

ICT IN THE ASSESSMENT OF LEARNING: A CASE STUDY WITH TEACHERS FROM THE ELEMENTARY AND SECONDARY EDUCATION

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Abstract

The society of information recognize the important role of education in the comprehension of complex, dynamic and changing contexts [1] and in the constant (re)construction of knowledge and how to act within a conditions of uncertainty, instability, unpredictability and ambiguity that characterize today's society [2]. This recognition has led many authors to recommend new educational frameworks, which also integrate new perspectives/conceptions for teaching and assessment. The crucial role of Information and Communication Technologies (ICT) in the assessment of learning involving teachers and students in an innovative way is a factor to take into account. Being a process to be used in a systematic and rigorous way, the ICT enables the integration of teaching and learning strategies that lead to the notion of assessment as an element inherent in the educational process [3], [4].

In this sense, a qualitative research was developed in order to understand how a group of science teachers in elementary and secondary school use the ICT in the assessment process of students' learning. The results show that the teachers interviewed don't use ICT in the assessment of learning despite of the recognition of the potential that ICT may bring to the evaluation process. This makes clear the need to invest in a teacher training where the use of ICT provides teachers with innovative educational media. Through its collaborative exploration we look for a development of pedagogical materials that help teachers to monitor students' learning.

Keywords: ICT, Assessment of learning.

1 INTRODUCTION

The Society of Information recognize the crucial role of education in (i) the understanding of complex, dynamic and changing contexts [1] and (ii) the constant reconstruction of specific knowledge and the know how to act according these conditions of today's society [2]. This recognition lead many authors to recommend new educational framework, which are also connect with news perspectives of teaching and assessment.

The current approach of assessment for learning according to current assumptions of Educational Science presents the assessment learning integrated in the strategies of teaching and learning process and, consequently, an element inherent to education process. [5] calls this authentic assessment.

With an approach of assessment for learning more formative than summative [6], a contribution to the educational quality, doing a better assessment and not more assessment, is the aim sought [3].

In this sense, is crucial to (re)think the assessment for learning process not only in terms of products obtained but also in terms of processes. Thus, the decisive role of ICT in the assessment learning process, involving teachers and students in an innovative way, is a factor that should be taken into account, being a process to be used in a systematic and rigorous way.

Based on these ideas, a qualitative research was developed with the main purpose to understand how the teachers of Science in Basic and Secondary School use the ICT in the learning assessment process.

In this article, we will discuss the development of the research, presenting:

1. A brief framework about the role of ICT in the learning assessment process according current educational perspectives;
2. The methodological questions and the design of the study that guided the research and;

3. The analysis of the results obtained and a reflection about it according the framework presented.

2 THE ROLE OF ICT IN THE LEARNING ASSESSMENT PROCESS

In this information age, the integration of ICT in a progressive way is a current concern of educative and scientific community. These technologies have potentialities to different levels as recognized by Tardif [7] when he says that new technologies allow making learnings more significant as a result of the increase of skills to solve problems and use metacognitive strategies by students.

Recent studies show the important role of ICT in the learning assessment and collaborative work between students and teachers.

From the perspective of teachers, the collaborative exploration (co-design) of the ICT offers new educational supports, promoting the development of material capable to monitor the students' learning [4]. The ICT in the learning assessment process can help teachers to manage their teaching activities, allowing (i) the improvement of the students' performance and (ii) a greater monitoring of productivity [8].

From the perspective of the students, the use of ICT in the learning assessment process can bring new opportunities for learning, allowing student to reflect about their development and learning process (self-evaluation). In other hand, and based on external interventions (from the teacher), the use of ICT can promote a pro-active attitude that allow students to advance in their learning process [4]. In addition, it is recognized the relevance of the group work when students work together and collaboratively. The group work allows a wide learning which not only students develop new knowledge, but also new skills such as (i) interpersonal skills when interact each others, (ii) intrapersonal skills when they reflect and mobilize what they learn in interaction with others and (iii) other skills related to the exchange of knowledge and experiences. Develop projects that promote the use of computer become the educational proposal more attractive, creative and effective, namely when the audience is young and challenging.

3 THE DESIGN OF THE STUDY

In order to understand how Science teachers of Basic and Secondary School use the ICT in the learning assessment process, a qualitative research with a design of multiple case study was developed [9,10].

At the first moment, we selected the multiple cases study. In this sense, we selected five cases study taking into account that it will be important to have Science teachers with students from the Basic and Secondary levels and with relevant professional experience. At the end of the selection process, the five cases studies were constituted by one teacher of Chemistry and four of Biology. Of these, one had students from the Basic Education and four from the Secondary. All the teachers had more than ten years of service and had already taught in Basic and Secondary Education.

The second moment consisted in the selection of procedures to collect and analyze data in order to achieve the aim of the research. In this sense, the main technique selected to collect data was the interviews because these allow us to access the perspectives of teachers about the use of ICT in learning assessment process and the description of learning assessment practices implemented by teachers. During this research moment, we constructed and validate with other researchers a semi-structure interview guide [11]. Then, and with the support of the interview guide validated, we did the interviews in a space and date selected by the teachers asking for authorization to record the interviews and ensuring the anonymity.

Taking into account the concern to triangulate the data collected [12,13], we selected the documental analysis, proceeding mainly to the analysis of teachers plans.

Regarding the analysis of data collected, we defined six categories of analysis: potentialities, disadvantages, functionalities, resources, training and other. The results obtained will be presented in next section.

4 PRESENTATION AND DISCUSSION OF RESULTS OBTAINED

A global and integrated analysis of the results obtained shows that teachers interviewed do not use ICT in the learning assessment process but, reflecting on that, they considerer that this phenomenon

(the integration of ICT in the learning assessment process) has potentialities and, in a less expressive way, some disadvantages too.

Then, we will present the results obtained according the categories of analysis defined.

Regarding the potentialities of use the ICT in the learning assessment process, the teachers interviewed mentioned the important facilitator role of the ICT (i) in the construction of instruments to collect data about student's learning and, consequently, (ii) in the organization, treatment and storage stage of data collected.

The ICT, when integrated in the learning assessment process can also allow an easier access from the student to pedagogical material provided by teacher. Furthermore, this integration can motivate the students for learning and promote a more effective communication between students and teachers, namely in a faster and immediate process to answer the students' questions. According the teachers interviewed, these aspects can serve as an incentive to the student, providing more interest about the subjects approached. In addition, the teachers interviewed also mentioned the advantages of ICT when used with students with special needs.

Others potentialities mentioned by teachers interviewed are related to:

- The environment issued, because the use of ICT would reduce the paper used in the students' learning assessment process;
- The management of time because the relation between ICT and learning assessment would provide a greater economy and efficiency in the time spent with student's learning assessment process;
- The development of skills by students, namely regarding to write and technologies.

Connected with these advantages, the teachers interviewed also mentioned the functionalities of using ICT in the learning assessment process. Thus, regarding the functionalities of using ICT in this context, the teachers interviewed indicate mainly (i) the exchange of information between teachers and students, (ii) answering questions of students in a more immediate and timely way and (iii) the delivery and storage of students' work, creating a data base with all information.

To use of the ICT in the learning assessment process, the teachers need to have and know the resources available. The teachers interviewed refer that they know the function and dynamic of some learning platforms, which in some cases these have already used in the school (e.g. moodle), the use of e-mail and the construction of sites and/or blogs by students.

Although, and despite the expressive advantages and functionalities that teachers refer that it is inherent of using ICT in the learning process, they also mentioned some disadvantages. Thus, and concerning the disadvantages of using ICT in the learning assessment process, the teachers interviewed highlighted (i) the possible lack of accessibility to ICT for some students outside the school context, (ii) the possible lack of training of some students in ICT, including the management of learning platforms such as moodle or drupal and (iii) a possible impatience of students to the slowness of equipment with access to ICT, which can cause loss of interest in subjects.

Regarding the last dimension of analysis – ICT training – the teachers interviewed indicate different perspectives. On one hand, some teachers refer that they do not have any training in order to give support of the use of ICT in the learning assessment process. But, on the other hand, there are two teachers that refer that they have some training obtained during the degree or by themselves.

5 FINAL CONCLUSION

The results obtained during the research that we presented in this article show that the teachers interviewed do not use the ICT in the learning assessment process. Despite of this, the same results put in evidence that teachers (i) have awareness about the advantages and functionalities of the use of ICT in the learning assessment process and (ii) have some knowledge about the resources that can be use in this context. However, the lack of time and training seems to be the main reason to not use the ICT during the learning assessment process, being in the teachers interviewed perspectives the advantages more expressive than disadvantages.

The results obtained also corroborate the results of other studies where is evident (i) the relation between learning assessment and technologies tools and (ii) the relevance of developing researchers focuses on the co-design of instruments that allow to assess students' learning using the ICT [4, 7].

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