



Full length article

Exploring the role of e-learning readiness on student satisfaction and motivation in flipped classroom



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ARTICLE INFO

Article history:

Received 27 August 2016

Received in revised form

28 December 2016

Accepted 29 December 2016

Available online 2 January 2017

Keywords:

Flipped classroom

E-learning readiness

Satisfaction

Motivation

ABSTRACT

Decrease in student satisfaction and motivation in flipped classroom (FC) model of instruction is among frequently observed problems. And these problems could reduce the efficiency of FC model. It is believed that the problems related to student satisfaction and motivation in FC model of instruction are related to the e-learning readiness of the students. The purpose of the current study was to explore the impact of the e-learning readiness of the students on student satisfaction and motivation in FC model of instruction. The study was carried out with 236 undergraduate students taking Computing I class taught using FC model of instruction. Data were collected from three self-report instruments: E-learning Readiness Scale (subscales: 'computer self-efficacy', 'internet self-efficacy', 'online communication self-efficacy', 'self-directed learning', 'learner control' and 'motivation towards e-learning'), Satisfaction Scale and Motivated Strategies for Learning Questionnaire. The path analyses with structural equation modelling (SEM) further verified that students' e-learning readiness were related to their satisfaction and motivation while undertaking academic tasks in FC model of instruction. The results of the study indicated that students' e-learning readiness was a significant predictor of their satisfaction and motivation in FC model of instruction. Findings were presented and discussed for future studies and applications.

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1. Introduction

The flipped classroom (FC) model of instruction has become popular in recent years. In an FC environment, students can access to learning contents related to the new topics that they will learn through such materials as lecture videos outside the classroom where they have face-to-face classes. Later, students work on assimilating the new material they learned through such methods as cooperative learning activities in the classroom, project work and group discussions and through videos (Smith, 2015). The objective in this model is to provide online access to learning contents and materials and to help students' in-depth and active learning in the classroom. Studies revealed that active learning strategies increase students' participation in the learning environment and improved learning process and results (Freeman et al., 2014; Yilmaz, 2016). However, the strategies, methods and techniques used within the scope of active learning could consume the time that should be saved for the student in the classroom. In addition to many other benefits, FC model of instruction offers a

solution to this problem as well. Thus, the concept of FC becomes a new fad with the need to reconstruct the learning environments in the light of the technologies advances and around student-centred instructional approached (Yemma, 2015).

However, to get the expected performance from the active learning activities to be carried out in the classroom and to enable student satisfaction and motivation towards these activities, students should attend face-to-face classes at a certain prior knowledge and readiness level and this is one of the hypothesis in ensuring the efficiency of FC model (Hao, 2016a; Wilson, 2013). In addition, students are expected to show a similar motivation and satisfaction in online and in-class activities of the course to ensure the efficiency of the FC model of instruction. Otherwise, this could reduce the efficiency of FC model. Although the results of the research on FC model of instruction indicate that it has certain advantages on learning outcomes, the results also show that it could lead to differentiations in students' learning satisfaction and motivation, it could result in decreases in the satisfaction and motivation of the students contrary to what is expected, that the frequency and their willingness to participate in the activities could decrease in time, that they had concerns about/showed resistance to participating in the activities and this, in turn, could reduce the

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efficiency of FC model of instruction (Gençer, 2015; Grabau, 2015; Hao & Lee, 2016; Herreid & Schiller, 2013; Missildine, Fountain, Summers, & Gosselin, 2013; Öztürk, Karademir, Karaoğlan Yılmaz, & Yılmaz, 2015; Smith, 2015; Strayer, 2007; Wilson, 2013; Yemma, 2015). Researchers state that it is necessary to determine the factors causing to the aforementioned problems in the application of FC model of instruction and take the necessary measures during the design, implementation and evaluation processes of FC model (Chen, Wang, Kinshuk, & Chen, 2014; Chen, Yang, & Hsiao, 2015; Hao, 2016a, Hao, 2016b; Hao & Lee, 2016; Yemma, 2015).

It is believed that one of the factors effecting student motivation and satisfaction in FC model of instruction is the e-learning readiness of the students. Because, successful completion of the online requirements of the course, which is considered as the first step of FC courses, is paramount in ensuring the student satisfaction and motivation in FC model of instruction (Alsancak Sırakaya, 2015; Gençer, 2015; Grabau, 2015; Öztürk et al., 2015; Turan, 2015). For instance, Grabau (2015) states that learners need to have intra-personal skills such as self-efficacy, self-regulation skills, good communication skills, time management skills, teamwork, and goal directed behaviors to some extent and FC courses' online requirements could be completed successfully. Hao (2016a) points that it is important for learners to reach and use online learning sources in order to ensure the effectiveness of FC model. For this, learners' technology self-efficacy, self-directed learning, communication skills need to be developed. Hao (2016b) expresses that the factors such as whether learners have used the online learning sources, the accessibility of off-campus support and learning sources and the reasons for the main goals of learners to use the internet could be decisive on the effectiveness of learners' FC courses. These results indicate that learners need to have some responsibilities, skills and opportunities about especially FC courses' online processes to provide the effectiveness of FC courses. Otherwise, without completing the prerequisites of the course, it will not be possible to significantly participate in active learning activities in the classroom; top utilize these activities effectively and to get the desired results from these activities. Therefore, in FC model of instruction, it is paramount that students fulfil the online prerequisites of the course before coming to the class. And in fulfilling the online prerequisites of the course, it is stated that such factors as computer self-efficacy, internet self-efficacy, online communication self-efficacy, self-directed learning, learner control and motivation towards e-learning could be efficient (Demir, 2015; Hao, 2016a; Hung, Chou, Chen, & Own, 2010; Moftakhari, 2013). Therefore, it is considered that e-learning readiness could also be an important factor in ensuring student satisfaction and motivation in FC model of instruction. The purpose of this study, accordingly, is to discover the impact of e-learning readiness on student satisfaction and motivation in FC model of instruction. When the literature is reviewed, it is seen that there is a need for studies towards identifying factors effecting student satisfaction and motivation in FC model of instruction. So, this study aims to discover the structural relationships between student satisfaction and motivation in FC model of instruction and e-learning readiness and thus, to expand the depth and flow of research on this topic.

2. Theoretical framework

2.1. Flipped learning instruction and E-learning readiness

One of the hypothesis to effectively apply FC model is that students should complete the online requirements of the course and they should come to the class prepared. And the main thing teachers do about the online phase of the class in FC model is to open the contents and materials of the class online for student

access. However, this is not the indicator of the adequacy of the completion of online requirements of the class in FC model. Since students are required to preview materials before coming to a flipped learning class, the ability to regulate one's own learning is crucial for success (Hao, 2016a). In the literature, it is seen that students fail in e-learning because they do not complete e-learning classes and do not follow online classes due to such reasons as not being motivated for e-learning programs and not being able to manage one's own learning process (Karaoğlan Yılmaz & Keser, 2016; Yılmaz & Keser, 2016; Yılmaz, 2014). This case which is true for e-learning environments is believed to be experienced in the online phase of the class in FC model and that, in turn, could negatively affect the face-to-face in-class activities of the course. Hence, researchers indicate that the factors related to e-learning readiness such as learner control and self-directed learning, technology self-efficacy, communication self-efficacy are significant for both online courses and FC courses (Hao, 2016a, 2016b). As for the researchers, students' e-learning readiness is an important indicator in carrying out and completing e-learning classes successfully (Demir, 2015).

According to Kaur and Abas (2004) e-learning readiness is the ability of individuals to utilize e-learning resources and multimedia technologies to improve the quality of learning. When the literature is reviewed, it is seen that the e-learning readiness comprises of computer such elements as self-efficacy, internet self-efficacy, online communication self-efficacy, self-directed learning, learner control and motivation towards e-learning (Demir, 2015; Hao, 2016a; Hung et al., 2010; Rovai, 2003; Yurdugül & Alsancak Sırakaya, 2013). According to Demir (2015), computer self-efficacy as one of these components is defined as the beliefs of computer users about their skills to use basic computer programs. Another component is that internet self-efficacy is defined as the trust of the internet users for internet using skills (Hung et al., 2010). Online communication self-efficacy is defined as the perception towards how much an individual understands the communication language and culture peculiar to e-learning environments and how well an individual can express himself/herself in such environments (Demir, 2015; Yurdugül & Alsancak Sırakaya, 2013). Self-directed learning, another component of e-learning readiness, is defined as a process in which learners take initiative with or without any help from others in finding out learners' learning needs, determining learning objectives, choosing and applying appropriate learning strategies, evaluating learning results (Knowles, 1975). According to Demir (2015), self-directed learning is shortly defined as to see the learning responsibility in himself/herself instead of an external source such as teacher and to take his/her own learning responsibility acting upon that. Shyu and Brown (1992) defined learner control as individual's own learning experience and the level of directing this process in accordance with his/her desire. Motivation towards e-learning, another component of readiness for e-learning, is defined as the desire and refreshment state having physical, cognitive and affective components inside and prompting people to do things for e-learning (Demir, 2015). According to the researchers, these components reveal the readiness conditions of individuals for e-learning (Demir, 2015; Yurdugül & Alsancak Sırakaya, 2013). As for Moftakhari (2013) as long as the e-learning readiness levels of the students is insufficient, the chance to succeed in e-learning is low. Guglielmino and Guglielmino (2003) indicate that pushing individuals, who are not ready for e-learning, to learn online will not only make them experience a negative e-learning experience but also will lead them to have prejudices for e-learning activities in the future. Similarly, Piskurich (2003) states that there are various reasons behind individuals' failure in e-learning environments and often the reason of the failure is that the students are not ready for e-learning.

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