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## CONTRIBUTION OF B-LEARNING TO PROMOTING SUCCESS - THE CASE OF MANAGEMENT ACCOUNTING IN THE INFORMATION SYSTEMS COURSE

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**Abstract:** Promoting the attentive and active participation of students in the classroom, theoretical and practical, was the main theme of the challenge faced by the Management Accounting teacher. In this sense, some *active learning* practices were created that led to better student performance and a collaborative and monitored learning process throughout the semester.

The introduction of analytical accounting software stimulated practical classes, appealing to the profile of the student of the Degree in Information Systems Management course more oriented towards New Information Technologies (NTIC), promoting greater involvement and understanding of learning (Gomes, 2014; Tatlı, İpek Akbulut & Altınışik, 2019) of management accounting as an information subsystem essential to the production of internal, relevant, useful and timely information in the organization.

The methodology adopted in the classroom consisted of the use of whiteboard, google classroom, kahoot and socrative through interaction between teacher and students through the submission of small questionnaires on the subject given in class, allowing to measure in real time whether students were acquire the knowledge taught. The results obtained prove that students became more interested in learning and the higher level of approvals compared to previous years attests to this situation.

This work is structured as follows: the contextualization of the case, the theoretical foundation in which it fits, the description of the pedagogical practice, objectives and target audience, methodology, evaluation of the results obtained, results, implications and recommendations, conclusions and references.

**Keywords:** Accounting, *B-learning*, Technologies

## CONTEXTUALIZATION

The purpose of this contribution is to promote reflection on pedagogical practices in Higher Education Institutions (HEIs), recognizing that students and teachers must contribute new pedagogical dynamics to the success of learning.

Using new technologies to support this dynamic seems fundamental to me, as long as it is applied objectively to the content and activities promoted in class.

Several scholars on this topic defend the use of technologies in classes as an element that generates value and knowledge for students (Ciftci, 2013; Erdemir, Bakirci & Eyduran, 2009; Hsu, 2016; Duhaney, 2012; Hirca & Simsek, 2013; Tondeur, van Braak, Ertmer & Ottenbreit-Leftwich, 2017; Can & Kaymakci, 2016; Tatlı, İpek Akbulut & Altınışik, 2019). The implementation of active learning practices undeniably innovates classes by opening up new ways of learning (Drake and Battaglia, 2014; Rodrigues & Francisco, 2019). *Active learning* can be applied transversally to several multidisciplinary domains and produces very positive transformations in the learning carried out (Dakovic, Pterbauer and Zhang, 2019).

Throughout this text I identify the different dimensions applied to the classroom context, namely for students of the Management Accounting curricular unit of the Degree in Information Systems Management, in addition to making some reflective considerations about the experience.

## THEORETICAL FOUNDATION

The use of pedagogical practices linked to new information and communication technologies (ICT) allows for better management and flexibility of the student's time and can effectively contribute to better learning acquisition. This interconnection can be characterized by the following aspects:

1) “the availability and accessibility of learning materials of high scientific and pedagogical quality, designed to enable and facilitate self-learning;

2) a substantial part of learning is carried out outside the classroom and without the presence of a teacher, thus allowing flexible management of the student’s work time and space;

3) maintenance of a permanent institutional relationship between the school and the students enrolled and recognized and integrated by it;

4) existence of individualized support mechanisms for students in order to avoid learning problems and guarantee the efficiency and effectiveness of the teaching-learning process.” (Trindade, 2001, pp. 56-57).

The combination of face-to-face classes with online classes, the so-called b-learning, requires “relocating, conceiving and combining in the teaching-learning process principles of the pedagogical model (in which the relationship is more heterostructured and controlled externally to the student) and the andragogical (more autonomous, centered and guided by the student’s interests)” (Pinheiro, 2014, p. 60).

There is a need to understand what something is for in order to learn and acquire experience and skills that provide the basis for learning activities (Pinheiro, 2014, p. 60). Student involvement in pedagogical practices is fundamental for self-responsibility and awareness of the training to be developed (Trindade, 1992, pp. 23- 25).

## **DESCRIPTION OF PEDAGOGICAL PRACTICE**

To explore tools such as Google *Classroom*, Whiteboard, Socrative and *Quizizz* or Kahoot!, supported by a smartphone as a work tool, was crucial for student engagement over two semesters.

For this purpose, a social network was created where the objective was to ask questions among peers and with the teacher promoting debate and providing clarification. Students received notifications about the activities they had to complete by the end of each school week. A commitment was made to make the student responsible for their own learning process from the first day of class. Every week, students had two quizzes, one theoretical and one practical, with twenty questions each, which they must hand in at the end of the following week. There are several attempts until they get the correct answer and only then can they move on to the next level. These practices help the student and teacher to understand, in real time, the difficulties experienced and the most critical matters.

The introduction of accounting software, TocOnline, appealing to students’ IT skills, proved to be vital in the teaching-learning process and in the search for motivation and consolidation of knowledge.

## **OBJECTIVES AND TARGET AUDIENCE**

Cultivating interactivity to the detriment of passivity, increased by the distance imposed by the pandemic context that characterized the 2019/20 and 2020/21 academic years, was the challenge that drove the Management Accounting teacher, curricular unit of the 2nd year of the Degree in Management of Information Systems, from the Escola Superior de Ciências Empresariais, from the Instituto Politécnico de Setúbal, looking for technological tools to support and promote

learning and student involvement in a curricular unit that is not part of the set of specific curricular units of the course and that, therefore, This could become a “less loved” subject, particularly in the *b-learning context*.

The historical Background of Management Accounting students, in terms of approval rate (number of students approved in relation to the number of students enrolled) insistently revealed the lack of motivation, participation and involvement of students in theoretical classes. This evidence forced us to transfer the core of teaching, centered on achieving curricular goals, to the active involvement of the student in the process of their own learning. In other words, promoting the need for an approach based on new teaching strategies that promote student-centered learning and not the teacher’s pedagogical performance.

The theoretical class consisted of 90 students with a theoretical workload of 2 hours/week and 2 hours of practical classes/week.

## METHODOLOGY

The pedagogical implementation initially included the dissemination, on Moodle, of all program content. In class, students asked questions raised by studying the materials available. To promote inter-peer debate, the large group was subdivided into smaller groups that debated and discussed, among themselves, the topics under analysis. To support the classes, an exercise/case manual was created to allow immediate feedback on the acquisition of learning.

I then proceeded to introduce an online tool, with a quick and immediate response, that allowed students to get involved and obtain timely results – Kahoot! and Quizizz. To this end, a virtual class was created, in which, using a simple smartphone using the internet, each group of students answered

multiple choice, true/false questions, or a brief quiz on the topic under analysis.

The discussion of the topics taught in class promoted the development of learning by levels (Luckesi, 2014), that is, the program contents are divided into levels and the student would only move to the next level after acquiring the skills and learning from the previous level. It was found that in terms of knowledge acquisition, there was greater robustness in the involvement of students in the classroom, which was reflected in the assessment grades in the curricular unit. The Tables below visualize this verification (Tables 1 and 2).

Subscribed	Reviewed	Approved
76	66	47
Evaluated/ Registered	Approved/ Registered	Approved/ Evaluated
86.84%	61.84%	71.21%

Table 1 – Results of the 2019/20 academic year

Source: Portal ESCE-IPS

Subscribed	Reviewed	Approved
73	70	64
Evaluated/ Registered	Approved/ Registered	Approved/ Evaluated
95.89%	87.67%	91.43%

Table 2 – Results for the 2020/21 academic year

Source: Portal ESCE-IPS

## EVALUATION OF THE RESULTS OBTAINED

To verify this growth in involvement in learning, I created an Individual Acquisition Map (MAI), whose objective was to demonstrate the path already taken by each of the students and the goals to be achieved. The student himself could suggest new approaches to the path outlined in order to achieve his own goals.

As we can see in Tables 1 and 2, the approval rate in relation to the number of registrants

increases by around 26 percentage points and the number of students who opt for continuous assessment also reveals the involvement and qualification of students in acquiring learning. The success of the curricular unit reflects the degree of commitment of students throughout the teaching-learning process, which is not unrelated to the use of technologies in the classroom and outside it.

## **RESULTS, IMPLICATIONS AND RECOMMENDATIONS**

There is an effective and better perception of the learning achieved by students, as we can see from the results in Tables 1 and 2. It is possible to evaluate the different themes, *in real time*, with benefit for students (they obtain feedback on the learning acquired) and for the teacher (has an instrument that allows him to measure the results of learning).

The results are very encouraging, even though each of the niches (groups) created had different rhythms and were at different stages in acquiring knowledge.

Transforming an amphitheater into a micro-room with n groups allowed the creation of a new pedagogical dynamic that meets student learning and can be disseminated to other areas of knowledge.

Adopting Siocrative, Quizizz and Kahoot in the classroom has several benefits, namely, “result information is immediate - Statistical analysis of test questions can be done quickly and exhaustively - Teachers can easily follow the evolution of individual students’

performance - The popularity among students of using digital instruments is great - The process of marking questions is automatic and fast and not biased by human errors, which makes it more valid (Lopes and Moura, 2014, p.196)

This model of pedagogical practice can be applied to various domains/areas of study and with very flattering results, both from the perspective of knowledge acquisition and understanding, and in the results of assessments. It is demanding in terms of the teacher’s preparation and digital skills, in order to carry out a multifaceted set of activities and provide feedback on these tasks, but this is still the teacher’s role as a motivating and triggering element of practices that promote student learning.

## **CONCLUSIONS**

The *active learning* practices implemented were extremely rewarding, as the teacher became aware of the need to create digitally oriented classroom contexts, as these were students with a profile very technology-oriented and who were able to recognize the importance of the unit curriculum in the context of the course syllabus.

The implementation of these new practices led students to reflect, reason, interpret, pose and solve problems, contributing to healthier and enriching learning in classes. The uptake was great and the introduction of smartphones, tablets and PCs proved to be an incomparable added value.

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