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61st International Council for Educational Media - ICEM
XIII International Symposium on Computers in Education - SIIE

Old meets new - media in education

Joint Conference

September 27, 28-30

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proceedings

Title: *Old Meets New: Media in Education* – Proceedings of the 61st International Council for Educational Media and the XIII International Symposium on Computers in Education (ICEM&SIIE'2011) Joint Conference.

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3810-193, Aveiro, Portugal

ISBN: 978-972-789-347-8

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"Old meets new – media in education"



Conferência Conjunta ICEM&SIIE'2011

28-30 setembro, 2011 | Aveiro, Portugal

A conferência ICEM&SIIE'2011 foi organizada pela Universidade de Aveiro (Portugal) – membro do European Consortium of Innovative Universities – e pretendeu reunir investigadores, professores e outros profissionais, a nível nacional e internacional, em torno de um tema aglutinador que pretendeu despoletar e colocar a tónica da discussão na dualidade “old/new”, ou seja, os participantes foram convidados a discutir:

- os media na educação em ambas as perspetivas, mais tradicionais ou modernas, com incidência numas ou noutras ou, ainda, numa perspetiva comparativa;
- a conjugação, adaptação e adoção dos media consoante os contextos e objetivos de utilização;
- o que os media implicam em termos de tecnologia, barreiras profissionais e /ou sociais;
- a relação custo-benefício da utilização dos media em contexto de aprendizagem;
- os media em função dos diversos contextos educativos e dos perfis de aprendizagem dos alunos.

Para a conferência foram seleccionados 76 artigos organizados em 15 sessões paralelas, 13 posters e 9 workshops.

A conferência caracterizou-se pelo carácter internacional dos contributos, reunindo 38 artigos em português, 32 em língua inglesa e 6 em espanhol.

Estas atas encontram-se organizadas de acordo com o programa da conferência. Em primeiro lugar incluem-se os artigos (full paper e short paper) por sessão, seguem-se os posters e, finalmente, o resumo relativo aos workshops.

"Old meets new - media in education"



ICEM&SIIE'2011 Joint Conference

September 28-30, 2011 | Aveiro, Portugal

The ICEM&SIIE'2011 conference was organised by the University of Aveiro (Portugal) – a member of the European Consortium of Innovative Universities – and aimed at gathering researchers, teachers and other professionals, at national and international level, around a focal topic that might trigger and centre the discussion on the “old/new” duality of media in education. Participants were invited to discuss:

- old and new media in education, in isolation or comparatively;
- how old and new media in education can be combined, adopted and adapted;
- what old and new media in education imply in terms of technological, professional and social barriers;
- what cost-benefit relationships old and new media in education entail;
- how to compare old and new media in education given their particular educational contexts and the students' learning profiles.

76 papers were selected and organised in 15 parallel sessions, 13 posters and 9 workshops.

The conference is characterized by the international character of contributions, gathering 38 papers in Portuguese, 32 in English and 6 in Spanish.

These proceedings are organised according to the programme of the conference. First we find the full and short papers, per session, then posters and finally the abstracts for the workshops.

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An evaluation model for blended learning - Evaluation goals, the process and lecturers' perspectives

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Abstract

This paper will discuss the process of evaluation in blended learning courses, offering an evaluation model for those particular courses and also showing the lecturers' views about how they think evaluation of bLearning courses should be done, taking into account the curricular proposals of the three cycles of Higher Education (HE). Questions like 'what is evaluation for?', 'who should evaluate?', 'how and when to evaluate?', and 'what should be evaluated?' are combined together integrating a model with all those variables, whose guidelines provide a practical tool to help designers and decision makers to assure an effective, efficient and flexible teaching and learning environment. In addition, the same questions were asked in a survey conducted with 100 bLearning lecturers (79 valid responses) of the 11 Portuguese HE institutions that offer this kind of courses. The study highlights the need for those institutions to reassess their approach to the quality assurance of bLearning courses, and brings some contributions to those who are in charge of bLearning courses, providing a useful framework for the evaluation of bLearning courses in order to assure and enhance their teaching and learning quality.

Keywords: evaluation model, bLearning courses, Higher Education.

1. Introduction

The concept of blended learning (bLearning) is recent and still ill-defined (Graham, 2004) and can be interpreted in various ways; consequently, the different definitions of bLearning show us the diversity and strength of this type of learning. Generally, bLearning is defined as a mixture of online and face-to-face (f2f) learning using a variety of learning resources and communication options available to students and lecturers; any combination of learning delivery methods that include f2f instruction with asynchronous and/or synchronous computer technologies (Osguthorpe & Graham, 2003). Its conceptualization, considering that to blend is to mix or combine things together, depends on the focus of the definition and can consider, for instance, a blend of: (i) pedagogical strategies, combining problem solving activities and debates, as proposed by Donnelly (2006); (ii) supporting technologies, using different tools, such as forum, podcast, wiki, blog, and twitter, as referred by Walker & Beats (2008); or (iii) delivery modes in which f2f and online activities are organized taking the strengths of both approaches (Garrison & Vaughan, 2008; Stacey & Gerbic, 2008). The literature highlights that when designing blended modes of teaching and learning, strategies and/or tools, in order to make the most of them, we need to consider the teaching and learning context to obtain the most appropriate mix or blend. In this contribution, and since we think Graham's (2004) definition is the most accurate and widely accepted, bLearning is taken as the integration of f2f activities with technology-supported activities at a distance (Graham,

2004; Conole et al., 2007). By practicing bLearning the conveniences of online courses are gained without the loss of f2f contact. Thus, a learning environment is created which is richer than either a traditional f2f environment or a fully online environment (Harding, Kaczynski & Wood, 2005).

Nowadays, bLearning is widely used in many Higher Education Institutions (HEIs), especially those that have embraced distance education and any other form of eLearning as one of their major institutional and teaching efforts (Mortera-Gutierrez, 2004). In some institutions in Portugal, in part due to the Bologna Declaration, a new reorganization of the HE system is eminent, the encouragement of people to go to university as well as students' mobility, which is highly related to the need of assuring (and also enhancing) teaching and learning quality. Currently, in Portuguese HE systems, almost all or even all Universities and Polytechnics already have eLearning initiatives, although they are more focused in the use of eLearning platforms as a complement to f2f modules (Magano & Vaz de Carvalho, 2008) to support the learning process in order to improve the quality of training and to allow access and learning opportunities to other potential users. As far as bLearning is particularly concerned, there are eleven institutions that already have bLearning course offers implemented in their curricula. Thus, bLearning is pervading HE, compelling educators to confront existing assumptions of teaching and learning. Lecturers adopt bLearning because they wish to introduce students to technology or because they wish to offer extra support to weaker students. Others are using it to reduce the f2f component of the teaching so that part time students and those with family responsibilities have better access to learning. For many universities the move to bLearning occurs for financial and staff management reasons (Harding, Kaczynski & Wood, 2005).

Independently of the above-mentioned reasons as to why bLearning is more and more used in HE, the imperative for quality assurance initiatives for eLearning, or particularly for bLearning in HE is highly acknowledged (Weaver et al, 2008; Ireland et al., 2009). Oliver (2005, p. 183) explains this "quality agenda" in the following terms: "As more and more universities seek to use e-learning as a mode of delivery for their units and courses, and as more and more they are held accountable for the quality of the services they provide, the need grows for accepted standards and benchmarks against which performance can be judged." Indeed, HE leaders are challenged to position their institutions to meet the connectivity demands of prospective students and meet growing expectations and demands for HE quality learning experiences and outcomes (Garrison & Kanuka, 2004).

Most studies about evaluation of teaching concerning the specificities of bLearning tend to report more varied aspects of the students' learning experience, and a small number of studies take a more holistic approach considering also lecturers' perspectives. This study is related to a previous one (Pombo & Moreira, 2010) that examined the evaluation practices of teaching and learning, concerning the perceptions of course directors. This paper aims at: (i) offering an evaluation model to help decision makers and bLearning course designers in terms of assuring an effective, efficient and flexible teaching and learning environment; and also (ii) the lecturers views about how they think evaluation of bLearning courses should be done taking into account the curricular proposals of the 1st, 2nd and 3rd cycles of HE.

2. Evaluation goals and process

The evaluation goals and process might be either to provide a means to check (process evaluation) or to improve (result evaluation) the teaching and learning process. Evaluation is a procedure that involves the comparison between a real situation and what is (highly) expected; it is guided by a theoretical referential (Hadji, 2001) about what is expected of the evaluation object. The complexity of the evaluation objects imposes diverse perspectives about them (using various sources and actors) as well as a subjective process of negotiation among the actors involved. Evaluation is also taken as a process of finding ways to improve the quality of the object under evaluation, i.e., quality enhancement.

Initially it seems paradoxical to talk about the quality of bLearning as quality is often linked with checking against externally imposed standards. However, quality can also be understood from a development-oriented perspective, which means enabling learners to develop themselves in their own learning process and consequently produce better results as far as quality is concerned. In this view, methods of self-evaluation, reflection and peer-evaluation are seen as more important. This kind of quality methodology does not have anything to do with normative, universally valid standards, but aims at improving the quality of the learning process (Ehlers, 2009).

Growing experience and analysis of online learning are revealing that new forms of teaching require new quality criteria. Most of our standards for the delivery of instruction never included these new technologies and communication tools. Standards and methods that have been studiously crafted to teach in f2f sessions cannot simply be double-clicked into an online environment. Although online learning exhibits many benefits in terms of flexible interaction, availability of various media and tools, etc., there are still some obstacles to the design of online learning solutions (Karadeniz, 2009). While online learning ensures flexibility and the development of competences that are difficult to ensure in a real class setting, f2f education enables social interaction that is required as guidance for students (Ugur, Akkoyunly & Kurbanogly, 2009). The key question of this contribution is how can we evaluate a learning environment to ensure effective, efficient and flexible learning for the learner? Combining the general variables mentioned in previous studies (Pombo et al., 2008; 2009; Pombo, Loureiro & Moreira, 2009; Pombo & Moreira, 2010) with the extra perspective of the workplace environment suggests a model, shown in Figure 1, that can be useful to guide the evaluation of blended learning for technical professionals where learning involving network technology and work-based activities that reflect Jara & Mellar's (2009) first principles for an important part of the course.

Our aim is to prepare these guidelines to provide a practical tool to help students, parents, educators and policymakers to create, use and evaluate bLearning courses (see Figure 1). To evaluate a course, first of all we have to know why, ie, what evaluation is for; what are the main goals of evaluation. The model shows four main reasons, but the model does not pretend to be exclusive (there might be other reasons), so the model always contemplates suspension points in each category. Evaluation is also considered as a process of finding ways to improve the quality of the object under evaluation, i.e., quality enhancement. The literature (Jara & Mellar, 2009) discusses the difference between assurance and enhancement. While some opinions tend to look at them as two mutually exclusive positions where improvement is mainly seen as the result of internally focused enhancement processes led by academics (Harvey, 2005), there are other perspectives which integrate assurance and enhancement, recognising their differences, but seeing them as parts of the same process. Assurance is concerned with determining whether objectives and aims have been achieved and enhancement being concerned with making improvements; both should be seen as part of a wider framework, as stages in the management of quality.

As evaluation should be linked to the concept of quality assurance, reinforcing the relevance of internal quality assurance procedures and their effectiveness in improving the quality of: (i) the course, for example, the external image of the course, syllabus, adequacy to the students' profile, etc.; (ii) teaching and learning, for example, students' learning outcomes, adequacy of faculty profile, adequacy of teaching strategies (e.g. inclusion of individual/group work), students' success, expectations of students before entering the course, etc.; (iii) resources, for example, support of non-teaching staff (secretarial, photocopying, library...), support structure (LMS, network, bandwidth, help desk), logistics (availability of computers, wireless access, adequate rooms...), etc; (iv) student support, for example, before entering the course (access), during the course (skills development), at the end of the course (career opportunities), etc.

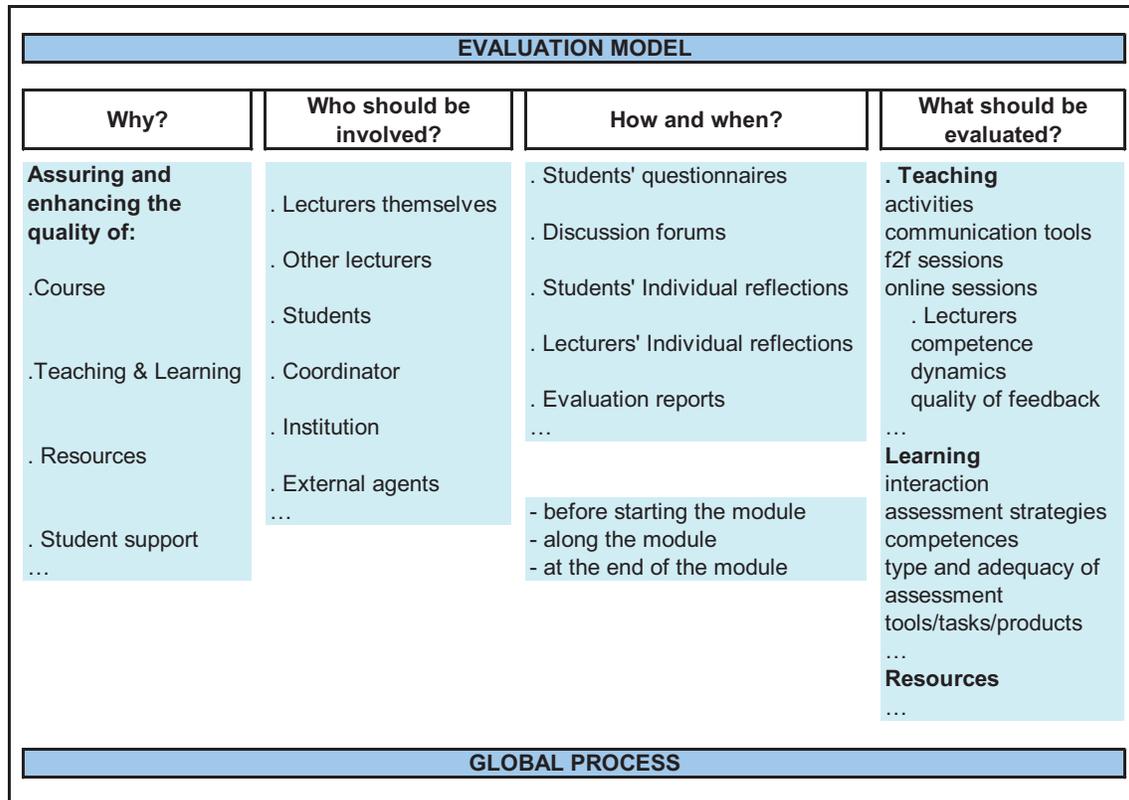


Figure 1 – Model for evaluating blended learning courses.

When focusing on the process of evaluating, we have to think about who should be involved in the evaluation (e.g. the actors of evaluation) and the model suggests: lecturers who are lecturing the course, other lecturers (peer evaluation), students, course coordinator, the institution itself or external agents (other entities outside the institution). The model underlines that subjectivity decreases when there are several evaluators; the evaluation should not only be made by the lecturer, but also by students, teaching peers and external evaluators. We also have to think about the instruments that should be used in the evaluation process; e.g. how and when to evaluate. The model proposes five main instruments: (i) students' questionnaires; (ii) discussion forums; (iii) students' individual reflections; (iv) lecturers' individual reflections; and (v) evaluation reports. When designing those instruments, we also have to consider when they will be applied: a) before starting the module, as an early-diagnosis of curricular units (e.g. of students' profiles and expectations about the course; b) along the curricular units (e.g. discussion forums that can be held among students and among lecturers throughout the process and also between lecturers and students throughout the process); c) at the end of the module (for example, evaluation reports can be periodical or only final). The general tendency is to evaluate only at the end of the course, but our evaluation framework recommends, also considering results from previous studies (Pombo et al., 2008; 2009; Pombo, Loureiro & Moreira, 2009), that quality evaluation of bLearning should be focused on the learning process, during the development of the tasks, and not just at the end, providing a means to check the process in order to have the opportunity to improve it before its end.

Last but not least, another important dimension is what should be evaluated, e.g., the evaluation objects or the evaluation criteria. In this category the model includes three main categories: (i) Teaching (which includes teaching but also the lecturers), (ii) Learning and (iii) Resources. In the Teaching category, we might evaluate the relevance of the proposed activities/tasks, the quality of available teaching materials, the communication tools used, the

organization of f2f or online sessions, the organization of the curricular units (e.g. if the activities reach the objectives, etc.), among others. Concerning specifically the 'Lecturers' category we can evaluate their scientific or pedagogical competence; their dynamism and monitoring in conducting f2f and online activities, their skills at motivating students, the quality of the feedback they give to students, etc. In the Learning category, we may evaluate the interactions (communication between students) within groups, among groups, the assessment strategies adopted, the development of specific competences defined for the curricular unit; the development of transversal competences (e.g. development of values and attitudes, autonomy, capacity for research and group work, etc.), type and adequacy of assessment tools/tasks/products (if the literature tools are appropriate to the proposed tasks), etc. As to the 'Resources' category we may evaluate support provided by non-teaching staff, the support structure (LMS, network, wireless access, adequacy of rooms...), etc.

In this contribution, researchers/senior teachers/lecturers with experience in bLearning were asked about their understanding of the evaluation goals of a course, and the whole processes, obtaining information that can be related to the above-mentioned model and, therefore, obtain a wider spectrum of opinions about the importance of each dimension and categories contemplated in the model.

3. The study

3.1. Methodology

The study has an exploratory and descriptive nature. The research method is mixed, using mainly quantitative techniques of data collection and analysis (Creswell, 2003). The aim was to design the evaluation model presented above and gather lecturers' perspectives about the dimensions of the model. The data used in the study was collected through the administration of an online questionnaire to researchers/lecturers with experience in bLearning at national level. The instrument was sent directly using the institutional email of each respondent, personalising the request and raising the importance of filling in the form, exposing the main aims of the study. The questionnaire was answered by 79 of 100 lecturers (95% confidence level, according to Cohen, Manion & Morrison, 2000) from 11 public Higher Education institutions that offer courses in a bLearning mode. The selection of lecturers had into account their experience and expertise in bLearning courses. The questionnaire designed for the above-mentioned purpose included 4 main topics in a total of 54 closed questions, except for the items where other topics that were not considered in the questionnaire (a total of 7 open questions) were required from respondents if they so wished. The data presented here only show the analysis of the closed questions. The instrument was divided into the four dimensions contemplated in Figure 1. Despite the lecturers' evaluation practices, lecturers were asked about their perceptions of what should be changed in the evaluation in order to improve the quality of the course. The questions were: (i) what the evaluation goals should be?; (ii) who should be involved in the evaluation for the improvement of the course?; (iii) how and when the evaluation of the modules should be made?; and (iv) what should be evaluated? The data were analysed using quantitative techniques, namely descriptive statistics, using 'Paws Statistics 18' and 'Microsoft Excel'.

3.2. Findings and discussion

Lecturers were asked about the goals of the evaluation that they thought should be implemented in their courses, i.e. what to evaluate for? (Figure 2). Most lecturers (more than 50%) found "students' success", "students' learning outcomes" and "students' skills development" a *very relevant* goal. In the categories "students' expectations before entering

the course”, “adequacy of faculty profile” and “external image of the course” more than 50% of the lecturers found those goals *relevant*.

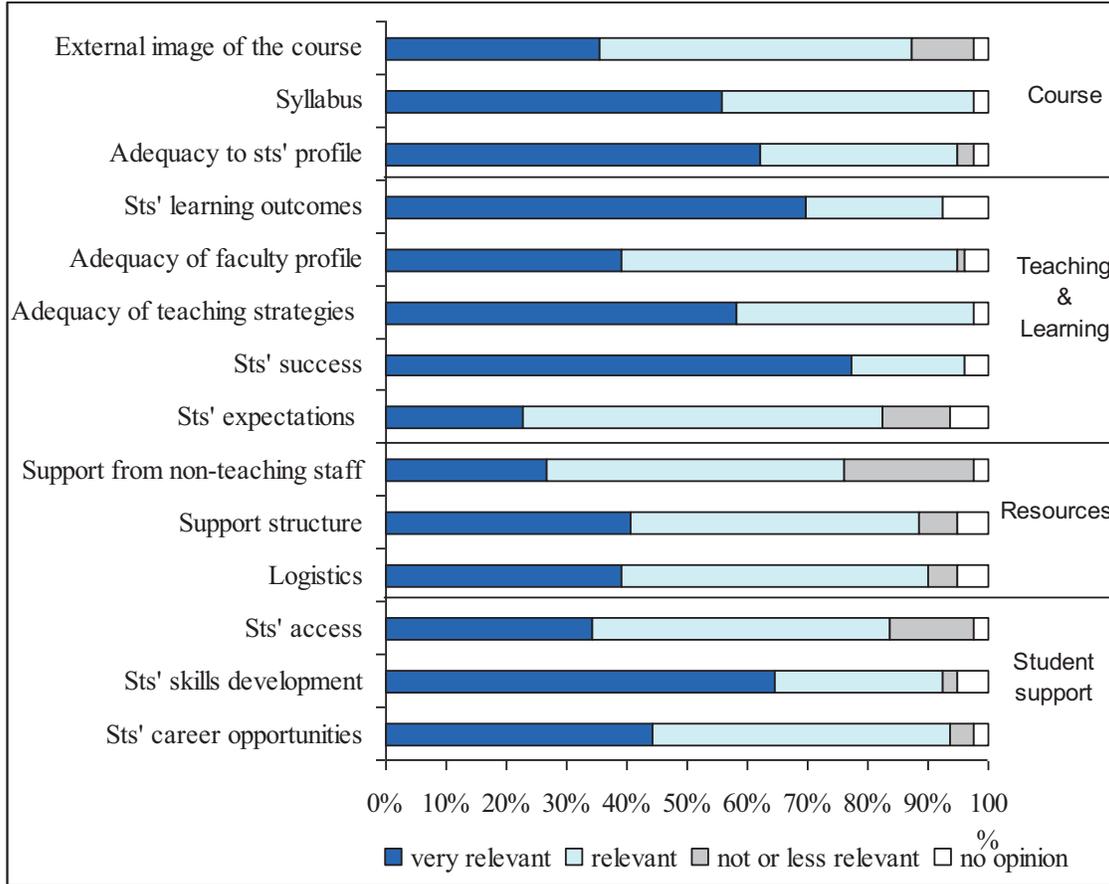


Figure 2 – Lecturers' opinions about what the evaluation goals should be (Sts- students).

When asked about the degree of relevance of who should be involved in the evaluation for the enhancement of the quality of the bLearning course (Figure 3), the majority of lecturers responded that “lecturers’ (68 respondents, 86%) should have an important role in the modules’ evaluation” (Figure 3). However, less respondents considered “students” (29 respondents, 37%) and “external agents” (20 respondents, 25%) *very relevant* to be involved in the evaluation. They almost equally considered the other topics (around 40 respondents) as *relevant*. Only 20 respondents (about 25%) considered “other lecturers”, the “coordinator”, the “institution” and “external agents” as *less relevant*.

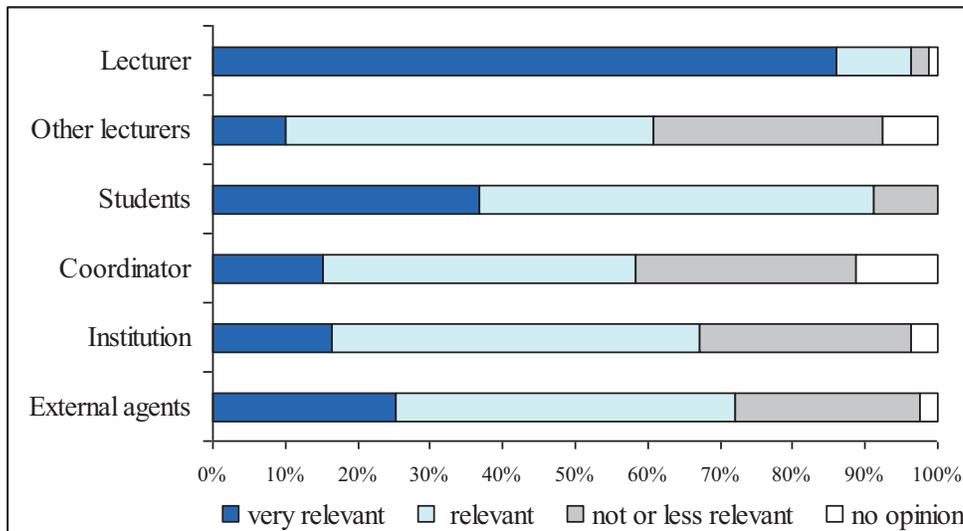


Figure 3 – Lecturers’ opinions about who should be involved in the evaluation for the improvement of the course.

As to how and when the evaluation of the modules should be made, i.e. what instruments should be used in the evaluation (Figure 4), and according to the lecturers’ opinions, final instruments are more valued than the during-modules ones. For example, most respondents valued as *very relevant* the “students’ questionnaires applied at the end of the modules” (58 respondents, 73%), ascribing less relevance to “questionnaires applied by students at the start and during the modules” (23 and 39 respondents respectively). These results show that few lecturers considered diagnostic questionnaires *very relevant* for the evaluation of bLearning courses, but they consider them important at the end of the modules. Then, where is the comparison about the development of skills before and after the modules, and what are the learning achievements proposed for each module? Furthermore, we can infer that evaluation is strongly associated with final products and less with the process itself, i.e. with the development of skills during the tasks. As to the lecturers’ opinions about the degree of relevance of using discussion forums as evaluation instruments, some consider them very valuable for the improvement of the modules, namely “discussion forums between students and lecturers” (56 respondents), “between students” (36 respondents), and “between lecturers” (15 respondents). This might be related to the importance of collaboration between lecturers and students and also to inter and intra group collaboration, providing opportunities for students to acquire the skills of working in teams and to negotiate, discuss and constructively criticize solutions to problems (Naismith et al., 2007).

Now, as to the degree of relevance of using individual reflections as evaluation instruments more lecturers considered *very relevant* rather than *relevant*, with the exception of “during-modules lecturers’ reflections”, probably due to the assumption that lecturers’ reflections during the process do not enable students to develop their knowledge individually and/or collaboratively by re-thinking and re-discussing the module contents over and over again, as Draper (2007) defends. Once more, “final lecturers’ reflections” are valued by more respondents at the end of the module (41 respondents, 52%), as compared to the “during modules reflections” (30 respondents, 38%).

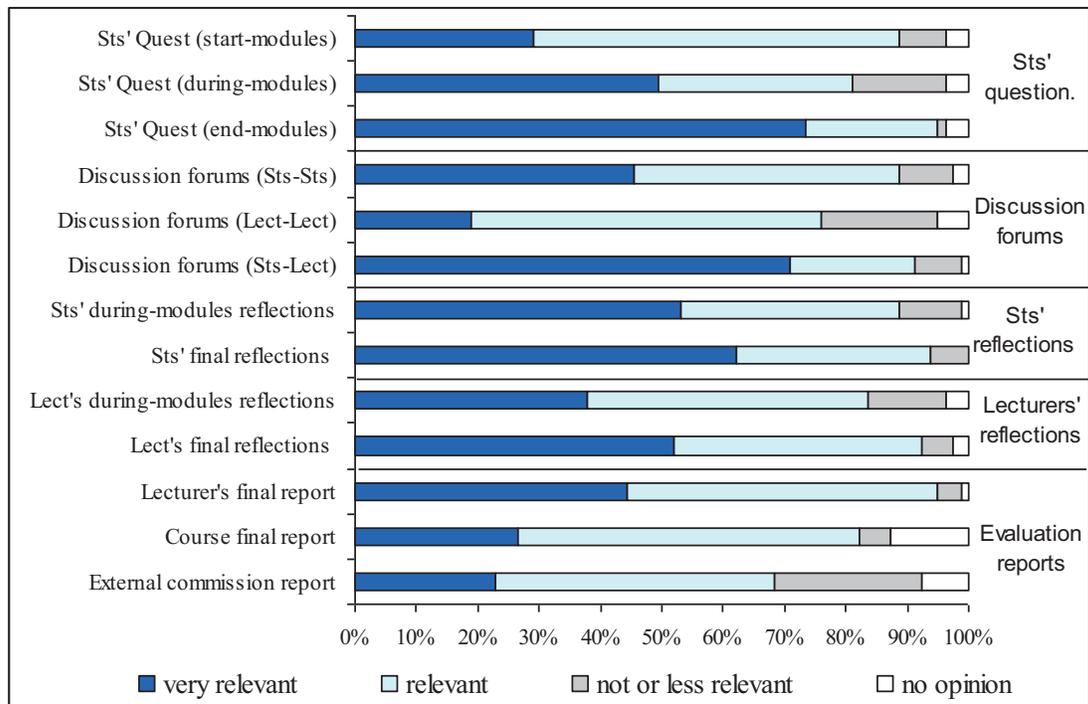


Figure 4 – Lecturers' opinions about how and when the evaluation of the modules should be made for the improvement of the course (Sts- students; Lect – lecturers).

The “evaluation report made by an external panel” is considered *less or not relevant* by 19 respondents (24%) but the “course final report” and the “lecturers’ final report” are also considered *relevant* (by 44 and 40 respondents, respectively) or *very relevant* (by 21 and 35 respondents, respectively). This could be interpreted as a result of bLearning courses being very recent and associated practices not yet fully implemented at an institutional level, although directors find them important. In addition, Harvey (2005, p.273) argues that the internal quality procedures are the place where an enhancement process can be carried out: “... In most institutions where it occurs, improvement of the student experience is a function of internal review and monitoring processes, usually heavily reliant, nowadays, on student feedback, examiners reports, internal improvement audits, periodic revalidation of programmes of study and staff teams critically self-reflecting on their everyday practice.”

Finally, considering the topic “what should be evaluated”, i.e. which evaluation objects should be adopted in Portuguese institutions (Figure 5), most lecturers (46 respondents, 58%) mentioned the “pertinence of the tasks” and the “organization of online sessions” (42 respondents, xx%) as *very relevant* in the “Teaching” category. When asked about the lecturers’ evaluation, most respondents mentioned their “quality feedback” and “lecturers’ motivation” (60 and 59 respondents, respectively) as *very relevant*, which is in accordance with Hummel (2006) who defends that feedback can be considered an important, if not the most important support mechanism in a variety of educational contexts as bLearning calls for individualized support to reach the learner’s needs of heterogeneous groups.

With respect to learning strategies, 43 lecturers mentioned the “adopted assessment strategies” and 42 respondents mentioned the “type and adequacy of assessment instruments” as *very important* categories. 39 lecturers considered “Communication between students” *very relevant*. “Logistic resources” was mentioned by 20-36 respondents as *very relevant* when compared to all the other categories.

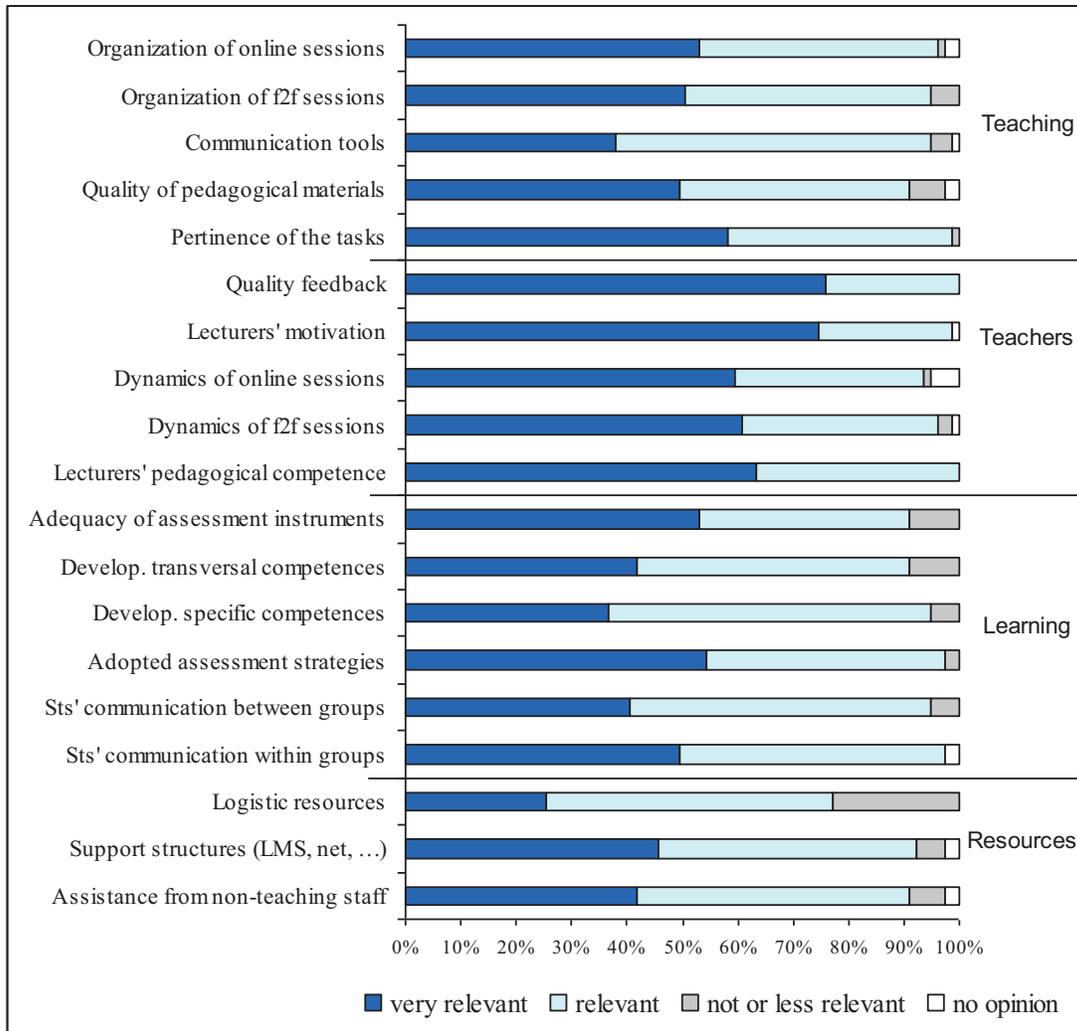


Figure 5 – Lecturers' opinions about what should be evaluated.

4. Final Considerations

The need for determining and maintaining quality in the process of designing, developing and delivering bLearning courses is becoming an important issue for universities and institutions worldwide. It is a process that some Portuguese institutions have recently taken seriously and are now in the process of formalizing. Course leaders and the other directly involved entities need to distribute responsibilities explicitly and collect feedback to use it for the enhancement of the quality of the course. bLearning not only centres the learners as receivers but also as active actors which take part in the definition and evaluation of the quality of learning resources and processes. bLearning requires a stronger definition of planning strategies, communication and coordination than f2f courses (Jara & Mellar, 2009). The evaluation model proposed in this paper aims to be a guide for the main evaluation dimensions, which are linked together, that decision makers have to consider when planning evaluation of bLearning courses. For example, it is clear that one end-modules students' questionnaire will not be enough to capture the data that will be needed for either formative or summative evaluation.

Our evaluation framework recommends, also considering results from previous studies (Pombo et al., 2008; 2009; Pombo, Loureiro & Moreira, 2009; Pombo & Moreira, 2010), that quality evaluation of bLearning should be focused on the learning process, during the development of the tasks, and not only at the end. When it comes to evaluation, subjectivity

decreases when there are several evaluators; evaluation should be made not only by the lecturer but also by students and teaching peers. Using more than one instrument allowing for triangulation of data and using several different quality criteria having in mind the improvement of teaching and learning quality, also guarantees the quality of the course. Online learning evaluation should be implemented to serve a variety of functions, such as to explore the potential effectiveness of online courses, compare online courses, and also as a formative tool to guide and inform the development of online learning materials.

As more and more educators and researchers realise that effective teaching and learning with technology must be driven by pedagogical principles, it is of paramount importance to ask questions such as how this could be achieved and what aspects should be considered for a more effective evaluation that ensures the quality of web-based teaching environments. These findings, linked to the evaluation categories mentioned in the model and added to the opinions of lecturers (directly involved in the process), bring some contributions to those who are in charge of bLearning courses, providing a useful framework that covers all aspects of quality assurance in order to improve the enhancement of teaching and learning.

5. Acknowledgements

The authors would like to thank all the lecturers who kindly participated in the study. This study was supported by the Research Centre for Didactics and Technology in Teacher Education, University of Aveiro, Portugal.

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