

Extending open space technology for blended learning

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Abstract — This paper presents a pedagogical strategy for the exploration of blended-learning in higher education. A key component is the adoption of Open Space Technology (OST) to group students according to their motivation for the topics to be studied and tasks to be performed, rather than following their personal affinities. We have developed and tested the strategy throughout two academic years. In the first year, we explored OST in its regular, face-to-face, approach. Although the results were good, we felt that learning could be further improved with a period of on-line discussion after the face-to-face session. With this in mind, in the following year we explored a combination of face-to-face and on-line activities, in what we called blended-OST (or b-OST). We concluded that this approach could lead to a deeper discussion of the proposed tasks, to the emergence of additional possible tasks, and to the participation of students who tended to shy away from expressing their opinions orally. The data collected shows that the involvement of the students increased in the second year. In our view, the use of blended-OST has contributed to the creation of a better learning context. The students' opinions, collected after the course, also support this view.

Keywords: *b-learning; OST; student participation; motivation; higher education*

I. INTRODUCTION

Blended learning (b-learning), the combination of face-to-face classes with on-line learning resources and activities, is becoming common practice in higher education. Sometimes, the institutions themselves stimulate the change, in order to increase flexibility in the use of time and space, improve the management of resources (including faculty), and broaden the opportunities for students who cannot come to all classes [1]. Other times, in the absence of institutional policies, but in environments where the learning materials are made available on-line, the students select a mix of classes and on-line activities in what amounts to an unofficial adoption of b-learning. The pedagogical and organizational changes introduced by b-learning thus justify major research efforts in devising appropriate strategies.

Our research, which extended over the last two years, has been directed to the design of a b-learning based pedagogical strategy to promote students' motivation and participation.

We have adopted a design-based research approach [2] where our strategy is seen as the artifact to be produced. We have, thus, followed an emergent, successive approximation, process where the strategy was gradually improved by taking into consideration the successes and failures of its application throughout the two years.

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 was seen as important to maximize their sense of belonging, keep them motivated and engaged, and create conditions for improved learning. With this in mind, we have chosen Open Space Technology (OST) [3] for the establishment of the groups and tasks within the course topics. Although OST is typically used in the organizational world, we believe it holds a lot of potential for exploration in educational settings. In the first year of the experience we resorted to a conventional, face-to-face, OST session that led to a set of groups formed, each with a specific task assigned. We were very pleased with the results. However, we felt that the process could be further improved by resorting to a shorter face-to-face session complemented with an on-line phase where students could propose, discuss, and agree on the tasks to be developed. Based on this idea, in the second year, we have used a mixed approach, creating what might be called a blended OST. Our conclusion was that this approach produced better results, in several aspects.

In section II we briefly present the strategy. In section III we describe the use of OST in detail and discuss the main results obtained. Section IV summarizes our conclusions.

II. PROPOSED STRATEGY

In order to attain our main objective of improving student participation, motivation, and learning, we wanted to create learning contexts where the students could enjoy a sense of freedom. Those contexts should include collaborative tasks that held some personal interest to each student and could promote individual and collective reflection about the course topics involved [4].

The strategy 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.

A. First action line – Collaborative group work

The objective of the first action line is to get the students involved in the discussion of relevant tasks that lead to the collaborative production of a text or set of materials. The objective is not just to produce an academic text, but also to put it in practice and present it in a public event at the final stage of the course. This is what we call a mobilizing common 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 [4].

After the course context is established, the traditional approach would be to ask the students to organize themselves in groups, so that each group proposes a task. What usually happens is that the students organize themselves following personal affinities, or try to re-create teams that worked together in the past, so that the discussion about the task to be carried out only appears after group formation. This often results in work routines that limit creativity and innovation and prevent students from getting used to collaborate with different partners. We believe in an alternative solution, where the point of departure is the choice of a task that is particularly meaningful for each student. Group formation is thus based on common interests, and not on routine or personal affinities. Of course, 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 make this possible, we organize the process using Open Space Technology (OST), a method proposed by Harrison Owen in the nineties [3]. The result of this phase is a set of groups assigned to tasks that interest and motivate a reasonable number of students. It is not fundamental that all the groups have the same number of students. We will present OST in more detail in the next section.

After the definition of the groups and respective tasks, each group gets involved in a collaborative process supported by private discussion spaces created in Moodle, the Learning Management System (LMS) of the course. The groups are expected to make the necessary research to answer their doubts and to produce good quality texts and materials, depending on the task. This phase ends when each group publishes a draft of their work in the LMS, so that the remaining students can visit it.

We believe it is important at this stage that students get feedback about their work. We think it is also important that the groups “forget” their work for some time and broaden their views by making contact with other tasks. That is why we have introduced at this stage a peer evaluation phase. It starts with a face-to face session where each group makes a brief presentation of their work. After that, the teacher assigns each group the draft presented by some other group. Groups are expected to discuss the draft assigned to them and produce a critical comment about it. All this process is

carried out on-line using the course LMS. After receiving the comments to its work, each group analyzes them and takes them into consideration when writing the final version of the assignment. This version is published in the LMS and made available to all students.

We thought the learning process would be incomplete if it ended with just one more academic text. So we invited the students to also produce materials connected with the task. For example, in a multimedia related course, if the task was about some new technology, the students would also create some small application using that technology.

This action line of the pedagogical strategy ends with the concretization of the final purpose agreed in the beginning of the course. Normally, this is an event, public or limited to the class, where the groups present their works. It could also be an exhibition where the works of the students are shown in a public space.

B. Second action line - General debate

The second action line of our strategy takes place along the entire course, essentially at a distance. It consists in the discussion of tasks that are relevant to the course, using the forums made available in the LMS of the course. This discussion 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 wider view about the topics related to the course, which would be difficult to grasp in the first action line of the strategy.

C. Third action line – Individual reflection

The third action line of the pedagogical strategy is launched near the end of the course. In it, 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.

III. OST OR B-OST?

As mentioned in the previous section, we propose the utilization of Open Space Technology (OST) to support the organization of the students in groups that contemplate the significance of the tasks to each student. It is helpful to know more about OST to understand this option.

A. What is OST?

In general, the main objective of OST is to debate ideas following an action-oriented perspective. It is not used to discuss the implementation of known technologies or to transmit rules and procedures. It is a method oriented to objectives or tasks, and not to discuss working processes.

Unlike conferences or workshops, OST events do not have keynote speakers, a pre-defined program, or invited panels. There is only a pre-defined task: an objective or set of objectives or concrete problems that must be solved. It starts with the participants seated in a circle, with a moderator in the centre, who explains how the participants

will create their own event. Any participant who wants to discuss a topic that is relevant to the general objective just has to announce that to the group. The topic title is written on a wall-board, indicating a time and place for its discussion. The collection of discussion topic proposals thus obtained makes the working program for the day. Each participant can then make her own program, just by selecting the discussions in which she wants to participate [5].

The environment in OST events is informal, and the participants have freedom to enter or leave any discussion anytime. This is called the “two feet rule”, meaning that people are free to use their feet to leave any discussion if they feel it is not interesting or they are not making any relevant contribution. OST also recognizes the role of people, often called “bees” in OST literature, who stay in one discussion for some time but leave and go to another, creating cross links between different discussions. There is another type of participant, the so called “butterflies”, who are more easily found in public spaces, like a garden or a bar, eventually making contact with other participants, starting new and often interesting and creative discussions related to the topic.

Often, OST based discussions change with time. Some authors consider the existence of three main phases: divergence, emergence and convergence [6]. Divergence is a phase where ideas start to appear, in an unorganized manner. Frequently there is some confusion and it is important that participants are open to other people’s views. It is also important to ask questions and discuss ideas. New ideas often arise from the discussion, and links start to be established between some of the participants. Eventually, divergence gives place to emergence. This is a moment when a collective sense starts to develop and similar conversations appear, as participants discover common interests. Often, new ideas arise at this stage and new relationships are established between some participants. People start to group as they identify shared interests and ideas. Finally, there is a convergence phase where decisions are made as a result of the convergence of ideas, interests, and, sometimes, personal relationships.

After each discussion, a small report about it is produced, and the collection of all reports makes the meeting final proceedings.

OST is used when it is necessary to define new objectives or devise strategies to implement them. It has been gaining many supporters, especially in the organizational and research worlds [7]. However, we believe it can also be very useful in educational contexts, and it did particularly suit our objective of allowing students to organize themselves around tasks that had significance to each of them.

B. OST at work

Our pedagogical strategy was put into practice for the first time in the academic year of 2007/08, in a course offered to Education students. In the OST phase, we tried to follow its proponent’s recommendations but we made adjustments to comply with the context. The session took place in a single room for around four hours. The students were seated in a circle and the teacher presented the method

and objectives around a common starting thought: Ghandi’s phrase “Be the change you want to be in the world”.

In the beginning there was some confusion and disorganization, but after a few minutes a number of students started proposing tasks they felt could be interesting. They wrote them on the board to see if other students would be interested. Students who didn’t propose a task circulated in the room, asking questions to each proponent and trying to know more about the proposed tasks. The promoters tried to explain their ideas and attract colleagues to their side. In about thirty minutes, organization started to become apparent. Some students discussed one of the available tasks. Some others didn’t show interest in any of the tasks, took the “butterfly” position, and left the room for some time. Still a few others acted like “bees”, going from group to group, participating in discussions and making bridges between some of them. In the end, we had the students grouped according to their interests. The groups had different numbers of students.

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, so as to create conditions for deeper involvement in the discussions and more reflected proposals and decisions. This was put in practice in the academic year of 2008/09, in the second implementation of the proposed strategy. It involved 178 students from Education, Social Service, and Public Relations courses.

As in the previous year, 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 required to decide at that stage about the tasks and groups they would adopt. There were proposals and discussion about them, but the proponents were asked to present their idea in a special forum in Moodle, the course LMS. 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, students were allowed to propose new tasks that 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.

C. Some reflections

This mixed approach to OST (or b-OST, as we call it, by analogy with b-learning) – combining the face-to-face and on-line contexts – proved very effective to our objectives. In the following lines we will reflect about our findings, namely the changes felt due to the extension of OST to the on-line dimension. We have identified three major advantages:

- Higher involvement of most students
- Richer and more profound discussions

- Participation of students with lower tendency for public exposure or not able to come to classes

During the first year we felt that the participation in OST had been very uneven among students. Some were very active, namely the proponents of the tasks and some who actively participated in their discussion. However, other students were not so active, although most of them followed the discussions. One of the reasons could be the limited time available. If we added more time and time flexibility we could encourage wider participation. Another important advantage would be to enable the students to participate in all the discussions that interested them. In face-to-face sessions it is common to have several parallel discussions taking place simultaneously and, due to time and physical limitations, students have to choose only some of them. On-line discussions are not time limited and students may follow and participate in all discussions that attract their attention. This wider participation can bring pedagogical advantages, since students make contact and discuss more tasks.

To get a better idea about what happened during the on-line part of the OST process, we have analyzed the Moodle logs of the course, looking for the confirmation of our views about the involvement of the students in the discussions. Figure 1 shows the number of messages written in the course LMS forums, organized by course weeks. It is easy to see that the number of messages was comparatively high in weeks 4 and 5, precisely the time when the on-line part of OST took place. If we analyze the number of accesses to the platform, we come to a similar conclusion. During weeks 4 and 5 we had around 16000 accesses to the forums, much more than in other weeks. In practice, this meant that most students got involved in the discussions, some of them making a significant number of contributions.

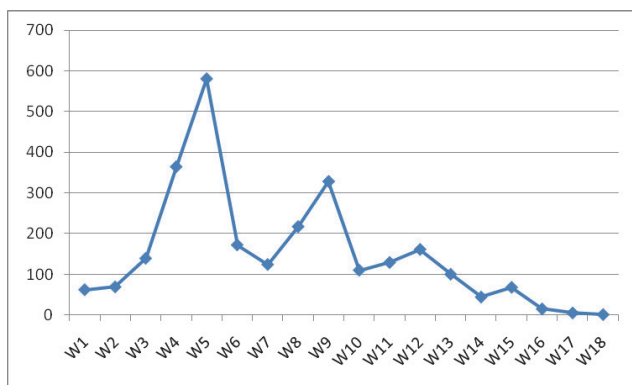


Figure 1. Number of forum messages per course week.

It was interesting to notice that the students didn't limit the on-line discussion to the tasks proposed and discussed in the face-to-face session. Although it started there, the discussion got wider and deeper, leading to the proposal of new possible tasks and its debate. The graphic in figure 2 gives an idea about this dynamics. During the face-to-face event a total of 70 tasks was proposed, but during the on-line discussion 16 new tasks were suggested, which resulted from the students' interactions. In the end, 37 tasks were agreed

and the students became organized around them. It is relevant to notice that some of the finally agreed tasks were only proposed during the on-line discussion.

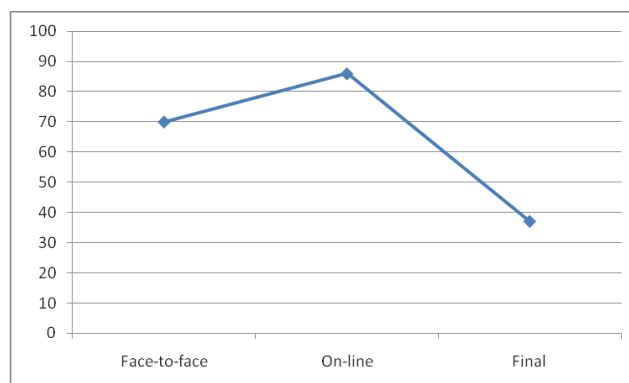


Figure 2. Number of tasks discussed and selected.

Analyzing the students' contributions in this new configuration, we notice a higher richness of arguments and a deeper discussion of many of the tasks. A few students even carried out some small research to find arguments to support their views. They presented ideas, put questions, negotiated meanings, shared experiences, and planned actions, sometimes in a very creative and enthusiastic way. The written medium proved to allow more time, reflection, and care when elaborating contributions than the more spontaneous and improvised face-to-face environment. The students are more at ease to prepare their contributions and feel the urge to be more careful, since the written contributions stay in the forum and can be read by any other student or the teacher. Another important fact is that the on-line environment seems to have changed the behavior of many students from social introversion to virtual extroversion. This is particularly interesting and valuable if we bear in mind that, as mentioned in [8], "the pleasant side-effects is that, once you come out of your shell online, it becomes easier to do it in real life". The virtual environment seems to contribute to increase some student's confidence, allowing them to contribute to the discussion. As one of the students wrote, reflecting on her first post, "it was the courage of the timid". Interestingly, this student later became the clear leader of the work group that produced one of the most interesting works, involving a good number of her colleagues who had been, apparently, more participative in the beginning. We also felt that in the on-line environment the students were more productive and consistent in their opinions. Overall, this blended approach to OST allowed a wider exploration of the implications of emerging ideas, the identification of priorities, and the development of action plans. It proved to be powerful because it is simple and self-managed.

D. The students' views

As mentioned before, the third component of the strategy is a personal reflection that each student is requested to make about her experience in the course. To get a better understanding about the students' views, we carried out a

content analysis of all the reflections, categorizing the contents in different categories. For the purpose of this paper, we just concentrate on the category “OST”, which includes contents related to this phase of the strategy. We have selected some students’ citations.

The dynamics of the face-to-face session can be illustrated by two students who wrote “It was interesting that, suddenly, many tasks appeared and many colleagues got interested into the same tasks, contributing to the interaction between the groups” and “No doubt, it was a very interesting morning. We exchanged ideas about very different tasks, all of them important. When the teacher asked us to write one or more tasks that we would like to work on, I felt unsure about which one would be the most interesting to me”.

The on-line period went through different phases. Some students wrote about the importance the debate had for them: “In this space we debated several important tasks. We could know our colleagues opinions about them, and also understand our own opinions” and “Each person is unique and the choice of tasks revealed a small part of us and how we think”. Other students focused on their groups: “I had the possibility to work with persons I know well, and others I almost didn’t know. It was possible to get the work done without any physical meeting”. Some other students reflected about what they learned: “I made contact with facts I didn’t know and learned a lot with my colleagues” and “It was fun, interesting, and a way of learning. We will always remember some things that we have learned”. The importance of the on-line experience for some more reserved students was also mentioned: “It was good, because I could free myself and express my opinions. I had space and time to reflect calmly and think before answering”. Finally, several students reflected about the overall process: “I had never done anything like this. I didn’t know very well where we were going, but I did go and I liked it! I liked the idea of organizing a group around common interests. It makes sense!” and “OST is a very interesting tool. It promotes responsibility, learning, and organization. It gives us the freedom to choose the place where we work. We can choose non-formal spaces and organize our time”.

IV. CONCLUSIONS

The proposed strategy facilitated the self-organization of the students and created a context where they could work autonomously and felt pleased with what and how they were learning. The students and the teacher shared responsibility

for all that happened. The process required effort, but this effort was rewarding and promoted participation and learning.

OST was used as a method to make sure that each collaborative task instilled a significant sense of belonging and grouped the students according to their shared interest in the task. The inclusion of an on-line dimension in OST proved valuable, as it promoted a much higher participation of most students, fostered the quality of their participation and their learning, and created a context that facilitated the involvement of those who feel shy to express themselves publicly, even 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 not only possible, but an interesting option to create valuable educational contexts that maximize students’ participation and learning.

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