

# **Information and Communication Technology AND THE INITIAL TRAINING of TEACHERS: A NEW ANALYSIS OF EDUCATIONAL PRACTICE**

**Maceió - AL - April 2012**

Guilmer Brito Silva - Federal University of Alagoas - guilmerbs@gmail.com

Cleide Jane Araújo Costa de Sá - Federal University of Alagoas -  
cleidejanesa@gmail.com

**Category:C:**

**Education Sector 3**

**Classification of Areas of Research in Distance Education  
Macro: D / Meso: I / Micro: M**

**Type:A:**

**Class 2**

## **ABSTRACT**

*The use of information technology and communication (ICT) to support teaching and learning has increased in recent years, providing effective contributions to education, face to face or distance. Therefore, in order to educators are able to use ICT in their pedagogical actions, they must acquire a set of basic skills and thus the initial training of teachers during their degrees becomes a potentially significant place for acquiring them. Initial training should enable the student to interact with ICT, so that you can integrate them into their future teaching practice. A survey was conducted in a course offered in the Language Bachelor's at the Federal University of Alagoas (UFAL) in 2011. The approach of the study is quantitative and qualitative, and procedures were used for collaborative research. The study aimed to ascertain the impact and perception*

*of students about the inclusion of ICT in the disciplines of teacher education. Thus, the research investigated the impacts that brought this discipline to students. The results indicate that the course presented students with the pedagogical possibilities that ICTs offer, as well as moments of reflection about the praxis integrated with operational issues, of the technological resources in building knowledge.*

**Keywords: ICT, teacher training, higher education.**

## 1. INTRODUCTION

The higher education institutions (HEI) and are becoming increasingly incorporating into their physical environments in their teaching and technological resources. For this reason, teacher education can not be far from changes in education, through the incorporation of information and communication technologies (ICT), since they must be prepared for this new situation, and consequently to use ICT in his practice.

According to <sup>[8]</sup>:

(...) when we observe the traditional pedagogical practice, in general, we found that this practice is inconsistent with the reality of the new dynamics of the knowledge society, and has satisfactorily met the new educational demands, thus it is necessary to undertake reformulations in the forms of teaching, learning and producing knowledge, stimulating new areas of knowledge in higher education institutions, and developing methodologies compatible with the new features of digital communication.

In this new scenario, several initiatives are being taken, such as providing resources for the Ministry of Education (MEC) for the purchase of equipment and teacher training projects for higher education institutions (HEIs) to promote closer ties between teachers and students through technology and innovate teaching and learning. HEIs have also invested in training programs, and encouraged teachers and students for use of 20% of the time courses of the distance, and in undergraduate programs is increasing, more and more discussion about what would be the best way to incorporate ICT into the <sup>[3]</sup>curriculum.

According to <sup>[2]</sup>, prospective teachers often come out of training courses with a lack of theoretical and practical technological knowledge, and confronted, immediately, to a generation of students that is inserted into a technological universe, the so-called "digital generation". This generation, in spite of being born immersed in the universe of digital technologies, need to develop a critical view of the issues and consequences of this new information society.

According to <sup>[9]</sup>, preparation for teaching the use of new technologies suggests more than provide knowledge about computers. It also implies a process of learning to create conditions for the appropriation of concepts, skills

and attitudes that make sense in that the contents have discussed relationship with educational objectives and the social, cultural and professional students. In other words, one should create conditions so that the teacher knows how to contextualize the learning and experience during their training in their reality of the classroom, aligning the needs of their students and the educational goals that seeks to achieve.

Thus, we understand that the information and communication technologies must be incorporated into a course of pedagogical training of teachers as a structural element of the dynamics of the various disciplines that constitute the course.

## **2. ICT AND THE INITIAL TEACHER TRAINING**

According to <sup>[5]</sup>we know that ICT is essential for new thinking and produce knowledge. Therefore, these resources are only to be added in the process of teaching and learning because it is not enough to support the teachers in technology, but try to incorporate the technical knowledge to pedagogical knowledge, where the two must go together. And for that to happen, it becomes necessary for educators to combine the curricular content and technological resources in situations organized and consistent, building meaningful learning. Therefore, the technologies must be designed and used to enrich the work of teachers.

Thus, the incorporation of ICT into the curriculum of teacher training aims to prepare professionals autonomous, reflective and able to adapt their teaching strategies.

Can not think of education nowadays without discussing structural changes in the way of building knowledge through technological mediation in teaching. In <sup>[7]</sup>appropriate technological resources at our disposal may allow construction of a different educational practice and quality. However, this will only be possible after changes in initial teacher training and in their pedagogical action, evaluating the traditional forms of learning and adapting them to social needs, cultural, political and economic society today.

## **3. COURSE METHODOLOGY**

This survey was conducted in a course offered in the Bachelor's Federal University of Alagoas (UFAL) in 2011. The research approach is quantitative and qualitative, and procedures were used for collaborative research, based in [4] and [6].

The data was collected through observations and questionnaires *online*. The study aimed to ascertain the impact and perception of students about the inclusion of ICT in the disciplines of teacher education. Thus, it was investigated by means of observations in the virtual learning environment in the classroom and questionnaires, *online* the impacts that brought this discipline to students.

Discipline was accompanied elective "Technology and Teaching Portuguese Language", offered in the degree course in Arts in half of 2011.2, and of which there were 24 students enrolled. The menu of course points to a reflection on the social practices built from the use of ICT and its implications for teaching and learning Portuguese. According to Professor lecturer, the preparation of the menu was based on the use of ICT and educational performance, designed not only for technical use of virtual environments and the various technological resources available, but mainly to allow discussion on the thoughtful use of these

resources. discipline was structured as follows on the platform:

MODULE 1 - Knowing the environment and the course.

Module 2 - Analyzing cultural objects.

MODULE 3 - producing learning objects.

Module 4 - Learning to produce a sound.

MODULE 5 - Learning to produce a video .

was discussed during the course Virtual Learning Environment (VLE) as a teaching aid for classroom courses, exploring and knowing the features of

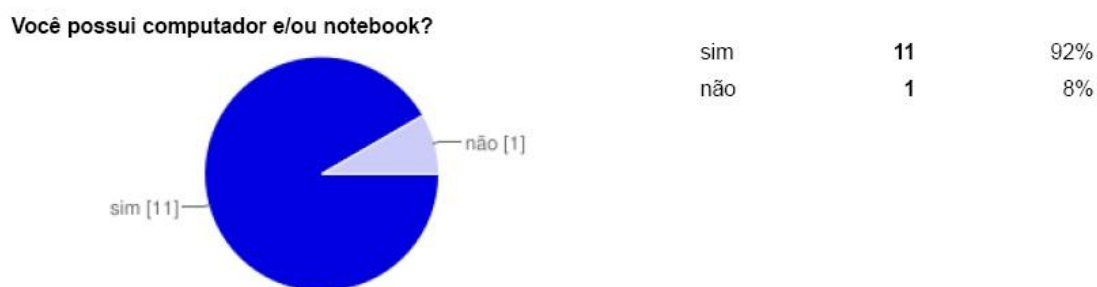
Moodle and analyze potential teaching tools. In another module, dealt with the use of media in the classroom, looking at issues related to the various audio and audiovisual materials accessible to teachers in higher education for the realization of its educational work.

Were also presented innovative ways to use ICT in educational activities, discussing their use of teaching and analyzing the influence of these resources in learning and teaching practice. Among the tools and resources seen, the students knew the software Audacity (audio editing) to create an audio file to use it in the classroom and virtual learning environment, was also presented the software Camtasia (creating video class) for the production and use of audiovisual media in educational activities. Each module has in its proposal: to read texts, supplementary materials and activities, with indications for consultation and research on the Internet through Web sites and videos. There are also forums, for discussion of themes, glossary, for the presentation of unfamiliar terms and expressions, and the calendar, with details of deadlines for delivery of activities. Multimedia resources were used to assemble the discipline, such as images and videos, as well as various *links*. Internet

#### **4. DATA ANALYSIS**

There were 24 students initially enrolled in the discipline, and 18 who participated in the lessons and activities of the discipline, and of these, 12 completed the questionnaire *online*.

Through Graphs 1 and 2, one can trace the technological profile of group.



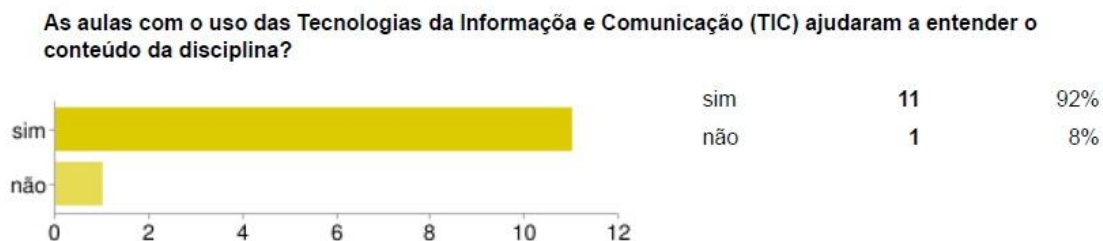
**Chart 1.** students access to computers.



**Figure 2.** students access to the internet.

By analyzing the profile of this group of students, in which 100% have accessed the internet and just did not have a computer, it appears that the inclusion ICT in subjects occurs naturally for them, although some teachers fear present in the use of ICT for various reasons such as lack of control, insecurity, among others. In practice, it is clear that students do not have these difficulties, even not knowing the tools and software to be used.

One of the questions raised was about the impact of ICT in the teaching-learning process. You can see in Chart 3 below that the students can infer the benefits of using ICT in the classroom. In the statements made by students, the student reported that *"The use of some features easier to understand, for example, use of videos and audios about certain content, it attracted attention and stimulated learning."*



**Figure 3.** Importance of ICT in understanding the subject content.

Using ICT to offer only the students different ways of presenting content may not be sufficient to ensure the student's motivation and a better understanding of the content. According to <sup>[1]</sup>, you must create an environment conducive to meaningful learning to the student, which triggers a willingness to learn, providing relevant information in an organized and at the appropriate time. B The student said that

*the use of ICT enhanced the teaching-learning process, because as a student of this discipline my interaction was higher than in other subjects in the Course of Literature. Moreover, the exchange of information and experiences through discussions in the forums become more meaningful learning. (Testimony student B)*

Another question asked students was on the use of ICT in other subjects of the course (Figure 4).



**Figure 4.** Importance of ICT in the subjects of the course.

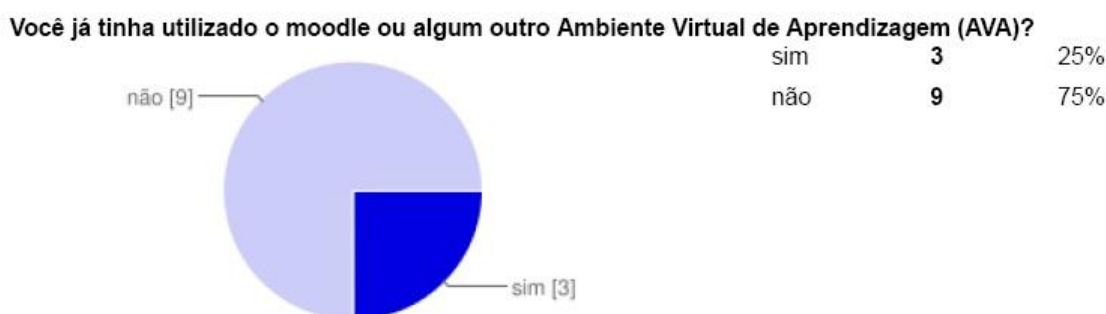
It is interesting to note that all future teachers used the media proposals and therefore had the field of tools and know the possibilities for developing new strategies. The best technology will not have the expected effect if students



do not feel comfortable and realize its importance. Just as a teacher who does not understand the changes in the acquisition of knowledge caused by technology can not appropriate the benefits. This is evident in the testimony of student C:

*The production of material was great news to me. I believe that teachers have a tendency to judge that technology in the classroom is only the sound and video, but no. We can go far beyond the games, the interaction was the most interesting. And there is the possibility of students not necessarily be present in the classroom to perform actions for a particular activity. Finally, other possibilities are possible and I think that is what it is: it's simple, we just need to be a little too curious and make students curious and thoughtful. (Testimony student C)*

About AVA used in the discipline, it can be seen in Figure 5 that most students, despite not knowing the Moodle had no problems in using the platform. Well, was not detected any great difficulty by the students surveyed in using Moodle and adapt to the proposed discipline.



**Chart 5.** Knowledge of students on the Moodle platform.

According to the report of teacher lecturer, the main problems and obstacles encountered for the development of the discipline were: access to the Internet in the classroom and the limited availability of laboratories in the institution. Moreover, in his opinion, there is a need to have more training and skills specific to the integration of ICT in the teaching.

Students recognize the importance of the theme for their training and consider this is an area that deserves to be explored . After all, what the technology can be incorporated in the educational process, it is necessary to

understand the constitutive features of this new medium, its potential and limitations on forms of interaction and meaning construction.

*ICT is the object of study of this discipline and was fundamental importance to have direct contact with them. For learn their roles in education, particularly in the area in which we also learn to use them in order to provide our students with classes more dynamic and playful. (Testimony student D)*

In reviewing the testimony of students, we found that some of them see that the experience with the technologies is the possibility of learning new knowledge and also recognize its use as a teaching aids for teaching. It is understood that, when discussing the possible uses of ICT, teacher training courses can help the teacher can insert themselves in the school.

Based on these observations, so that future teachers can take ownership of these technologies and make creative use of meaningful and reflective of them, the institution must offer the student the theoretical basis and practical about it.

## **5.FINAL**

Abid to bring the students from undergraduate to know and apply various technological resources and media encouraged to rethink their future practices in the classroom. The discipline provided to future teachers the opportunity to discuss and reflect on how best to use these resources in the classroom in order to promote

learning. Reflection held during the course led student teachers to have a new look their lesson planning, with respect to the use of technological tools. In this perspective, it was found that the course was relevant to students, because the actions to identify, reflect and reevaluate the use of ICT in practice provided students with significant learning moments.

Finally, it was found that the integration of technology into the curriculum is all important and necessary. This use must be implicit in the practice of the teacher and their pedagogical, to make his classes a good time, discussion and knowledge construction.

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