Evaluation of an online social constructivist tool based on a secondary school experience in a Middle East country

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ABSTRACT

This paper presents the "Moodling" (Moodle, 2005) experience within a secondary school in a Middle East country, namely Turkey. The study reveals that secondary school teachers are willing to participate in a virtual learning environment in addition to the traditional methods of teaching despite the lack of infrastructure and the inadequate ICT literacy skills of the teachers. Based on a focus discussion group with the foreign language teachers, the author depicts the critical points that need to be taken into consideration so that an effective collaborative online platform for both teachers and students to learn together can exist.

Keywords: *"social constructivism", Moodle, "virtual learning environments", "online collaboration", "social artifacts".*

INTRODUCTION

Being one of the new modes of learning and communication to support a full range of teaching and learning activities conducted by educational institutions Moodle facilitates online content creation and collaboration by entailing various social and communication tools that support teacher-student, student-student, and teacher-teacher interactions. Therefore, Moodle is often seen as contributing to the schools' mandates for the delivery of high-quality education through the provision of a complete set of tools.

The aim of this paper is to provide a picture of the role of Moodle for secondary school language teachers rather than making generalizations with regard to the use of Moodle. The study mainly reveals that the necessary resources and facilities to use the computer as just another teaching tool must be provided in order for the teachers to adopt the dual role of both content developer and coach. One must bear in mind that the findings are not exhaustive since the statements presented in this study include contextualizing and interpretation by the researcher based on a single case study within a Middle East country.

THE CONTEXT OF TVO: A TURKISH SECONDARY SCHOOL

Being a developing country located in the Middle East, there have been many attempts to integrate the ICT s into Turkish primary, secondary and higher education system since 1990. Some of the factors which have affected the effective deployment and utilization of ICT s for educational purposes not only in Turkey but also in Middle East in general can be summarized as (Akbaba-Altun, S., 2006):

▪ Inadequate ICT infrastructure including computer hardware and software, and bandwidth/access

- A lack of skilled manpower, to manage available systems and inadequate training facilities for ICT education

- Resistance to change from traditional pedagogical methods to more innovative, technology-based teaching and learning methods, by both students and academics

- The over-dependence of educational institutions on government for everything has limited institutions' ability to partner with the private sector or seek alternative funding sources for ICT educational initiatives

- Lack of effective co-ordination of all the various ICT s for education initiatives

One of the leading secondary schools teaching in English in Turkey, TVO has put every effort to integrate the computers into its educational system via funding and grants. Apart from numerous computer laboratories with high-speed Internet connectivity one computer exists in every classroom. Teachers also receive regular trainings about the integration of computers into their curriculum. In short, it can be said that with the initiatives taken by the school governance, TVO managed to utilize the computer-mediated communication mostly with regard to its foreign language teaching process.

The Moodle experience at TVO

One of the main reasons for using Moodle was a shift toward the teaching approaches that combine both face-to-face and online learning environments, especially when teaching English as a foreign language. In the past few years, some popular Web 2.0 tools such as Hot Potatoes, Voicethread or Pageflakes were being used separately according to the preferences of the teachers. Yet, these tools were not deemed as sufficient by the teachers due to the fact that they all provide different functionalities which may take a long time for the teachers to learn about them and to get used to.

Furthermore, the conventional lesson design experienced in Turkish schools separates the lesson content and activities from the individual lesson as the central theme. This is in distinct contrast to Moodle in which content and activities can be grouped together with the discussion forums, content, group areas, etc. in an area that is designated to Forums, Content, etc. Hence, in order to collect all the digital learning resources in one single place via an open-source software as well as to increase the interactivity Moodle has been selected as the most appropriate tool by the related personnel.

As the underlying philosophy of Moodle is maximum instructor control and minimal administrator control (Moodle, 2005) once the course area has been created in Moodle, the instructor manages its materials with minimal (if any) assistance by TVO's Moodle administrator. An administrative documentation, a teacher's manual, and documentation created by other users that were available on Moodle's web site have also been introduced to the teachers by TVO's Moodle administrator.

METHODOLOGY

The participants were all the foreign language teachers in TVO totaling a number of 20 teachers. Interviews were held in groups of 3 or 4 based on the availability of the teachers. Both structured and unstructured interviews were used in order to get more informed about their experiences with Moodle.

According to Patton (1982), the fundamental principle of qualitative interviewing is providing a framework within which respondents can express their own understandings in their own terms and therefore for which open-ended, rather than closed, questions should be used as far as possible (Patton, M., 1982).

Patton's style of qualitative interviewing is referred to as the standardized open-ended interview', through which questions are asked in the same way and order, with a minimum of probing by the interviewer (Patton, M., 1982). Use of probes were preferred by the researcher in order to allow the informants to answer more on their own terms (Patton, M., 1982), so the interviewer seeking at the same time both clarification and elaboration on given answers was more free to probe beyond answers (Patton, M., 1982).

Theoretical Lenses

Before proceeding with the analysis of findings, it may be useful to briefly mention the underpinning theories of Moodle.

The most prevalent theoretical perspectives concerning online learning are mostly related to social constructivism with a focus on collaborative discourse (Bonk, C.J. & Cunningham, D.J. 1998; Jonassen, D., Peck, K. & Wilson, P., 1999) and the individual development of meaning through construction and sharing of texts and other social artifacts (Gergen, K.J., 1995).

According to constructivism, learning is an active rather than passive process where new insights are developed and knowledge is based on what one already knows (Kanuka, H., Anderson, T., 1998). As the teachers scaffold and organize information into conceptual clusters of problems, new conflicting experiences cause "perturbations in the knowledge structures" (Driscoll, M.P., 2000). Constructivist strategies such as problem-solving, critical thinking, reasoning and the reflective use of knowledge can be effectively implemented via the interactive environments provided by the computers (Driscoll, M.P., 2000).

Two of the several different constructivist-learning theories that are related to web-based learning are cognitive or critical constructivism and social constructivism.

To begin with, social constructivism is a closely related set of ideas that focus on the individual development of meaning through communication and the active construction and sharing of social artifacts, including texts rather than receiving them passively from the environment (Dougiamas, M., 2000). Through conversational language used in a social context the emerging patterns are negotiated into meaning and the construct of the "zone of proximal development" is bridged via deeper learning (Vygotsky, L.S., 1990). So, learning occurs through joint problem-solving between partners and social interaction (Vygotsky, L.S., 1990).

Within the context of a text-based environment, it is believed that these collaboration and sharing processes increase the quality of dialogue between participants as a tool to construct knowledge (Dougiamas, M., 2000) and make learners get apprenticed into "communities of practice" which embody certain beliefs and behaviors (Lave, J. & Wenger, E., 1991).

A dialogue within these communities of practice is an exchange of information that takes place either directly via a semiotic medium such as language and other signs, or indirectly via tools such as computer interfaces (LeFoe, G., 1998). Computer softwares, such as web sites, can be considered as both a tool and a language in terms of the medium. Dialogue in online learning situations can be divided into four types (LeFoe, G., 1998):

- Dialogue of the content development process: A teacher learns while creating content for students during the design process
- Dialogue of each student with content: The student acts and writes in response to the content being read
- Dialogue of students with teacher: This refers to the negotiation and clarification of ideas
- Dialogue of students with other students: Students test their ideas and learn by teaching other students

Still another learning theory within the framework of constructivism is the cognitive or critical constructivism where knowledge is constructed through the interactions of the student with their corresponding socio-cultural environment rather than through the interactions with other people as is the case in social constructivism (Dougiamas, M., 2000). New experiences cause the cognitive schemas to get altered in order to make sense of the new information (Rogoff, B., 1990). In contrast to the Vygotsky's perspective of joint problem-solving Piaget focuses on individual work with independence where cognitive development occurs via facing cognitive conflicts with peers in meaningful and authentic activities (Rogoff, B., 1990). Undoubtfully, web-based technology offers many opportunities for sharing perspectives.

As seen from these constructivist perspectives, individual cognitive growth is encouraged via the social interaction in the online environment being guided by the teacher. This theoretical framework for learning in a web-based environment is crucial for understanding the underpinning philosophy of Moodle.

Towards Theory Evolution

In light of these theories, in order to move from the data (face-to-face interviews) to a generalized framework several guidelines utilized by Strauss and Corbin (1990) were adapted and employed. The process involved the following (Strauss, A., Corbin, J., 1990):

- Reading the transcript interviews on participant's experiences with Moodle
- Developing some ideas from the data that seemed to be applicable
- Reading more transcripts and applying these initial ideas to them
- Reformulating ideas and reapplying refined ideas to the original transcripts
- Refining ideas into basic concepts that reflect the ways that participants talk about their thinking and dealing with Moodle
- Formulating questions regarding each concept to ask of the interviews
- Clarifying concepts and questions
- Recording anomalies such as data not fitting into the conceptual framework
- Checking the scrutiny of the remainder of the interview transcripts, concept refinement, question clarification and recording anomalies
- Reviewing the entire framework in light of the interview transcripts again to look for anomalies, concept refinement and question clarification

From this process a set of common and interconnected factors were combined into a framework for understanding both the advantages and disadvantages with regard to the use of Moodle.

Although the researcher's preference was to use a tape recorder during the interviews the tape recorder could not be used due to the bureaucratic reasons related to obtaining another permission document of recording authorization. The fact that its use might also be inhibiting for teachers was stated as another reason. So, the researcher took notes by handwriting and typed them after each interview.

After completing the interviews, the transcribed interviews were sent to those informants who have provided their contact details as promised. Due to the fact that not all of the informants were willing to be contacted later because of both their time restrictions and their preference of not providing their e-mail addresses the researcher could not send to all of the informants these transcribed interviews.

Furthermore, a small survey was prepared to gain a better understanding of their 'Moodling' (Moodle, 2005) experience. A drafted question set for teachers is as follows:

Table 1: Views about Moodle (N: 20)

Statement		1	2	3	4	5	Total
1. I enjoyed the Moodle environment.	%	3,3	0	6,7	23,3	66,7	100
2. I prefer Moodle to purely face-to-face teaching.	%	3,3	20,0	3,3	46,7	26,7	100
3. Face-to-face environment was sufficient to achieve our teaching objectives.	%	0	0	3,3	63,3	33,3	100
4. Moodle environment was necessary to achieve our teaching objectives.	%	6,7	6,7	13,3	26,7	46,7	100

5. Time spent in Moodle environment was worthwhile.	%	6,7	16,7	10,0	43,3	23,3	100
6. Students' having control of my own learning of online material was useful.	%	6,7	0	6,7	33,3	53,3	100

FINDINGS AND DISCUSSION

These findings could be related to the material used in the online environment. In fact, it was pointed out during group interviews that,

> "The overview is unclear and not very well organized"; "the use of Moodle for submitting course assignments did not work well all the time"; and "its use takes too much time and may be boring".

Some teachers mentioned that apart from Moodle's social interaction and knowledge sharing facilities it allows students to take responsibility of their own learning. Related comments in focus group discussions that supported these findings include the following:

> "Our students could easily get into contact with their peers at any time and anywhere via Moodle. Besides, pupils who lost or did not get hand outs can print it off Moodle."

One teacher stated,

> "Moodle allows the files to be easily distributed and saves a lot of paper. Besides, it allows one to make comments on one's work outside the class hours and facilitates easy communication for both pupils and teachers. "

As these statements reveal, Moodle enables learners to become active creators of knowledge rather than being passive recipients of knowledge. By inventing their own ideas, students are placed at the center of active learning.

The teachers also admitted,

> "Our students feel motivated by the fact that they could communicate about a particular subject beyond the walls of classrooms and have a web presence."

Yet, some teachers mentioned that they were unsure whether they should allow the students to develop and exercise their own voice. Their being unsure about how to act on the online forum was evident in the following statement:

> "I felt like an outsider providing only occasional contributions, hence I could not develop strong educative relationships with my students. The students mostly were dealing with one another."

Based on these statements, it can be inferred that the emphasis on reflective dialogue rather than serial dialogues should be emphasized by the teachers. In order to enhance the educative relationship the teachers might pose thought-provoking questions and offer related readings in advance while 'injecting a sense of humor and a helpful degree of informality' (Dougimas, M. , 2000). As teachers become more engaged in facilitating the dialogue and adapting a more interactive role similar to their role in the classrooms, students' conceptual development can also be extended (Dougimas, M., 2000). Besides, as Dougimas (2000) suggests, by encouraging the pupils to get involved in mutually productive dialogues, their sense of accountability and their willingness to seek assistance from each other might also increase.

In short, the teachers' comments primarily reveal their emphasis for schools as social environments where a two way communication occurs between teachers and students.

CONCLUSION

One should not disregard the fact that the statements presented in this study include contextualizing and interpretation by the researcher based on a single case study within her country, since the aim of this research is not generalization but to provide a picture of the role of Moodle for secondary school language teachers.

The most important conclusion derived from this research is that secondary school teachers are willing to participate in a virtual learning environment in addition to the traditional methods of teaching. Their statements were aligned with Jonassen's (1991) assertion that multiple perspectives or interpretations of reality, knowledge construction, context-rich and experience-based activities" are supported via learning environments." (Jonassen, D.,1991). So, they would like to embed the ICT s as a learning tool into their teaching process. Needless to say, taking into consideration both the lack of the required training and the infrastructure the necessary resources and facilities to use the computer as just another teaching tool must be provided in order for the teachers to adopt the dual role of both content developer and coach.

Furthermore, the major benefits of Moodle realized by the teachers so far can be summarized as (Su, C., 2006): (1) A platform to save and achieve teaching material easily; (2) A collaborative online platform for teachers and students to learn together.

As Warschauer and Meskill (2000) averred "the key to successful use of technology in language teaching lies not in hardware or software but in humanware". Rather than promoting the teaching on Moodle's own effectiveness one should take the following factors into consideration with regard to the effective use of Moodle as Su (2006) suggested:

- The online environment must provide complex, culturally relevant, authentic domains within which the learner can "live."

- Online learning should involve social negotiation and mediation.

- Content and skills should be made relevant to the learner.

- Online content and the learners' skills should be understood within the framework of the learner's prior knowledge so that they may be adjusted according to the feedback received from the students.

- Online learners should be assessed formatively, perhaps with self check quizzes, serving to inform future learning experiences.

- Students should be encouraged to become self-regulatory, self-mediated, and self-aware.

- Teachers should act as facilitators of learning, not instructors.

- Teachers should encourage multiple perspectives.

As the rapidly growing interest in Moodle within the e-leaning community especially around the developing world, it would be unwise to ignore its likely impact.

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