

ICT IN PRE-SERVICE TEACHER TRAINING: UN EXPLORATORY STUDY

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Pre-service teacher training (PTT) is one of the points where questions about school life inevitably converge. Teacher profile required by each educational system, according to the context and specific characteristics of each society, should be based on pre-service training. This is the way pre-service teacher training is approached here. On the one hand, this work attempts to reflect on the importance of PTT in the construction of a *teaching profession* integrated in what is known as the "technological society". On the other hand, this work aims to analyse how they use the formal knowledge of technology acquired in higher education institutions during their work as teacher trainees. As part of this exploratory study with probationary teachers, various techniques of data collection were used, including interviews and questionnaires. They were based on a review of available literature and an analysis of relevant legislation, allowing the authors to assess probationary teachers' ICT skills and identify how they had been acquired. Their use of ICT resources, their motives in using them and their perceptions of the suitability of ICT to teaching and learning were also studied. The results reveal the state of ICT implementation in pre-service teacher training at state universities in Lisbon, and subsequently how future secondary teachers use ICT at school, during their probationary year.

1 Introduction

Pre-service Teacher Training is a point where inevitably converge the issues related with school life. On it should be lay the foundations for building the teachers' profile necessary to each Educational System.

It's in that sense this research approach the pre-service teacher training. We aim, on one side, to consider carefully the building of the teacher's career integrated in the so called "Learning Society" [1] and in the other hand, to analyse the connection between the formal technological knowledge acquired by teachers in higher education and the beginning of teacher's activity [2]. We also examine the role of ICT in teacher training and the importance attributed to them by teachers in their professional development and educational practices. It's nowadays well documented [3, 4, 5] that teachers training is an essential condition to effective use of ICT in schools and classrooms.

It's an exploratory study, conducted with a sample of 223 trainees, which frequent Higher Education and achieved is probation year in Lisbon urban secondary schools in the year of 2002-2003.

The data was collected by means of semi structured interviews and a questionnaire.

The data analysis identifies the places and institutions where the future teachers had acquired ICT's skills and knowledge and the use they made of them at school. He also reveals what trainees think about the use of ICT in educational practice and the feelings they have about it.

2 Methods

This research was developed in three interconnected moments:

1. Analysis of literature and formal regulations of pre-service teachers training
2. Construction, validation and application of data collection instruments: interviews and questionnaire
3. Data analysis and interpretation

We used a descriptive methodology [6] also called survey research [7], which combined data collection techniques, both qualitative (interviews) and quantitative (questionnaire). The goal was to study the social representations about ICT educational practices of the subjects under research. The population was the total number of teacher education trainees in the Lisbon region (501 individuals). We obtained 223 valid responses (return rate of 44.5%).

The interviews were conducted with a sample (8 individuals) select from de population of the trainees of the earlier year. Its objectives were:

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- a) to accede to the deep perceptions [8], its to say, to understand the meanings that subjects gives to the object of study (the role of ICT in teaching and learning) and the way they conceptualized this domain
- b) To be a source to construct meaningful items to the questionnaire.

The questionnaire validation was conducted in two moments:

- a) Before its application, by means inter agreement codifiers (8 experts) with 90% of agreement
- b) After the application, by means of factorial analysis - 6 factors emerged, that confirmed the 6 initial categories, and add new factors related to technical equipment present in schools - and the Cronbach's alpha [9] of the total instrument was 0.84.

The final version of the questionnaire had 53 items.

3 Main Results

The results interpretation was based in the categories that emerged by content analyses [10] of the interviews and the factors that emerged of factorial analyses of the questionnaire (that confirmed the initial categories). We only selected the main results of this analysis.

a. ICT knowledge acquired in pre-service teacher training

The majority of the 223 trainees didn't learn how to use ICT.

- ✓ 177 didn't know how to use videos
- ✓ 144 didn't learn databases
- ✓ 112 didn't know how to made transparencies
- ✓ 123 and 101 didn't learn how to use spreadsheets and word processor, respectively.

Less than 50% learned how to use transparencies and word processor.

b. ICT application in probationary works

Trainees had little contact with ICT during pre-service teacher training, even so schools ask and expect they use new technologies. That's what said:

- 78 of the 91 Sciences students
- 42 of the 51 Sports students
- 34 of the 81 Humanities students.

c. ICT application in classroom

- The most used technology is the traditional Overhead Projector - 98 of the 223 trainees use it frequently.
 - The least used technology is the computer - 10 of the 223 trainees use it frequently.
- The majority of trainees don't use ICT in classroom activities but they expect students make use of them. They reproduce the model of teaching they had during their pre-service teacher training.
- Only 3 of the 223 trainees use PowerPoint and 13 use educational software.
 - But 72 of the 233 expected their students use ICT in school works.

d. ICT adjustment to teaching and learning processes

Even so trainees don't use ICT in classroom; they think technologies have advantages to student's motivation and learning.

- ✓ 106 believe that the computer motivate students to academic subjects
- ✓ 64 think that web pages enhance learning.
- ✓ 49 believe that OHP motivate students
- ✓ 33 think that video projections enhances learning

4 Discussion

The results of this research make clear that:

There is a desajustment between trainees believes about ICT and the use they made of them in classroom activities

The Overhead Projector is the most used technology in classroom and the computer the least one

The fewer skills acquired by trainees during pre-service teacher training are desajust to the needs of the new teachers

Trainees feel the need to learn to construct didactics materials with technological resources

Trainees feel the need to develop skills to analyse and chose educational software adapted to their academic subjects.

These results also show that pre-service teacher training doesn't developed ICT skills and that the personal use they made of them hasn't effects in their pedagogical practices with students. We know that school life have constraints that personal use doesn't have, like classroom management and management of curricular activities [4].

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