be suitable for all the students. In electronic teaching, learners experience and personalize first hand information and use it in desirable context. (Rend Sovan 2010)

- Learning is an active process. Keeping the students active and doing meaningful activities result in the higher levels of process by the students.

- Emphasis on critical thinking in the students. (Ukagi, et, al, 2008)

- Learning must be meaningful. Teaching materials should contain related examples so that the students can understand them. Exercises and projects let the students choose meaningful social activities and help them in the application and personalizing information. (Anderson and Alomi, 2006, PP 48-49)

- Emphasis on purpose-oriented learning (purposes which are determined by the professors and understood by the students) (Segrav and Halt, 2003)

- Learning can result in the production of different interpretations when learning involves the application of different resources, for example, first hand experiences, secondary resources, interactive materials, independent search, interaction and discussion with others. Different views exist about a special subject that results in the improvement of critical thinking skills. (Parichard, 2009)

- Emphasis on learning in context, that is, all learning should take place in social context.

- Emphasis on the learning society, the construction of meaning in society through discussion.

- Learning is considered as active participation of learners and interaction with others.
The students’ recognition depends on the application of different instruments and constructed learning environment.

The emphasis on the thinking and practice in group and multilateral interactions with each other. (Wilson and Modsen, Myers 2003 as quoted by Schmitt, 2007)

**Figure 3: blended learning model based on social constructivism theory**

- **Learners activities**: interaction with on-line and written content, multilateral interaction with the students’ group and professors, thinking about the subjects with respect to social context, solving real problems and doing related projects in group and through cooperation, emphasis on group learning activities not teaching process.

- **Evaluation**: emphasis on self-evaluation and peer evaluation, evaluation is a part of teaching and serves it, evaluating real outcomes of learning, evaluation based on higher levels of cognitive stages, qualitative and dynamic evaluation, the evaluation of students’ group work and cooperative situations.

- **Group activities**: high group activities, emphasis on learning activities through cooperation, group discussion for providing different views to get knowledge.

- **Teaching strategies**: emphasis on active and student-centered teaching strategies, emphasis on cooperative and interactive teaching methods, emphasis on providing various viewpoints, emphasis on social learning environments, emphasis on wide interaction between the students.

- **Learner role**: student-centered, learners’ control over learning process and information.

- **Teachers’ role**: director and facilitator, provider but not lecturer, cooperation of the teacher as analyzer of problem solving strategies, observer, organizer of the environment for researching, organizer of social environment to get experience and produce knowledge, organizing group discussion and student interaction.

- **Learning**: personal discovery based on intuition, creating meaning from social experience, thinking in synchronous face to face and on-line learning environment and using social interactions of both methods.

- **Different kinds of learning**: Problem solving.

- **Factors influencing learning**: individual, environmental factors, social factors, multilateral interactions between individuals.
9. Discussion and conclusion

In response to the first question asked in this study relating to capabilities and characteristics of blended learning and after studying various resources, results showed that among prominent capabilities and features of this learning model are the development of education, emphasis on active learning, development and variety of the amount of interaction and communication, access to content and educational resources, flexibility, the possibility of receiving on time feedback, supporting the variety of learning, being multimedia (richness of learning environment) and the possibility of lifelong study. These features attract the attention of pedagogical designers, curriculum planners, teachers and other organizations involved in education in order to apply this model in short term and long term programming.

In response to the second question of this study relating to the components of learning model features based on individual and social constructivism theory, in the individual constructivism theory, prominent features are as the followings: construction of knowledge through interactive teaching based on facilitated blended learning, the ability to control learning process by the learner, the emphasis on learning in context, that is, the emphasis on learning environment, the recognition of the application of different instruments and constructed learning environment and the emphasis on learning environment instead of teaching. (Table 1)

Table 1: characteristics and components of blended learning model based on individual constructivism theory

<table>
<thead>
<tr>
<th>Components and features</th>
<th>Individual constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning</td>
<td>The discovery of personal knowledge based on intuition, creating meaning out of personal experience, thinking in physical contexts based on textbook, thinking in online context.</td>
</tr>
<tr>
<td>Different kinds of learning</td>
<td>Problem solving</td>
</tr>
<tr>
<td>Factors influencing learning</td>
<td>Individual, environmental factors and their interaction</td>
</tr>
<tr>
<td>The role of the learner</td>
<td>Active, self-directed and thoughtful, student-centered, the students’ control over learning and information phenomenon.</td>
</tr>
<tr>
<td>The role of the teacher</td>
<td>director and facilitator, offering no information, as an analyzer of problem solving strategies and observer, encouraging the students, organizer of on-line and face to face environment for individual search and research.</td>
</tr>
<tr>
<td>Learners’ activities:</td>
<td>Activity in a predetermined environment based on personal experience, interaction with written and on-line content, reflecting on the subjects with respect to context, solving real problems and doing related and real projects individually, attention to personal learning activities which create thinking, discovery, interpretation and construct of knowledge in the learner.</td>
</tr>
<tr>
<td>Teaching strategies</td>
<td>Emphasis on active, student-centered and individual teaching strategies, emphasis on various views in on-line and face to face environments.</td>
</tr>
<tr>
<td>Group Activities</td>
<td>Inattention to group activities</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluation: emphasis on self-evaluation, evaluation as part of teaching, the evaluation of real outputs of learning, evaluation based on higher levels of cognitive aspect, dynamic and qualitative evaluation, evaluation of individual learning activities.</td>
</tr>
</tbody>
</table>
Table 2: Characteristics and components of blended learning based on social constructivism theory

<table>
<thead>
<tr>
<th>Characteristics and components</th>
<th>social constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning</td>
<td>personal discovery based on intuition, creating meaning from social experience, thinking in synchronous face to face and on-line learning environment and using social interactions of both methods.</td>
</tr>
<tr>
<td>Different kinds of learning</td>
<td>Problem solving</td>
</tr>
<tr>
<td>Factors influencing learning</td>
<td>individual, environmental factors, social factors, multilateral interactions between individuals</td>
</tr>
<tr>
<td>Learner role</td>
<td>student-centered, learners’ control over learning process and information</td>
</tr>
<tr>
<td>Teachers’ role</td>
<td>director and facilitator, provider but not lecturer, cooperation of the teacher as analyzer of problem solving strategies, observer, organizer of the environment for researching, organizer of social environment to get experience and produce knowledge, organizing group discussion and student interaction.</td>
</tr>
<tr>
<td>Learners activities</td>
<td>interaction with on-line and written content, multilateral interaction with the students’ group and professors, thinking about the subjects with respect to social context, solving real problems and doing related projects in group and through cooperation, emphasis on group learning activities not teaching process.</td>
</tr>
<tr>
<td>Teaching strategies</td>
<td>Emphasis on active and student-centered teaching strategies, emphasis on cooperative and interactive teaching methods, emphasis on providing various viewpoints, emphasis on social learning environments, emphasis on wide interaction between the students</td>
</tr>
<tr>
<td>Group activities</td>
<td>Intense group activities, emphasis on learning activities through cooperation, group discussion for providing different views to get knowledge.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Emphasis on self evaluation and peer evaluation, evaluation is a part of teaching and serves it, evaluation of real outcomes of learning, evaluation based on higher levels of cognitive stages, qualitative and dynamic evaluation, the evaluation of students’ group work and cooperative situations</td>
</tr>
</tbody>
</table>

In learning model based on social constructivism, the emphasis is on learning through cooperation, interactive learning, meaningful activities, critical thinking, purpose-oriented
learning, learning society, thinking and performance in group, and multilateral interaction between group members. (Table 2) Finally in response to the last question of this study, blended learning model based on individual constructivism theory is presented in figure 2 and blended learning model based on social constructivism theory is presented in figure 3.
References


