ICRES 2016: International Conference on Research in Education and Science

TEACHER´S LEARNING AND COLLABORATION USING INNOVATIVE TEAMS: PROFESSIONAL LEARNING COMMUNITY

Karla Gamez-Perez
Tec de Monterrey, Campus León

Elizabeth Mena Avilés
Tec de Monterrey, Campus León

Roberto Rosas Rangel
Tec de Monterrey, Campus León

Abstract: The 21st century is a challenge for education at all levels and the way that students learn is a challenge which invites teachers to improve learning experience techniques. This research presents the results of the implementation of an innovative educational project conducted at TEC de Monterrey at Campus Leon from August 2014 to May 2015, in which 8 teachers from four different subject areas: Basic Sciences, Humanities and Social Sciences, Applied Engineering, Language and Communication, were involved. There were three main objectives for this research project. The first objective was to provide an overview of the terminological framework that describes the teaching collaboration. The second objective was to present the focus and depth of collaboration during the development of the different learning opportunities that were observed. The third objective consisted in listing the benefits observed for students, teachers and the institution. The factors that were initially viewed as an obstacle in coordination ultimately led to the creation of a new methodology for teaching that allows the implementation of new models and improved communication styles between peers. The prior will serve as valuable points of action for class implementation and effective collaboration. This last point is vital for the future since it represents a necessity to build educational organizations that anticipate new trends and generate cutting-edge educational models.

Keywords: Collaboration, methodology, alignment, learning.

Introduction

Teachers say that collaboration encourages the development of a powerful learning environment (Dunn, 1999), (Kwakman, 1999), (Lohman, 2005). Because of teamwork, teachers can exchange ideas and experiences, as well as develop and discuss new materials, get feedback from colleagues and obtain moral support during the implementation of some strategies in the classroom. However this does not ensure that collaboration in educational and pedagogical themes will incorporate innovative and enriching strategies to the process of teaching learning. The potential for collaboration depends on the interdependency of partnerships (Little, 2003) and the ability to have groups of teachers that work in a structured manner and under a previously established methodology. Therefore, during this project an evaluation was established and a new way of working teacher´s groups was implemented, leading to the identification of the positive factors and areas of opportunity for the application of the analyzed model.

Professional Learning Communities Precedents

Today, there are different terms used to describe the partnership between teachers however since they are not clearly defined, one of the objectives of this project is to clarify such terminology and provide guidance on the

type of collaboration that was used during this work. The most important terms to describe this relationship are discussed; those terms will be clarified in this section and their different ways of use shall be clarified:

Collaboration: This type of collective work consists of the cooperation between team members and how their joint work spreads over every part and combines the individual results into a final team result.

Professional Learning Community is defined as a group of professors belonging to an educational institution that to some extent share a set of values, students, and school norms and guidelines to teaching. They operate together to promote interdependence.

Community of practice refers to the trading of personal criteria for community decision-making. Although it is expected that not everyone in the group will share the same ideas, or agree with everything, the decisions are the result of a collective bargaining process and this is related to a self-government group.

Team is a set of individuals who are interdependent in their tasks and share responsibility for the results. A group sees themselves and is seen by others as an intact social entity embedded in a larger social system and they manage their relationships across organizational boundaries.

Many studies have reported that the collaboration of teachers provides multiple benefits for teachers; however, there are also other groups that are favored with this collaboration. Students, for example, have reported an enhancement of understanding and performance in various subjects. Furthermore, various studies have shown that by using collaborative teams, teachers feel more motivated, the workload is reduced, efficiency is increased, communication is promoted, technological skills are improved, thus reducing personal privacy and allowing the development of strategies for student-centered instruction, consequently the alignment between the actual curriculum and the hidden one increases.

At the organizational level, the collaborative team of teachers reported additional benefits such as the positive influence on the work environment, the increase of equity, the encouragement of innovation within the institution, and an increased concern for the needs of students, thereby forming an inclusive organizational culture (Meirink, Imants, C. Meijer, & Verloop, 2010)

Innovation description

Collaboration between teachers and teamwork has been studied and encouraged in different institutions over time. However, the incorporation of the element of innovation in this project focuses on developing a methodology that allows teachers to work in a structured and enriching way. Similarly this research motivates the collaborative teacher teams, in which teachers, who may be physically in the same space or may even belong to different Campuses located in various cities, can offer students a different way to receive a class, so they could gain experience and knowledge from different teachers within different geographical areas. Thus encouraging the creation of courses to harness the experience and different specialties of teachers so that they may collectively enrich the teaching of the subject.

Implementation Process

The testing groups are implemented in the following areas:

Table 1. Testing groups

Number of Students per subject	Subjects
47	Mathematics 2 Bachelor
60	Analysis and Verbal Expression
9	Design and Improvement of Logistic Systems
120	Ethics, Profession and Citizenship

The first phase of implementation consisted of the following activities: Teachers, who wanted to join the project "Collaborative team Teachers", a name given to the model, were invited to become involved by collaborating with several teachers in the development of the same field.

In the first meeting, they were asked for suggestions in the development of the methodology and the needs that any team can have when working together. After this meeting, the different manners of working of each group of teachers was identified, for this reason we felt the need to investigate and generate interviews with teachers who had already had previous experience in working together for the development of any subject, and survey their students to give us their opinion about this form of collaboration.

The first interviews were conducted on teachers who shared and collaborated on the development of the Professional Business coaching class during the semester of August through December, 2014.

1. C.P. Pilar Muñoz Tejeda.
2. Lic. Elvira Toba.
3. Lic. Wilberth Ortiz Legaspi.

Some of the comments and suggestions obtained from the interview were: It will be necessary when implementing a model of collaboration between teachers, that students have an explanation about the team model: which consists of several teachers, teaching the same subject. Discuss the experience and area of expertise of each teacher, so that students understand the reason for the cooperation during the development of the subject. Emphasize the contribution of each teacher in the subject. Review the teacher's profile immersed in collaboration, so that you can have a constructive and rewarding collaboration. Allow the development of a plan for the team. Explain the importance in choosing equipment. Respect agreements. Communicate that the diversity of explanations, is not a problem, rather it is an enrichment for the student and there is no better way to learn than to have more than one observation around the same topic. Establish the initial design where all teachers are present. Find the difference between the groups of teachers and ensure that these differences are explained to the students. Recognize that collaboration adds value, allows us to have different observers of the same project and provides flexibility in the presentation of the classes in case of malfunction. Recognize that communication inside the team is essential. Establish among all teachers that they must to have a mastery of the material. Assign a professor team leader to improve collaboration. Encourage a meeting place for teachers and enjoy coexistence. Sensitize and generate a schema of trust between teachers. Anticipate, review and overcome the various administrative constraints. Find teachers with complementary profiles. Define a homogeneous system of evaluation with a single evaluation criterion. It was recommended that modifications in any grade should be made together, and it must be the result of consensus calibration and teachers involved. Maintaining an attitude of humility and respect for the work of teachers who belong to the team is extremely important, this shall be a cornerstone in the development and success of the project. Finally, be aware that collaborative teams generate a learning opportunity even amongst teachers.

After obtaining the comments of teachers, the survey applies to the students who took the class with these teachers. The results are shown in table 2:

Table 2. Survey results

Question	Results				
	SI (Yes)			**NO**	
Is the aim to enrich the teaching-learning process completed?	100%				
Would you recommend taking a class under this format to other colleagues?	88.89%			11.11%	
	Excellent	Very Good	Good	Regular	Bad
In general how would you rate the teachers' collaborative team format?	44.44%	44.44%	0%	11.11%	0%

Another question made in the survey was: What challenges or difficulties could be encountered in this new way to take class? Some comments are described below:

" (You) get to know the 3 teachers", "I don't think there were any difficulties, but a challenge was maintaining a level of a very active class, because teachers are often very different and sometimes they do not reach an agreement (not the case), but if applied in other subjects it would be a bit more challenging. ", "The challenge is to learn to work with different styles but the difficulty is that many times the teachers do not agree or contradict each other during the sessions", "In my career collaborative team teachers always handled the subjects well, so I feel comfortable", "No, because the three are well connected and there were no problems in different directions", "Funny"

Methods

In the third part of the project, subjects were selected and teachers were involved in their implementation. We took on the task of establishing the methodology for the following months: Figure 1 shows methodology for the project:
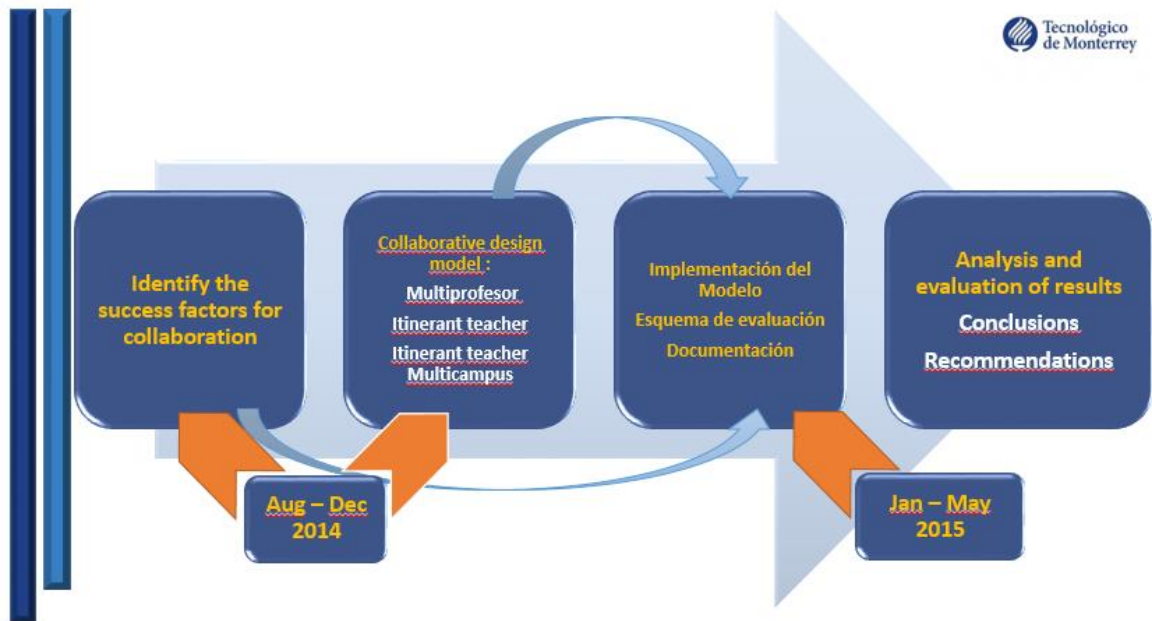
Figure 1. Methodology

Phase I. Identify the success factors for collaboration

The following information, are some important points identified during the research as key factors for teacher collaboration: (1) Define the subjects to be taught under this model. (2) Allow a development plan for the team and not for a teacher individually. (3) Review the profile of the teacher immersed in collaboration, so that you can have a constructive and rewarding collaboration. (4) Assign a leader professor for collaboration work. (5) Stimulate a meeting place for teachers and enjoy coexistence that encourages awareness and generates an outline of trust among themselves. (6) Define a uniform system of assessment under a previous agreement; management of these headings and activities should be reviewed under a single criterion. (7) Establish the methodology and select an appropriate model of work, respecting agreements and providing suggestions for the enrichment of the material (8) Establish a mechanism and tool of communication in the team. (9) Review and adapt to different administrative constraints. (10) Clarify and explain to the students the class format (Collaboration amongst teachers) and define the experience and the area of expertise of each teacher involved in teaching the class, so that students understand the reason for the collaboration.

Phase II. Design collaboration model

During the research, three different models for collaboration were established: (1) **Same Subject / multiple Teachers**: Several teachers teach different groups on the same material, which can be exchanged during sessions interchangeably (same time and day of classes). (2) **Itinerant teacher**: Each teacher teaches a module / topic of assigned materials according to his or her area of expertise and / or experience. (3) **Itinerant teacher – different campuses.** Each teacher teaches a module of the subjects assigned according to his or her area of expertise and / or experience. It is proposed that at least one module should be taught by a teacher in a different campus and there was student mobility in the Campus selected during the semester.

Phase III. Implementation of the Model Scheme Assessment Methodology and Documentation
The implementation of the model, was based on the following steps and activities on figure 2:
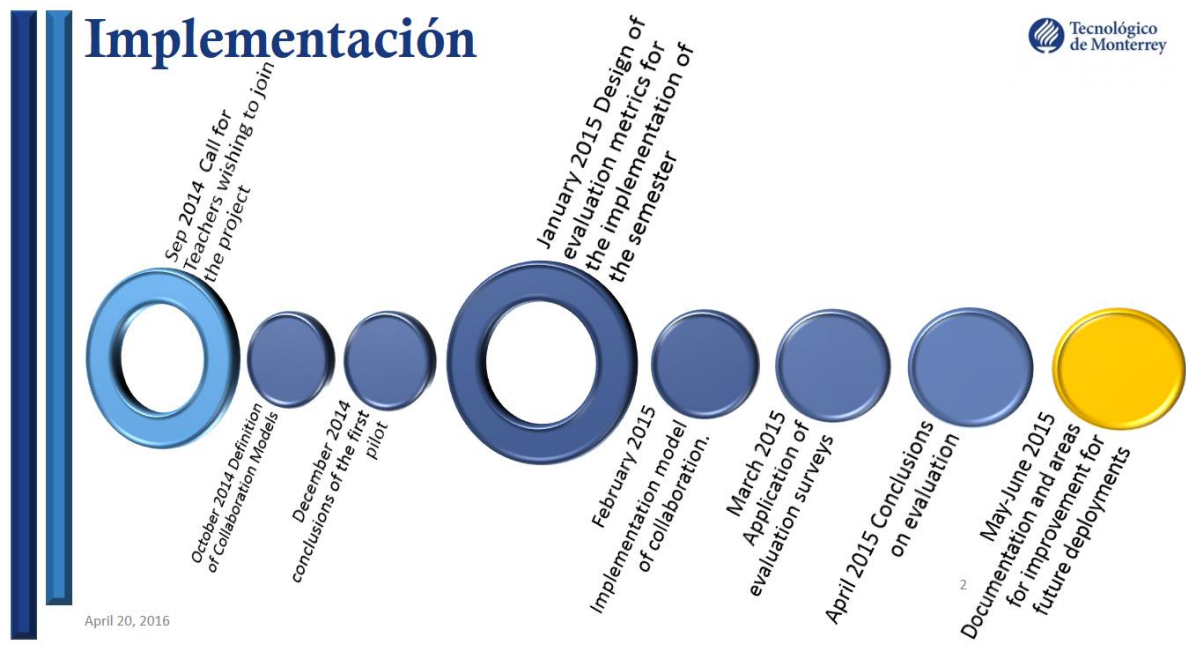
Figure 2. Implementation process

The Model assigned to each subject is shown in Table 3:

Table 3. Models

Model	Subjects
Same Subject / multiple Teachers	Mathematics 2 Bachelor
Same Subject / multiple Teachers	Analysis and Verbal Expression
Itinerant teacher	Design and Improvement of Logistic Systems
Itinerant teacher – different campuses	Ethics, Profession and Citizenship

Some of the incidents or changes during implementation, are described next: (1) Mathematics: Expansion and unification of resources, materials and assessment instruments were standardized without influencing the teaching styles, thus benefiting the development of academic skills of students. (2) Analysis and Verbal Expression: Students identify us as teachers who can turn area. We developed joint activities in the three groups, for example: Reading Circles (more than 90 students working collaboratively at the same time). There was also a system of standardized assessment. (3) Design **and Improvement of logistics systems:** A visit to Campus Guadalajara was organized and a class with affinity to the corresponding one in Leon was taken, thus breaking the paradigm of the difficulty of student mobility. (4) **Ethics, Profession and Citizenship**, establish a uniform design of activities for all students.

Results and Findings

The evaluation scheme proposed for the implementation of the models was the following: (1) Student evaluation: ECOA: official survey evaluation conducted by the University, and a further evaluation survey on the perception of the model. (2) Teachers Self-assessment and peer assessment of the performance of each teacher in the implementation of the model in the selected area. (3) Between Teachers: Space feedback from staff.

After the implementation of the models an evaluation survey on the development of the model was applied in order to assess its impact and these the results are showed in Table 4:

Table 4. Survey results

Question	Results				
	SI (YES)		**NO**		
Are you aware that your class is taught under the form of a collaborative team of teachers?	98.08%		1.97%		
Was the aim to enrich the teaching-learning process achieved?	92.76%		7.24%		
Would you take another class under this format?	86.18%		13.82%		
	Excellent	Very Good	Good	Regular	Bad
In general how would you rate the teacher collaborative team format?	25%	43.42%	23.03%	2.63%	5.92%
How satisfied are you with this model?	28.95%	53.95%	15.79%	1.32%	0.00%

Conclusion

As was seen in the development of this work, the first phase of this project was to understand the terminology related to the type of collaboration between teachers. We established that the type of collaboration which was used during the past year was that of learning communities, where it was possible to generate benefits that students could identify. We evaluated the implementation of the whole model using different surveys, we also noticed that the collaboration between teachers caused an atmosphere of teamwork and continuous learning within the community of teachers involved in the project. The implementation of the first phase was a success and created the opportunity to integrate this new methodology into a new community of teachers. Methodology provides an opportunity not only to learn but to innovate in the way in which a class is taught, even physical barriers were removed to motivate and ensure collaboration between different campuses in the development of the same subject.

Recommendations

This research was part of the project "Leaders TEC21" led by the Faculty Development Center for Educational Innovation -CEDDIE- ITESM, in west rectory where teachers involved sought to contribute to the educational model TEC21 under the premise that starting academic innovation will achieve quality education and comprehensive training of students.

References

Dunn, T. &. (1999). Deliberate practice in teaching: What teachers do for selfimprovement. *eaching and Teacher Education*, 631–651.

Kwakman, C. (1999). *Teacher learning during the professional career; Studies of professionalism at the workplace in secondary education.* Netherlands: Radboud University Nijmegen,.

Little, J. (2003). Inside teacher community: Representations of classroom practice. . *Teachers College Record*, 913–945.

Lohman, M. (2005). A survey of factors influencing the engagement of two professional groups in informal workplace learning activities. *Human Resource Development Quarterly*, 501–527.

Meirink, J., Imants, J., C. Meijer, P., & Verloop, N. (2010). Teacher learning and collaboration in innovative teams. *Cambridge Journal of Education*, 161–181.