

The dynamics of project-based learning extension courses: the “Laboratory of Social Projects” case study

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ABSTRACT

In this case study we discuss the dynamics that drive a free-of-charge project-based learning extension course. We discuss the lessons learned in the course, “Laboratory of Social Projects.” The course aimed to teach project management skills to the participants. It was conducted from August to November of 2015, at Federal University of São Paulo (Unifesp), Osasco Campus, Brazil. The course had 72 participants (41 community members and 31 university students). The participants worked in teams of four members (on average) and developed 13 projects on behalf of eight NGOs that help people in need.

In our research, we followed a mixed methods approach, using project reports, project blogs and the course management database as sources of information. We made use of system thinking analysis to reveal the dynamics that unfolded during the course.

Our main findings are the following: 1) free-of-charge extension courses can be much more challenging to manage than traditional courses once the workload of the professors involved can be substantially higher than in similar regular courses; 2) the use of project-based learning techniques in extension courses can be very effective; 3) problems are created when the students drop out of the course.

Keywords: extension courses, project-based learning, NGOs

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DESCRIPTION OF THE CONTEXT

Brazilian public universities provide regular courses to its graduate and undergraduate students. In addition to that, the universities also offer courses to the broader community. These courses are called ‘extension courses.’ They can be free of charge or not depending on the course organizer’s decision. The extension courses are offered to anyone (community members or university students) interested in them. These courses do not count as credit for university students.

This case study analyzes, “Laboratory of Social Projects,” a 30-hour free-of-charge course offered to community members and university students. This course was designed with the objective of developing the project management skills of its participants. In addition to that, the course was planned to allow knowledge-sharing among the participants. The participants were grouped in teams of four people (on average) on projects that could lead to the creation of products and services to benefit eight institutional university partners (NGOs that help people in need). The teams were formed in three different arrangements—university students and community members, only community members, and only university students.

Although the course was open to the broader community, the course organizer (a university professor) made efforts to invite people from the community that work in NGOs and who wanted to improve their project management skills.

All of the course participants who completed the course with success received a university certificate. This certificate brought benefits to all participants in different ways. The community members may have used the certificate to improve their curriculum vitae, to get a promotion in their career, and to improve their future employability. The university students may have used the certificate to fulfill the hours of complementary activities (HCA thereafter) demanded by Unifesp.

THEORETICAL FRAMEWORK

Partnerships between universities and communities have recently been gaining more attention from scholars (Bouillion & Gomez, 2001; Kearney, Wood, & Zuber-Skerritt, 2013). Scholars point out that partnerships that involve universities and NGOs may bring benefits not only to the NGOs and the university, but also to the broader community (Arantes do Amaral & Okazaki, 2016; de Figueiredo, Keffer, Barrientos, & Gonzalez, 2013; Mendenhall & Anderson, 2013). Researchers (Arantes do Amaral & Matsusaki, 2016) have described arrangements between academia and NGOs by means of project-based learning centered courses. However, it seems that there is still a lack of information about project-based learning extension courses

that involve the joint efforts of community members and university students on behalf of NGOs and the broader community. This case study aims to address this gap.

In our research we followed a mixed method approach. This research method joined the essential characteristics of quantitative and qualitative research approaches (Johnson, Onwuegbuzie, & Turner, 2007). We collected the data (quantitative and qualitative) from the project reports, from the project blogs and from the course management database.

The project report was compiled from the teams' answers to eighteen questions. We asked them open-ended questions such as what motivated them to choose the NGO, what was the scope of the project, what were the project's main characteristics, what were the problems they faced, what they did to overcome the problems, what were the main lessons learned during the project, how they managed the conflicts, how the fundraising strategies worked, how many hours they spent working in the project, what they had learned working in a real project with a real client, how the relationship with the client was, and what they would recommend to improve the course. We also asked each team attach the evaluation done by the client (an email with the comments from NGO representative) to the final project report.

We also asked the students to create a project blog. Each blog included complementary information, such as the details of what the students had done in the project on a weekly basis. The blogs also included the project management plans and management tools created (such as the project's status reports, the project's charter, the work breakdown structure, the responsibility matrix, the risk management plan, the communication plan).

In addition, we also collected data from our course management database (thereafter CMD). In our database we registered information related to the time we spent organizing and managing the course. Here we included information such as the number of hours we spent proposing the course, obtaining the necessary university approvals and answering the students' emails.

We analyzed the qualitative data following the five-phased cycle method, as proposed by Yin (2015). We analyzed the quantitative data by means of basic statistics, counting the occurrence of variables and organizing them by means of histograms.

We use a system dynamics tool, causal loop diagram, in order to connect our findings of both research approaches.

CONCRETE IMPLEMENTATION AND ACTIONS

Planning for the "Laboratory of Social Projects" course began in June 2015. The course was planned to take over 15 weeks; each week, the students would have classes that were two hours long. The course was limited to 140 students.

Getting the university's endorsement for this course was not an easy task. The professor had to write the course proposal, fill out several forms, and submit them to the Extension Chamber (a chamber of the university that oversees all the extension courses offered by professors of Unifesp Osasco Campus). However, the extension chamber only meets once a month: therefore, the proposal had to be submitted two months before the beginning of the course. It took one month to get the approval. After that, the professor had to get the signatures from the campus directors, and then submit the proposal to the Dean of Extension's Chamber, who would approve the course and make the course available for enrollment on the university website. This process was, again, bureaucratic and time consuming; it took another month to get the authorization.

Meanwhile, the professor also contacted the institutional partners—the NGOs with whom he had worked—in order to learn of their needs and translate them into the project themes. He also worked on creating an enjoyable learning environment (ELE thereafter). He built the course's website with all the information that students would need: a page with the course basic information (schedule, course rules, approval criteria), a page with the list of the project's themes, a page with the course's videos/lectures, a page with the links to all institutional partners.

After getting the authorization of the Dean of Extension's Chamber, the course was made available on the university's website allowing the people interested on it to enroll.

The professor then sent emails to 120 NGOs that worked with people in need, telling them about the course and inviting their members to enroll. The professor also sent emails to university students, letting them know about the course. Three days after offering the course on the university's website, the course had 140 people enrolled. The professor contacted the Dean of Extension's Chamber representative and asked for the list of emails of all people enrolled in the course. Based on this list, the professor sent an email to each one, asking them for specific information (such as his/her academic background and work experience), and for permission to create a personal webpage with this information. The idea was that the course website would allow the students to know more about each other. This knowledge would help the students create groups based on their affinities. The creation of ELE took a lot of time and energy.

The course was scheduled to follow the academic year schedule: it would begin the first week the August. However, the university's administrative staff began a strike just at the beginning of that month. Despite this problem, the course began as planned on August 5th.

The strike created a major problem for the course: it was very difficult for the professor to reserve the auditorium—the only space suitable for a course with so many students. The strikers took the reservation system down; therefore, the professors who wanted to use the auditorium had to negotiate with each other. It created a great deal of confusion and conflict. During the

course, the participants had to be moved back and forth, from the auditorium to a regular classroom, depending on the auditorium’s availability. In order to resolve this problem, the professor asked for support from the Academic Director; however, the director did not have power to overcome the strike and give support. This was a problem that almost jeopardized the entire course.

The course followed a PBL approach: in each class the students learned only the project management theory necessary for the next step of the project (Table 1). During the course, each team presented the project status to the professor and to the other teams on three occasions: in the fifth week of the course, the tenth week, and at the final class (15th week). Outside the classroom, the students developed several project-related activities, such as meetings with NGO representatives, fundraising actions, development project plans among many other activities. Each team had a project blog; the blog made available all project-related information.

Week	Lecture content	Deliverable for next week (on the project’s blog)
1	Course overview; project management basic characteristics	Group composition and the project’s blog
2	How to create a project chart	Project chart
3	How to create a fundraising plan	Fundraising plan
4	How to create a work breakdown structure (WBS)	WBS
5	How to create a project network of activities (PERT/CPM)	PERT/CPM project network First project status report
6	How to define the team members’ responsibilities and to create and a matrix of responsibilities	Matrix of responsibilities
7	How to manage risks and how to create a risk management plan	Risk management plan
8	How to create a communication plan	Communication plan
9	How to control the project, using Earned Value Analysis (EVA)	EVA
10	How to assure project quality; how to create a project’s quality management plan	Project management plan Second project status report
11	How to manage risks and how to create a risk management plan	Risk management plan
12	How to create a work breakdown structure (WBS)	WBS
13	How to create a project network of activities (PERT/CPM)	Project network of activities
14	How to close the project; how to create a lessons learned catalogue	Lessons learned catalog
15	Project Wrap-up	Presentation of the final project’s status report

Table 1. Course planning

Of the 140 enrolled, only 72 showed up. Of this 72, 17 participants (5 university students and 12 community members) dropped the course during the semester. It caused a lot of problems for the projects; the teams had to adjust their plans, distributing the tasks to the students who did not give up. Nevertheless, despite all these problems, the 55 participants were able complete the course successfully.

RESULTS AND REFLECTIONS

There were 13 projects accomplished on behalf of eight different NGOs (Table 2). Approximately 70% of the projects (nine projects) succeeded (the students were able to create the product/service required) and 30% failed (four projects).

We consider a project as a failure if:

- 1) The team was not able to prove, through their project report and project blog, that the project did create (even partially) the product or service that it aimed to create, and
- 2) The project report and project blog were incomplete, and failed to provide information about the project's activities and the project's plans.

On average, the teams had four members. Five teams were mixed, five teams had only community students and three teams had only university students.

No.	Project Description	Project's client	Team members	Results
1	Donate clothes	Institute "Future Herds" (an NGO that helps children victims of sexual abuse)	4 community students	Success
2	Obtain 100 kg of food	Claretianos (an NGO that helps children of poor families)	4 university students and 2 community students	Failure
3	Create an architecture project	Care home, "Love and Hope" (an NGO that helps children with cancer)	4 university students and 2 community students	Success
4	Obtain 100 towels	Spirits association, "Pathways to the truth" (an NGO that give educational opportunities to children from poor families)	2 university students and 2 community students	Success
5	Develop a pictures database	Institute, "Making History" (an NGO that helps orphanages)	4 community students	Success
6	Obtain 200 books for children	Institute, "Future Herds" (an NGO that helps children victim of sexual abuse)	3 community students	Success
7	Creation of a database	Association, "Have a better life" (an NGO that helps children of poor families)	3 university students and 3 community students	Success
8	Promote recreational activity to the children	Care Home, "Love and Hope" (an NGO that helps children with cancer)	3 university students	Success
9	Obtain 300 books and 200 toys for children	"Claretianos" (an NGO that helps children of poor families)	1 university student and 2 community student	Success
10	Create eight twelve-minute video documentaries about the NGOs involved in the course	Professor and the eight NGOs	2 university students	Failure
11	Promote a short tour with elderly	"Spirits assistance association" (an NGO that helps elders)	3 community students	Success
12	Create a hydroponic garden	"Japanese-Brazilian Association" (an NGO that helps children of poor families)	1 university student and 1 community student	Failure
13	Promote storytelling activities	"Claretianos" (an NGO that helps children of poor families)	5 community students	Failure

Table 2. Projects' overview

All of the projects that failed had similar problems (Figure 1): team member dropouts, scheduling conflict (the team members had difficulty synchronizing their different schedules) and lack of commitment (team members doing less than that they were supposed to do in the

projects). Three teams pointed out that they had problems with getting support from NGOs (all of them reported communication problems). One group reported conflicts among the team members and one group reported failure in implementing their fundraising strategy.

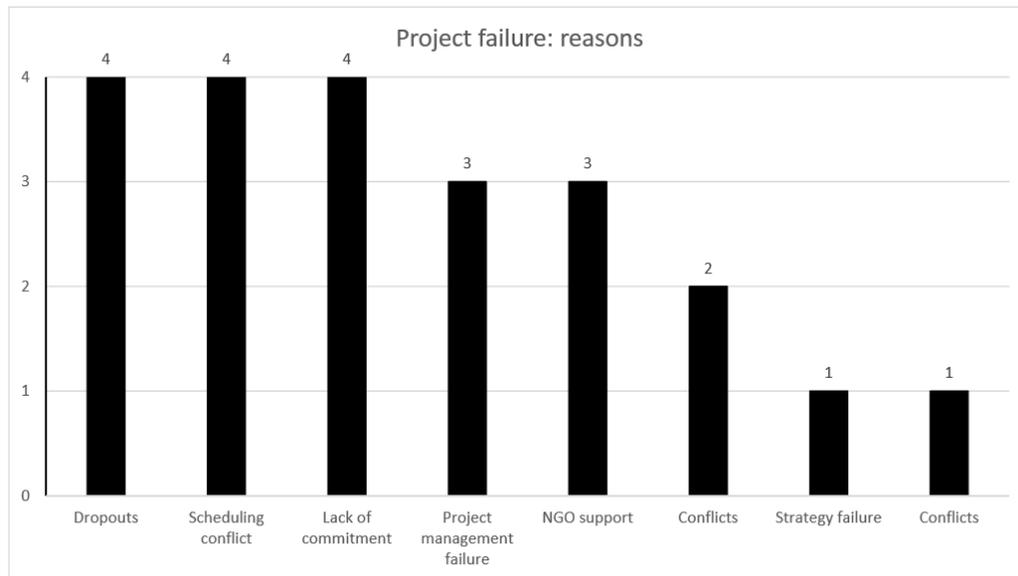


Figure 1. The main reasons stated by the students as responsible for the projects’ failures.

All of the teams that succeeded (nine teams) mentioned that the team commitment to the project was the main reason for the success (Figure 2). Eight teams also stressed that the use of project management techniques contributed to their success. Four groups highlighted the importance of the NGO support to the project, two groups reported that the group worked in harmony—without conflicts—and one group reported that the project management background of team members also contributed.

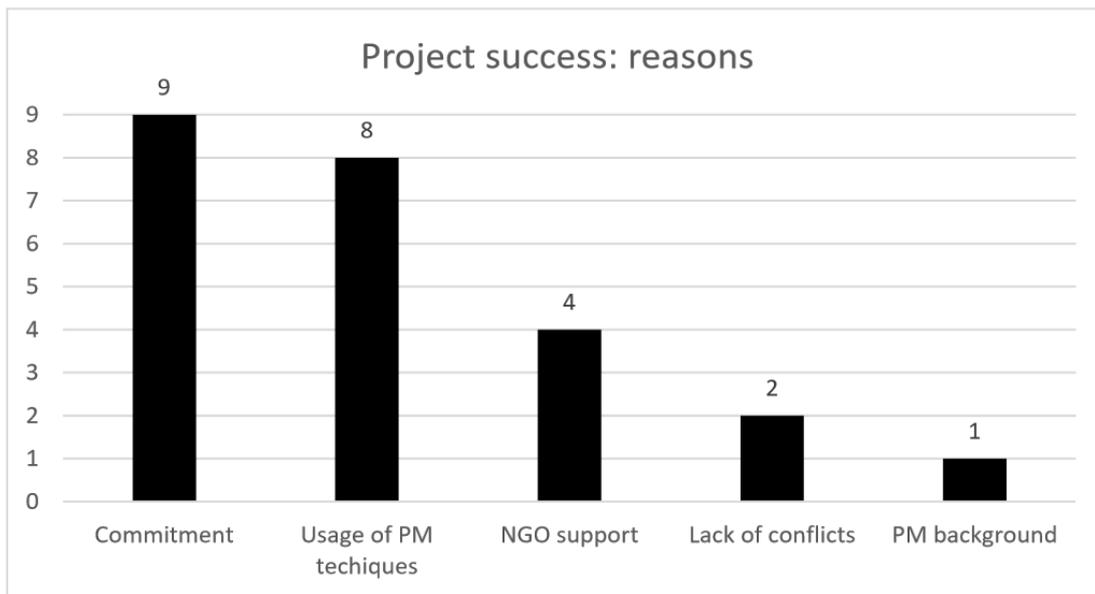


Figure 2. The main reasons stated by the students as responsible for the projects' success.

Based on the CMD, we can say that we spent about 10 hours writing the course proposal and completing the required forms, 5 hours obtaining the necessary approvals and signatures, 10 hours creating the course website and personal pages for all the students, 5 hours talking to our institutional partners (the NGOs that offered the project's themes) explaining to them the characteristics of this specific course, 5 hours writing emails inviting the community members to participate, 10 hours answering, by email, the questions the community members had about the course, 15 hours managing the problems created by the dropouts, 7 hours solving the problems created by the strike and 5 hours creating the course certificates. In short we spent around 72 hours (more than the double of hours of the course itself) simply dealing with issues related to the organization and management of the course.

Therefore, we can say the creation of the ELE was time-consuming and stressful. In parallel to this extension course, the professor also had to teach regular courses. Teaching an extra-curricular course like this one increased his workload and stress, impacting negatively on his motivation with the course (Figure 3, "Professor fatigue and stress" loop). Having teacher assistants would alleviate his burden; however, the university was not able to provide any assistants.

In addition to that, the strike of the administrative staff, described previously, also contributed to the increase in the professor's stress (Figure 3, "Insufficient support" loop).

This analysis led us to our first finding: 1) free-of-charge extension courses can be much more challenging to manage than traditional courses once the workload of the professors involved can be substantially higher than in similar regular courses.

Analyzing the main reasons the students identified as responsible for the success of their projects -- commitment and usage of project management techniques, Figure 2 -- we can say that the professor's actions to create an enjoyable learning environment worked, leading to an increase in motivation for both the professor and the participant. (Figure 3, "Creating ELE" loop). As the team members became more motivated with the course, they also became more committed to the projects; they worked harder in order to achieve the project goals (Figure 3, "Getting motivated" loop). For many of the teams, the efforts paid off. Week after week the project advanced, and the team members were able to achieve the intermediate goals as planned. Achieving the goals motivated them to work even harder, leading to new achievements, which increased their enthusiasm and participation in the course's activities, making the learning environment even more enjoyable (Figure 3, "Enhancing ELE").

This analysis and the high project success (70%) rate led us to our second finding: the use of project-based learning techniques in extension courses can be very effective.

However, as the teams worked harder, the fatigue also increased. The fatigue led to a decrease in motivation of some team members with the course. These team members became less and less committed to the projects as the weeks passed. Each week at least one student dropped out – 17 in total, by the end of the course. The analysis of the project reports suggests that the number of dropouts was the main cause of project failures (Figure 1). We suspected that the people who left the course were those more interested in obtaining the course certificate (or getting the HCA, in the case of the university students) than in learning about project management techniques and/or work on social projects. When one student left the course, the burden increased for those who remained, leading to a decrease in the project achievements (Figure 3, "Leaving the course" loop). In one project (Project 12, Table 2) three students left the group of five, which led to the failure of the project.

This analysis led us to our third finding: problems are created when the students drop out of the course.

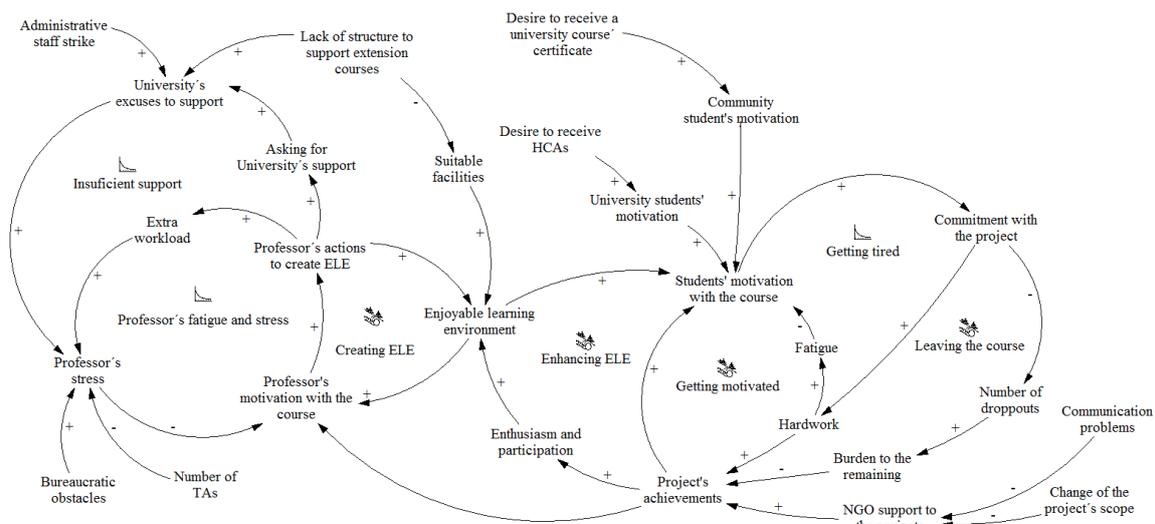


Figure 3. The dynamics present during the development of the course, based on Arantes do Amaral & Gonçalves (2015).

FINAL REMARKS

Concluding, we can say that that this free-of-charge extension university course was much more challenging to manage than the university's regular courses. The professor had to deal with a lot of bureaucracy just to get the university's approval. More than that, the professor was also responsible for inviting people to participate, to manage the enrollment, to create the learning environment, to deal with the problems caused by the dropouts and, at the end of the course, to create course certificates. The professor's workload was substantially higher than the workload required in regular courses. In addition to that, offering this course did not provide any academic benefit to the professor, only peer recognition. We guess that this explains why only very few professors are willing to offer this kind of course in Brazilian public universities.

However, we think that a course with these characteristics can provide a very rich educational experience to all participants. The use of PBL techniques was very effective and there was intense knowledge-sharing among the university students and community members. More than that, the projects provided benefits to NGOs and to the people they assisted. We hope this case study can be helpful to the PBL community.

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