LEARNER CENTERED EXPERIENCES WITH FLIPPED CLASSROOM AND MOBILE ONLINE WEBINARS IN DISTANCE HIGHER EDUCATION PROGRAM

Lisbeth Amhag
Senior Lecturer, Ph.D. in Pedagogy/e-learning
Faculty of Education and Society
Malmö University, Sweden

ABSTRACT

The aim of this study is to describe and analyse students' learning activities in distance higher education program with online webinars (WEB-based semINAR) by computer, laptop or mobile app for phones and tablets directly face-to-face (F2F) with other students and teachers introduced by "flipped classroom". The data collection consists of qualitative research interviews with students and observations of F2F webinars and parallel chat communications with problem solving, discussing theoretical concepts and literature, and engaging in various collaborative group works, as well as examinations. Theoretically, the study joins the research tradition of sociocultural theories and Computer Supported Collaborative Learning, CSCL, as well the theoretical approach of self-efficacy and Computer Self-Efficacy (CSE) concerned with individuals' media and information literacy. Important conclusions from the results of the learning activities with flipped classroom, online synchronous webinars and chat communications are that these learning activities gives the students more learner-centered experiences and are important for them in order to continue the education and be able to be a part of the reciprocal learning processes, as well as to understand the academic way of reading and writing.

KEYWORDS

Computer-Supported Collaborative Learning; Computer Self-efficacy; Distance Education; Distance Learning; Flipped classroom; Higher Education; Mobile app; Webinar

1. INTRODUCTION

The purpose of this article is to describe and analyse students' learning activities in distance higher education program with online webinars (WEB-based semINAR) by computer, laptop or mobile app for phones and tablets, directly face-to-face (F2F) with other students and teachers introduced by "flipped classroom". The core ide of "the flipped classroom" is to flip the common instructional approach with recorded teacher-created videos with various briefings and interactive instructions that can be accessed at home before the ordinary class learning activities, as in this study before follow-up online webinars F2F. Therefore, the flipped classroom consists of two parts: interactive group learning activities inside the online webinars F2F and direct computer-based individual instruction outside the classroom, which remove the outline lectures from the webinars in order to allow better use of the in-class time during the webinars, as well as help and scaffold the students to be prepared for the learning activities during the in-class time (Bishop & Verleger, 2013; Long et al., 2014). "Class" becomes the room / place of the online webinars at distance to deal with problem solving, discussing theoretical concepts and literature, and engaging in various collaborative group works, as well as examinations. A webinar in this study is defined as mobile online meeting at distance for direct / synchronous discussions F2F, with a predefined aim, during real-time and a specific time period, guidance of a teacher. The potential of online synchronous webinars is that everyone can see and hear each other and at the same time communicate via textual chat. Furthermore, the synchronous online webinars can be recorded for later asynchronous viewing online in the learning management system (LMS) in order to provide students the opportunity to take a step back, reflect, self-assess and compare various contributions. Several activities can be part of the course structure with online synchronous webinars in order to mediate meaning and learning on a higher level. Such activities are:

- Tutoring and scaffolding, as well as peer learning processes;
- Group discussions regarding theoretical concepts, literature, experiences and problem solving, as well as course assignments;
- Receiving and providing peer feedback and self-assessment;
- Collaborate with common notes, documents and whiteboards;
- Sharing screens and software with others;
- Examinations of course assignments and critical peer review.

In this context it is important that research focus is on how new educational techniques can support students learning and collaboration in a more digitalised mobile education, instead of merely focusing on how such new media techniques can make education more effective or detrimental (e.g. Amhag, 20011; 2013; Lee & Salman, 2012; Rockinson-Szapkiw et al., 2013; Sana et al., 2013).

1.1 Previous Research

Recent researches on emergent pedagogy of the flipped classroom in higher education are based on articles and conference proceedings. Bishop and Verleger (2013) provide a comprehensive survey of these prior and ongoing researches of the flipped classroom to avoid considerable amount of buzz in academic circles at all levels. Most of the studies explore student perceptions and work in single-groups, someone is mixed. But the students are overall generally positive. However, there is little research investigating students learning outcomes objectively. A literature review by Roehl et al. (2013) shows that flipped classroom is easy-to-use with readily accessible technology in order to give prepared pre-class time from planned in-class time. This design allows an expanded range of learning activities during class time for active learning and provides opportunities for greater teacher-to-student tutoring, peer-to-peer collaboration and cross-disciplinary engagement.

Likewise, the trial of flipped classroom by Wagner et al. (2013) indicate that flipped classroom materials can offer a unique, yet challenging opportunity for universities to collaborate on maximizing the effectiveness of higher education. Some observations by Wallace (2014) are made regarding evident in the way in which video, text and instruction are balanced both synchronously and asynchronously according to need and practicality. The roles of the teacher and the student, and how these relationships become more complex and complementary in online spaces, are also changing. The essences of flipped classroom, according to Long et al. (2014), show that more opportunities can be provided to the students in the in-class time. The teachers can prepare for their course implementing, both the pre-class phase and the in-class phase, and their own technical literacy, and other available resources and supports. Even the faculty contact could be reduced by two-thirds demonstrate Baepler et al. (2014) if there is an active learning classroom. The students achieved learning outcomes were significantly better, in comparison with traditional classroom. Even the student perceptions of the learning environment were improved. These results suggest pedagogically dialogues and active learning classrooms.

Only a few research studies have examined the impact of online synchronous webinars. For example Nelson´s (2010) study, about the learning outcomes of online synchronous webinar versus classroom instruction among 224 nursing students showed no significance difference between the groups. An online synchronous webinar was just as effective as classroom instruction. Rich´s (2011) investigation, which measured the impact of online synchronous webinar instruction at a National Science Foundation Advanced Technology Center, showed that there was a lack of evidence about the actual outcomes of participation in synchronous webinar. Buxton et al. (2012) research evaluates pharmacists' satisfaction with and reasons for enrolling in a series of continuing education webinars. The online webinars included presentations, lectures, workshops or directly F2F-webinars. The results show both positive satisfaction for the quality of the programming efforts and the method of delivery, but also the lack of continued participation in subsequent webinars. Skype, as another online communication tool, examined by Kiriakidis (2010), contributed level of self-efficacy to school and district administrators'. The result shows that self-efficacy can be increased through opportunities for ongoing, systemic, and systematic discussions with other participants. However, these studies focused on organizing and administrating the education from an individual perspective.

2. THE AIM

The aim of this this research is to describe and analyse if and in what way the learning activity with flipped classroom and synchronous webinars or by computer, laptop or mobile app for phones and tablets would give distance higher education students greater opportunities to participate and learn with other students and teachers. Following questions will be illuminated:

- What experiences and opportunities can the mobile learning activities with flipped classroom and synchronous webinars give distance students as a tool for learning and development?

3. THEORETICAL APPROACH

This research is based on socio-cultural theory in which our understanding of language, communication, culture, and various aspects of the social context for student learning and development is central. Wenger (1998) consider sociocultural theory of learning in terms of *communities of practices* constituted by students´ negotiated engagement and joint enterprise as well as shared repertoire. There is also a question of collective appropriation of tools through language, and how students use language as a tool for learning. The concept of Wenger (1998, p. 5) is divided into four components: 1) *meaning*, as a way of talking about our abilities, individually and collectively, 2) *practice*, as a way of talking about different perspectives that can sustain mutual engagement in action, 3) *community*, as a way of talking about social arrangements and suggesting that our participation is recognizable as a capability, and 4) *identity*, as a way of talking about learning. According to this perspective, people's dialogues, interactions, and interplay constitute a determining factor for the individual's learning and knowledge development. The theoretical approach of self-efficacy is related to Computer Self-Efficacy (CSE), which has been used in research concerned with individuals' intentions to use information technology (IT), as in this study, to use flipped classroom and participate in mobile online synchronous webinars F2F, and the opportunities to challenge different efficacies and make assessments of their ability to apply knowledge, and manage and evaluate the peer learning activities, collectively as individually (Bandura, 2002). Bandura (1984) distinguishes between the component skills in practice through car driving e.g. between driving in freeway traffic and navigating twisting mountain roads. It is comparable with the individual and collective efficacy through flipped classroom and participating in online synchronous webinars F2F or the use of mobile tools as mobile phones and tablets to develop CSE, which can be seen as a level of *media and information literacy*. Methodically, CSE has been used and concretized through Compeau and Higgins (1995) three interrelated dimensions: *magnitude*, *strength*, and *generalizability*. The *magnitude* of CSE can be understood as a reflection of the student's cognitive knowledge processes, based on the abilities to analyze, communicate, manage information, and understand concepts and meta-cognitive skills, such as problem solving, interpreting, reflecting and evaluating. The *strength* of CSE refers to the self-confidence and self-esteem the student has in his or her ability to perform various tasks. *Generalizability* of CSE reflects the degree to which online studies are limited to a specific area of a learning activity, such as *media and information literacy*, and use of different software and computer systems as online synchronous webinars F2F with different mobile tools.

4. METHODOLOGY

This article is based on a study with 22 student teachers (women=16, men=6) participating at half-time study in the first three continuing web-based courses over a eighteen-month period in Vocational Teacher Education Program, VTEP, to become authorized teacher in any of the twelve upper secondary schools vocational programs. This qualitative research design involved an in-depth data collection process and analysis of open-ended interviews and observations of mobile online synchronous webinars F2F. Therefore, the researcher had the opportunity to obtain a deeper inquiry per individual in order to provide possible complete understanding. The interviews and dialogue exchanges during the webinars were transcribed and analyzed by Wengers (1998) four components; *meaning*, *practice, community* and *identity*, complemented by Compeau and Higgins (1995) three interrelated dimensions: *magnitude*, *strength*, and *generalizability*.

4.1 Data Collection

The data collection consists of ten recorded online synchronous webinars F2F, of which five of them were examinations and five of them prepared with flipped classrooms during spring and fall semester 2013. The students could also have parallel textual chat communications during the webinars. All webinars were recorded and made available online in the students learning management system (LMS) after the webinars were ended in order to take a step back, reflect, evaluate and compare own and others contributions. The data collection was after the two courses were ended complemented by semi-structured research interviews with six students about their participations and uses of the flipped classroom and the meanings content and dialogue exchanges during the mobile online synchronous webinars F2F and textual chat communications. Each recorded interview lasted for approximately half an hour and was transcribed verbatim.

4.2 Context and Implementation

The e-meeting system with mobile app for phones and tablets which was used in this study has three interfaces with chat: 1) sharing desktop, program and whiteboard, 2) F2F discussion via webcam and microphone/headset, and 3) collaboration by using whiteboard PowerPoint, pdf-files, pictures and video. The students worked during the web-based courses both individually and group wise with problem-based course assignments with deadlines. They were divided into five groups of four to five students in each. A summary of the design is given in Table 1.

Table 1. Summary of the design with flipped classroom and online webinars in VTEP.

Fall semester 2012 (half-time study)		Course 1 VTEP - Three introductions of online webinars about social relations, conflict management and educational leadership.
Academic year 2013		(half-time study)
Date	Length	Course 2 VTEP - Learning outcome about syllabus, vocational didactics and assessment
02/15/2013	00:27:46	Flipped classroom: Theory of Pedagogy & Didactic, follow-up of course start
02/25/2013	01:16:27	Webinar: Teaching & Education, five groups, drop-in
03/15/2013	00:19:13	Flipped classroom: Theory of Formative assessment
03/21/2013	00:19:51	Flipped classroom: Theory of Assessment & Grading
03/21/2013	01:14:01	Webinar: Assessment & Grading, three groups, 25 min / group
03/25/2013	01:00:59	Webinar: Assessment & Grading, two groups, 30 min / group
05/07/2013	00:55:06	Webinar: Tutoring of the two last course assignments, five groups, drop-in
Date	Length	Course 3 VTEP - Learning outcome about development, learning and special education
09/09/2013	00:28:05	Flipped classroom: Theory of Read & writing disabilities, follow-up course start
10/14/2013	00:47:49	Webinar: Literature of Read & writing disabilities, five groups, drop-in
10/29/2013	01:04:57	Webinar: Examination of Read & writing disabilities, two groups, 32 min / group
10/31/2013	00:46:22	Webinar: Examination of Read & writing disabilities, one group
10/31/2013	00:42:36	Webinar: Examination of Read & writing disabilities, one group
10/31/2013	00:56:22	Webinar: Examination of Read & writing disabilities, one group
12/10/2013	00:34:24	Flipped classroom: Theory of Teaching & Education of vocational students
12/19/2013	00:39:50	Webinar: Tutoring of the last course assignments, five groups, drop-in

5. FINDINGS

Important conclusions from the results of the learning activities with flipped classroom, mobile online synchronous webinars, and chat communications are that the time and space for learning expands. The flipped classroom gave the students more learner-centered experiences when they had the ability to prepare and negotiate new meanings before and during the online webinars by computer, laptop or mobile app for phones and tablets for further learning and collaboration The result shows that the peer learning activities gives the students (N=22) more *meaning* and learner-centered experiences. Also to prevent drop off, as well as to help and scaffold students' peer learning processes to get ideas and define roles in the processes that contribute theoretical refinement and constructive criticism (Amhag, 2011; 2013). The preparations in the flipped classroom lectures, before the follow-up webinars, gave the students more time to managing the

content from the literature. Online webinar is a kind of *community of practice* (Wenger, 1998, p. 226) which involve the whole person in a dynamic interplay of participation and reflections on learning. This is possible when the students directly meet other fellow-students and teachers F2F online and can discuss how they shall deal with literature, theoretical concepts, course assignments and examinations. The *magnitude* of CSE might be gauged in terms of support levels required to be a part of the reciprocal learning processes that take place at distance (Compeau & Higgins, 1995). Moreover, their *strength* of self-confidence and self-esteem to perform various tasks has also developed, as well as to understand the academic way of reading and writing. The *meaning* of meta-cognitive ability is related to a wide range of skills, such as identity, problem solving, interpreting, communicating, reflecting and evaluating (Wenger, 1998). In practicing peer-to-peer collaboration and cross-disciplinary engagement in various professional fields (Roehl et al., 2013), the students can identify their professional *identity,* as well as strengths and weaknesses in own and others work.

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