Investigating the impact of Flipped Classroom on students’ learning experiences: A Self-Determination Theory approach

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Abstract: Blended learning environments supported by the Flipped Classroom Model (FCM) have been repeatedly investigated in both research and practice contexts, primarily in terms of their capacity to foster students’ cognitive learning outcomes and overall motivation for the learning process. However, despite the significant body of existing works studying these aspects, there are still very scarce insights regarding the potential reasons for this impact of FCM on students, from the perspective of how this model affects students’ internal satisfaction dispositions and fulfills their various ‘needs’ for sustaining their motivation. Therefore, by adopting Self-Determination Theory as a theoretical framework to model these student ‘needs’, this work aims to address this identified issue and investigate, in an exploratory manner, the impact of FCM-enhanced blended learning environments not only on students’ cognitive learning outcomes, but more importantly on their internal dispositions (level of satisfaction) and ‘needs’ for competence, autonomy and relatedness. The work builds on educational data and evidence from three different implementations of FCM in action research studies across diverse K-12 subject domains, and reports on a consistent pattern of positive findings regarding the capacity of FCM-enhanced blended learning environments to improve the aforementioned aspects of students’ learning outcomes and experiences, with a particular added value for low-performing students.

Keywords: Flipped Classroom; Self-Determination Theory; Learning Outcomes; Learning Satisfaction; Autonomy; Competence; Relatedness; Action Research

1. Introduction

Blended learning environments supported by the Flipped Classroom Model (FCM) have been the subject of increased attention in both research and practice (O’Flaherty & Phillips, 2015; Lo & Hew, 2017). The FCM has been studied primarily as a means to enhance the teaching and learning process and optimize the exploitation of teaching time in face-to-face school sessions, by replacing teachers’ lecture with more (collaborative) hands-on activities and individual scaffolding (Bergmann & Sams, 2012).

This standpoint of the FCM, and its potential benefits for the teaching and learning process, have been investigated by a significant body of research, across different subject domains and educational levels (Bishop & Verleger, 2013; Giannakos et al., 2014; Lo & Hew, 2017). More specifically, the clear majority of this pool of evidence argues that FCM can indeed deliver diverse benefits, spanning from helping teachers improve the teaching and learning conditions for their students (e.g., Kostaris et al., 2017; Aidinopoulou & Sampson, 2017), and also enhancing students’ cognitive learning outcomes (e.g., Kong, 2014), skill development (e.g., Tanner & Scott, 2015) as well as overall motivation (Baekler et al., 2014; Sahin, 2015).

Despite this evidence base, however, a shortcoming of existing works is that they have focused on investigating the impact of FCM on particular aspects of students’ learning, primarily cognitive learning outcomes and overall motivation (Lo & Hew, 2017). The standpoint of this paper is that there is another dimension to be investigated, which has not yet received equal research attention. More specifically, even though the impact of FCM-enhanced blended environments on students’ cognitive learning outcomes and overall motivation has been repeatedly investigated, there are still very scarce insights regarding the potential underlying reasons for this impact. In particular, there is still limited understanding regarding how FCM-enhanced blended learning environments can affect students’ internal dispositions (i.e., level of satisfaction) and also fulfill their motivational ‘needs’ for engaging in the learning process, which can ultimately lead to the recurrently observed improvements in performance and overall motivation (Abeysekera & Dawson, 2015). According to the prominent Self-Determination Theory (Ryan & Deci, 2000), these ‘needs’ relate to the need for autonomy, relatedness and competence, and have been repeatedly utilized as the means to study the underlying factors of students’ performance and activity in the learning process (Guay et al., 2008).

This additional layer of insights on the impact of FCM is worthy to be investigated since it has the potential to facilitate practitioners and researchers identify not only whether FCM can be used to attain better experiences and outcomes in ‘standalone’ interventions (e.g., a single course) but also whether and how it may drive more systematic improvements on students’ dispositions and fulfillment of internal ‘needs’ towards the learning process, leading to more replicable and sustained improvements.

This work aims to address this issue and investigate the impact of FCM-enhanced blended learning environments on students’ cognitive learning outcomes, as well as students’ satisfaction and self-determination for their learning. The contribution of this paper is to present initial findings derived from three different implementations of FCM in action research studies across diverse subject domains (i.e., Math, ICT and Humanities). Initial insights from some of the studies used in this paper have been reported in prior works (Katsa et al., 2016; Kostaris et al., 2017), primarily relating to the impact of FCM on students’ cognitive learning outcomes. This paper extends the findings of these prior works and enriches the existing understanding of the potential of FCM from a different and novel perspective. The remainder of the paper is structured as
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