

## Chapter 33

# A Flipped Classroom Design for Preservice Teacher Training in Assessment

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### ABSTRACT

*This chapter presents a strategy for designing a flipped classroom model (Khan, 2011) for the training of future teachers in a university context. This model was designed by a group of university professors with complementary expertise in didactics, learning assessment, and Information and Communication Technologies (ICT) for education. This chapter describes their collective procedure, as well as the chosen design. The approach is based on an instructional systems design method called Méthode d'Ingénierie des Systèmes d'Apprentissage (MISA) (Paquette, 2004). The authors use this framework to describe the different stages of the design process while paying particular attention to the challenges posed by a hybrid model of training in higher education.*

### INTRODUCTION

For several years now, thanks to the Khan Academy (Khan, 2011), the flipped classroom is a teaching model used in many primary and secondary schools. Teachers see an opportunity to take advantage of technologies (video in particular) that allow students to access concepts and knowledge that are presented by their teacher in the setting of their choice in a personal and timely manner that is adapted to their needs and no longer re-

stricted to school hours. This ensures that students become responsible for listening and watching these presentations in conditions that are likely more conducive to learning (as they are chosen by the students themselves) and that allow them to listen as many times as they feel the need. More important still, this approach ensures that class time usually required for theoretical presentations by the teacher, during which students are often mostly passive and unresponsive, can now be used to place students in active learning situations and

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to free up the teacher so that he or she can play the valuable roles of pedagogical mediator and coach (Jonnaert & Vanderborght, 2009).

In Quebec, this pedagogical model is being tested in some schools ([innovationseducation.org](http://innovationseducation.org), 2013) but is still very marginal in universities, in particular at the University of Sherbrooke where the experiment we present here takes place. During a course in learning assessment and evaluation, which is mandatory for a Bachelor in Secondary Education where we teach, we realized that the flipped classroom model would be highly suitable to support complex learning concepts and skills related to rubric-referenced assessment.

In this chapter, we begin by presenting the context and background of the project. This includes a description of the practical dimension of professional development for preservice teachers in Quebec, the course in learning assessment and evaluation and the bachelor's program of which this course is a part. Secondly, we describe the theoretical framework supporting our thought process and the development of the project. This includes two important models: the Scholarship of Teaching and Learning model (SoTL) (Kreber, 2002) and the Technological Pedagogical and Content Knowledge model (TPaCK) (Mishra & Koehler, 2006). Thirdly, we describe the collaborative design and implementation process of our flipped classroom project as it relates to the method called *Méthode d'Ingénierie des Systèmes d'Apprentissage* (MISA) (Paquette, 2004). This method identifies four complementary design axes that led us to implement our project and to prepare it for testing with students. Fourthly, taking into account these four different axes, we describe the flipped classroom training environment created for preservice teachers, as well as the different kinds of resources established. Finally, we conclude with an analysis of the collective design process to determine the strengths and weaknesses of the chosen strategy, as well as its relevance in the context of collaborative design. We also include a quick overview of the next steps of the project.

## BACKGROUND

The project discussed in this chapter has been initiated at the University of Sherbrooke, a francophone university located in the province of Quebec (eastern Canada). The target students for the flipped classroom are future teachers enrolled in a Bachelor in Secondary Education program, and more particularly those students enrolled in the course in learning assessment.

### Bachelor in Secondary Education

The Bachelor in Secondary Education at the University of Sherbrooke<sup>1</sup> is a professional program accredited by the Quebec Ministry of Education, Recreation and Sports (MERS). Upon completion of the program, students receive a teaching certificate that authorizes them to teach in any secondary school in Quebec.

Like all teacher education programs in Quebec, this is a four-year curriculum that consists of a total of 120 credits. In this particular program, these credits are distributed as follows: 24 credits in education, 63 credits in specific disciplines and didactics (some of these courses are taken in partner faculties in conjunction with students pursuing bachelor degrees in these particular disciplines), 21 internship credits including a cyberfolio, and 12 credits for the reflective process, which includes an essay. Five distinct pathways are offered: Mathematics, Science and Technology, French, Social Studies (History, Geography and Citizenship Education), and English as a Second Language (ESL).

### The Practical Dimension of Professional Training for Preservice Teachers

The training of future secondary school teachers involves an initial two-credit course in learning evaluation. When offered in a university context, this training has both theoretical and practical di-

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