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Learning Communities and the Development of Teaching Skills in traiNing Environments as Blended Learning. An Innovative Methodological Experience at the University of Granada (Spain)

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Abstract
Current training in University requires the introduction and development of life-long learning due to the evolution society has experienced and hence higher education. The training needs can be faced up with the introduction of different innovative strategies, such as the development of blended learning through the use of ICT in a specific learning community. Even more, considering the globalization and its effects it seems indispensable to use the communicating possibilities provided by ICT, the potentialities they can bring us in different training settings. Obviously this will require the use of active methodologies to be able to share knowledge so that learning communities reach a relevant role transforming the teaching scenario in a more updated and dynamic context. Student's participation is necessary both face-to-face and in virtual settings. No doubt, the introduction of all these issues requires deep methodological changes in the University context, being able to assume a continuous process of re-

flection and innovation. The aim of this paper is to analyse the most relevant contributions made by several teaching innovation projects that have been implemented at the University of Granada (Faculty of Educational Sciences) during various academic years, and whose implementation teachers and students have positively valued. The innovative action allows us to analyse the impact of how learning communities in blended learning and with different active methodologies contribute to enhance the students' learning process. Self-didactic and collaborative ICT tools in learning communities in university courses seem to guarantee the development of a suitable lifelong learning process.

Keywords: blended learning, active methodologies, students' participation, learning community, teaching-learning processes

6.1. Introduction

In accordance with current socio-educational requirements and job placement-related training needs, in the "lifelong learning" environment the University should increasingly promote the improvement of educational quality for teachers to develop in, who are better trained, in order to acquire and master a series of professional skills as basic tools for their self-learning, which derives from social interaction in face-to-face and virtual environments (social networks) (Soler Santaliestra, Soler Costa and Araya, 2016). In turn, this training experience will lead to their own continuous and self-taught professional development, which will improve their teaching activity and performance in education centres by transmitting knowledge and learning to new generations through a "waterfall model". This implies laying the bases for a fundamental methodological change characterised by using active methodologies from initial levels of education. Thus teacher training in the Faculties of Education is essential as teachers are the main agents of much socio-educative importance to change and develop the transformational process in school teaching innovation, and even the University training model, according to the European convergence framework (the Bologne Declaration).

Hence in an increasingly more interconnected world, which has been called "the global village" given the possibilities of communicating thanks to major advances in ICT, which totally minimise geographic distances, it is crucial to properly use the

main potentialities offered by these new training scenarios, such as collaborative learning (Hinojo, Aznar, & Cáceres, 2009; López, Jaén, & Cabero, 2013; Cabero & Marín, 2014; Grande, Cañón, & Cantón, 2016). This can be understood as "the reciprocity between a set of individuals who know how to differentiate and compare their points of view to generate a knowledge building process. In this process, all individuals learn more than they would if they learned by themselves as a result of the interaction among team members" (Guitert & Giménez, 2000). In this way, and together with such learning, *solving projects* is necessary which, according to Román 2004, involves performing *group tasks* (fulfilling qualitatively richer aims with several group members); *group dynamics* (increasing closeness, better interactions and personal relationships, and a higher degree of job satisfaction and valuing others) and its implication in *personal aspects* (developing social and communicative skills, respect for differences, growing feedback, etc.).

All this is framed within *active methodologies* and the aim is to build knowledge in a shared manner so that learning communities play a relevant role throughout this transforming process, as verified by the research results published in different works and by former innovative teaching projects undertaken at the University of Granada since academic year 2005/06, and also at other Spanish Universities. Here active and dynamic student participation is basic to favour their training in a continuous interaction process.

Hence learning through a community, a group, becomes the central and cross-curricular axis in students' training in both face-to-face and virtually settings (blended learning) (Chaves, Trujillo, Cáceres, Hinojo, & Alonso, 2015; Fernández, Arias, Fidalgo, & Robledo, 2017). Defined as free pedagogical spaces for cooperation that promote "an interactive process of collective building that is permanently submitted to public scrutiny, and debate to socially and educationally improve the community" (Leiva, Pedrero, & Pérez, 2014:1), they become one of the main priority training strategies to meet one of the principal demands in implementing the European Higher Education Area and to improve the quality of University teaching.

6.2. Justification

The way to face methodological changes will depend, to a great extent, on each University's idiosyncratic features (supporting teaching innovation, work dynamics, financing, teachers' motivation, incentives, etc.). First of all, it requires a continuous process to reflect on both the practice and innovative initiative of the teachers who work in dynamic and interdisciplinary groups according to operational and sequenced goals in time (Aznar, Raso, Hinojo, & Romero, 2017; López Llorent & Medina, 2017).

One example of all this is the teaching innovation experience, which is backed by a successive professional career that derives from former teaching innovation projects which have covered a 10-year period of innovative initiatives, and with commitment to improve the quality of University teaching and research, action which detects strengths and weaknesses, and which restructures new intervention proposals about more particular aspects. All this focuses on the innovative action of University teaching methodologies.

This proposal intends to synthesise the most relevant contributions made by several teaching innovation projects that have been implemented at the University of Granada (Faculty of Educational Sciences) during various academic years, and whose implementation teachers and students have positively valued, these being the people it addresses and the direct beneficiaries of a series of actions. There is the importance of making good use of students' active implication through the possibilities that the method by projects offers to favour greater implication and motivation, and to undertake "self-didactic" and interactive strategies by successively alternating with collaborative learning in networks. Here information is exchanged, opinions are compared and collaborative learning is undertaken as groups. All these strategies and tools are necessary to develop specific skills, which are required to train future teachers. Moreover within the European Higher Education Area, acquiring strategic skills to master Information and Communication Technologies (ICTs) is a fundamental challenge throughout this training process and, within this, so is knowledge and the practical use of the advantages provided by Web 2.0 tools. In this way, combining and reflecting on practically putting into practice projects were done with technological support to facili-

tate the development of skills that any teacher requires to work according to the quality and professionalism parameters currently expected of them.

By considering verifiable aspects in today's university situation through implementing former teaching innovation projects, and other studies and reports, we confirm a series of teaching methodological drawbacks that are indicated in the Universidad 2000 Report (excessive use of master classes, poor pedagogic innovation by teachers). During the previous academic year (2016-2017), we considered integrating all this background into a project in an attempt to reflect the methodological advanced made in university training holistically to help to improve Higher Education teaching (Cáceres, Raso, Bautista, & Hinojo, 2013; Cáceres, Aznar, Hinojo, & Alonso, 2014; Raso, Aznar, & Cáceres, 2014; Cabero, Marín, & Sampedro, 2017). Among the obtained results, which are susceptible to improvement, we found:

- A high percentage of students who lack teaching transversal skills (reflective capacity, the capacity to analyse, plan and organise work; personal initiative and metacognitive self-regulation, etc.)
- Differences for students in skills in and knowledge of handling ICT (digital skills) which is a handicap to establish true networking learning communities (collaborative learning). Some students lack motivation and availability, which limits their extensible participation
- Students lack motivation and implication to study, particularly in core subjects like Didactics and School Organisation, which are fundamental for training future teachers.
- Lack of training for the teachers who have actively participated in the project, who recognise their limitations in planning the method by projects, designing assessment instruments to do follow-up, and how to organise suitable feedback to students' requirements, interests and cognitive needs.

We centre on the main weaknesses detected in the latest innovative action, and we focus on the following lines of action taken in this project or innovative experience, financed by the Teaching Innovation Unit of the Vice-Rector of Quality at the University of Granada:

- Supporting key skills or metacognitive skills. Lack of knowledge in some cases, and lack of, in most cases, mastering and/or skills to use the techniques and resources needed in university teaching, such as "learning to learn", are key aspects for students' professional development as future teachers.
- The emerging design of classrooms and spaces to form learning communities (in semi-face-to-face or blended learning settings). The intention of this line of action is to follow a series of procedure principles (a growing community, emerging objectives, exceeding limits, respecting others, etc.) according to Olivencia, Pedrero, & Pérez, 2014, and backing, in turn, its training process to mitigate teachers' gaps in learning when designing such face-to-face and virtual learning places to guide and motivate participation and social knowledge building by students.
- Methodological-type implications to develop an all-round integrated approach in which all competences are coordinated and participate with one another where students are the main figures in their own learning. Hence action and experience become two characteristic notes that delimit, to a great extent, the development of competences through having to introduce active methods that centre on students' autonomic and decisive participation: e.g., like that we propose by the "method by projects" by semi-face-to-face interaction in learning communities (blended learning).
- More specific intervention that centres on developing "learning communities" as an axis to encompass the interaction, collaboration, sharing experiences, ideas, skills and knowledge from group diversity (Fig. 1), particularly in relation to improving metacognitive (reflective capacity, the capacity to analyse, plan and organise work; personal initiative and metacognitive self-regulation, etc.) and teaching transversal skills; digital competences (suitably using and handling ICT); and teacher training for planning these innovative actions (method by projects with use of ICT, self-assessment and follow-up of the teaching-learning process through feedback from the aforementioned "learning communities" outline). To this end, here the intention is to follow a series of procedure principles (a growing community, emerging objectives, exceeding limits, respecting others, etc.) that are fundamental for this training model to be successful.

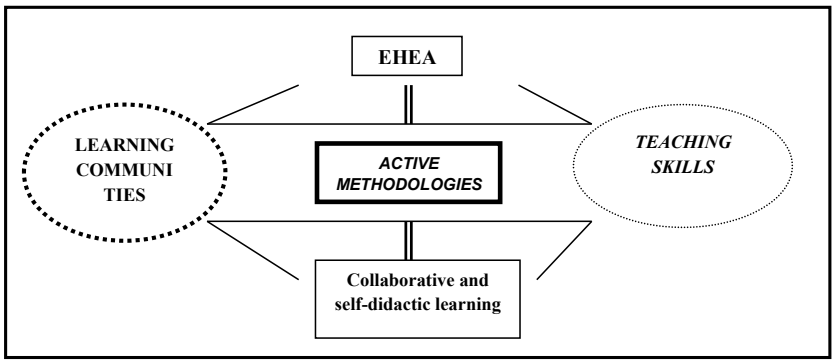

Fig. 1. Learning communities in students' development of skills

The intention of this whole process of restructuring innovative action in the university teaching methodology is to "analyse the impact of learning communities on semi-face-to-face settings by putting into practice different active methodologies (method by projects, using ICT, collaborative self-didactic learning, etc.)". This was the general objective of our innovative action.

6.3. Objectives

- Carrying out a DASW (detecting and analysing strong and weak points) analysis to design and develop learning communities in blended learning university settings.
- Training teachers to design face-to-face and virtual settings that guide towards, and motivate participation and social knowledge building, among university students.
- Promoting students' development, commitment and implication in using technological tools and in developing active learning methodologies.
- Promoting "self-didacticism" among students in interactive and interdisciplinary learning processes with which to acquire a high potential to develop continuous training permanent learning strategies (lifelong learning).
- Favouring teaching skills being acquired by the method by projects, and active and collaborative work dynamics, by focusing on knowledge management using technological tools.

- Improving students' learning outcomes, and their levels of teaching quality and success, in the teaching-learning process.
- Helping students acquire/master metacognitive skills by making them more aware of their own cognitive resources, and by promoting their self-regulation ("learning to learn").
- Developing significant and autonomous learning in a group oriented to research and critical thinking.
- Acquiring seeking, evaluation, quality and selection skills for information on the Internet. Evaluating the levels of the main agents' (teachers and students) satisfaction with the way the innovative action proposed through its impact to improve the teaching-learning process at the university.

6.4. The action plan and its beneficiaries

It involves the students who participated in this teaching innovation experience, who focused on the different courses of the Degrees of Primary and Childhood Education taught at the Faculty of Educational Sciences at the University of Granada. This experiment involved some 345 students from the four courses per degree.

A series of phases in the procedure were carried out, which specified the actions to be taken: *Phase 1. Structural aspects*: setting up a moodle education platform (basic lines of activities or proposals to be performed as part of the method by projects); *Phase 2. Undertaking the project*: an initial seminar (face-to-face), and then seminars on a monthly basis (virtual/face-to-face), to determine the common and generic aspects of all the contents to be developed, and to design practices that integrate acquired knowledge, skills and attitudes; i.e., the teaching skills needed to adapt to today's educational expectancies and challenges; online/face-to-face tutoring; and training in and counselling about suitable platform operation (LeaderGroup.com). *Phase 3. Assessing the project:* assessing the impact of the taken innovative action via the involved agents (questionnaires, reflections through seminars, etc.). Finally, writing an end report that includes future research lines, including the project possibly continuing or its extension by introducing the required improvements; diffusing the obtained results (multimedia production) in different media and electronic

resources (journals, books, talks, posters, communications, etc.); attending Conferences, Teaching Innovation Events, etc.

6.5. Discussing the results

In order to learn about the degree of the planned objectives being fulfilled after applying this innovative teaching methodology, we centred on analysing students' perceptions, who are the direct beneficiaries of this whole training experience, by designing two surveys (initial and final) on a Likert-type scale using the "lime survey" server, with responses that go from 1 to 4, whose values represent progressive responses (not at all, somewhat, quite a lot and a lot), save the last item, whose evaluation goes from "completely disagree" to "completely agree". Both surveys centred on four dimensions:

Identifying data

Students' profile offers a good gender balance with 45% males and 58% females, which is quite normal in Education Degrees. Specifically, more than half the participants studied the second course of the Primary Education Degree (62%), and 38% studied the first course of the Childhood Education Degree. Their ages went from 19 to 20 years, so their initial expectancies when they arrived at university were compared with the experience of those who had known some teaching methodologies in different subjects.

Perceptions of using and expectations of ICT

It can be stated that after taking this innovative action, students considered that they possessed suitable knowledge and could appropriately use ICT to conduct their learning, as opposed to either expressing uncertainties (stating that they were barely up-to-date with the latest novelties in technological tools and resources), or considering them difficult to understand or use, which they showed in the survey (more than 60%) on initial expectancies. Some of the most outstanding results are summarised in Figure 2:

ITEMS	Valid percentage
"Suitably using Internet search engines (Google, Yahoo, Proquest, etc.) is a very useful tool to access relevant information" (item 5)	82.33%
"I found it easy to handle the education platform" (item 4)	70.68%
"I find it more motivating to work on subject contents using ICT-based teaching methodologies than conventional classes" (item 6)	65.04%
"I think I master today's technological tools quite well" (Item 13)	72.93%

Fig. 2. Summarised results on the "use and knowledge of ICT"

Perceptions of collaborative learning in communities and social networks

As with the previous dimension, quite positive results were obtained about respondents' perceptive experience in collaborative learning and its use in learning communities. The same line coincided with the initial vision, that of students maintaining the importance of group work (more than 80%) as a facilitating element to acquire and complement new information, learning, etc. However, one of the items with a lower score refers to preferences of working individually as opposed to working as a group, where almost 40% opted for the first option; this indicates poor training in group dynamics, lack of knowledge of how to collaboratively work, negative group work experiences, etc. It will be necessary to learn about them in order to work to improve this situation.

In line with this, Figure 3 provides some of the most significant items and results:

ITEMS	Valid percentage
"Working with other colleagues helps me learn and better understand contents" (item 16)	85.34%
"Entering in dialogue and interacting with other people helps me learn by comparing different points of view" (item 18)	83.38%
"I prefer to work alone than doing group tasks" (item 19)	67.29%
"Forming part of professional learning communities in the future with other teachers and professionals, etc. is fundamental." (item 23)	85.72%

Fig. 3. Summarised results about "learning communities and group work"

Valuing degree of satisfaction

Students quite positively valued the use and operation of social networks, developing interactive learning, the need to train by using this type of university models with ICT, improving the quality of face-to-face classes and motivation, making contents to be worked more accessible and practical, etc. Nonetheless, some handicaps have to be considered; e.g., more than 40% of the study group stated that teachers do not frequently use "active methodologies with the use of ICT"; about 30% indicated certain difficulties in grasping that "interacting with others in social networks facilitates collaborative learning", which might coincide with the previously mentioned preference to working "individually" as opposed to working as a group. So it would be necessary to examine in-depth students' *work cultures*. Students were also divided in their views about developing the "digital skill" as 50% considered it had increased, while the other half believed the opposite was true.

ITEMS	Valid percentage
"Social networks favour cooperative-dynamic learning"	66.17%
"Teachers use active methodologies with ICT"	57.09%
"Using ICT favours autonomic and self-didactic learning"	73.68%
"Using social networks facilitates interactions with other colleagues and developing collaborative learning"	68.08%
"I feel that using social networks greatly motivates learning and complements face-to-face classes"	67.29%
"My digital competence has increased by undertaking this subject"	50%

Fig. 4. Summarised results about "assessing the use of new methodologies with ICT"

In general lines, students' degree of satisfaction with the initiative of the project dealing with university training was high, as reflected in Figure 5:

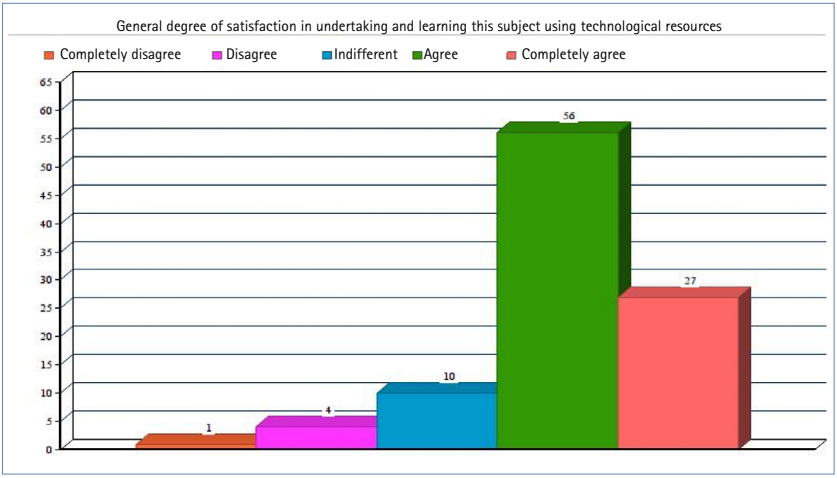

Fig. 5. Students' degree of satisfaction with having undertaken and learned the subject using the ICT

6.5. Conclusions

According to the obtained data, the questionnaires, observations and reflections carried out and made throughout the process confirmed that students' responses were most favourable about this methodology, and about the learning possibilities it offers. As strong points, the importance attached by students to using new teaching methodologies and using ICT stood out for their training as future teachers through developing a series of specific skills. Here the interaction taken in learning communities through semi-face-to-face settings also positively stood out as a key motivating element to improve the teaching-learning process by, for example, using search engines and databases on the Internet (Web of Knowledge, Proquest, etc.). This interaction is integrated into work done by the "method by projects", where self-didacticism and collaboration are constantly combined, and even an evaluation of the great enrichment gained from having a virtual community of education professionals. However as some limitations were detected by both students and teachers, it would be important to consider them to improve implementing future teaching innovation actions as the results verified the need to examine digital skill training for students and teachers more in-depth because tech-

nological advances and their implications for education change and contents need to be updated. Hence a self-didactic training process followed by teachers would be necessary to plan and orientate technological resources, to detect any possible student difficulties and, in particular, to revitalize group interactions in learning communities by encouraging participation and moderating solving projects. This would be fundamental to motivate students to work in groups, to learn collaboratively and to acquire satisfactory learning experiences. Nonetheless, the personalized attention needed today in this teaching methodology presents severe structural limitations given the high teacher/student ratio. So it would be necessary to set up the personalized didactic planning of practical seminars, to count on smaller class groups and, above all, and to reinforce intergroup and intragroup tutoring as indirect support to solve any main doubts, interests and requirements that may emerge in each work phase through classmates themselves. Besides, the time needed to reach an agreement about setting up some common guidelines to share tasks and to reach a consensus about them is lacking. Many students' habits and "academic cultures" are also lacking who, having played a passive role in the teaching-learning process, and having employed traditional methodologies and reinforced individual learning more, now face the restructuring of different roles to what they are accustomed, and they have no knowledge of the strategies and skills required to work in a group from not only an academic approach, but also from a personal one (developing social skills, knowing how to communicate, knowing how to suitably express themselves, being tolerant, developing active listening, etc.) (Trujillo, Aznar, & Cáceres, 2015).

Therefore, acquiring this whole series of self-didactic and collaborative tools through learning communities in early university courses will guarantee being able to better face the academic world (later courses, preparing Final Degree Projects, etc.), for their professional development. Thus it is fundamental to continue working in this line, and also with all those aspects that ensure verifiable improvements in student learning to acquire evidence that guarantees improving university education quality in agreement with today's challenges.

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