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The Eurasia Proceedings of Educational & Social Sciences (EPESS), 2016

Volume 5, Pages 135-138

ICRES 2016: International Conference on Research in Education and Science

## SELF-REGULATION AND INTERACTIVITY TYPES AS THE PREDICTORS OF LEARNER SATISFACTION WITH FLIPPED COURSES: EVIDENCE FROM A VOCATIONAL COLLEGE

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**Abstract:** Learner satisfaction, which implies learners' positive perceptions of their learning experiences in a particular learning environment, is assumed to be a critical indicator of academic achievement as well as the effectiveness of a method. Flipped courses, receiving a growing interest among contemporary instructional designs, appear to be a promising pedagogical model that entails high learner satisfaction through a variety of features. One is related to learners' self-management of their own learning processes throughout the courses. The other feature is about the way learners interact with their instructors, peers and the content. A lack of appropriate educational technology would lead to limited interactivity and self-regulation, which might in turn decrease learners' satisfaction with the courses. In this study, we assessed the values of self-regulation and interactivity features (the interactivity among learners, between learners and the instructor, and between learners and the course content) as the factors impacting learners' satisfaction with the flipped courses. The participants ( $n=243$ ) were from a two-year vocational college and took the courses Computer Use, Operating Systems, and Computer Programming in a flipped way in the 2015–2016 academic year. The data were collected via an online questionnaire and analyzed through linear regression analyses. The general results of the study revealed that self-regulation, interactivity between learners and the course content and among learners were found to be the significant predictors of learner satisfaction with the flipped courses. On the other hand, the interactivity between learners and the instructor did not appear to effect learners' satisfaction with the flipped courses, which could imply the changing role of instructors in contemporary learning environments. Accordingly, the flipped courses seem to eliminate the traditional role of instructors (being at the center of all interactions) and bring the self-regulation along with the interactivity among learners and with the course content to the front.

**Keywords:** Flipped course, interactivity, self-regulation, satisfaction

### Introduction

As a recently-emerging instructional model, flipped classroom has been receiving increasing attention at all levels of education, particularly in tertiary level settings. As in all other pedagogical models, one important aspect that instructors and educational researchers desire to learn about the flipped classroom is learner satisfaction. Learner satisfaction, which implies learners' positive perceptions of their learning experiences in a particular learning environment, is assumed to be a critical indicator of academic achievement as well as the effectiveness of a particular method or a program. It is widely asserted that learners are likely to perform better in their courses as they become more satisfied (Keller, 1983; Pike, 1993) and learners with a higher level of satisfaction are more persistent in their learning; thus, providing them with more satisfying experiences is expected to improve retention (Koseke & Koseke, 1991).

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- Selection and peer-review under responsibility of the Organizing Committee of the conference

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Flipped courses, receiving a growing interest among contemporary instructional designs, appear to be a promising pedagogical model that entails high learner satisfaction through a variety of features. One is related to learners' self-management of their own learning processes throughout the courses. Flipped courses' flexibility, challenging nature, and learner-centered approach necessitate learners to engage more self-regulatory skills (Artino, 2007; Kuo, Walker, Schroder & Belland, 2014). In a flipped classroom model, learners are supposed to finish learning knowledge through teacher-created videos, extensive notes, or other appropriate sources before class and come to class to be engaged in discussion and interaction with teacher or peers, which facilitates internalization of previously learned knowledge. Learners having a capacity of self-regulation can use this model efficiently, because they are supposed to arrange time and space, watch their all learning process, interpret their own learning outcomes (either curricular or extracurricular), and enhance their flipped classroom engagement through discussion, analysis, synthesis, and problem solution. Compared to traditional classrooms, flipped classrooms are considered to be more student-centered models through which students exercise autonomy and take their own responsibilities, mainly in asynchronous learning environments (Artino, 2008). It is affirmed that there is a paucity of research focusing on how self-regulation is associated with emotional outcomes such as student's satisfaction and attitudes (Artino, 2007; Puziferro, 2008).

The other feature is about the way learners interact with their instructors, peers and the content. Interactivity, as an important element in educational environments, regardless of whether technology is used (Moore & Kearsley, 1996), is continuously specified as a significant predictor of learner satisfaction (Kuo et al., 2014). Traditionally, for communication in classrooms interactivity stands between the instructor and students (Anderson, 2003) and the most identifiable framework of interactivity includes three major aspects: interactivity among learners, between learner and instructor, and learner and course content (Moore, 1989). The interaction between the learner and the instructor represents a two-way communication between course providers and receivers (Moore & Kearsley, 1996). The interactivity between the learner and the content is, on the other hand, a one-way process of detailing and thinking about the subject matter or the course content (Moore, 1989). The interactivity among learners is claimed to be a stronger predictor of learner satisfaction than the interactivity between the learner and the instructor (Jung, Choi, Lim, & Leem, 2002). An influential use of technology with an appropriate pedagogy might enhance interactivity between learners and instructors or course content in online environments, because interactive group processes are supported by online learning environments (Jain, 2011). In flipped courses, formal class time is allocated to learners' undertaking collaborative and interactive activities related to the material covered by learners outside of formal class time. Such interactivity lets learners to connect new information and pre-existing knowledge, and then through analysis or integration create new meaning (Juwah, 2006).

A lack of appropriate educational technology would lead to limited interactivity and self-regulation, which might in turn decrease learners' satisfaction with the courses. In this study, the values of self-regulation and interactivity features (the interactivity among learners, between learners and the instructor, and between learners and the course content) as the factors impacting learners' satisfaction with the flipped courses were assessed. Moore and Kearsley's (1996) interactivity types and self-regulation that impact student satisfaction, are included in the framework of the study.

## Methods

Constructed as a correlational research model, this study was conducted as during the 2015–2016 academic year at a post-secondary vocational college located in Balıkesir, Turkey. The participants consisted of 243 students enrolled in the following flipped courses: *Computer Use* ( $n=114$ ); *Operating Systems* ( $n=30$ ); and *Computer Programming* ( $n=99$ ). In each course, all the course materials including video-recorded lectures, lecture notes, projects, electronic exams and web-based assignments were accessible over a learning management system named '*Course Portal*.' Each course lasted for a 15-week semester. Before the class time, the participants were supposed to go through the content of each week's materials, read lecture notes, and watch videos. On a weekly basis, the participants had the opportunity to attend face-to-face interactive sessions in computer laboratories to meet their peers and the instructor and share their work on course projects. At the end of semester, the participants were provided with an online questionnaire including 25 items and five subscales: three interactivity types, self-regulation, and learner satisfaction. Each item was recorded in a five-point *Likert-type* scale ranging from 5 (coded as *Strongly Agree*) to 1 (coded as *Strongly Disagree*). In this scale, a higher score means more favorable orientations towards flipped courses. The data were collected via an online questionnaire and analyzed by means of SPSS 22.0 software through linear regression analyses with the purpose of determining the predictors of learner satisfaction in three flipped courses.

## Results and Findings

Internal consistency of the sub-scales was tested through Cronbach's alpha. Table 1 displays the alpha values along with the mean values and standard deviations of each sub-scale. According to descriptive results, the average level of learner satisfaction was measured as 3.74, which could imply that the participants were adequately satisfied with the flipped courses offered to them. Although the mean values of the sub-scales tended to be fairly close to each other, interactivity between learners and the instructor had the highest mean score ( $M=3.93$ ). The lowest mean score, on the other hand, was of interactivity between learners and the course content ( $M=3.61$ ).

Table 1. Descriptive results of scale

| Subscales  | N   | Items | M    | SD   | Cronbach Alpha |
|--|-----|-------|------|------|----------------|
| Interactivity between/among learners                 | 243 | 5     | 3.75 | .90  | .816           |
| Interactivity between learner and the course content | 243 | 5     | 3.61 | .99  | .811           |
| Interactivity between learner and the instructor     | 243 | 5     | 3.93 | .84  | .895           |
| Self-regulated learning                              | 243 | 6     | 3.74 | .81  | .809           |
| Learner satisfaction                                 | 243 | 4     | 3.74 | 1.01 | .870           |

The linear regression analysis, which was run to test interactivity types and self-regulation as the predictors of learner satisfaction with flipped courses, indicated significant results only for three variables: self-regulation, interactivity between learners and the course content and among learners,  $R^2 = .613$ ,  $F(4, 238)=94.408$ ,  $p<.001$ . These findings could mean that self-regulation, interactivity between learners and the course content and among learners were significant predictors of learner satisfaction with the flipped courses. On the other hand, the interactivity between learners and the instructor did not appear to effect learners' satisfaction with the flipped courses.

Table 2. Regression results predicting satisfaction from interactivity types, self-regulation

| Variable   | B    | SE   | $\beta$ | t stat |
|--|------|------|---------|--------|
| Interactivity between/among learners                 | .302 | .063 | .268    | 4.812  |
| Interactivity between learner and the course content | .439 | .067 | .429    | 6.532  |
| Interactivity between learner and the instructor     | .059 | .068 | .049    | .865   |
| Self-regulated learning                              | .185 | .084 | .148    | 2.213  |

## Conclusion

The findings put forward that the strongest predictor of learner satisfaction with flipped courses was the interactivity between learners and the course content. This underlines the significance of the features of the model as well as the richness of the resources and materials within the Course Portal. Self-regulation was also found to be a significant predictor, which indicates the crucial role of learner autonomy and self-management in flipped classrooms. Additionally, the interactivity between and among learners was also a significant predictor as opposed to the interactivity between learners and the instructor. This was a parallel finding with some studies claiming that the interactivity between and among learners is a stronger predictor of learner satisfaction than the interactivity between the learner and the instructor (Jung et al., 2002). All those points could imply the changing role of instructors in contemporary learning environments. Accordingly, the flipped courses seem to eliminate the traditional role of instructors (being at the center of all interactions) and bring the self-regulation along with the interactivity among learners and with the course content to the front.

## Recommendations

The very basic attempt in designing flipped courses should be enriching the course content to appeal to learners' engagement and selecting the most appropriate delivery technologies. The design should enhance optimum accessibility as well as adequate interaction among learners and with the course content. Providing learners with necessary spaces to empower their self-regulation and autonomy would be an inevitable part of flipped classrooms.

## References

- Anderson, T. (2003). *Modes of interaction in distance education: Recent developments and research questions*. In M. G. Moore, & W. G. Anderson (Eds.), *Handbook of distance education* (pp. 129–144). Mahwah, NJ: Erlbaum.
- Artino, A.R. (2007). Online military training: Using a social cognitive view of motivation and self-regulation to understand students' satisfaction, perceived learning, and choice. *Quarterly Review of Distance Education*, 8(3), 191–202.
- Artino, A.R. (2008). Promoting academic motivation and self-regulation: Practical guidelines for online instructors. *TechTrends*, 52(3), 37–45.
- Jain, P. J. (2011). Interactions among online learners: A quantitative interdisciplinary study. *Education*, 131(3), 538–544.
- Jung, I., Choi, S., Lim, C., & Leem, J. (2002). Effects of different types of interaction on learning achievement, satisfaction and participation in web-based instruction. *Innovations in Education & Teaching International*, 39(2), 153–162.
- Juwah, C. (Ed.). (2006). *Interactions in online learning: Implications for theory and practice*. New York, NY: Routledge.
- Keller, J. M. (1983). *Motivational design of instruction*. In C. Reigeluth (Ed.), *Instructional design theories and models: An overview of their current status* (pp. 386–434). Hillsdale, NJ: Erlbaum.
- Koseke, G. F., & Koseke, R. D. (1991). Student burnout as a mediator of the stress–outcome relationship. *Research in Higher Education*, 32(4), 415–431.
- Kuo, Y. C., Walker, A., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education*, 20, 35–50.
- Moore, M. G. (1989). Three types of interactions. *The American Journal of Distance Education*, 3(2), 1–6.
- Moore, M. G., & Kearsley, G. (1996). *Distance education: A systems view*. New York, NY: Wadsworth.
- Pike, G. R. (1993). The relationship between perceived learning and satisfaction with college: An alternative view. *Research in Higher Education*, 34(1), 23–40.
- Puzziferro, M. (2008). Online technologies self-efficacy and self-regulated learning as predictors of final grade and satisfaction in college-level online courses. *American Journal of Distance Education*, 22(2), 72–89.