VIRTUAL CLASSROOM PARTICIPANTS' VIEWS FOR EFFECTIVE SYNCHRONOUS EDUCATION PROCESS

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ABSTRACT

Virtual classroom (VC) is the preferred application in distance education since it provides simultaneous interaction and a communication environment between the student and the instructor. The aim of this study is to determine the key components which make VC sessions effective in terms of environment and method. Determination of these components and their effects through experiences of VC is important to improve the design and management of VC sessions. In this case study, VC experiences at theology bachelor's completion degree distance education program are examined. Semi-structured interviews were performed with 20 participants (8 instructors, 10 students, 2 technical staff) of this program, which had regular VC sessions. Data were analyzed by using content analysis. This study reveals that VC sessions should be well planned and includes interactive activities in addition to good technical support. The instructional techniques that are of importance for VCs are considered to be active participation of students, summarization of material, attraction of students' attention and high association with real life.

Keywords: Synchronous learning, virtual classroom, distance education

INTRODUCTION

Synchronous learning, in which students and instructors are simultaneously present on the system and have instant communications, has a significant place in the distance education process. The use of synchronous conferencing techniques can offer opportunities for social interaction in a virtual classroom space. VC sessions are mostly preferred in synchronous distance education systems. VC allows students and instructor from different geographic places to have a class by the help of audio-visual communication via video conferencing software. VC offers extensive meeting set-up features, providing both moderators and users with effective options for interaction and learning. These environments also have several interactive characteristics. They allow students and instructors to communicate orally, exchange messages through typing, share PowerPoint presentations, transmit video, surf websites together, and more (Engle & Parent-Stevens, 1999; McBrien, Jones & Cheng, 2009; Yang & Liu, 2007).

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VC environments consist of a number of essential components such as Internet access, audio and video devices and server and client software. However, the system and the required equipment do not guarantee to have the desired learning outcomes of the VC activities. Design of VC activities become effective if issues such as organization, instructional methods and the motivation of the student and the instructor are taken into account. It is important to determine the essential components that have key roles in the design, implementation and evaluation process of VC practices (Clemens, Starke-Meyerring & Duin, 1999; Moore, 1994).

Frequently focused dimensions of VC sessions, in the up-to-date literature related to the effectiveness of VC sessions, are technical support, learning outcomes, method used, interaction, communication, adaptability and motivation (Engle & Parent-Stevens, 1999; Guichon, 2010; Kidd & Stamatakis, 2006; MacIntosh, 2001; Newman, Martin, McGarry & Cashin, 2009; Ng, 2007; Tipton et al., 2011).

In the study of Tipton et al. (2011), appropriate methods and learning outcomes have been investigated. It is concluded that the integration of the system should be simplified in order to make students create positive attitudes towards the system. The effect of the system to learning and motivation was investigated in another study. It was emphasized that interaction, communication, feedback provision and scheduling are important to increase the success of the VC sessions (De Vries, 1996). In the study by Engle & Parent-Stevens (1999), effects of technical problems encountered by students on both the method and learning have been investigated, and general evaluations have been made. In the qualitative studies conducted on the VC sessions; motivation, method, learning, scheduling, interaction and technical issues have been investigated (De Vries, 1996; Guichon, 2010; Ng, 2007; Tipton et al., 2011). On the other hand, in the quantitative studies related to the VC sessions interaction, method, content, success, satisfaction, perception and communication have been generally investigated (Abdous & Yoshimura, 2010; Engle & Parent-Stevens, 1999; Kidd & Stamatakis, 2006; MacIntosh, 2001; Newman et al., 2009; Sims, 2003). A summary of the literature relevant to factors of virtual classroom is presented below in Table: 1.

Table: 1
The factors used at studies about virtual classroom

Author(s)	Factors
De Vries (1996)	interaction, active participation, method, learning strategies
Ng (2007)	supporting, interaction, communication, presentation, active participation, technical issues, material, motivation
Guichon (2010)	scheduling, communication, interaction, material, technical issues, method, presentation, content, pedagogical activity
Tipton et al., 2011	technical support, learning activities, material, pedagogical instruction, method, technical issues, scheduling, interaction, controlling, group cohesiveness, content
Engle & Parent-Stevens, 1999	satisfaction, scheduling, material, content, interactive learning, interaction, method
Kidd & Stamatakis, 2006	interaction, satisfaction, success, perception, lecture content, presentation, learning, student contact
Newman et al., 2009	technical issues, interactive environment, success, communication, perception, learning community
Abdous & Yoshimura, 2010	satisfaction, learning effectiveness, success, learning strategies, interaction, method, learning, learner outcomes

The synchronous VC can be used as primary medium or support activities. The aim of this study is to determine the key components which make VC sessions effective in terms of environment and method.

Determination of these key components would contribute to the improvement of configuration, conduct and evaluation of VC sessions. The employed data were obtained from the experiences of instructors, students and technical staff who are involved in the process of VC sessions. Given the stated aim, this study attempts to identify the essential components and role of teaching methods used in an effective VC sessions.

METHOD

In this case study, experiences of instructors, students, and technical staff in the VC sessions in Theology Bachelor's Completion Distance Education Program, conducted in 2010-2011 academic year by a University from east part of Turkey, is investigated. Students, in this program can access courses and activities via virtual classroom practices, forum discussions, online quizzes and self-learning package, lecture notes and video courses. The program has both synchronous and asynchronous activities.

During the 2010-2011 academic year, 14-week VC sessions were carried out within 12 courses. Each session, with the participation of one or more instructor, took place within approximately an hour.

Usually 40-50 students have been attending these sessions, which were held during evening hours on weekdays. VC software used in sessions has many features such as file, presentation and screen sharing, chat, audio and video conversation, and whiteboard.

By using these features, VC sessions were held by the instructor with the help of technical staff. In the VC environment, instructors lectured related topics by sharing the audio and video materials previously installed on the learning management system. Technical staff finished the necessary preparations prior to the each session. During the sessions, instructors and students were supported in terms of the usage of the software by the technical staff. All sessions were recorded and published with the help of the software as a video for the students who could not attend the VC session or want to watch the lecture again.

The semi-structured interviews were conducted with 20 participants (8 instructors, 10 students, 2 technical staff) selected randomly. The participants took part in VC sessions, which were regularly carried out as part of the mentioned program. The data were analyzed with the content analysis method.

Semi-structured interview carried out at the data collection process. Different forms used for instructors, students and technical staff. These forms include questions to extract ideas about the living experience in VC sessions, expectations on the environment and the requirements for environment issues.

Interviews have been personally held by the researchers 20-25 minutes. Collected data were analyzed by considering research questions, and the code and categorical association have been provided. Explanations related to the categories, which were generated from the result of the analysis, are presented with the participants' declarations.

The aim of this study is to determine the key components of effective VC sessions in terms of environment and instructional method.

The results of the content analysis on the interview data collected from Instructors (I), Students (S) and Technical Staff (T) are presented in this section. The opinions about the properties of the effective VC environment and expressions about teaching methods and activities in VC sessions were analyzed and codes-categories were determined (Figure: 1).
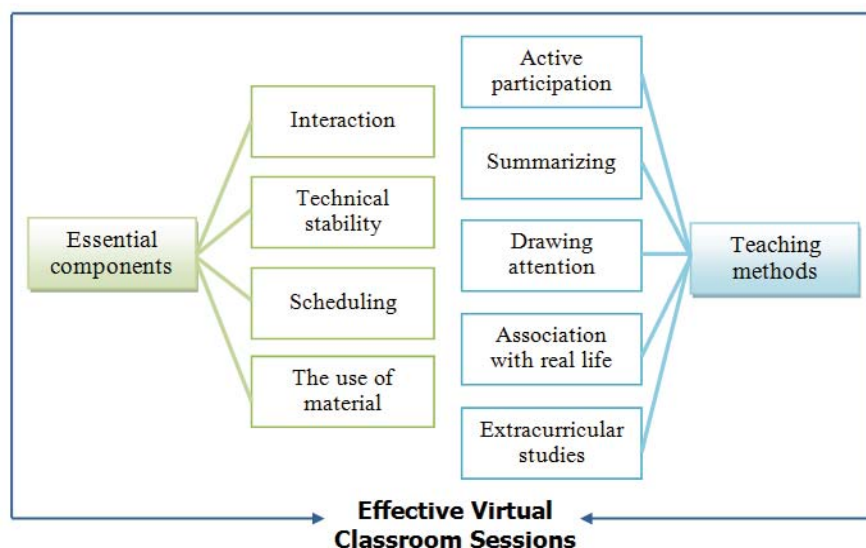

Figure: 1
Effective virtual classroom session

Essential Components of an Effective Virtual Classroom Sessions
The identified categories are interaction, technical stability, scheduling and the use of the material. These categories are presented below, accompanied with sample statements of the participants.

Interaction
The participants stated that "interaction" was one of the most important components of effective VC sessions. Moreover, it was frequently emphasized that the environment should enable students and instructors to use various communication formats. The students generally stated that they found the class boring when the instructor gave a one way lecture. Therefore, teaching methods should encourage the interactions between students and instructors. Two of statements from interviews are given below;

S: ... at least I believe that it is effective to keep contact with teachers in my permanent learning.
I:... in my video lessons student didn't understand what I meant and they asked questions... by answering the questions we may provide better learning to the student.

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Technical Stability

Another issue participants frequently raised is technical stability. They generally mentioned technical problems rather than technical abilities of VC environments. Technical dimension of the VC sessions is very important since the VC sessions are performed on a technology-driven system. Technical difficulties such as Internet access and audio-video transfer problems, and software errors decrease effectiveness of VC sessions.

Participants also frequently mentioned technical facilities, technical support and technical problems in the VC sessions. Moreover, it was declared that technical problems should be swiftly handled in order to raise the effectiveness of VCs. Four sample statements of participants are given below;

> S1: ... constant voice interruption may distract students and instructors...
> S2: I have problems in the noisy sound and video because of data transfer.
> T: ... minimization of the disruption of Internet access may make the courses more effective.
> I: Especially, we had the Internet access problem which troubled us.

Scheduling

Another important point inferred from the view of participants is about time and duration of VC. There are three groups of ideas about scheduling. First one is the participants stated that the VC sessions should be well scheduled. Instructors expressed that the duration of VC sessions is not sufficient. On the other hand students and technical staff stated that they may not keep up with the time of these sessions. Lastly, it is also mentioned that timetable of VC sessions should be scheduled by considering students' convenience.

> S: ... philosophy course should begin at 7 pm, it starts at 6 pm... I need to do a different job in the meantime; I could not set myself according to this time...
> T: When a course session is delayed for 15 minutes, the next course may hinder.
> I: ... more than one session for a week may be better for me...

The Use of the Material

Another issue revealed from the participant's expressions is importance of instructional materials in VC sessions. Moreover formats, contents and publishing time of materials were concerned by participants. Instructors have tendency to use different instructional materials in the VC sessions from those used in the traditional classroom. They also expressed various formats of materials may be supported before and after live lecture. Students not only expressed positive opinions on the matter, but also complained about the insufficiency of the materials. They stated that when the published materials on LMS are used during VC sessions students may get bored. Moreover, participants suggested that materials should be used effectively in VC sessions.

> S_1: ... of course, the repetition of the course is good. We watch them later.
> I: ... video summary were presented... these includes short and summary contents.

S₂: I don't like repeating the text. They give me more permanent and more detailed information which is better. We already have the text, giving more permanent and different information is better than reading.

T:... the students claim that they have already watched the video of the lecture and have already listened to the material. They ask me to not repeat the lecture but solve the problems that they got stuck at.

Participants stated that interactive VC provides permanent learning and facilitates understanding. It was frequently emphasized that technical problems in VC sessions should be immediately overcome. Moreover, the need to plan effectively for VC sessions and to adhere to this plan is also expressed as an important issue. In addition, some participants also stated that the use of different types of teaching materials may increase the effectiveness of the courses.

The Teaching Methods Used in an Effective Virtual Classroom Sessions

The main categories emerged from participants responses. They related to the methods are active participation, summarizing, drawing attention, association with real life and extracurricular studies. These categories are considered in detail below.

Active Participation

The participants specially brought active participation component in the foreground among teaching methods used in the VC sessions. It was expressed that the classes which students participated actively with question-answer method facilitate understanding. Some of the sample declarations of participants are stated below;

I₁: I think that both verbal and written communication with students increase effectiveness of the courses.

I₂:... to be asked encouraging questions and to hear classmates' answers are the important points in terms of active participation.

S: When a student asks a question, I may get the answers to the questions in my mind. Moreover, this may call my attention to a topic that I have never focused on before.

Some of the student-participants stated that the whole class should be conducted through the question-answer method. On the other hand, some preferred that the class include the question-answer method in a certain part of the class rather than all the session.

Additionally, some of the participants expressed that some questions may be irrelevant and this may affect the flow of the class.

I: Students are generally prepared before the course since video, audio and other materials are available before the course. Moreover, they asked me to explain misunderstood topics and answer the related questions.

S: I found it more suitable that the course begin with lectures, followed by a question-answer phase in the last 10 minutes.

My attention may be distracted by a question from a student. This may also lead to disintegration of the topic. So, it may be better if the questions are asked during the last 10 minutes of the course.

Summarizing

Another important aspect in the VC sessions that the participants referred to is "summarizing". Students stated that VC sessions should be designed as short, as concise and as to the point as possible. On the other hand, participants' expectation about VC sessions is to attend new activities that guide their studies, facilitate understanding and enable them to perceive the issue from different perspective. These are some of sample statements about the content of lecture;

> S_1: ...it gives me more detailed and permanent information. Since we already have text, presenting different information and knowledge may be better than reading the text.
> S_2:... giving a summary of a chapter (weekly reading) by expressing important point is more permanent.
> S_3:... synchronous virtual classrooms may sophisticate us in terms of writing commentaries.

Drawing Attention

In some situations, students' attention may be distracted during the VC session. Participants stated that in order to overcome this distraction problem, presentations should be prepared with more interesting and structured manner.

Moreover, instructors expressed that they are aware of this situation, and try to take precautions. In addition, it was also highlighted that irrelevant chatting and technical problems may distract students' attention. Three sample participants' declarations related to attention are stated below;

> T: ... some parts of the course when the students were bored; the teacher was telling an episode or an event.
> I: ... I'm trying to make the course attractive. Rather than standing still, I try to use all my emotions and body language so that students feel that the instructor is trying into teach something.
> S: ... while the teacher is lecturing, some students may ask irrelevant questions by using the chat section. This disrupts the instructor's attention.

Association with Real Life

Association of the content with real life which may support effective learning is the other aspect that participants have mentioned. It was also expressed that when the contents are presented just like in the text, students' interest may be decreased; this may also cause absenteeism. According to the participants' opinions, relation of the class with the real life makes the course meaningful and understandable.

> S_1: ... demonstration is better than telling.
> S_2: ... giving information related to real life is better.

Extracurricular Studies

In participants' opinion, the interaction increased when the students were previously prepared for the class. This also paves the way for an effective learning environment. Because of the time restrictions of the VC sessions, all the related information cannot be presented during the lecture. So, it was stated that being prepared before the class has an important effect on the class efficiency. In addition, it was indicated that the topic presented during the VC session should be repeated afterwards.

Three of statements from the interviews are given below;

S:... reading related chapter before the VC session make it more permanent.
I$_1$: ...I get the students to read the texts before the sessions. This makes the course more effective.
I$_2$: ... Getting the students to do something about the course is important.

Participants stated that in VC sessions the question-answer activities make the courses more effective than traditional lectures. In addition to this, association of the class with the real life may also provide permanent learning. Instructors expressed that in order to provide interactive learning environment, students should be encouraged to study before and after the classes.

CONCLUSIONS AND DISCUSSION

The aim of this study is to determine the key components which make VC sessions effective in terms of environment and method. A limitation of this study is the findings unable to generalize about all live classroom sessions. Another limitation is about that participants' ages 18-30 were from a particular area. Singularity of field (theology) can be considered as another limitation of this study. As the result of this research, key requirements and tips of effective teaching methods for effective implementation of a VC were revealed from the perspectives of instructors, students, and the technical staff who attended real VC sessions. Major issues of VC environments included interaction facilities, technical competencies, scheduling of the session and the contents. Major issues of methods included active participation, summarizing, drawing attention, association with real life and extracurricular studies.

According to findings, the most emphasized feature of VC sessions is interaction. Interaction is a very important component of the distance learning environments and its forms are student-teacher, student-student, student-content, learner-interface forms (Guichon, 2010; Tipton et al., 2011). Particularly the teacher-student interaction comes forward in the case of VC sessions (Schullo, Hibelink, Venable, & Barron; 2007). Findings show that technical problems occurred during VC sessions disturb participants and reduce the efficiency of the class. This finding is parallel with literature (Anderson et. al., 2006; Clemens, Starke-Meyerring & Duin, 1999; Dudding & Justice, 2004; Guichon, 2010; Tipton et al, 2011). Also, students should be provided with technical equipments and technical support so that they use the system with less anxiety and more conveniently. Technical support is important in terms of students' confident use of the system.

Secondly, findings showed the need to effective plan of the VC practices as stated by De Vries (1996). In the scheduling phase; student number, course topics, duration and time of VC session should be considered. VC sessions schedule should be announced to teachers and students before the VC sessions. According to schedule, teachers and students should organize their participation and miscommunication about this issue may have prevented. Scheduling is also critical in order to avoid the problems that may arise.Another main finding is about the course material. Even though VC sessions provide an interaction between instructor and student, like in-class training, course materials should be used before or during the session. Materials are required to be satisfactory, to support students' learning and to contain an outline of the topic (Telles, 2008; Tipton et al., 2011).

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Teachers should express the important point of the course material in VC sessions. Also course materials should be used to provide student participation. This may be attractive and supportive learning for students.

Last major issue about VC sessions in this study is teaching method. Appropriate methods and techniques should be used in VC since methods are strongly related to learners' motivation, success and attitude towards the course.

In order to encourage students' active participation, a variety of methods such as question- answer, discussion, interpretation or small projects can be used according to course objectives. Having an active role in VC sessions allows students to have positive attitude toward learning (Bertsch, Callas, Rubin, Caputo & Ricci, 2007; Ng, 2007; Tipton et al., 2011).

Students prefer to receive precise information and the main points of the subject in live lectures. Synchronous VC sessions can be used to support instruction as secondary activities as well as a primary medium of distance education environment (Yang & Liu, 2007). Preference of summary information in online lectures may be related to that the students had weekly asynchronous materials together with VCs in this study.

Participation and satisfaction levels increase as students' attention is drawn via different techniques in VC sessions. Therefore, methods or activities should be able to attract students' attention.
The methods and techniques used in VC sessions should motivate the student, draw the student's attention and prevent the isolation of the student from the class (Marjanovic, 1999; McAlister, Ravenscroft & Scanlon, 2004; Ng, 2007).

Association of the VC sessions with real life may support effective learning. Also relation of the class with the real life makes the course meaningful and understandable. In the lights of this result, while the scheduling VC sessions, it should be associated with the real life and personal experiences to provide effective learning (Anderson et al.2006).

Students should be previously prepared for VC sessions to increase the interaction. Because of the time restrictions of the VC sessions, all the related information cannot be presented during the lecture. Therefore students should be more engaged with the course contents after and before VC sessions. It is possible that giving homework, providing positive or negative feedback and promoting learners' asynchronous discussions (Guichon, 2010).

As a result of this study, the following recommendations are specifically directed to practitioners and researchers.The design of VC sessions should be considered that both activities and materials of the VC should support learning and the student's perception of being involved in the learning environment. Methods which capture student interest and enable active participation can be used. Continuous technical support should be available to students and instructors before, during and after each session.

Future studies can be conducted to assess the effectiveness and determine key components of the VC sessions and by using quantitative and mixed methods.It can be researched VC sessions, which planned according to presented framework in this study, on students' performance. Moreover, the findings of this research can be used to develop an Instrument for evaluation VC sessions.

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