Inverted Learning Environments with Technology, Innovation and Flexibility: Student Experiences and Meanings

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ABSTRACT

Flexibility, technology and innovation can lead to challenging learning environments. The research question: What are students’ meanings and experiences in inverted learning environments? The investigation methodology was mixed with three instruments applied to 568 students. Flexible environments, active learning and inverted learning were analyzed. Qualitative and quantitative data were triangulated with instruments, data and theory. The results indicated that (1) university students of flexible environments modified their schedules and learning locations; (2) active learning is related to students’ meanings, and; (3) inverted learning experiences confirm that they find a source of learning not only in the teacher figure but also in their peers. Students mentioned learning from videos (77%) has the advantage of flexibility as well as technical problems (34%) as a disadvantage.

KEYWORDS

Active Learning, Flexible Learning, Innovation, Inverted Learning, Learning Environment, Technologies

INTRODUCTION: FLEXIBLE LEARNING ENVIRONMENTS

When searching for options that generate transcendent learning, “inverted learning” should be considered. It shifts the teacher’s role away from “dictating” information to passive students towards centering students’ interests and teacher’s instructions on non-classroom environments featuring active participation. The time that these activities require leaves the course content, which is usually in video format, outside of the classroom in order to allow time for practical activities and meaningful interactions between students and the teacher in the classroom.

The learning environments are transformed into flexible spaces that can be located within or outside the institution. From this perspective, institutional surroundings such as the cafeteria, library, halls, or gardens can be conducive to learning; homes can also become venues for students to learn new materials. Students can choose which spaces to learn in and manage their own learning processes and rhythms.

The possibility to invert space and time generates student experiences that are different from those they were accustomed to in their previous academic experience. This leads to questions such as: What does inversion mean to the students? What formative experiences do they have? Can we say that inverted classrooms generate inverted learning? Can teaching strategies also be inverted in these environments? Is active learning promoted in flexible environments? What do students think about inverting their time and space? This article addresses these themes from the perspective of university students who have been experiencing flexible environments and inverted classrooms since 2013.

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FRAMEWORK AND NATURE OF THE PROBLEM

The study was developed in a college that wishes to generate 21st century competencies in its students. Based on this vision, in 2013, the institution underwent substantial changes involving its internal organization, processes, structure, and learning methodologies.

When talking about learning environments, we do not refer only to a classroom where learning is promoted. A “learning environment” is a combination of many elements: material (such as architecture and equipment), cultural and social (promoting interaction, communication, and teamwork), time (includes planning and learning moments), and academic (also known as the syllabus) (Woolfolk, 2006). Ramírez (2015) mentions that there are many elements in learning environments that may or may not contribute to flexible learning environments.

The classrooms (Figure 1) were equipped with flexible technology and furniture that allow mobility and a change in organization. These changes allow students to interact with peers and teachers, which allows them the physical flexibility needed to apply teamwork strategies.

In the library, traditional areas intended for individual and silent work gave way to other spaces in which the furniture was flexible, encouraging teamwork in academic activities and interactions in “freer” spaces (Figure 2).

Spaces that foster “creative ideas” were also generated. Students and teachers can be “in class” while generating projects outside the traditional classroom (Figure 3). These spaces are freely accessible, and students can choose their own times and functions.

In these flexible learning environments (as shown and mentioned previously), the modifications were not only made to the infrastructure; the learning styles also changed. One of the changes that occurred alongside the inverted classroom strategies was that inverted learning was fostered. The inverted classroom is associated with assigning students to revise content outside the classroom in order to use class time for other types of nontraditional activities such as active learning, providing greater flexibility to the students’ learning process.

These changes towards flexible learning styles motivated the investigators to examine students’ opinions regarding the implications of the changes. The current study thus asks the following question: What meanings and experiences do university students have regarding flexible environments for inverted learning?

Figure 1. Classrooms with flexible furniture
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