

Collaborative Learning 2.0

María Nieves Florentín-Núñez, *florentin@uni.edu.py*

Margarita N. Takahashi, *na2mitakahashi@hotmail.com*

Marian Aranda, *gisselaranda@hotmail.com*

Nilda N. Cuenca, *nildacuenk2010@hotmail.com*

María L. Sanabria, *mariasanabria@hotmail.com*

Leticia Arzamendia, *lety_arzamendia6@hotmail.com*

Blás Vera, *blasv@hotmail.com*

National University of Itapúa, Faculty of Economics and Administrative Sciences,
Paraguay

Abstract

With collaborative learning, one wants to avoid that students become dependent on the teacher as an authority on the subject contents or in group processes. In collaborative learning, the teacher becomes together with the students, a member of a community that searches for knowledge. We have experimented with collaborative learning, as a complement of face to face teaching. We have considered the educational tools of Web 2.0 to experiment collaborative learning. The different experimental results obtained, have shown that the students have developed abilities to solve problems, abilities for the critical and analytical reasoning, abilities that promote self-learning, communicative abilities, and capacities for team work.

Keywords

Web 2.0, collaborative learning, lifelong learning

INTRODUCTION

There is a growing interest on behalf of the universities in the incorporation of new technological tools offered by the Information and Communication Technologies (ICT), as a complement to face to face teaching (Florentín-Núñez, 2010; Álvarez, Ayuste, Gross, Guerra & Romañá, 2005). One of the many possibilities offered by the ICT are collaborative tools under the denomination Web 2.0, with these new tools the teacher can collaboratively organize any didactic task of any subject and within any study program, but it is an error to present all the activities as from the collaborative processes, as learning is an individual process, which can be enriched with collaborative activities tending to develop in the individual, personal and group abilities (Lucero, 2003; Álvarez et al., 2005).

Within the new education environment the teacher should develop abilities to renew the course contents and the teaching methods, which allow forming students that will be capable to develop themselves in a collaboration context and of permanent social iteration, where the necessary knowledge to solve situations is constantly changing (Álvarez et al., 2005).

Students should develop multiple abilities and capacities (Johnson, D., Johnson R. & Holubec, 2004), such as the capacity to work in a team (share goals, information and materials); abilities for the critical and analytical reasoning (to reason in a deductive way, evaluate ideas, to the teacher and peers); abilities to solve prob-

lems (identify problems, analyze them, plan, organize and apply and evaluate); communicative abilities (listen, understand, exchange ideas and formulate conclusions); and abilities to promote self-learning (reflection, self-evaluation, and learning from errors).

The quality of education is not dependent on the technologies, but the required change of conception of learning and education that is required by society knowledge.

In this paper we have proposed collaborative learning 2.0, in order to facilitate the development of abilities and basic capacities for student lifelong learning.

This paper is structured as follows. Section 2, describes the materials and methods considered for experiments with collaborative learning 2.0. The design of collaborative activity is detailed in Section 3. The experimental results obtained are presented in Section 4. Finally, the conclusions are in Section 5.

MATERIALS AND METHODS

The parameters and the tools which we have considered for experimenting with collaborative learning, we have outlined in the following subsection.

Collaborative learning elements

The main collaborative learning elements are (Casamayor et al., 2008):

1. Positive interdependence: Group members should help each other, share among themselves (information, resources and achievements) to reach the common goal.
2. Individual responsibility: Each member should be responsible to fulfill with the part of the work which corresponds to each one.
3. Collaboration abilities: Members should develop abilities necessary for the group to function, i.e. they should know how to exercise leadership, make decisions, create confidence environment, communicate with each other and manage conflicts.
4. Communication: Group members should share information and material. They should help each other in an efficient way and offer feedback to improve the work. They should analyze each member's contribution and through consensus try to obtain a higher quality result.
5. Group evaluation: Group members should analyze up to where they have reached their goals, they should determine which group member actions are positive or negative and should make decisions on which behaviors to keep or modify.

The classroom

The classroom becomes an oral expression and communication space, where students expose and share their ideas on the theme being studied, i.e. the classroom environment becomes a consensus, negotiation and exchange of ideas, materials and information, among the different group members; all this guided and managed by the teacher.

Group conformation

For collaborative learning group conformation, there is no ideal dimension. To determine the group dimensions, one should take into account the following (Johnson et al., 2004):

1. Large groups: In a large group, the personal interaction between the members diminishes, and the sensation of intimacy is reduced, resulting in a less cohesive group and less individual responsibility to contribute to the success of the group work.
2. Small groups: In a small group, it will be more difficult for some group members not to actively participate in the development of the collaborative work;

because the performance of each member is more visible and the members are more responsible for their acts, which guarantees everyone's active participation. It will also be easier to detect and mend the difficulties which the students could have by working together.

The smaller the group, the better. It is better to form groups of two or three students. The learning groups may be homogeneous or heterogeneous. So as to teach certain social practices or reach certain conceptual objectives the homogeneous ones are preferable, whose members have similar capabilities. However, heterogeneous groups are preferable, i.e. groups made up of students with different yields. The heterogeneous groups tend to promote a deeper learning, because it allows students to have access to diverse perspectives and problem resolution methods. This increases comprehension, reasoning and retention in the long run of knowledge acquired by students.

The distribution of the group members can be at random or in a selective way. The random distribution is the most effective and easy method to form groups of students; which consists in dividing the numbers of students in class by the number of members one wishes to have in each group. The distribution in the selective way is similar to the random one, only that the teacher makes sure that in each group there are one or two students with certain specific characteristics (with different performances, learning styles, or personal interests).

The groups can be established by the teacher or by the students. The groups chosen by the teacher, allow the teacher to make sure that in none of the groups there are a majority of non hard-working students or that the best students are all together. The groups chosen by the students themselves are the less advisable, because they tend to be homogeneous, i.e. that the group's members are all good or all of the same sex.

A useful modification which can be made to this method is to allow the students to choose their own groups, but overseen by the teacher, thus avoiding the forming of homogeneous groups.

So as to avoid that the members adopt a passive attitude, or a dominant one in the group, each group member is given a role within the group. The roles indicate what each group member can expect from the others, and so, what each one is expected to do.

Evaluation

The teacher can evaluate the collaborative learning process in a quantitative and qualitative way. The evaluation of the developed contents, are considered in a quantitative way, and everything related to knowledge construction process in the collaborative environment, is evaluated in a qualitative way considering as parameters the elements of collaborative learning. Both the successes and the errors obtained in these evaluations; allow the teacher and the students to get to know the perspectives and the level of aims obtained (development of personal and group abilities) facing collaborative learning, and carrying out adjustments in the following collaborative task to be done.

Web 2.0

Web 2.0, is dynamic participative and collaborative Web, which allows reaching lifelong learning in a collaborative environment (Shuen, 2008). In this one, the users are the protagonists, which using the new applications and services of Web 2.0, create and share contents.

Following this we design the collaborative activity which is based on the observations mentioned in the previous sections.

COLLABORATIVE ACTIVITY DESIGN

2012 Computational Training II students, of the Commercial Engineering Career, Faculty of Economics and Administrative Sciences have used the Web 2.0 tools, for experimenting with collaborative learning. In Figure 1, there are reflected the different actors, activities and Web 2.0 tools that participated in the collaborative environment.

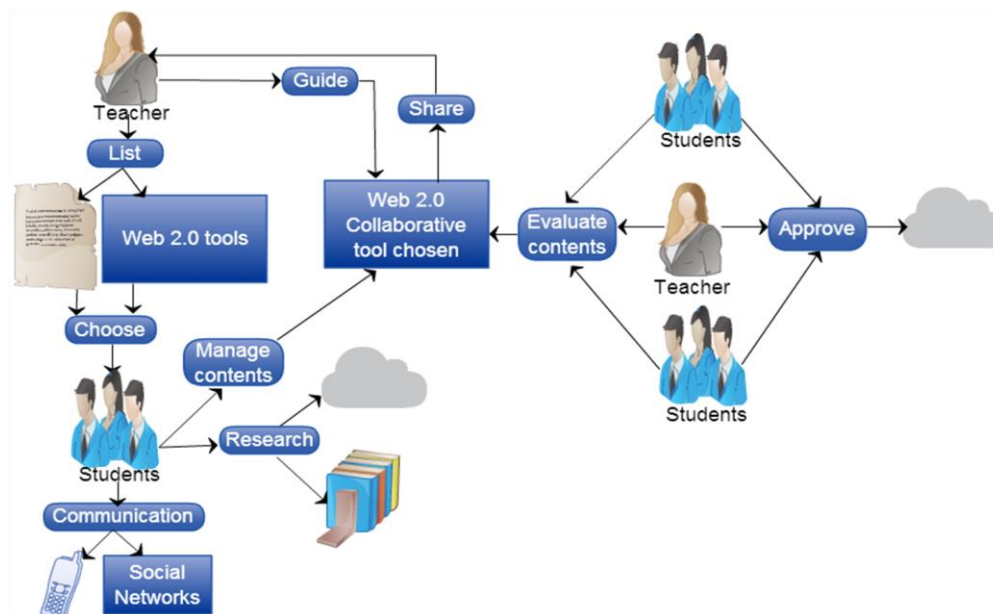


Figure 1: Block diagrams of collaborative learning.

The following explains the most important elements which intervened in the collaborative environment:

1. **Teacher:** Is responsible to provide students with a list of activities to do and the Web 2.0 tools to be chosen. Collaborative tools of Web 2.0 which the teacher has suggested to the students in this experiment are: Webquest and Wordpress.
2. **Students:** They form a group of three students and assign the role to each one of the members; they select by consensus the research issue, the collaborative tool to be used and determine the communication media to be considered in the group. Having established these points, they begin to research in the network or in the reference books that the teacher has provided for them.
3. **Web 2.0 Collaborative tool chosen:** After choosing the tool to be considered for research, the group manages the contents of the collaborative tool and shares it with the teacher. From this invitation the teacher observes the participation of group members in the process of task elaboration and constantly guides them to achieve the goal.
4. **Teacher-Students:** In class, students and teacher evaluate the contents presented by the group. In agreement the collaborative work is approved and finally the group publishes the work, so as to share information with the rest of the world.

EXPERIMENTAL RESULTS

Twenty four students of the subject Computer Training II in 2012, have experimented with collaborative learning. Eight groups were formed, made up of three students each.

The Following are the experimental results obtained with two groups of students. The first group has considered Webquest to present information related to pivot tables1 in a simple, practical way and with the objective of avoiding aimless browsing.

The choice of this topic was to experience and learn together, beyond what is learnt in the classroom and that this experience will be able to help others. Figure 2 presents one of the contents displayed in Webquest.

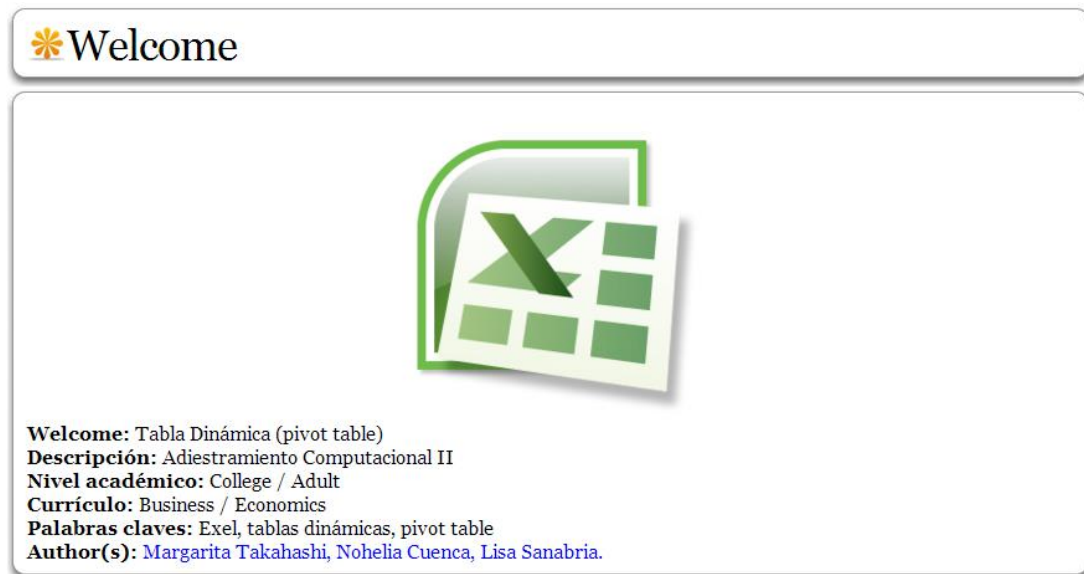


Figure 2: Welcome.

The second group of students has considered Wordpress as a tool to manage contents related to the promotion of different tourism attractions in the Itapúa Department, Paraguay. They have decided to contribute to the tourist communities on-line. In Blog2, they present different places of public interest, museums, tourist sights and the traditions of each city of the Itapúa Department. Figure 3 presents one of the tourist attractions there.



Figure 3: Dunes at San Cosme and Damián.

CONCLUSIONS

We have experimented with collaborative learning 2.0 as a complement of face to face teaching; we have considered Web 2.0 collaborative tools, as fundamental tools to put into practice collaborative learning. The experimental results obtained with the different collaborative groups have shown that the majority of the students

of the subject Computer Training II in 2012, have developed abilities and basic capacities necessary for lifelong learning.

NOTES

¹ Available at <http://zunal.com/introduction.php?w=154185>

² Available at <http://malebla.wordpress.com/>

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Biographies



María Nieves Florentín Núñez is a researcher and teacher at the National University of Itapúa; in the Faculty of Computer Science Engineering and the Faculty of Economics and Administrative Sciences, Paraguay.



Margarita N. Takahashi is a student in the 3rd semester at the Faculty of Economics and Administrative Sciences. National University of Itapúa, Paraguay.



Marian Aranda is a student in the 3rd semester at the Faculty of Economics and Administrative Sciences. National University of Itapúa, Paraguay.



Nilda N. Cuenca is a student in the 3rd semester at the Faculty of Economics and Administrative Sciences. National University of Itapúa, Paraguay.



María L. Sanabria is a student in the 3rd semester at the Faculty of Economics and Administrative Sciences. National University of Itapúa, Paraguay.



Leticia Arzamendia is a student in the 3rd semester at the Faculty of Economics and Administrative Sciences. National University of Itapúa, Paraguay.



Blás Vera is a student in the 3rd semester at the Faculty of Economics and Administrative Sciences. National University of Itapúa, Paraguay.

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