



ANSWERING BOLOGNA'S CHALLENGE: HOW AUTHENTIC ASSESSMENT STRATEGIES CAN BE USED TO PROMOTE COMPETENCY BASED EDUCATION IN AN ONLINE COURSE

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Summary

The Bologna Process challenged Higher Education to promote learning environments that go beyond objectives based instruction to a new paradigm centered developing competencies. This new scenario calls for authentic assessment strategies that will allow learners to attain deeper levels of knowledge and develop professionally development skills and thinking processes (Gulikers et al 2008), more relevant to their professional practicum. To attain this goal, we developed a Competency Assessment Program (Baartman et al 2007) for an online Masters course in "eLearning Pedagogies" where the main objective was to further the students understanding about "how to learn", particularly when learning is mediated through technology.

This study was conducted with 37 master students enrolled in an online course. Here, we have focused on the group project work where the students, working in small groups developed a project linked to their professional practice, while creatively using technological tools. Data was gathered from a questionnaire, the online students' transcripts, and their final project artifacts.

The analysis distinguished different ways in which the students perceived the proposed assessment strategies, and its consequences towards their learning. Furthermore, the results illustrate an alignment between the intended competencies, the work developed by the students, and the assessment strategies used.

1. Introduction

The Bologna Process challenged Higher Education to promote learning environments that go beyond objectives based instruction to a new paradigm centered on developing competencies. This shift requires not only a change in the perceived goals of the higher education system and on the selection of methodological approaches to be used, but also on a drastic adjustment in the assessment strategies to be used in order to foster and assess a competence-based learning curricula. As Baartman et al. (2007) put it "if European countries want to reform their curricula, assessment must have an important place in the reform process and assessment approaches need to focus on the integrated assessment of knowledge, skills and attitudes". This new scenario calls for authentic assessment strategies that will allow learners to attain deeper levels of knowledge and develop professionally development skills and thinking processes (Gulikers et al., 2008), closer and more relevant to their professional practicum. To attain this goal, we developed Competency Assessment

Program (Baartman et al., 2007) for an online Masters course in “eLearning Pedagogies” where the main objective was to further the students understanding about “how to learn”, particularly when learning is mediated through technological tools.

2. Theoretical framework

Assessment is currently recognized as one of the most powerful strategies to drive learning (Schwartz & Webb, 2002). This is true for both traditional face-to-face settings, and also for virtual learning environments (Macdonald, 2004). A significant body of research supports the view that the design of assessment is critical in determining the direction of student effort, and that assessment is vital in providing a channel of communication between students and their mentors (Black & Wiliam, 1998). This role for assessment is increasingly important for campus-based universities, as well as in a traditional distance learning context (Higgins et al, 2002). Several authors (Birenbaum et al., 2006; Elwood & Klenowski, 2002) state that current assessment practices in European countries fail to address learners’ needs because they tend to focus on assessment of learning instead of on assessment for learning, are limited in scope, drive teaching for assessment instead of teaching for learning, and ignore individual differences.

Given the recognition of the shortcomings of traditional assessment strategies to fully promote the driving force for learning in assessment as a consequence of their main focus on classification, the last two decades have seen the emergence of several alternative assessment strategies. Brown et al. (1997) illustrate the change in the assessment paradigm as a change from written examinations to coursework, from tutor-led to student-led assessment, from implicit to explicit criteria, from product to process assessment, from objectives to outcomes, and from content to competences. As Sainsbury and Walker (2007) emphasize, it is necessary to take an approach which incorporates collaboration into a wider range of assessments, and which provides useful timely feedback, and thus has the potential to harness the motivating force of assessment into the effective promotion of learning during the assessment process itself. Moreover, Mateo and Sangrà (2007) stress the importance of authentic experiences to build mental structures that work in significant situations, defining the concept of authenticity “as a function of the type of cognitive challenge proposed by the activity more than the genuine character of the context” (p. 6). Several authors also refer to the relevance of assessment authenticity (Gulikers et al., 2004; Maclellan, 2004), focused on the way that knowledge, skills and attitudes are used in order to reflect real world contexts. In this sense, self and peer assessment can be key contributors to assessment authenticity (McConnell, 2004), due to their promotion of cognitive gains in a set of variables, including levels of time on task, engagement and practice, as well as a greater sense of accountability and responsibility; and to the fact that both self and peer assessment are commonplace in professional practice (Topping, 1990).

We make no claim here that assessing e-learning is radically different from assessing learning: the same principles apply (Macdonald, 2004; Quintas-Mendes et al, 2007; Pereira, 2005). Basically, the key to supporting e-learning development lies in an understanding of the complexity of the processes which students are asked to undertake. E-learning courses which adopt a constructivist philosophy may impose new and unfamiliar demands on the students who study them, expose students to a more demanding approach to study, requiring greater self-direction and a critical approach to study than has been the norm in the early undergraduate years (Macdonald, 2004).

Since 2006, our research group has already a significant amount of work exploring how assessment strategies can support e-learning development, whatever the subject or level of the course, namely: the establishment of learning contracts (Morgado et al., 2006; Pereira et al. 2007); the use of online portfolios (Pereira et al, 2009); online group work (Tinoca et al., 2007; Pereira et al., 2008); the use of Weblogs (Monteiro & Pereira, 2007).

This new approach is also supported by emerging technologies of computer supported collaborative learning (CSCL) that provide increasing opportunities for fostering learning in such an environment by creating online communities of learners (Birenbaum, 2003, p. 21).

These tasks might involve collaborative work, problem solving, and open access to electronic resources. Kischner, Srijbos, Kreijns and Beers (2004) propose educational design for competence-based education focused on the task. It's important to develop ill-structured real-life problems, framed by "an authentic environment to carry out the task, and cognitive feedback on the quality of the task performance" (p. 55). Moreover, they also emphasize the need for student ownership and control over the task development (context, content, sequencing, pacing, and presentation style). This approach to task control is now facilitated through ITC technologies as they allow the student to take over the "depth of study, range of content, number and type of delivery media, and time spent on learning" (p. 56). Within this framework the students are empowered to adapt their learning experiences to their own professional needs and interests.

3. Methodology

This work was developed in the context of a Curricular Unit called Using ICT for Learning and Teaching that is part of the degree plan for the Master in Elearning Pedagogies and the Master in Educational and Multimedia Communication at the Universidade Aberta, and involved 37 master students.

The Curricular Unit (class) where this study was conducted has been developed based on a Pedagogical Model for online learning developed by a group of researchers from the Universidade Aberta [8]. Based on this model, the adopted methodology is structured around two completely asynchronous and complementary work strategies. It requires that the participants work collaboratively with their peers, participating in online forums where they debate and (re)construct collectively their learning. Moreover, the participants are expected to work in small groups and to find the best solutions for the problems and cases that they are confronted with.

Here, we have focused on the group project work where the students developed a project linked to their professional practice, while creatively using technological tools adapted to the learning environment.

The participants were assessed based on three different approaches: a) their participations on the online discussion forums; the group project; and a final paper. The group project was developed during the fourth, and last, stage of this Curricular Unit. The assessment of the group project was divided in two: 1) the process of elaboration of the project (1/3); and 2) the final project product (2/3). The Instructors responsible for this Curricular Unit recognized that in this type of activity the participants often develop a large majority of their work outside of the Virtual Classroom Software and use other tools (such as MSN® or Skype®), it was decided to attribute the responsibility of assessing this component to the participants. The Instructors, however, developed a set of criteria that the participants should use to guide their self-assessment and that of their peers. These criteria included:

- Commitment to the group project.
- Relevance/pertinence of the research made.
- Presentation of innovative elements to the project.
- Contribution to the group dynamic.

Once the group project had ended each group was responsible for sending the instructors a small document with the classification attributed to each participant accompanied by a justification. Moreover, all the projects were made available in a public forum, and discussed between all the participants.

Data was gathered from a questionnaire applied in the end of the semester, the online students' transcripts, and their final project artifacts. For this particular paper we focused on three of the best presented projects, representing a variety of technological tools (weblogs, games and programming software).

4. Data Collection and Analysis

For this study, we focused on three types of projects, developed by the participants that emerged as specially representative for their task and assessment authenticity: weblogs; game-based learning; and problem based learning. These particular projects were identified as authentic due to their real-life contexts, complexity and cognitive challenges. The participants were presented a problem but had the freedom to define the depth of study, the sequencing of the partial problems, and the presentation format.

4.1 Authentic Activities

4.1.1 Robotics as a learning motivator

This group included teachers involved with professional schools and their project was targeted at 1st year students from the professional high-school in electronics and telecommunications, with ages ranging from 16 to 19. These teachers wanted to develop their students' autonomy, and problem solving competences. With that goal the teachers developed a Problem based learning task (figure 1) where the students were challenged to enter a "robotics contest". With that end the students had to research and learn about both hardware and software in order to create the robot.

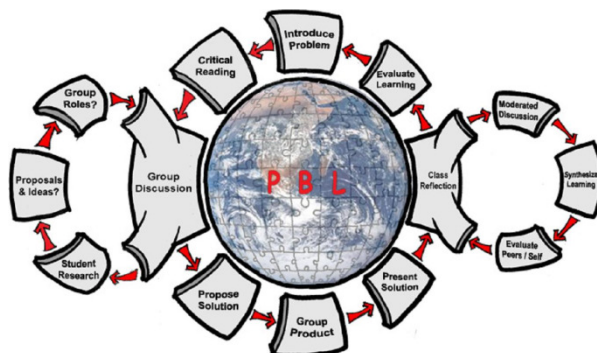


Figure 1: Problem based model for the robotics group

4.1.2 The Blog as a pedagogical proposal

This group included Professional development trainers, and developed a module for e-tutors training. As part of this module the e-tutors were asked to create a weblog as a learning resource for e-tutors professional activity. In this weblog the e-tutors had to describe tutoring profiles, learning roles in online environments, as well as make available resources and technological pedagogical tools such as bibliographical and webreferences. The course activities where to be implemented in both an LMS and a weblog built to support it (figure 2).

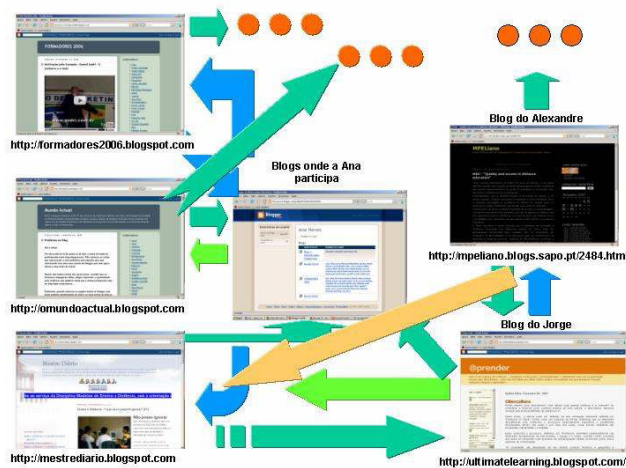


Figure 2: Blog group webring

4.1.3 How can electronic games be a resource for successful learning?

This group included both science and mathematics teachers, and developed a proposal for a game about Real Numbers (SUCETAR, see figure 3). The computer game is set to be used in a face-to-face mathematics classroom as a conclusion of a learning activity.

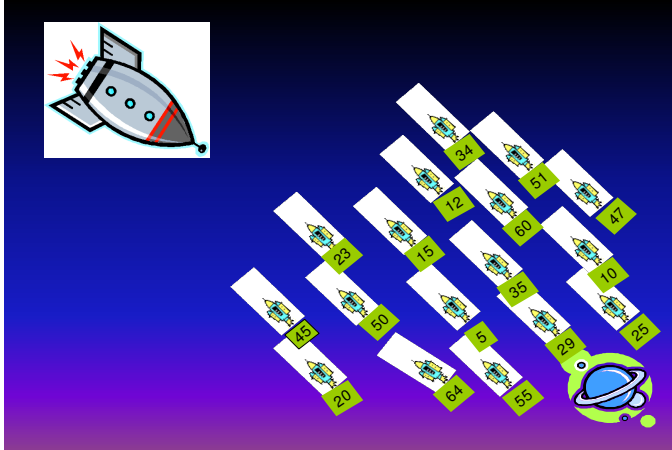


Figure 3: screen capture from the SUCETAR game

To play this game the students were challenged to demonstrate their knowledge about real numbers, completing a series of mathematics exercises in order to perform an extra-planetary mission.

4.2 Authentic Assessment

There were three main factors contributing to the assessment authenticity: the discussion of the assessment criteria; the use of both self and peer-assessment; and the public discussion of each group's final products.

4.2.1 The discussion of the assessment criteria

In the beginning of this curricular unit all participants were invited to debate the presented learning contract that included the proposed assessment strategies. In the ensuing discussion, the participants felt a necessity to clarify the implementation of both self and peer-assessment practices. However, from the participants' answers to the final questionnaire, this is not something that they are used to have to be accounted for, even though they recognize that is something that they usually do informally, but with no consequences. Also in their professional experiences they did not have the chance to experience formal situations where they are required to assess their peers (Tinoca et al., 2007). The relationship between these assessment practices and their professional practice is also highlighted by several participants as significant, for allowing them to develop assessment competencies that they recognize as important and valuable for their own practice.

4.2.2 Self and peer-assessment

All the participants, within each group, were required to share their own self-assessment, and peer-assessment of their colleagues. This task was successfully completed by all the participants. The groups were able to responsibly implement the suggested assessment strategy, with the exception of one group that chose to give each participant full credit for their participation in the group work process, justifying this posture saying that all the group members "contributed for the group's excellent dynamic, that through the conducted

investigations and readings translated into pertinent and innovative contributions” (group “Amadeo”).

Each of the groups’ participants shared their own self-assessment, as well as the self-assessment of his colleagues, justifying the presented differences. Furthermore, the participants’ assessments were clearly supported by the accorded criteria leading to concordant results, and to clearly identifiable roles played by each of the participants.

In other groups peer-assessment was not completely assumed. Even though they did perform their colleague’s assessment they failed to provide individual formative feedback and support the presented assessments. This posture is reflected in group “Dali” comments when they say “from the beginning the group demonstrated empathy among its members, leading to an easy organization of each member’s tasks”.

4.2.3 Group work products’ discussion

The final step contributing to the assessment authenticity of the group projects was their public discussion between all the participants. In this discussion the participants had an opportunity to confront their work with that of their colleagues, provide a critical review of their work and challenge their views. Even more, each participant was also asked to answer the questions posted as comments to his group’s product, clarifying when necessary and justifying his group’s options. This was a very productive phase, as all the participants were fully engaged in commenting their colleagues work and at the same time, defend and argument to support their own project.

5. Concluding Remarks

Group projects can be considered authentic tasks not only thanks to their relationship with the participants’ professional life, but also due to the higher order thinking skills, and cognitive challenges that it poses. This was reflected in the three presented projects, closely related to the participants practice both as teachers and professional development trainers. In fact, all the projects included the description of the context, scheduling of the tasks, instructions, assessment strategies and a final product.

Furthermore, the proposed assessment strategies were discussed and negotiated with the participants in different moments, in the beginning of the semester, and during the group project stage. What is more, the participants were required to perform both self and peer-assessment. McConnel (2006) emphasizes that self and peer-assessment processes allow participants to assess “their own work in ways that are applicable to their future professions (and) help students develop enterprising competences” (p.91), and so contributing to assessment authenticity.

Finally, in this proposal of authentic assessment strategies, associated to group project work, we can recognize the integrated assessment of knowledge, skills and attitudes. So being, this case study illustrates one possible way of developing a competence-based learning program supported by authentic assessment strategies, aligned with the Bologna Process recommendations.

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