

Promoting Motivation and Participation in Higher Education: a B-learning Experience

Isabel Pereira and Antonio Dias Figueiredo
 ipereira@eseecs.ipleiria.pt, adf@dei.uc.pt

Abstract - A b-learning based pedagogical strategy is proposed to promote motivation and participation in higher education. It employs Open Space Technology (OST), collaborative activities, peer evaluation, individual reflection, and the sharing of a final purpose. OST lets the students group themselves according to their interest in a task and develops a mobilizing sense of belonging. A peer-evaluation phase is included, in which each group evaluates and gives suggestions to another group. The groups then produce the final versions of their work, which are presented at a final event whose format has been negotiated to strengthen motivation and shared commitment. The students are also expected to reflect individually on their own participation and learning during the course. The paper describes the pedagogical experiments that supported the development and validation of the strategy and explains why it had a positive impact on student participation and on the overall learning process.

Index Terms - b-learning, higher education, motivation, OST, participation.

INTRODUCTION

Blended learning, the combination of face-to-face classes with on-line based resources and activities, is quietly becoming a natural educational model for higher education [1]-[2]. In recent years, many higher education institutions have been adopting b-learning strategies to improve their teaching and learning processes while taking advantage of the better of two worlds, face-to-face and virtual [3].

The reasons often mentioned to justify this adoption are flexibility in the use of time and space, better management of resources (including faculty), improved support for students who cannot come to all classes and better opportunities for students with different participation styles and abilities for public exposure. The adoption of learning management systems to support higher education is also contributing to this trend. Even in institutions where the adoption of blended learning is not formally acknowledged, many students define their patterns of class attendance and on-line participation as though they were, in fact, following a blended learning regime. They often complement, or partially replace, their participation in formal classes by using the digital resources available online for course support and joining social spaces where related learning activities take place. B-learning currently makes a lot of

sense, since it supports learning in contexts that value the autonomy of the students and their organization of time and space while creating settings for debate and collaboration that get beyond class time and space. It also allows the teacher to propose activities that may be designed, prepared, and executed outside the formal context of the classes.

Every change of educational model, even when it occurs gradually, requires special reflection and experimentation to make sure that maximum benefit is obtained. With this in mind, and to support improved student involvement, motivation, and learning, we have carried out over a period of two years the exploration of a new pedagogical strategy that tries to combine the virtues of face-to-face education with the opportunities of on-line learning. We have followed a design-based research approach [4] where the artifact to be produced was that strategy. Following this approach, we have developed an emergent successive-approximation process where the strategy suffered gradual improvements dictated by the successes and failures of its application along the two years.

In the next sections we present the strategy, describe the pedagogical experiments that supported its development and validation, and explain, with the help of data collected during and after the process, why we believe that it had a positive impact on student participation and on the overall learning process.

THE STRATEGY

One of the main ideas of the strategy is that students should work collaboratively in learning tasks to which they attach sizeable personal meaning. This is seen as important to maximize their sense of belonging, keep them motivated and engaged, and create conditions for improved learning. A major concern has been to create contexts with significant freedom, based on learning activities that have personal meaning to the students and promote individual and collective reflection.

The main components of the strategy have been the use of Open Space Technology (OST), the development of collaborative activities, peer evaluation, individual reflection, and the sharing of a final purpose.

Figure 1 gives an overview of the proposed strategy. It includes three parallel threads, or action lines, two of them developing during the entire course and the third appearing only at the final stage. The first action line is developed in small groups, interspersed with a few face-to-face whole-class meetings, while the second action line involves all

students at the same time, essentially at a distance. The third line is devoted to individual student reflection about the course and the activities carried out.

I. First action line – Collaborative group work

The objective of the first action line is to get the students involved in relevant learning tasks. The objective of each task is to collaboratively produce some artifact (a text, a presentation, a computer program) related to the aims of the course. The idea is not just to produce an academic work, but also to use the deliverables in a common event, which can take several forms, such as a face-to-face public presentation, a physical or virtual exhibition, or the publication of a set of texts. For example, in a multimedia related course, if the task is about some new video technology, the students could also develop a small project using that technology, stressing its virtues (or comparing it with solutions based on other technologies). The various applications could thus be made available in a webpage or physical exhibition, in what we call a mobilizing shared purpose. This purpose should be negotiated between teacher and students at the beginning of the course, so that it may attract most of the students and contribute to keep the motivation high [3].

The definition of the tasks to be attributed to each group of students is a major issue under the strategy. It is fundamental that they hold personal meaning or interest for each student, to reinforce motivation and engagement. The traditional approach would be to ask the students to organize themselves in groups, so that each group proposes a task. Usually, the students organize themselves following personal affinities, or they try to re-create teams that worked

together in the past. The result is that the discussion about the task to be carried out only appears after group formation. This often leads to work routines that limit creativity and innovation and prevent students from getting used to work with different partners. We favor an alternative solution where the point of departure is the choice of a task that is meaningful for some of the students and these students get together in a group when they want to share that task. Group formation is thus based on common interests and not on routine or personal affinities. This approach also contributes to higher degrees of socialization between students who do not know each other well, and helps them develop their relational skills.

To put this process into practice we chose a large-group facilitation method called Open Space Technology (OST), created by Harrison Owen in the mid-1980s [5]. Although it was proposed and is more often used in organizational contexts, we valued its potential to create learning environments with the characteristics described above. OST activities are normally carried out in face-to-face settings, but in an educational context we defend a mixed approach (blended-OST or b-OST as we call it). It includes a first session where students can propose and discuss course related tasks that interest them, followed by a virtual stage where other proposals can be made and discussion continues. This creates conditions for more profound discussions and allows the participation of students who are unable to attend the face-to-face session or have difficulties to express themselves in that context [6]. The OST session leads to the emergence of a set of tasks co-defined by the students who are going to explore them.

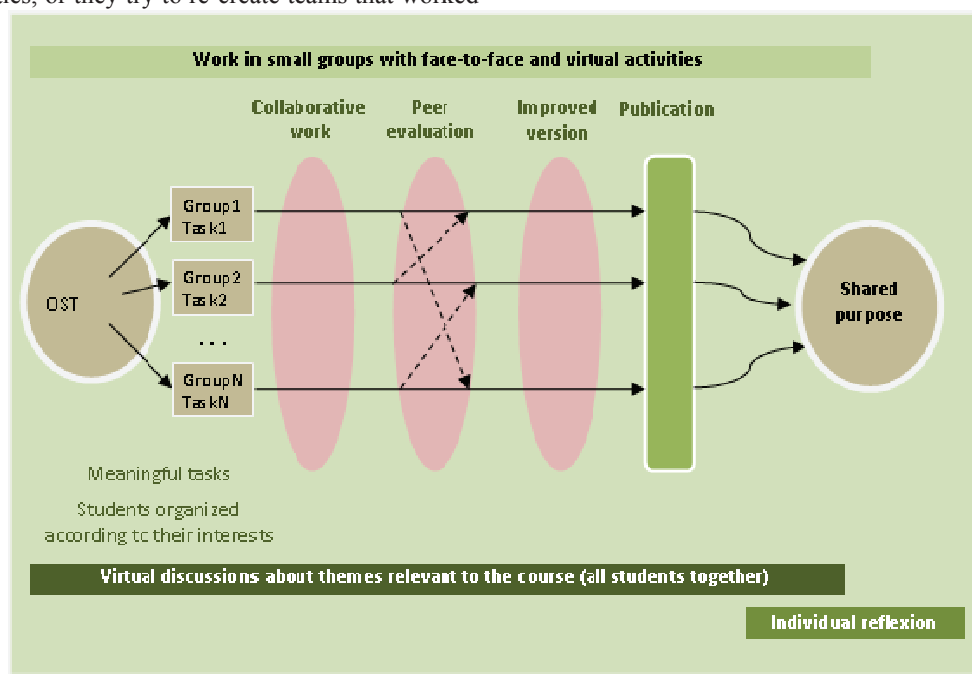


FIGURE 1
STRATEGY OVERVIEW.

After the convergence process that results in the definition of tasks and groups, the students start their collaborative work, mostly at a distance, supported by private discussion spaces created in the course Learning Management System (LMS). Each group must make all the necessary research to produce a good quality artifact that fulfills the task requirements. At the end of this phase, each group publishes a first version of their work on the course LMS.

To let the groups receive comments and suggestions about their work, and to let them temporarily gain some distance from their task, so as to let them broaden their views about the course, we introduce an LMS based peer-evaluation phase where the students in a group evaluate, comment, and give suggestions to another group. This makes them aware of the need to reflect about their tasks and enables each group to receive feedback. After this stage, and taking the feedback into account, each group produces the final version of its work, which is published on the course LMS to become available to all students.

After all this process, the shared common purpose defined in the beginning must be put into practice. As mentioned before, this may be a public event, an exhibition, or some other activity that mobilizes the students throughout the whole work.

II. Second action line – General debate

The second action line of our strategy takes place throughout the entire course, essentially at a distance. It consists in the discussion of themes that are relevant to the course, using the forums made available on the LMS. This debate is open to all students, who may read their peers contributions and make their own. Of course, the teacher plays a central role, launching, stimulating and moderating discussions. However, any student can launch her own discussions, as long as they are related with the course. The main objective is to allow the students to build a broader view about the topics of the course, which would be difficult to grasp in the first action line of the strategy.

III. Third action line – Individual reflection

The third action line of the pedagogical strategy is launched near the end of the course. Each student is expected to elaborate an individual reflection about the course, namely about what was learned, the value of the different activities, the difficulties felt, and suggestions for course improvement.

THE STRATEGY PUT IN PRACTICE

As mentioned before, we have used a design-based research approach [4] in the development of our strategy. Departing from an exploratory first proposal, we have put it into practice to evaluate the results of its application and we have refined it in successive approaches, to increase student motivation and participation and to strengthen the learning experience. In this section we describe those experiences and our main results and conclusions.

I. Context

In the academic year 2007/08 we have made a first experience involving 77 Education students from the Polytechnic Institute of Leiria. In 2008/09 we repeated the experience with the participation of 66 students from the same course and institution. The activities took place in the context of a course on Social and Personal Development. The first author was the professor responsible for the course. The course used a b-learning approach, with 10 face-to-face sessions, between October and January. Work at distance occurred in parallel, according to each student's personal organization of time and space.

At the beginning of the courses all students were asked to register in Moodle, the LMS we had chosen. The teacher encouraged students to participate in the different activities, starting their own, reading and answering their colleagues' messages. Those activities would be considered in their final classification.

The face-to-face sessions were used mostly to introduce the different activities and present the course theoretical framework. One of those sessions was dedicated to the negotiation of the shared common purpose recommended in the strategy. After several proposals, the option was to organize a final event, open to the community, which would involve all students. In this event the groups would have to present and discuss the results of their work: pedagogical proposals and materials to promote education on values in kindergartens and primary education. This decision also defined the framework, or common objective, for the tasks to be attributed to each group during the Open Space Technology phase.

II. Open Space Technology

In the first experiment, in 2007/08, the Open Space Technology session took place about one month after the beginning of the course. We tried to follow the basic OST recommendations, but we made adjustments to comply with the context. The session took place in a single room, for around four hours. The teacher introduced the objectives and rules that should be followed. She also proposed a phrase by Mahatma Gandhi as an inspiration or starting point: *Do the change you want to be in the world.*

After some initial confusion, a few students started to propose themes and associated tasks that they felt would be interesting. Each proponent wrote a proposal in a wall board available to everyone. Students circulated freely around the room, reading the proposals and talking with the colleagues who proposed them. About 30 minutes after the beginning we could see some proponents promoting their proposals, trying to get the attention of their colleagues, and negotiating the details and meaning of the proposals. The students used several strategies, including role-playing, songs, and announcements made in different spaces.

It was interesting to notice the different behaviors shown by the students. Some seemed decided in favor of some theme and tried to convince others to join them, but

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others looked undecided and tried to know more about the proposals, without committing themselves to a decision.

We also noticed that some students did not show any interest in any of the proposed themes. Some scanned the various proposals without choosing any of them, and others simply left the space going to a different place. Harrison Owen uses the words *bees* and *butterflies*, respectively, to define the roles played by these students [5]. Curiously, one of the groups decided to follow their discussion in the garden.

At the end, several groups had been formed. The number of students in each group was uneven. The process each student followed to define her favorite theme also varied. Some made a decision during the session; others simply kept an observing position and only made a decision later. There were students who registered in several themes and others who didn't show any interest in any of them, and only later decided to participate in a particular group.

Although the main objective had been reached – the students had organized themselves in groups, based on a common interest, to work in a particular task – we felt that the dynamics created between the students could have been further explored pedagogically. That was the main reason for the introduction of an on-line part in the OST component, in what we called the blended OST, or b-OST. The idea was to create conditions for deeper involvement in the discussions and more reflected proposals and decisions. This was put into practice in the academic year of 2008/09, in the second implementation of the proposed strategy.

As in the previous year, the b-OST started face-to-face. The dynamics created in the session was very similar to that described for the first year. The main difference was the final objective, as students were not expected to decide at that stage about the tasks and groups they would adopt. There were proposals and a discussion about them, but the proponents were asked to present their idea in a special forum in Moodle. This led to a second discussion cycle, which extended for two weeks, where the proposals were deeply discussed, even by students who had stayed aside during the face-to-face discussion. Also, during the on-line phase, the students were allowed to propose new tasks, which were also an object of discussion. After the two-week discussion, students met again to share their views about the experience and to confirm the decisions expressed on-line about groups and tasks. This session was also used to decide the details about the event that would be organized collectively as the final purpose of the whole work.

III. Collaborative writing

After the definition of the groups and their tasks, the students started to work collaboratively, using private forums created in Moodle for the purpose. The aim of using private forums was to allow groups to discuss freely and to collaboratively write their text without the constraint of being read by all their colleagues.

The groups showed different dynamics. Some started to discuss the structure of the text while others started to work

on a first text written by one of the group members. The flexibility of time created by the use of an LMS was clear, since the contributions could be made at different moments, including during the night.

During the process, we could observe several interesting aspects. For example, in general, we could not observe a clear concentration of leadership in a single student within a group. In fact, leadership emerged and rotated between group members during the writing process. We could also observe the negotiation of proposals to introduce changes in the documents, with expressions such as “I think it would be better if we did like this... but, if you don't agree, we can change”. It was also apparent that the texts evolved with time, suffering changes, gaining or losing parts, altering the format, and evolving in the line of thought that was apparent in the earlier versions.

IV. Peer evaluation

Some time later, all the groups had produced a first version of their texts, which was published in the LMS. In the next face-to-face session, each group made an oral presentation of its theme, followed by a period of questions and comments, open to all students. Each group was expected to present, clarify, and justify the key ideas of its work. The feedback obtained was registered for further use.

After this session, the teacher distributed to each group the text of another group. Each group was expected to put up on the LMS a critical evaluation of the text received, including comments and suggestions that might improve it.

After receiving the comments to their texts, the groups had to produce a final version that took into account all the input received.

V. Final shared purpose

In the beginning of the semester, the teacher and the students had decided that the final shared purpose would be a public event where the groups were expected to present their work to the other groups and to the community. In addition, the teacher suggested that, based on its text, each group planned a pedagogical strategy to be used in a professional context related to the expected future of its members. They should think about an activity, the necessary pedagogical resources, and the context where they would be used. This was the task that mobilized them until the final event.

In this way, at the end of January, the students of two higher education courses, future teachers, transformed their b-learning experience into an event with major significance for their future professional life. It was interesting to notice that each theme had been transformed into a small book, a piece of poetry, a music, a paper flower, a bookmark, a play.

VI. On-line debates

Participation in the on-line forums occurred during all the semester. We opened eight forums, trying to focus in aspects that were not covered by the work of the groups. Some of these forums were well participated while others did not attract many contributions.

In general, the contributions did not raise controversy (although some of the themes had the potential for it). Part of the writing had a noticeable emotional nature, expressed in smiles and words of friendship and encouragement. We also noticed expressive signs of tolerance for the opinions of the colleagues and particular care in the manifestation of disagreement.

We felt that many of the discussions were useful for most of the students, even for those who did not make any contributions but followed the discussions.

VII. Individual reflection

As extensively explained by Schön [7], the ability to reflect in action and reflect on action is an essential quality of professionals, who must be able to analyze what they do and articulate the contextual nature of their actions with the concern to create knowledge that can be adapted, shared, and used in the future. To be able to reflect about their experience is, thus, an important step in the students' personal and professional development. That was the main reason why we included the request for an individual reflection in the final part of the course.

In our case, we asked the students to produce a written reflection about what they had learned in the course, along its different steps, the OST experience, the collaborative writing, the peer evaluation, and the LMS based debates. We also asked them to express how they saw their participation on-line and the feelings and expectations they experienced throughout the course.

SOME REFLECTIONS

During and after the experiments we collected data to analyze the results. Some information was collected directly from Moodle, namely regarding student participation in the on-line activities. We also carried out a content analysis of the students' contributions to the Moodle forums and of the individual reflections they produced. Finally, we conducted a survey based on a Likert-type questionnaire to collect the students' opinions on different aspects of the course. The quantity of data collected was high, so in this paper we will mention only a small part, to give a flavor of our reflection about the two-year experience.

One interesting aspect regards the use of b-OST. The option for b-OST in the second year was based on our expectation that it might allow us to deepen the discussion and broaden it, both in terms of themes and students involved. To get a better idea about what happened during the on-line part of the b-OST process, we have analyzed the LMS logs to weigh up the involvement of the students in the discussions. Figure 2 shows the number of messages posted in the LMS forums, organized by course weeks. We notice that the number of messages was comparatively high in weeks 4 and 5, precisely the time when the on-line part of b-OST took place. If we analyze the number of accesses to the platform, we come to a similar conclusion. In practice, this means that most students got involved in the discussions, some of them making a significant number of contributions.

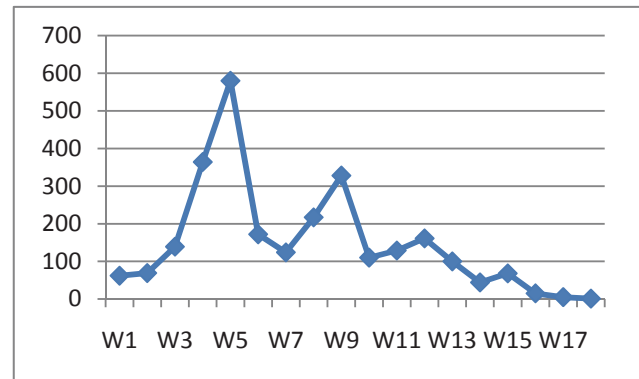


FIGURE 2
NUMBER OF FORUM MESSAGES PER COURSE WEEK.

It was interesting to notice that the students did not limit the on-line discussion to the tasks proposed and discussed in the face-to-face session. Although departing from there, the discussion got broader and deeper, leading to the proposal of new possible tasks and their debate. It is relevant to notice that some of the finally agreed tasks were only proposed during the on-line discussion. So, we can conclude that the inclusion of an on-line component in the OST phase was positive, as it created a new flow of engagement that involved most students in the discussions and widened the list of themes under consideration.

The content analysis of the students' written contributions focused on several aspects. One was how they weighed up their experience of the course. For this topic, we found out nineteen categories. The category mentioned more often was "satisfaction", which grouped different mentions stating an overall satisfaction with the course and the learning experience. The next category was "Moodle", which grouped references made to the LMS and the online activities it supported. For most students, this was the first time they used an LMS, and the general tone of their comments was positive. The third category was "initial expectations". Students referred to the expectations and fears they experienced when they realized the course would follow a model very different from what they were used to. In general, they acknowledge that their fears were not confirmed and show appreciation of the model (as confirmed by the "satisfaction" category). Other categories highly mentioned were "sharing", "pedagogy" and "OST". All of them included positive references, leading us to conclude that the course was much appreciated by most students. Interestingly, the category "difficulties", which grouped references to difficulties and aspects that the students did not like, was the second less found in our content analysis.

As mentioned before, we have also conducted a satisfaction survey, using a questionnaire that included 52 items in a 5-point Likert scale. We will focus here on just two items that seem particularly relevant. Figure 3 shows a boxplot that demonstrates a high level of satisfaction with the online activities included in the course.

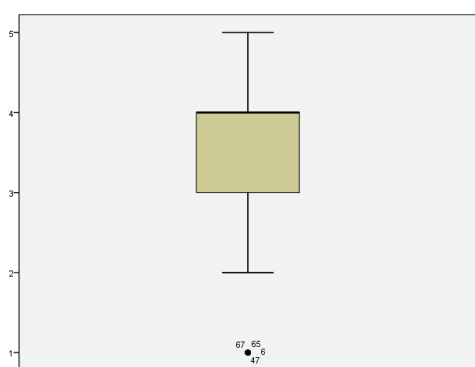


FIGURE 3

IN GENERAL I'M SATISFIED WITH THE ONLINE ACTIVITIES

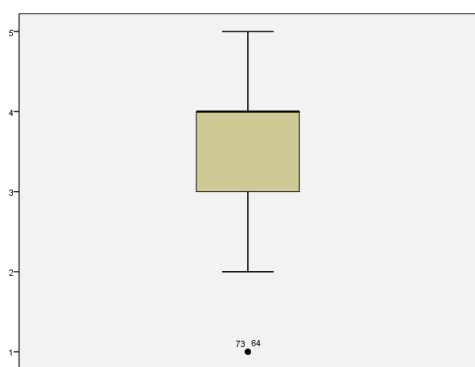


FIGURE 4

ONLINE DISCUSSIONS ALLOW ME TO DEEPEN INTERESTING THEMES

Figure 4 shows that most students felt that the activities allowed them to deepen their knowledge about the themes that interested them. The remaining items focused on other aspects of the course, and the corresponding results confirmed a very positive judgment.

CONCLUSIONS

The strategy we propose facilitated the self-organization of the students and created a context where they could work autonomously. In general, they felt pleased with the activities involved. The process required effort, but it was rewarding and promoted participation and learning.

We used OST to make sure that each collaborative task instilled a significant sense of belonging and grouped the students according to the interests that attracted them to it. The inclusion of an on-line dimension in OST proved

valuable, as it promoted a higher participation of most students, improved their participation and the quality of their learning, and created a context that facilitated the involvement of nearly every student, including those who felt shy to express themselves in front of their colleagues.

Our experiments, in two consecutive academic years, in a real setting, involving courses with many students, also showed that b-learning in higher education, supported by appropriate strategies, is an interesting option to create valuable educational contexts that maximize student participation and learning. The data we have collected, during and after the experiments, showed that the students were very pleased with the activities they had chosen, evaluated positively their learning, and felt that they now knew their colleagues better and had established personal links they had never thought possible.

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AUTHOR INFORMATION

Isabel Pereira, Instituto Politécnico de Leiria e Centro de Informática e Sistemas da Universidade de Coimbra, Portugal, ipereira@esece.ipleiria.pt.

António D. Figueiredo, Centro de Informática e Sistemas da Universidade de Coimbra, Portugal, adf@dei.uc.pt.