

Investigating the Effects of Training and Techno-Pedagogical Support

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Abstract

This communication presents a quantitative-qualitative research conducted among 225 teachers and teaching assistants who have benefited from the education technologies training program provided by our eCampus department at IFRES (University of Liege, Belgium) since 2011. The data collected are used to a) describe and characterize the public who attended these training sessions, b) identify the types of training programs chosen by the attendees, and c) to explore the influence of those sessions on the techno-pedagogical development of teachers. That effect is manifested by a change of mental representations or by "acting out" in terms of integrating technology into teaching practices.

1. Introduction

The Institute for Training and Research in Higher Education (IFRES) was established in January 2005 by the University of Liege. Various missions related to higher education have been entrusted to him. Among these tasks "to facilitate the integration of ICT (Information and Communication) and eLearning in education: developing the virtual campus of the University."

This mission is especially implemented by the eCampus team. This includes being responsible for trainings in educational technologies that are included in the annual training catalog IFRES available to teachers at ULg. Our training program is described below :



Figure 1: eCampus training program

One of the objectives of our eCampus department is to train and support teachers in integrating ICT into their practice (see also the expression "technology-enhanced learning"). This process of gradual integration of technology is intended to serve a teaching / learning quality.

To think this integration, eCampus uses the TPACK model for its high level of generality.

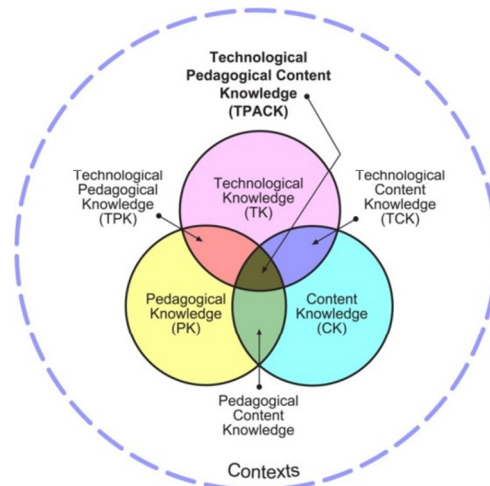


Figure 2: TPACK framework (Koehler&Mishra, 2009)

The model consists of three main components of the knowledge of the teacher: "Content (CK), Pedagogy (PK), and Technology (TK). There is no dominant component in the model and interactions between the various components are as important as the components themselves. They are represented in the diagram by the intersection areas ("Technological Pedagogical Knowledge - TPK, Technological Content Knowledge - TCK, Pedagogical Content Knowledge - PCK"). The intersection of all these sets is the TPACK. (Koehler & Mishra, 2009, p.69).

At the center of the model lies "Technological Pedagogical Content Knowledge" It represents the emergence of new forms of reflections, insights and practical lessons in the head stock. It is the result of the interaction between the aforementioned components. Among them, the eCampus training program intend to act specifically on:

- Technological Pedagogical Knowledge: facilitating awareness of the "TPK" zone, highlighting educational gains in technology and confronting it with the "pedagogical beliefs of teachers" (Ertmer, 2005, PP 36-37), training wish to perceive and understand the value and meaning of the integration of eLearning into their professional practice;
- Technological Knowledge: strengthening the sense of technological control for educational activities, placing its very practical use through scripted activities (Clark, 2005 Depover, Karsenti, Komi, 2007, p.5). Technological knowledge area training (see Figure 2) wishes to contribute to the demystification of practical technologies and enhance their ownership by teachers.

Based on teacher's professional experiences, training strive to serve as a trigger for them to integrate effectively eLearning in their educational practices. Determine to what extent they succeed is, next to a better understanding of public training, one of the aims of this research.

2. Our research question

"How do you characterize the public that is attending the eCampus training program and which subjective or tangible effects are they producing in terms of ICT integration in teaching practice?"

3. Methodology

3.1. Population

This study is based on 225 people who attended 62 sessions during the last two academic years.

The categorization of the population attending the training sessions is made from the registration data retrieved from the database of enrollment. The same data used to objectively measure changes in enrollment and the number of unique participants in these sessions.

3.2. Declarative effects

The preferred source of data to address this issue is in training reports. Any assistant / lecturer compelled to attend training must write a reflexive report right at the end of his training program. Among the reports made available by IFRES, 56 were written by teachers having attended at least one training eCampus since the 2011-2012 academic year and 44 were containing mention of eCampus.

The analysis of these reports uses a deductive coding. This methodology is characterized by the use of an a priori coding scheme supported on prior research, a theoretical framework or experience. In the case of this research, the coding instrument streamlines insights fed by numerous interactions with participants in training.

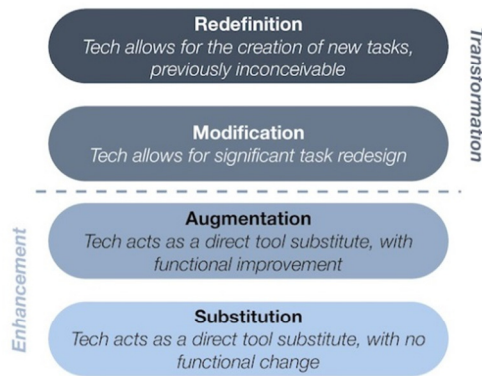
These suggested benefits in terms of "Awareness" (value-added technologies for education), of "Intention" (implementation of a technology-enhanced learning) and "Operationalization" (in the implementation of technological tools such as those handled during training). That led to the establishment of a rubric "CInOpTIC (Awareness, Intention and Operationalization in the integration of Information Technology and Communication in the teaching practice).

The coding of these comments according to three categories defined above was made by two people (concordance rate: 83%). Comments coded differently by the two coders were discussed between them.

3.3. Observed effects

In an attempt to overcome an assessment based solely on self-reported intents or action knowing about the limits of this type of evaluation (Veenman, 2011), the study focuses on two possible impacts of our training : availability of eLearning course space opened by teachers and requests for techno-pedagogical support.

Two types of supports were distinguished: on one side the "short time" support that involves small claims "Helping hand" and are realized through one or even two meetings. On the other hand, the "long time" support that requires a larger investment. The study extends the exploration to describe the results of those support actions. For this, the SAMR model ("Substitution Modification Augmentation and Redefinition") offered by Puentedura (2009) was preferred. Based upon the accompanying sheets written on the occasion of these supports, each project has been positioned on this scale.



Podcasts on iTunes U: <http://tinyurl.com/aswemayteach>

Figure 3: SAMR model (Puentedura, 2009)

4. Main results

4.1. Public attending our training session

4.1.1. Evolution

Enrolment evolution for eCampus training sessions (2011 -> 2013)

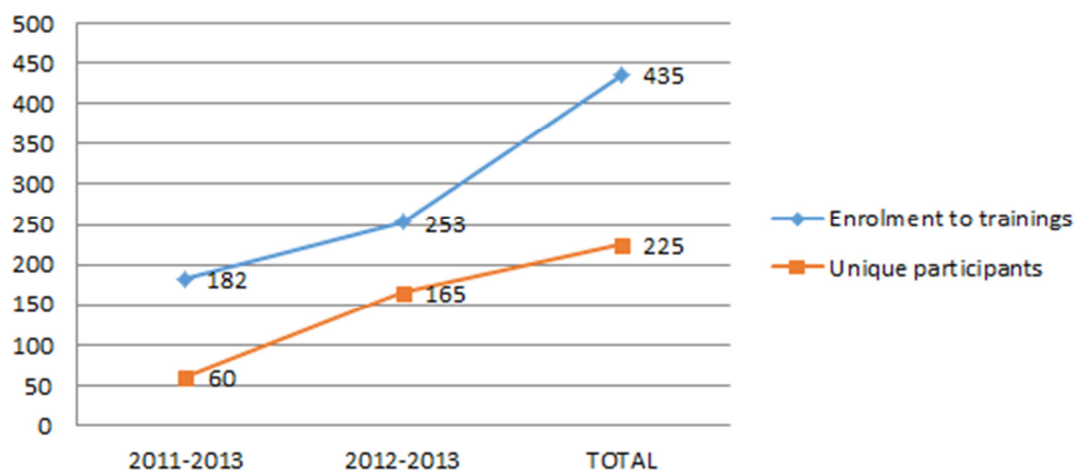


Figure 4: Level of enrolment for eCampus training

A significant increase in enrollment resulting in 253 entries identified and 165 unique participants is measured for this year. The attendees' faculty of origin is largely in "hard science" field although there are increases for all faculties. The number of women (110) and men (115) are equitably distributed and grow in the same proportion.

4.1.2. Distribution of enrolment

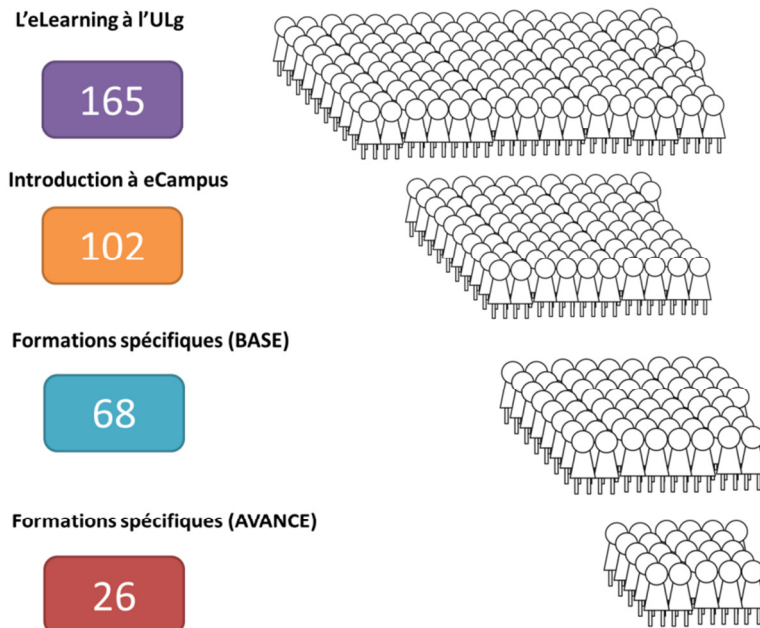


Figure 5

165 enrollments were measured for the "eLearning at ULg" session compared to 102 enrollments in the "Introduction to eCampus" session. Regarding specific trainings, there are 68 enrollments distributed among the three basic sessions (content creation, evaluation and communication). Specific advanced sessions on the other hand attracted 26 persons.

4.1.3. Main training path chosen by attendees

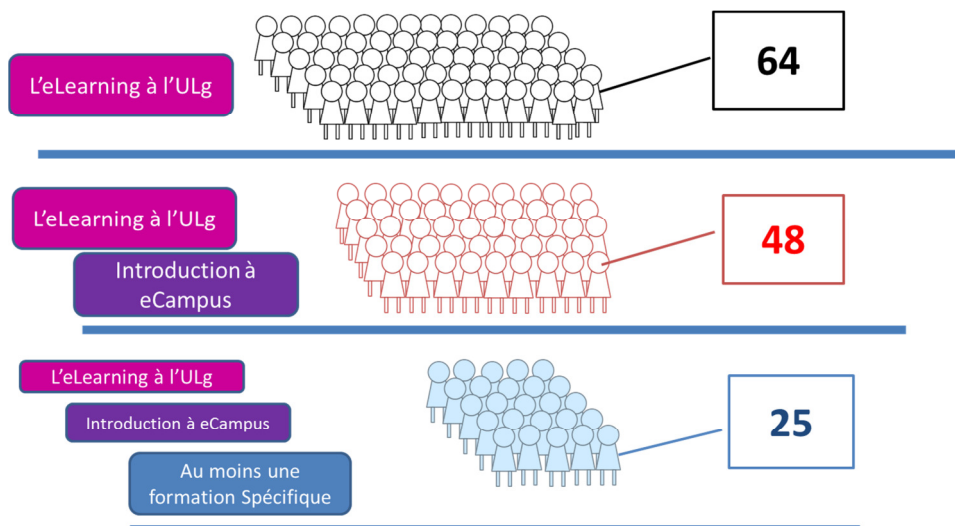


Figure 6

From the 225 people having at least attended one training, 64 only attended "eLearning at ULg", 48 teachers have chosen to attend a combination of this training with "Introduction à eCampus" session. Finally 25 attendees have followed a training path that includes the two trainings mentioned above and at least one specific basic session.

4.2. Declarative effects

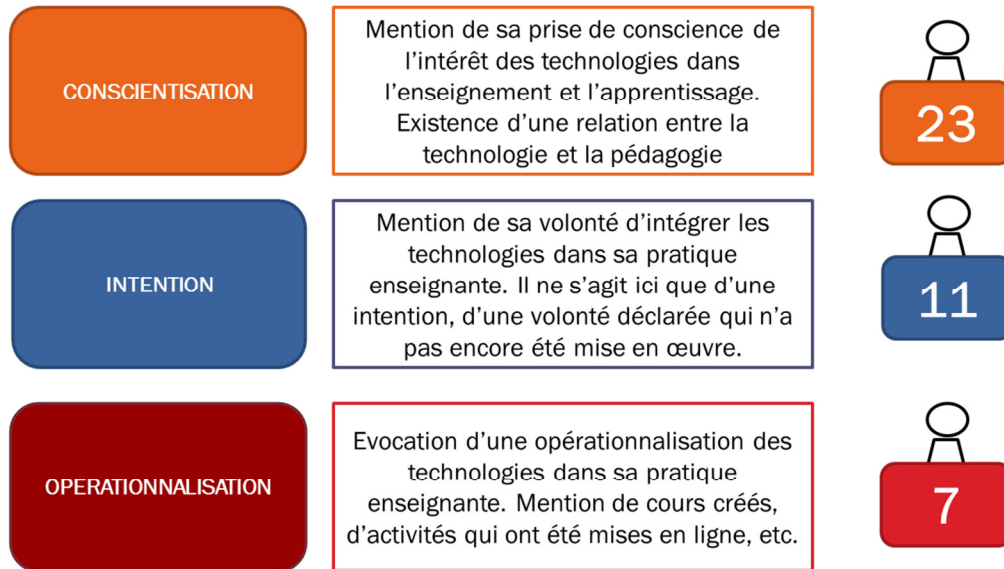


Figure 7

Analysis of the reflexive reports written by the attendees with the CINOPTIC rubric shows that 23 participants (56%) clearly mention an awareness of the interest to the integration of ICT. 11 participants (27%) are clearly stating intention to integrate ICT into their practice by describing the activities they wish to implement. Finally, seven participants (17%) report that they have systems already implemented for students that are now available on eCampus.

4.3. Observed effects

4.3.1. Implementation of eLearning activities through eCampus

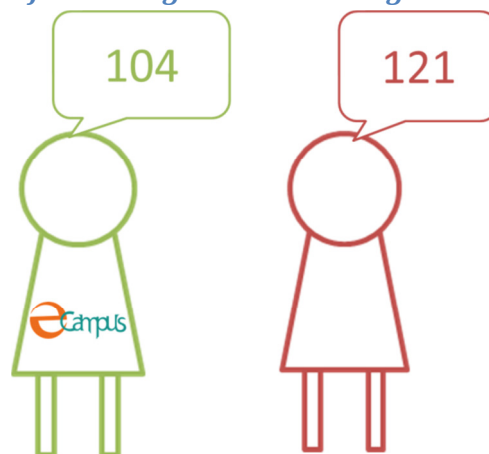


Figure 8

We observed that 104 attendees opened an access to an eCampus course space to their students.

4.3.2. Description of activities developed by teachers after a request of support

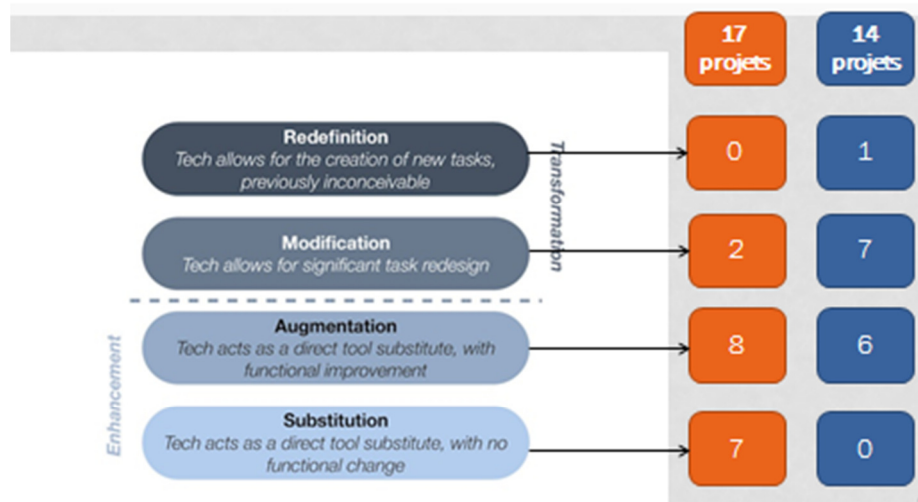


Figure 9

We classified the projects and situated them on the SAMR model. The numbers in orange describes the projects resulting from short term support. The one in blue cases represent the number of projects resulting from “long-term” support provided by the eCampus department. The figure above also tends to demonstrate that the more a project is supported, the more it has chance to produce a high quality activity for students.

5. Discussions

The discussions and perspectives of regulation will be presented during our Online Educa session.

6. References

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