

Trabajo cooperativo y competencias transversales: una experiencia de la web 2.0 aplicada a la asignatura de educación social e intercultural (grado de maestro de primaria) en la facultad de educación. Universidad de Zaragoza

Cooperative work and transferable skills: experience of Web 2.0 applied to the subject of Social and Intercultural Education (Primary teacher degree) in the Faculty of Education. University of Zaragoza

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Resumen

Este trabajo desarrolla una experiencia educativa que se realiza durante el curso 2010-2011 en la asignatura de Educación Social e Intercultural, del primer curso del Grado de Educación Primaria en la Facultad de Educación de la Universidad de Zaragoza (España); cómo las herramientas TIC de la Web 2.0: plataforma de aprendizaje Moodle, glosarios en línea, spicynodes, uso de herramientas síncronas y asíncronas de comunicación (chat, foros, correo electrónico), entre otros; facilitan el logro de aprendizajes significativos y el trabajo cooperativo entre los estudiantes universitarios, aumentando su motivación en el aprendizaje, su grado de satisfacción con la asignatura y su implicación; a la vez que se fomentan competencias transversales ligadas a la capacidad de trabajo en equipo, la comunicación y la capacidad de aprendizaje.

Palabras clave / Key words Web 2.0., trabajo colaborativo, plataforma de aprendizaje, conocimiento colectivo., aprendizaje, competencias transversales.

Abstract

This paper develops an educational experience that takes place during the course 2010-2011 in the subject of Social and Intercultural Education, the first year of the Bachelor of Primary Education at the Faculty of Education at the University of Zaragoza (Spain), how ICT tools web 2.0: Moodle learning platform, online glossaries, Spicynodes, tool use synchronous and asynchronous communication (chat, forums, email), among others, facilitate the achievement of significant learning and cooperative work among college students increasing their motivation in learning, their degree of satisfaction with the course and its implication; while generic skills are fostered linked to the ability of teamwork, communication and learning ability.

Key words: Web 2.0., Collaborative work, learning platform, collective knowledge., Learning, transferable skills.

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Introduction

From a methodology based on cooperative work, it is possible to generate in students the achievement of learning about the contents of the subject, while developing transversal skills that will improve their access and adaptability to the world of work. The educational technologies of Web 2.0, through interactive tools for communication and creation of online content, allow improving communication channels between students and teachers, and favoring teamwork and collaboration among students..

Developing

1. Cooperative learning in the university context

We are increasingly aware as educators of the importance of training our university students not only in academic content or skills related to the profession, but also in other skills that qualify them for the world of work. In the specific case of teacher training, this need is completed with the importance of students learning work tools that they will be able to apply in their classrooms tomorrow. Therefore, if possible, the responsibility to train them as teachers capable of putting collaborative work into practice as a very useful tool in the classroom, in increasingly complex and diverse school contexts, is even greater.

When we talk about collaborative or cooperative learning, we refer to a learning system based on the interactions between the members of a team. It is in itself a process, in which gradually and intentionally, the members of a team become "responsible" for the learning of each of the other members.

When designing activities in any classroom, we can adopt three ways of organizing students, depending on the objective that we intend:

- a) a) *Competitive work*: the activity is structured in the form of a competition. (eg the one who finishes an exercise first, the one who solves the most activities, etc.). The success of the student is linked to the failure of the others (if I win, the others lose).
- b) b) *Individualized work*: the activity is carried out individually. The progress criteria are personal and based on your own performance. You are with others, but you do not work with them.
- c) c) *Cooperative work*: the activity is structured through tasks in which cooperation is the condition for them to be carried out. These are tasks that cannot be carried out without collaborating with colleagues. Getting good results depends on working collaboratively (If I win, we all win).

All the types of exposed activities allow to develop learning based on the contents of a certain subject. But only cooperative-type activities also allow the development of transversal skills such as: teamwork, communication, decision-making, problem solving, learning ability, etc.

Authors Johnson and Johnson¹ define it as follows: “in cooperative learning situations, students experience feelings of belonging, acceptance and support; and the skills and social roles required to maintain interdependent relationships can be taught and practiced.”, For this reason, this type of activity, in addition to influencing the development of significant learning, allows students to develop other skills that are highly demanded in increasingly competitive work environments.

This is demonstrated in the study carried out by the Carlos III University of Madrid on the identification of values and skills demanded in the professional market from university graduates (2008) ², in which of the 25 transversal skills evaluated, those considered very important by organizations are: Learning capacity (85.4%), Teamwork and cooperation (73.7%), Responsibility at work (67.4%), Positive attitude and optimism (60.1%), Flexibility /ability to adapt to new environments (58.7%), customer orientation (58.2%) and problem solving (56.8%).

For this reason, the application of collaborative work in university contexts is recommended, not only because it allows the acquisition of significant learning typical of the subject, sino como metodología que ayuda a conseguir en nuestros estudiantes and future workers, better preparation in transversal skills, which will help them in the near future to better adapt to the workplace.

In the Primary Education Teacher degree, there are several reasons why we decided to use this methodology based on cooperative work, in the Social and Intercultural Education subject:

1. Promote the acquisition of learning linked to the contents of the subject.
2. Promote the development of transversal skills linked to cooperative work (teamwork, problem solving, communication and responsibility).
3. Provide future teachers with the tools of cooperative work that allow them to apply it in the near future as teachers in their classrooms.

For its application in the subject, 5 essential conditions in cooperative learning were taken into account:

1. Positive interdependence: implies the development of attitudes and behaviors of co-responsibility with the group to which it belongs. The students are aware that they can achieve their learning objectives, if all the members of the group also achieve them.
2. Stimulating face-to-face interaction: by understanding that each student has a unique and important contribution to collective learning, there is a feeling of "mutual encouragement" that translates into offering the necessary support to achieve the objectives. This fact motivates the members to work together, generates confidence in the contribution of each one and demands the effort of all to achieve the challenges.
3. Individual commitment, personal responsibility: from the knowledge of each member of the team, it is possible to know who needs more support in a task y quién tiene más habilidades en un área determinada, lo que permite ajustar la tarea a las posibilidades de cada uno. De la misma manera, cada uno es responsable de su contribution to the group, and no one "takes advantage" of the work of others without having made any contribution to the group. In order to develop this individual responsibility, the evaluation should focus both individually and collectively, providing feedback that allows each one's effort to be adjusted to the overall results.

1. Social and small group skills: in order to work in a coordinated group, students must implement a series of social skills that allow them to: get to know each other, communicate effectively, accept each other and resolve conflicts constructively. These skills can be trained from work in the classroom, and their application must be motivated.

2. Assessment of the group: in cooperative work, the group must dedicate a space to reflect on its own functioning. This assessment must be periodic and systemic, in such a way that the review allows improvements to be included and their implementation to be evaluated on a constant basis. It allows to change those behaviors that are not working and reinforces positive behaviors.

In addition to these, there were 2 other elements that were also essential:

- Create heterogeneous groups. So that each team has diversity in terms of race, sex, cognitive levels, skills, etc.
- Equal opportunities for success. Everyone should contribute to the achievement of the group and advance their learning.

The more conditions that exist in a team, the closer it will be to cooperative learning. The assessment of these elements must be made based on the intensity with which they are appreciated in the group, bearing in mind that there are no absolute values, but rather a matter of degrees. And that reaching this point of cooperation and collaboration requires perseverance, time and work.

1. Web 2.0 tools as facilitators of cooperative work in university contexts

It is evident that our students (from an early age, until they reach university) are used to handling technologies, it can be said that we are facing a generation of "digital natives", who already find it difficult to imagine a world without the Internet or mobile phones.

Currently the web is much more than a space to host information³, it is a virtual environment in which interaction, individual and group creativity, research, are encouraged, borders are opened and we are facing the greatest "bombing" of information, of the that anyone from another time could be exposed. The school and the university must echo this great event, and offer learning that uses these technological tools to favor collective processes where knowledge is built with a click.

But what is web 2.0? In order to arrive at a definition of the concept, it is necessary to review what could be the main main characteristic of this Web: the replacement of the concept of the reading web, by that of reading and writing. This fact, which may seem simple, marks the real difference between the most traditional web services and the infinite possibilities of interaction, learning, teamwork, etc. that open with this fundamental change in the conception of the web.

These differences mean that in web 2.0 a multitude of tools allow the information production and management processes that are developed on the web to be launched without almost any type of technical knowledge, and without an excessive expenditure of resources. weather. In this way the web and the construction of knowledge are accessible to all users.

On the other hand, and as Marquès⁴ proposes, with the term Web 2.0, we underline a paradigm shift in the conception of the Internet and its functionalities, which now abandon their marked unidirectionality and are more oriented towards facilitating maximum interaction between users and development. of social networks (social technologies) where

they can express themselves and express their opinions, search for and receive information of interest, collaborate and create knowledge (social knowledge), share content.

In its beginnings, O'Reilly Media5 proposed the term “Web 2.0” to give a name to a new trend in the way of using and conceiving the web, in which different technical specifications were applied and significant technological changes were made. Some of the utilities of Web 2.0 in education are:

- a) Collaborative word processors. For example, Writely (writely.com), or the Twiki application (twiki.org), in which, in addition to having a word processor function, there is the possibility of uploading the .doc files themselves and editing them directly online, without no need to have any additional programs installed, which turns the website into a real platform.
- b) Construction of collective knowledge. For example with the free encyclopedia Wikipedia (wikipedia.org), which is built thanks to the collective knowledge of the people who write in it.
- c) Collaborative and cooperative work space. For example, through communication systems, instant messaging, video conferencing (Tok-box, Conference XP and Skype), Blogs, Newsletters or distribution lists, portals to store resources (Moodle, Blackboard), establish interactions through networks social (facebook, Twenti), create mental maps (Spicy nodes, Mind meister), etc.

Web 2.0 tools bring many advantages to collaborative learning, some of these are:

1. Eliminate technological gaps to bring quality education to all types of users.
2. Eliminate barriers of time and space.
3. It improves the efficiency of the learning processes in such a way that quality education can be carried out in a shorter period of time.

4. It improves the efficiency of the learning processes in such a way that what the students learn will transfer better to real life.
5. Promotes the information society by motivating students to use technological tools that will serve them throughout their lives.
6. They contribute to facilitating the student's work in a double sense: on the one hand, they encourage their individual work, and on the other, they stimulate interaction with their work group colleagues.

2. The educational experience in the subject of Social and Intercultural Education (course 2010-2011):

The following describes how this experience was carried out during the 2010-2011 academic year in the Social and Intercultural Education subject. To situate the context, say that this subject is developed in the first year of the Primary Education Teacher's Degree, with a load of 6.0 ECTS credits and aims to introduce the student to the social and intercultural dimension of education through of the achievement of a terminological-conceptual structure that allows to integrate both the knowledge of the subject area itself, as well as that of the broader field of Educational Sciences. The development of sensitivity towards cultural values in socio-educational and family contexts is considered a focus of special interest.

This experience takes place at the University of Zaragoza, where, through the Rector's Office for Teaching Innovation, it offers the Web of the Area of Technologies for Teaching as a space for teachers and students that provides a technological and methodological environment for training and support, which integrates the teaching platforms and teaching support sites that make up the Digital Teaching Ring⁶. The objective is to offer a dynamic and constantly evolving virtual teaching campus within a complete teaching-learning scenario, from the perspective of innovation and improvement, betting on quality as a strategy.

As teaching tools, they offer the Digital Teaching Ring, which brings together the Teaching Platforms and Teaching Support Websites of the University of Zaragoza. Currently, three different platforms are available to teachers, with different characteristics and possibilities, which increases the freedom of selection depending on the use that each teacher wants to attribute to it. These platforms are:

- Blackboard learn (Version 9.1): software for the creation of a networked teaching-learning environment. Blackboard Learn software allows educational institutions to create and host courses on the Internet, both online and in support of traditional face-to-face teaching. Since September 2010, the University of Zaragoza has version 9.1 in production
- Blackboard (Version CE 8): software for the creation of a networked teaching-learning environment. This system includes four main areas of functionality: content management (an online repository system for educational material with great advantages), communication (both synchronous and asynchronous collaboration tools and email), evaluation (surveys, exams and quizzes along with a gradebook) and a dashboard (management tools for teachers).
- Moodle: open source software for conducting online learning courses.
- OCW (eduCommons platform): free and open digital publication of high-quality educational materials, organized as courses.

In the teaching of the subject, the decision was made to use the Moodle platform, as support for a project in development designed to support a social constructivist education framework, which is distributed as open source software under the GNU public license. Martin Dougiamas, the creator of Moodle, is a strong advocate of social constructivism. For this reason, he is convinced that the person who learns builds knowledge on the basis of sharing his ideas with other people with whom he contrasts them and, through them, participates.

The Moodle community communicates mainly through the forums within the "courses" of the Moodle site, although you must be "enrolled" in the course to be able to send messages, which provided us with the peace and security of working only with our students, since that all the students were registered and could access it through their username and password, but no other person had access to it.

Once the subject began, the students were informed of the methodologies that were going to be applied throughout the course (ICT and cooperative learning) and for a couple of weeks they received theoretical training on cooperative work. In practical terms, heterogeneous work groups (randomly assigned) were created, which had the possibility of being tutored through seminars by the teachers, to carry out a follow-up throughout the course to prepare a final project that delivered on CD and exhibited in the last classes.

In the Moodle platform in which the subject was hosted, the following items:

- Instant messaging systems.
- Emails
- Forums
- File transfer and upload
- Calendar with important dates of the subject
- Library and video library
- Glossary
- Events, congresses and conferences on Interculturality

Through these tools, students could exchange and collect information, as well as share ideas, events or projects and establish interactions, which allowed the student to acquire a more active and participatory role in the development of the subject. The participation and collaboration of the students at all times is monitored and recorded by the teachers, which favored continuous evaluation, both at the group and individual level.

On the other hand, Moodle hosted easily accessible information for students (subject documents, online library, practices, slide presentations, etc.) that allowed easy updating of resources, such as databases, electronic books, online publications, centers of interest, encyclopedias, etc. The subject was divided into five modules, each of which had an identical development structure: PowerPoint presentation of the main ideas (which was also shared through the Slideboom.com tool), a theoretical activity and its respective material of work, a section of practical activities and some websites with resources for expanding the subject. Likewise, each presentation had an interactive map made through the Spicynodes.org application, which allowed us to organize the information in the form of connected nodes, so that students could expand the concepts and navigate through the map easily. This tool allowed us to relate concepts, make idea maps, present hierarchies between data, demonstrate relationships, etc. and it could be accessed from the same Moodle platform, through a hyperlink in the presentation.

As for the activities and tasks that the students had to carry out, throughout the course from the same learning platform, discussion forums, file upload tasks were proposed. collaborative glossary on concepts of the subject. For the delivery of the activities, the students had different possibilities: deliver it on paper to the teacher, send it via email or upload it to the platform. Thus, the alternatives for practical participation of the students were expanded, and the task was made easier for those students who, for various reasons, could not attend all the classes in person.

In the teams, the work was carried out an analysis of didactic material aimed at Primary Education and designed with the aim of working on aspects of intercultural education, education in values, education for peace and tolerance, as well as related topics. Each group, based on a bibliographical consultation, constructed a 10-item teaching material assessment scale, to which was added that of the other groups. In this way, after this first

phase, the entire class had 50 items created collaboratively by all of them and that would serve them for the evaluation of the material.

Subsequently, each group analyzed the teaching material, in terms of support, suitability, content, activities, etc. and presented its conclusions through the platform and in a face-to-face session.

At the end of the subject they were asked to assess their development through a self-assessment letter, following the following sections:

- Use of Web 2.0 ICT tools.
- Work in cooperative teams:
 - Achievement of goals and objectives
 - Responsibilities assumed by members
 - Degree of satisfaction with individual work within the group
 - Conflicts and their resolution
 - Learning of cooperative work techniques
 - Development of transversal skills
 - Communication skills
 - or learning to learn
 - o Conflict resolution
 - or teamwork
- Degree of consolidation of learning on the subject

The total number of students who submitted this self-assessment was 68. Most of them found the use of ICTs as support tools positive. As reasons "the ease of being able to access the topics from any place and at any time", "because of the savings that having the materials on the internet and not printed" means. Regarding teamwork, in general they stated that they were satisfied with the work carried out "it allowed me to get to know my classmates

better", "we coordinated quite well", although some stated that they had encountered some difficulties to overcome "we clashed a lot at time to work", "some were not as responsible as others".

Regarding the development of transversal skills, the best valued was teamwork, since the need to carry out work with people with whom they do not usually meet forced them to interact with other colleagues. In the same way, they positively valued the fact of having to look for information in different media to solve the tasks that were set for them "I discovered educational websites, which until now I did not know and which will come in handy as a teacher".

On the last point, the students agree that having the subject's resources on the internet helped them "better clarify the concepts." On the other hand, they valued as very positive the possibility of making an online glossary, to which each one contributed definitions extracted from different sources, to complete the concepts of the subject. In this way they were able to "have a broader conceptual framework", which was good for them to study the subject.

Conclusions

If we compare this experience with that lived in other subjects, we find that the experience in general terms was very positive, due to different aspects:

- It favored fluidity in communication between teacher-student and student-student.
- It allowed a constant exchange of information about the subject and that those students who could not attend, for various reasons, could prepare for the subject.
- It meant a substantial improvement in the organization of the subject, since the structure was clear to everyone and thus everyone knew the content to work on in each class and the practical activities to develop.

- It favored the motivation of the students, since this link with ICT was reinforced from university teaching, taking into account that in general they have a developed digital competence and all content presented in this format is an incentive for their learning.

This was reflected in the qualitative and continuous evaluation carried out by the teachers during and at the end of the course, and was reflected in the self-assessments carried out by the students in which they expressed their satisfaction with the subject, the positive assessment of the cooperative work, the achievement of significant learning and the development of transversal skills (mainly "teamwork" and "learning to learn").

Teamwork, so that the students have actively participated and collaborated in the construction of the assessment items for the teaching materials. Ability to learn to learn, so that students have had to perform knowledge management on the subject, search and construction of concepts.

On the other hand, we believe that in future experiences an educational blog of the subject could be developed, in which students can contribute news, events, and all kinds of information related to the contents of the subject. And create a series of short films, videos or an educational tool based on SCORM, related to the intercultural theme, taking into account that it is a content that allows the creation of original materials from the educational field.

In conclusion, say that the use of ICT provides important benefits for the collaborative learning process, some of which are:

1. It stimulates interpersonal communication, by enabling the exchange of information and dialogue between the participants.
2. It facilitates collaborative work, by allowing you to work with common documents.

3. It favors the monitoring of the progress of the group, at an individual and collective level, which allows the results of self-assessments, co-assessments, activities, tasks, etc. can be collected and analyzed from certain tools.
4. Easy access to information and learning content, which allows the student to expand and complement their learning, diversify resources and integrate different perspectives
5. Allows the management and administration of students, ICT tools facilitate access to information linked to the student's file, which may be useful to the teacher.
6. Creation of assessment, self-assessment and co-assessment exercises, some applications make it easier for the teacher to create different assessment systems, depending on the content and nature of the course (more theoretical or more practical), in this way the trainer can assess the learning acquired and if the direction of the course is adequate.

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