



LEARNING AND TEACHING LANGUAGES ONLINE: A CONSTRUCTIVIST APPROACH

Tuncer CAN^{*}

Abstract: The recent advances in technology have necessitated first new approaches and then new methodologies in the area of foreign language learning and thoroughly teaching. The Internet and the virtual learning environments have diversified the opportunities for school teachers, instructional designers as well as learners by varying and broadening the alternatives for learning and teaching of languages. Employing tools and applications, other than classroom and course books, in the learning of foreign languages requires reconsidering the pedagogy, methodology, applications, teacher roles, interaction types, and teaching environment itself. And also multiple selections of channels, through which the teaching materials can be implemented mandate the revision of traditional one way communication between the teachers and the learners. An acknowledgement is brought about by the constructivist approach with its assumptions about learning and knowledge, multiple perspectives and modes of learning and the complexity of learning environments. Constructivist approach is promising at promoting learners' language and communicative skills as well as at fostering their autonomy, social and interactive skills contributing to their development into more confident, pro-active and responsible individuals by supporting incentives on diverse media in language learning and teaching.

Key words: Constructivism, Foreign Language Learning, Distance Education, E-Learning, Videoconferencing

Özet: Teknolojideki son gelişmeler, yabancı dil öğrenimi ve öğretiminde öncelikle yeni yaklaşımları ve sonrasında da yeni yöntemleri gerekli kılmaktadır. İnternet ve sanal öğrenme ortamları, öğretmenler, eğitim tasarımcıları ve öğrenciler için yabancı dil öğrenme ve öğretme seçeneklerini çeşitlendirip genişleterek fırsatları değiştirmektedir. Sınıf ve ders kitapları gibi eğitim araçlarından farklı araç ve uygulamalar kullanmak, eğitimin, yöntemlerin, uygulamaların, öğretmenin görevlerinin, etkileşim şekillerinin ve eğitim ortamının kendisinin sorgulanmasını gerektirmektedir. Eğitim araç gereçlerinin uygulanması için seçilen çokluklu kanallarını öğretmen ve öğrenci arasındaki tek yönlü iletişimin de gözden geçirilmesini gerektirir. Bu sorgulamalara bir karşılık, öğrenme ve bilgi, çoklu görüşler, öğrenme şartları ve öğrenme ortamlarının karmaşıklığı ile ilgili ilkeleri ile oluşturmacı yaklaşım tarafından gelmektedir. Oluşturmacı yaklaşım ayrıca dil öğretiminde çeşitli araçların kullanımını özendirerek öğrenenlerin dil ve iletişim becerilerini desteklemesinde, özerkliğini beslenmesinde, öğrenenlerin toplumsal ve etkileşimsel becerilerine katkıda bulunarak onların daha özgüvenli, proaktif ve sorumluluk sahibi bireyler olmasında da ümit vericidir.

Anahtar Sözcükler: Oluşturmacılık, Yabancı Dil Öğretimi, Uzaktan Eğitim, E-Öğrenme, Videokonferans

1. Introduction

To Driscoll (2000), "Constructivism has multiple roots in the psychology and philosophy, among which are cognitive and developmental perspectives of Piaget, the interaction and cultural emphases of Vygotsky and Bruner, the contextual nature of learning, the active learning of Dewey, the epistemological discussions of von Glasersfeld, postmodernist views, and the paradigm and scientific revolutions of Thomas Kuhn" (p. 375). Constructivist assumptions about learning could be summarized as "knowledge is actively constructed by learners as they are trying to make sense of their experiences, learners form, elaborate and test candidate mental structures until a satisfactory one emerges" (Perkins, 1991, p.20), particularly conflicting experiences will cause perturbation in the new structures, so that they can be restructured and constructed anew to make sense of the new information (Piaget, 1973; Bruner, 1966; Vygotsky, 1978). That is, knowledge is not representing or corresponding to the external reality, but is viable (von Glasersfeld, 1996). To Vygotsky (1978), learning is a social negotiation of meaning.

Jean Piaget's view is constructivist, because he firmly believed that knowledge acquisition is a process of continuous self-construction. That is, knowledge is not out there, external to the child and waiting to be discovered. Instead, knowledge is invented and reinvented as the child develops and interacts with the surrounding world. Accordingly, children actively approach their environments and acquire knowledge through their actions. Children go through stages and processes of development. These processes, assimilation, accommodation and equilibration, are critical to development and to advancing between stages. Children assimilate the newly perceived objects and events according to their existing schemes. Then they need to modify their existing schemes according to the new experience, this is called accommodation. Finally, the state of disequilibrium and contradiction arising between the existing schemes and the more sophisticated mode of thought adopted by the new experience has to be resolved via equilibrium process. Language is also central in Piaget's theory of development and learning. Children make sense of their environment via language and as they advance through stages and processes language acquisition plays an important role (Piaget, 1973).

Much like Piaget, Bruner, defining discovery as all forms of obtaining knowledge for oneself by the use of one's own mind, proposes that a true act of discovery is not accidental. It involves an expectation of finding regularities and relationships in the environment. With this expectation, children devise strategies for searching and finding out what the regularities and relationships are. The character of this searching and finding is an attitude of constructing. The mental contrasts and contradictions that the children come across during the act of discovery create urge for restructuring of their previous knowledge about their environment. According to Bruner (in Driscoll 2000, p. 375) "children, as they grow, must acquire the ways of representing the recurrent regularities in their environment." He posited that humans respond to their environment through conventionalized imagery and perception, and through language and reason. These representations are enactive, iconic and symbolic. Bruner also believed that the process of discovery is an exercise of problem solving that contributes remarkably into the intellectual development (Bruner, 1966).

Vygotsky postulated that the concepts of development and learning of the individuals could not be understood without reference to the social and cultural context in which these concepts are embedded. Development is the conversion of social relations into mental functions. Individuals actively modify the situations as part of the process of responding to it, this is called mediation. The mediation is linking the social to the mental through a tool or sign. Language serves as a sign and tool in the internalization process of the outer social environment into the inner mental world. Also the interaction between individuals in the process of development and learning serves as a social space for the occurrence of a gap between developmental level determined by independent problem solving and the potential development determined by problem solving under adult scaffolding, guidance or in collaboration with more capable peers. This is called Zone of Proximal Development (ZPD). To Vygotsky, learning is a socio-cultural construction and meaning negotiation achieved through language; language has a particular role in learning and development, by acquiring a language, the child gains the means to think in new ways and a new cognitive tool for making sense of the world. Language is used by children as an additional device in solving problems, to overcome impulsive action, to plan a solution before trying it out and to control their own. They use the language to obtain the help of others and to solve problems (Vygotsky, 1978).

According to Dewey knowing is not a process of registration or representation, but a process of intervention; knowledge does not point to an external, independent and objective reality, but is always involved in the action. Knowing consists of operations that turn the experienced reality into a form of relationships that can be used in the future actions. Social interaction drives all involved participants to pay attention to the contribution made by the other participants. To be able to continue the social interaction, participants have to observe and comply with the objects and inferences which others construct. Dewey defined reflection as a proactive, ongoing examination of beliefs and practices, their origins, and their impacts during interaction. Therefore, he favours "learning by doing" (Dewey, 1966).

Kuhn (1970) demonstrated how intellect of the world progressed through revolutionary paradigm shifts that influenced how the individuals experience the world. Suffice to say, people construct their understanding about the world through constant restructuring of their thoughts, they also perceive the world through their experiences, through the interface of their senses and their self-constructed meanings of those senses. According to von Glasersfeld constructivism posits that humans interpret the world in ways that cohere with reality. Coming to know is a process of dynamic adaptation towards viable interpretations of experience. The knower does not necessarily construct knowledge of a "real" world. von Glasersfeld has particularly focused on individual self-regulation and the building of conceptual structures through reflection and abstraction (von Glasersfeld, 1996). According to Fosnot (1996), in terms of constructivism, knowledge is temporary, developmental, non-objective, internally constructed, socially and culturally mediated; and constructivist learning is a process in which the learner solves conflicts which arise between old and new knowledge with help from culturally created tools and in cooperation with others (p. ix).

2. Constructivist Learning

Regarding the constructivist learning Driscoll (2000, p. 378) summarizes Umberto Eco's "rhizome" metaphor: "The rhizome models the unlimited potential for knowledge construction, because it has no fixed points and no particular organization. Eco also spoke of a jar full of marbles, which, when shaken, will produce a new configuration and a new set of connections among marbles". Cunningham (1992) states that "the rhizome concept alerts us to the constructed nature of our environmental understanding and the possibilities of different meaning, different truths, and different worlds" (p. 171).

Constructivist theory poses that knowledge is a "web of relationships" and is constructed actively by learners as they attempt to make sense of their experiences and environments. Therefore, learners are not empty cans to be filled with knowledge, but dynamic organisms seeking meaning. Perkins (1991) states that "regardless of what is being learned, constructive processes operate and learners form, elaborate, and test candidate mental structures until a satisfactory one emerges. Moreover, new, particularly conflicting experiences will cause perturbations in these structures, so that they must be constructed anew in order to make sense of the new information" (p.20). Piaget, Bruner and Vygotsky referred to the similar process as schema accommodation and restructuring.

Constructivist approach acknowledges learning in context (Duffy and Jonassen, 1991, p.8) and learning of knowledge could only be achieved through meaningful activity, learning is a continuous, life-long process resulting from acting in situations (Brown, 1989, p.33). Learners should identify, pursue and reflect on their own learning goals while solving the genuine problems in the world. That is, learners are to be self aware and autonomous. In this respect, the necessary constructivist conditions for learning (in Driscoll, 2000, pp. 382-3 and elsewhere) are summarized as follows:

1. Embedded learning in complex, realistic and relevant environments (Duffy & Jonassen, 1991; Cunningham, 1991; Honebein, 1996).
2. Provide for social negotiation (cooperative and socio-moral atmosphere) as an integral part of learning (Piaget, 1973; Vygotsky, 1978; Bruner, 1966; De Vries, 2002).
3. Support multiple perspectives and the use of multiple modes of representation (Duffy and Cunningham, 1996; Honebein, 1996).
4. Encourage ownership in learning (Duffy and Cunningham, 1996; Honebein, 1996).
5. Provide adequate time for learners' investigation and in-depth engagement (De Vries, 2002).
6. Nurture self awareness of the knowledge construction process (Jonassen, 2003; Duffy and Cunningham, 1996).

Problems and experiences in real life are complex and relevant; one cannot escape multiple attractors while trying to solve these problems. For this, school education must reflect the complexity of life. In Dewey's words (1966); education is not simply transmission of knowledge, but, "in its broadest sense, is the means of this social continuity of life" The complexity of learning environment could be provided via tools and content to be learnt. Perkins (1991) proposes "construction kits" and

“phenomenaria” which could be either way digital or realia, and could enable learners to assemble toys, as well as abstract entities, such as commands in a program language, creatures in a simulated ecology, Legos, and language learning softwares. Wilson (1996) exemplifies phenomenaria like SimCity and SimEarth which enable learners to observe various phenomena and to manipulate concepts and assumptions. These are games where language learners could both create all aspects of a real city and manipulate among the relationships of language, city parts and construction. Sims is another version of phenomenaria in which virtual avatars (animated individuals) could build their own houses, buy their furniture, apply for jobs, shop for food, socialize with neighbors, go downtown for a drink and etc. While these games reflect the complex and interconnected aspects of life they also reflect the vocabulary, contexts, discourses and necessary linguistic and pragmatic aspects of language. “Second Life” and “Active Worlds” provide another example of virtual environment in which learners are allowed to create their own avatar and interact and communicate with other real people via these avatars. As in Sims, learners are granted a virtual second life representing real life complex structures and relevant domain based language experience on islands, bars, restaurants, schools, shops exchanging real life money. They allow virtual environment and space for educational purposes such as “The Active World Education Universe” (AWEDU) as well. Jonassen (2003) offers an instructional design model for developing instructions to teach problem-solving in both well-structured and ill-structured domains like medical schools and geography. He proposes contextual analysis to be favored in instruction of relevant and complex problems in real life. This idea could be worked out for the purposes of language learning and teaching. Construction kits on the other hand are similar to phenomenaria except they are less tied to natural phenomena. Construction kits are packaged collections of content components for assembly and manipulation. They may have no clear counterpart in the "real" world. Examples include Legos, learning logs, math-manipulation software such as the Geometric Supposer, or authoring tools such as HyperStudio (Wilson, 1995).

Bruner (1986) asserts that “learning in most settings is a communal activity, a sharing of the culture” (p.127). So to say, collaboration is an important notion in constructivist learning environments. Collaboration representing and providing the social aspect of learning enables learner to “develop their own plans and understandings through joint effort and have the opportunity to come to new understanding through the give-and-take of interaction, argument and discussion” (Vygotsky, 1978; Watson and others, 1999, p. 142).

In constructivist field, collaboration enables insights and solutions to arise synergistically (Brown, 1989). Collaboration also provides means for learners to understand and learn point of view other than their own. In this aspect, collaboration has the potential to transform all the interactants involved in the interaction. Cooperative learning in constructivist approach facilitates the socio-moral atmosphere of the learning environment by explicitly or implicitly referring to values, consideration, fairness, respect to others, helpfulness, personal responsibility governing the whole classwork and interaction (Watson and others, 1999p.142). To Edelson (1996 in Driscoll 2000), “advances in technology starting with the personal computer have assisted in broadening the form that collaboration takes to include not just discussion but sharing of artifacts and cooperative work across time and distance. Moreover, the potential is there for technology to play a revolutionary role in supporting new forms of learning conversations in educational settings.” For example, not only groupwork activities in classrooms, but Internet, software and websites that enable chatting, forums and blogging, and web projects as well create opportunities for social negotiation and interactional learning.

According to constructivist approach like complexity, diversity is one of the characteristics of life which is to be reflected into the constructivist learning environments. General principles and single models do not always apply to all situations and cases in life. People differ in their social backgrounds thus their perceptions about the matters they encounter may be multiple. Multiple perspectives is widely accepted among constructivists (Duffy and Cunningham, 1996; Honebein, 1996). Negotiation among learners represents the diversity of perspectives and opinions about issues. According to Spiro (in Driscoll 2000, p. 380) “revisiting the same material, at different times, in rearranged contexts, for different purposes, and from different conceptual perspectives is essential for

attaining the goals of advanced knowledge acquisition.” He also proposed that hypermedia provides an excellent tool for achieving this. A rich and flexible knowledge base can be built that enables learners to systematically explore multiple models and multiple interpretations. To constructivists, hypermedia and the emerging technologies can be effectively used to encourage learners to think about ideas, theories, literary works, or whatever, from variety of perspectives (Cunningham, 1992). Viewing the same learning content via different sensory modes (such as visual, auditory, or tactile) enables different aspects of it to be seen. As a instructional strategy, multiple modes of representation receive support from cognitivist views as well as biological and pedagogic theories (Driscoll, 2000).

Constructivist theory holds the view that learners actively construct meaning for themselves in the process of learning. This necessitates their ownership in learning and posits that they need to take responsibility in their learning. However, learners need to be taught to develop autonomy besides content. They have to be given opportunity to select and negotiate the content, and work autonomously on it. For this, from the beginning, learners need to be asked to reflect on the content, investigate the topics relevant to their interests; and teachers should imply that they are there to coach and are ready to share and question their authority and resources. Honebein (in Wilson, 1996) asserts that “learners might have difficulty in navigating a learning environment or try not to so on their own accord is that such environments have typically been decontextualized, however, tasks that are thought to be difficult when attempted in a decontextualized environment become intuitive when situated in a larger framework, that is, a more authentic context” (p. 12). Learners need time to be able to analyze the context in all its perspectives. Teachers should allow for thinking time before and during the activities.

Cunningham (in Driscoll, 2000) defines self reflexivity as “the ability of learners to be aware of their own role in the knowledge construction process. To this definition Driscoll (2000) adds that “with this awareness comes the ability to invent and explore new structures or new interpretive contexts, and when the learners come to realize how a particular set of assumptions or worldview shapes their knowledge, they are free to explore what may result from an alternate set of assumptions or a different worldview” (p. 390).

3. Constructivist Approach in Online Learning and Teaching

From the constructivist principles above, it is so obvious that the achievement of these conditions for learning in the classroom and by course books only would not be possible. For this teachers and instructional designers need to liberate the learners from the restricting walls and pages. Freeing, especially, the language learners from rigid and restrictive rules of grammar and classrooms is even more important.

Employing technologies like the Internet, websites and the virtual learning environments, creating 'microworlds' and 'hypermedia' designs for learning, applying collaborative learning, problem-based learning and goal-based scenarios, making Open Software and Course Management Tools, like Moodle and BlackBoard, accessible to learners, and using distance learning applications like computer-conferencing and videoconferencing could serve to implement the multiple constructivist conditions for learning, which in return has the potential of upheavals in the online teaching and learning of foreign languages and other subject matters (Driscoll, 2000; Duffy and Jonassen, 1992; Schank, 1994; Lebow, 1993; Can, 2006).

3.1. Microworlds and Hypertext

Papert (1981) defines microworlds as “small but complete subsets of real environments that promote discovery and exploration, they have two essential characteristics, one is they embody the simplest working model of a domain or system, and the second is that they offer a point of entry that matches the learner’s cognitive state” (p. 204). Papert applied these arguments to the use of the programming language LOGO, he claims that LOGO provides a culture which helps to make abstract concepts simple and concrete so that the child can relate them to his or her existing knowledge and fit them into his or her knowledge structure. One metaphor Papert uses is the way children learn to talk. This

process happens without any formal organised learning and is encouraged by the environment. Papert used this analogy in describing 'Mathland' a context which is to learn Maths like living in France is learning French. This application could be beneficial in foreign language learning and teaching as well. Online games and virtual microworlds like Sims and Second Life could be employed to enrich the language learning experience and provide space for constructivist conditions mentioned earlier. Hypermedia designs like PCs, DVDs and other digital devices could easily be compiled and put into use to prosper the classrooms. They also allow for networking, thus sharing and collaboration is possible. In these designs, vast body of information about matters of interest like personal data, definitions, descriptions, photographs, videos and graphic designs, interviews and other samples of research could be presented.

Using hypertext allows the learners to navigate through the materials. Via hypertext information chunks can be constructed and interlinked to stimulate and simulate the learning process and knowledge, links could be created to external information and learners' own texts could be published and shared in real life. Another constructivist aspect in hypertext is that pictures, sounds and other multimedia can be incorporated, which could benefit learners and language learners by creating a learning environment and setting in constructivist perspective. Accumulation of these hypertexts creates microworlds and hypermedia which provide access to rich information especially if they are implemented alongside the Web. Lowry & Wilson (2000) exemplify "World Lecture Hall" a website which presents examples of the Web being used for learning-courses, activities, etc. and serves as a mini-browsing environment with some quality screening, but lots of room to explore. Regarding the Internet online hypermedia they also think that "the point is that information of all kinds can be placed on the Web and made available for convenient access, bookmarking, and use. A site's value lies partly in the design of the information presented, but remains largely in the hands of the users. If a resource is accessed by a person skilled at self-directed learning, with clear learning goals, then the resource will likely be an effective aid to constructivist learning" (http://ceo.cudenver.edu/~brent_wilson/WebLearning.html accessed 3/3/2009). Lowry and Wilson gather a number of metaphors to describe the Web: "information highway, digital library, cyberspace, global village. All of these are compatible with learners constructing meaning through self-directed inquiry, guided activity, or community-based co-participation." "Wikipedia" and other specialized, topic based wikis can also be both used and even created by learners. These allow for opportunities to implement asynchronic distance learning and e-learning as well.

3.2. Bubble Dialogue

Driscoll (2000, p. 378-83) summarizes "Bubble Dialogue", "developed by the Language Development and Hypermedia Group" in 1992, as an example of "open software" which can be used to promote constructivist learning principles. In Bubble Dialogue, content is empty and the software is like a shell ready to be filled by the learners. Learners adapt these shells according to their intentions, and "create conversations among comic strip characters, including thoughts that would not be said out loud. In this way, they have the opportunity to express personal views of the world, to contemplate multiple perspectives in both public and private domains and to accommodate their own thinking to contrary views. Another example is "Construe", open software found in course management tool. It is designed to enable course instructors to mount Web-based courses with constructivist principles. One example from the application is that an informational database is presented in the form of online articles that can be searched easily by author or keyword; while reading the articles learners can publish their own ideas online as well. Therefore, they can bring in new resources into the learning environment for their peers. A computer conferencing system is also integrated so that learners can discuss their opinions throughout the semester; thus, a public knowledge building community environment is being constructed by the learners themselves (Driscoll, 2000). Bloggers are another Internet application which could be implemented into the course. Blogs on various topics relating learners' interest can be written collaboratively or individually, they also allow for construction and co-construction of various texts, which promotes learner autonomy; and they can also serve as log books allowing learners to reflect on their own learning and learning process.

3.3. Videoconferencing

According to Miller (in Can 2006) videoconferencing can be defined as communication in which all parties can send-and-receive audio-and-video to-and-from each other. All other types of electronic communication (including typing, electronic drawing, the viewing and manipulating of websites, the playing of pre-recorded video, etc.) can occur within, or concurrently with videoconferencing. Videoconferencing is a form of interactive television. Burn (2002) asserts that “within the field of education, whilst videoconference systems appear to provide the potential to reach a wider student audience, offer greater flexibility, make use of scarce expertise and enhance communication channels between remote groups of learners and their tutors, its use within an educational context is still not well understood.” Distance learning applications like computer conferencing and videoconferencing for language learning and teaching could be used by schools to enrich the classroom experience by allowing for all types of electronic communication and media, by connecting them to learning parks, museums, experts and even other schools worldwide through television monitors and video cameras. Along with the instructor on one end a facilitator could be employed on the other end. Thus, a conventional classroom is enriched. The facilitator could act as a helper, guide, example or interactor, communicative pair in activities. These aspects of conferencing and videoconferencing could bring into language learning the real life, real interlocutors and the target culture, which in return could serve as a valuable resource for meaningful language input, real life and simultaneous language practice, comprehensive output, pragmatic and discourse awareness (Can, 2006).

These e-learning applications could serve for collaborative and problem scaffolding as well. According to Male (1999, p. 267) these collaborative applications which could also be termed as “groupware” are required to be learner and problem oriented. Moreover, learner-centered software enables students to take intellectual risks and communicate about the task with each other. Through learner-centred software, a student:

- is in charge of the goal or the means to reach the goal;
- receives informational rather than judgmental (positive or negative) feedback;
- is encouraged to make approximations as a part of problem solving (Male, 1999, p. 267).

Johnson, Johnson & Stanne (1986) (in Male, 1999, p. 268) found that “cooperative learning with computers promoted greater quantity and quality of daily achievement and more successful problem-solving. Cooperative learning resulted in higher performance on factual recognition, application, and problem solving test items than did competitive or individualized learning with computers.” Driscoll (2000) asserts that “another advantage of collaborative Web-based technologies is that they can provide problem scaffolding in the form of virtual access to knowledge experts and on-line support to make thinking visible. In this way, learners can identify learning goals, conduct investigations, keep track of their progress, think about their ideas and those of others, and communicate to others within or outside the immediate learning community.” Collaborative online learning applications facilitate both synchronic and asynchronous distance learning.

As another example of e-learning, online and computer based learning environment Goal-based scenarios (GBS) are real-time simulations presenting clear and concrete goals and missions to be achieved (e.g. designing a house, a city, shopping for many things) and providing a task environment in which learners learn and practice basic language or other target skills (Shank, 1994).

Jonassen (2003) presents Problem-based learning (PBL) as a constructivist application. Problem-based learning necessitates that learners work together to solve real problems while employing various resources and technologies. In this process, learners work together to identify the problem, assign tasks to be completed in order to achieve a solution, think critically as they gather data and resources towards solution, find a solution, then assess and reflect on the solutions (Jonassen, 2003). Webquests also help in learners’ interaction with the content by posing problems and providing different activities in the process of finding a solution. Lowry and Wilson (2002) exemplify one such example for language learning, “Guess Who’s Coming to Dinner: A French Revolutionary Dining Experience” in which learners prepare to assume identities of prominent French people like Rousseau

and King Luis XVI and get ready for dining language. These applications create an environment for distance and e-learning.

The Internet, websites and virtual learning environments provide autonomy, embedded learning in complex and relevant environments. Microworlds and hypermedia, with their potential for authentic activities, assist in rich learner centred learning environment and social negotiation. Goal-based, Problem-based and collaborative learning prosper the task environments and skills, and contribute into the implementation of variety of resources, technology, solutions via multiple perspectives, multiple modes of representations and reality, and helps in reflection on reasoning and ownership in learning. By creating conversation and collaboration among students, Open Software and Course Management Tools supply rich resources in construction and creation of new knowledge, encourage ownership, autonomy and reflection in learning.

4. Constructivist Approach in Online Learning and Teaching of Languages

Reinfried (2000) summarizes the constructivist principles in foreign language learning and teaching by comparing Wolff and Wendt's views. According to Reinfried constructivist language learning should be action oriented where language is learned through collaboration, free creation is praised, and learning is achieved by actively doing projects and self teaching. Constructivist language learning should be learner centred that supports individualization of learning and autonomy. Learner should develop awareness not only for learning but for the language itself and for the intercultural aspect as well. The last but not the least, constructivist language learning is to be holistic with content oriented perspective, authentic and complex learning environment. In this aspect, implementing online applications, using instructional technologies and diverse media in the process of learning and teaching languages are all advocated by constructivist approach.

The Education Committee of European Union have defined the language learning and teaching experience in their comprehensive "Common European Framework of Reference for Languages" (CEF) as process oriented, including linguistic, sociolinguistic and pragmatic competence, skills and abilities for learning. Promotion of plurilingualism has been of concern for the European Union, for this the Education Committee has outlined some key concepts in language learning and teaching. Among these are action oriented approach that is encouraging active learning of the language learners, autonomy and self awareness in learning, cognitive and social aspects of learning, using instructional technologies and diverse media in the process of teaching and learning languages, promotion of life-long learning (CEF, 2001). These concepts are in line with the constructivist learning conditions mentioned above.

The implementation of computerized online applications, CALL applications, the Internet, websites and the virtual learning environments (i.e. LOGO, Second Life, interactive websites, chat-rooms, interactive games like Sims and SimCity) in the context of language learning could benefit learners with enriched resources and possibilities for language use, creation and practice. Self study websites and CD ROMs have the potential to free the learners from the rigid rules of grammar and classrooms, and taking learners away from classrooms could assist in self awareness and autonomy by providing opportunities for ownership in learning.

For Dudeney (2000), The Internet is a medium for teachers to find authentic and infinite resource files of texts, visual stimuli, listening materials, vocabulary, cultural information, video files, live TV and radios, newspapers from around the world. The Internet also allows for contextualized real time communication via voice-chat, chat, e-mails and forums. Browsing the Internet creates various opportunities for learners to take control of their own learning, especially in foreign language learning classes, learners can benefit from the authentic content, vocabulary and various language practice opportunities while filling forms for registration, searching for e-mail pals and posting questions to experts, writing reviews for movies, books and etc. on various blogs and websites, looking for perfect holiday places, sharing their own views and learning about the views of others, preparing Web-based Projects in collaboration, finding images relating the classroom topics; these in return enable

contextual practice and real time discourse instances to be mastered. The Internet provides language learners with the opportunity to create their own materials and share these with public in collaborative contexts as well as real life, Scenario-based and Problem-based learning environments.

Creating Microworlds and Hypermedia designs for language learning where collaborative learning (i.e. working in groups for creating a content website, film making or preparing presentation on a specific language piece using wikis), problem-based learning (i.e. solving real life communication and interaction problems between people, creating focused wikis) and goal-based scenarios (i.e. creating scripts for events and texts, writing for blogs) are elaborated could construe a prosperous context for meaningful language input, real life and simultaneous language practice, comprehensive output, pragmatic and discourse awareness. This would boost the learning opportunities and contexts as well as other skills necessary for language, technology and knowledge creation. One such project for learning languages has been carried out at Georgia Institute of Technology. A resource for using hypertext in online language learning environments is the platform “CoWeb” (Collaborative Web), which allows the learners to co-write texts and to make hyperlinks in published texts to comment on these, but also to make hyperlinks in others’ comments to comment on those. An example of how to use virtual environments as part of language learning is online role play games (i.e. Sims) where the learner chooses a character and socializes with other characters. These also enable learners to construct their own virtual environments (i.e. AWEDU has been mentioned) and characters via collaboration and negotiation in groups and projects. At Georgia Institute of Technology project “Villa Diodati” is carried out, where learners of literature represent and analyze their poems and novels differently by constructing their virtual forms. The structure of the literary text and the appearances of the characters are determined and different costumes for visitors are created. These virtual environments also create opportunity for context based language forms, which could facilitate creative and autonomous language use.

Other e-learning applications that constructivist theory supports in foreign language learning and teaching are, as Shih (2006) proposes PDAs and Hyper Pens. Teachers share their course materials, videos and files, make individualized tests and learners have the chance to practice via personal PDAs. Hyper Pens allow learners to make practice, store and share content and references. By creating digital content PDAs and Hyper Pens can assist in authoring of the learners and teachers, in preparing presentations, interaction with and evaluation of content, simulation-based learning, case-based teaching and learning and learning by exploring and discovery.

Distance learning applications like computer conferencing and videoconferencing for language learning and teaching could be used by schools to enrich the classroom experience by connecting them to learning parks, museums, experts and even other schools worldwide through television monitors and video cameras. All other types of electronic communication (including typing, electronic drawing, the viewing and manipulating of websites, the playing of pre-recorded video, etc.) can occur within or concurrently with videoconference. Along with the instructor on one end a facilitator could be employed on the other end. Thus, a conventional classroom is enriched. The facilitator could act as a helper, guide, example or interactor, communicative pair in activities. These aspects of conferencing and videoconferencing could bring into language learning the real life, real interlocutors and the target culture, which in return could serve as a valuable resource for meaningful language input, real life and simultaneous language practice, comprehensive output, pragmatic and discourse awareness (Can, 2006, p. 447-52).

The Internet, websites and virtual learning environments provide autonomy, embedded learning in complex and relevant environments. Microworlds and hypermedia, with their potential for authentic language activities, assist in rich learner centred learning environment and social negotiation in foreign language learning area. Goal-based, Problem-based and collaborative learning prosper the task environments and skills, and contribute into the implementation of variety of resources, solutions via multiple perspectives, multiple modes of representations and reality, and help in reflection on reasoning and ownership in foreign language learning. By creating conversation and collaboration among students, Open Software and Course Management Tools supply rich resources in construction

and creation of new knowledge, encourage ownership, autonomy and reflection in foreign language learning.

6. Conclusion

In concordance with constructivist approach employing technologies like the Internet which creates a new environment both for foreign language learning and teaching will diversify the classroom and course books. Websites and the virtual learning environments have the potential to transform the pedagogy and methodologies for foreign language learning and teaching. Creating Microworlds and Hypermedia designs for learning necessitates new approaches to learning like collaborative learning, problem-based learning and goal-based scenarios. Learners have the opportunity to work together and collaborate while learning the language by creating their own designs and projects. In terms with constructivism they are likely to learn for themselves while solving real life problems and achieving goals in teams and groups like real micro societies. Moreover, forming such societies out of classroom is acknowledged for the sake of simulating the real life solutions to real life problems. Negotiation of meaning could easily be achieved through this kind of collaborative and meaning construction approach.

Making Open Software and Course Management Tools, like Moodle and BlackBoard, accessible to learners could serve to implement the multiple constructivist conditions for learning in the foreign language learning and teaching. Learners would have more opportunities to contact all classroom materials, activities and the instructor on and out of site; this in return would enrich learner activity and learning opportunities. They would also serve as synchronous and asynchronous learning environments, where learners could create and learn together both during and out of class. In addition, using distance learning applications like computer-conferencing and videoconferencing could serve as brand new environments for communication, sharing and experience in foreign language learning and teaching. Learners would have the opportunity to come together from very different physical environments and enable them to share diverse experiences and perspectives and cultures. This is in lines with constructivist approach, which necessitates multiple experiences and perspectives of the knowledge to be constructed during the classes.

According to constructivist approach and constructivist learning principles, online learning and teaching of languages mentioned above could also be promising at promoting learners' language and communicative skills as well as at fostering their autonomy. Learners would have more opportunity for self study as well as collaboration. In asynchronous learning environments, for instance, learners could contribute by having time for research and acquire the necessary skills for further knowledge construction. The acquisition of these social and interactive skills would contribute into their development into more confident, pro-active, responsible and social individuals. This has also been considered in CEF, the Common European Framework for Teaching and Learning of Languages. (Driscoll, 2000; Duffy and Jonassen, 1992; Schank, 1994; Lebow, 1993; Can, 2006).

References

- Brooks, J. G. & Brooks, M. J. (1999). *In Search of Understanding: The Case for Constructivist Classrooms*, Association for Supervision and Curriculum Development, New York, USA.
- Brown, J. S., et. al. (1989). Situated cognition and the culture of learning, *Education Researcher*, 18,

32-42.

- Bruner J. S. (1966). *Toward A Theory Of Instruction*, Cambridge, Mass.: Belknap Press of Harvard University.
- Bruner, J. S. (1986). *Actual Minds, Possible Worlds*. Cambridge, MA: Harvard University Press. USA
- Burns, J. T. (2002). *Evaluating staff development and training models to support the implementation of videoconferencing technology for teaching and learning in a distributed University*. Retrieved March 17, 2008 from <http://www.euodl.org/materials/contrib/2002/3ICLPaper%20HTMLM.htm>
- Can, T. (2006). Teaching foreign languages via videoconference (a practice paper) in *Lifelong Open and Flexible Learning in the Globalized World Proceedings*, pp: 447-452. International Open and Distance Learning (IODL) Symposium, Anadolu University, Eskişehir, Turkey.
- Council of Europe (2001). *Common European Framework Of Reference For Languages : Learning, Teaching, Assessment*. Cambridge, U.K. : Press Syndicate of the University of Cambridge.
- Cunningham, D. (1991). Assessing constructions and constructing assessments: A dialogue. *Educational Technology*, 31 (5), 13-17.
- Devries, R. et. al. (2002). *Developing Constructivist Early Childhood Curriculum*, New York: Teacher's College Press.
- Dewey, J. (1966). *Democracy And Education : An Introduction To The Philosophy Of Education*, New York : The Free Press.
- Driscoll, P.M. (2000). *Psychology of Learning for Instruction*. Allyn&Bacon: Massachusetts.
- Duffy, T.M. & Jonassen, D.H. (1991). Constructivism: New implications for instructional technology? *Educational Technology*, 31(5), 7-11.
- Duffy, T. M. & Jonassen, D.H. (1992). *Constructivism and the Technology of Instruction: A Conversation*. Lawrence Erlbaum Assoc. Inc.: New Jersey.
- Duffy, T. M. & Cunningham, D. J. (1996). Constructivism: Implications for the design and delivery of instruction. In D. H. Jonassen (eds.), *Handbook of Research for Educational Communications and Technology* (pp. 170- 198). New York: Simon & Shuster Macmillan.
- Fosnot, C.T. (1996). Constructivism: A psychological theory of learning. In Fosnot, C.T. (ed.), *Constructivism: Theory, Perspectives, and Practice*. (pp: 8-33). New York and London: Teachers College Press.
- Honebein, J. (1996). *Seven Goals for the Design of Constructivist Learning*. Retrieved January 11, 2008 from http://cter.ed.uiuc.edu/JimL_Courses/edpsy490i/su01/readings/honebein.htm
- Jonassen, D. H. (2003). *Learning To Solve Problems With Technology : A Constructivist Perspective*. Upper Saddle River: N.J.
- Kuhn, T. (1970). *The Structure of Scientific Revolutions*. (2nd. edition) Chicago: Chicago University Press.
- Lebow, D. (1993). Constructivist values for instructional design: five principles toward a new mindset. *ETR & D*. 41(3), 4-16.

- Lowry, M. & Wilson, B. (2000). For inclusion in Liz Burge (ed.), *Learning Technologies: Reflective and Strategic Thinking*. San Francisco: Jossey-Bass, *New Directions for Adult and Continuing Education*, (2001). Retrieved April 5, 2008 from http://ceo.cudenver.edu/~brent_wilson/WebLearning.html
- Male, M. (1999). Cooperative Learning and Computers. In Sharan, S. (ed). *Cooperative Learning Methods*, (pp. 267-280). Praeger Publishers: Westport.
- Reinfried, M. (2000). *Can Radical Constructivism Achieve a Viable Basis for Foreign Language Teaching?* Retrieved March 10, 2008 from http://webdoc.sub.gwdg.de/edoc/ia/eese/artic20/marcus/8_2000.htm
- Papert, S. (1981). Computer-based microworlds as incubators for powerful ideas. In R. Taylor (ed.), *The Computer in The School: Tutor, Tool, Tutee*. (pp. 203-210). Teacher's College Press: New York.
- Perkins, D.N. (1991). What constructivism demands of the learner, *Educational Technology*, 39(9), 9-21.
- Piaget, J. (1973). *To Understand is to Invent*, Grossman, New York, USA. Retrieved Jan 12, 2006 from <http://curriculum.calstatela.edu/faculty/psparks/theorists/501const.htm>,.
- Schank, R. C., (1994). *Active Learning through IEEE Multimedia*, Vol:1, No:1, p.69-78.
- Shih, T. K. (2006). Ubiquitous e-learning with scorm in lifelong open and flexible learning in the globalized world. Proceedings, pp: 41-55. *2nd International Open and Distance Learning (IODL) Symposium*, Anadolu University, Eskişehir, Turkey
- Von Glasersfeld, E. (1996). *Radical Constructivism: A way of Knowing and Learning*. The Falmer Press: London.
- Vygotsky, L. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press: Harvard.
- Watson, M., et. al. (1999). CDP cooperative learning: Working together to construct social, ethical and intellectual understanding. In Sharan, S. (ed). *Cooperative Learning Methods*. (pp. 137-156), Praeger Publishers: Westport, CT.
- Wilson, B. G. (1995). Metaphors for instruction: Why we talk about learning environments. *Educational Technology*, 35 (5), 25-30. Retrieved April 20, 2008 from <http://www.cudenver.edu/~bwilson>
- Wilson, B. G. (1996). *Constructivist Learning Environments: Case Studies in Instructional Design*. Educational Technology Publications: Englewood Cliffs, NJ.

* İstanbul University, Turkey, tcan@istanbul.edu.tr

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