

**Title: University teacher competencies in a virtual teaching/learning environment:  
Analysis of a teacher training experience**

**Abstract**

This paper attempts to shed light on the competencies a teacher must have in order to teach in online university environments. We will relate a teacher training experience, which was designed taking into account the methodological criteria established in line with previous theoretical principles. The main objective of our analysis is to identify the achievements and difficulties of a specific formative experience, with the ultimate goal of assessing the suitability of this conceptual-methodological framework for the design of formative proposals aiming to contribute to the development of teacher competencies for virtual environments.

**Keywords:** teacher competencies, teacher training, higher education, virtual teaching/learning environments

**Introduction**

Analysing the changes to teacher roles brought about by incorporating information and communication technologies (ICT) in teaching/learning processes has been the main focus of attention in various research work carried out over the past few years (i.e. Goodyear, Spector, Steeples & Tickner, 2001; Coppola, Hiltz & Rotter, 2002; Williams, 2003; Klein, 2004; Marshal & Akdere, 2005). All this research points out that teachers must rethink their teaching role in order to facilitate communicative situations

suitable to the peculiarities of various interrelations (between teacher and student, among students, and between teacher, student and content) in a virtual environment based on online asynchronous learning (Coppola et al. 2002).

Whilst all these studies make a distinction between teacher functions, roles and competencies taking into account the peculiarities of teaching environments which introduce ICT, they do not outline in a significant manner the teacher functions in completely virtual environments. Furthermore, they fail to clarify which competencies are associated to new or renewed teacher functions. These studies are based on the systematisation of teachers' experience and are clearly circumscribed to specific university environments.

It is not possible to make generalisations on this conceptual basis; however, global changes affecting our universities today call for guidance and agreement on defining teacher functions in virtual environments and their corresponding competencies. These conclusions are useful to keep in mind, specially in view of the need for training to cope effectively with educative changes.

Added to this conceptual problem is the fact that demands for changes to teacher roles are not made explicitly, and they frequently arise only indirectly, as pressure for implicit change in current curricular reforms (Progress Report, European Commission for implementation of Education and Training 2010 work program, 2003, p. 34). On the other hand, it is necessary to make progress in clarifying the organisational, instructive and technological functions involved in teaching in this new educational paradigm.

In addition to this vagueness, we also find a diversity of interpretations of the terms "*teacher functions*" and "*competencies*" (Gonzi et al. 1993, Eraut, 1998; Salmon, 2000, Goodyear et al. 2001; Westera, 2001; Anderson et al. 2003).

Unfortunately, the concept of competency is used in several differing ways. In general, there are two clear approaches: one viewing competency as a personal skill or ability, linked to behaviour efficiency (McClelland, 1973; Pearson, 1984; Spencer & Spencer, 1993; cited in Eraut, 1998), and another approach which understands competency as strategic behaviour, linked to the possibility of adjusting performance to the demands from the context. In our opinion, the latter approach seems more suited to refer to teacher competencies, whose exercise must unavoidably respond to the peculiarities of their given educative context. Accepting the social nature of competencies implies that it is the actors, and their expectations, who determine and shape the content of the competencies required to successfully perform in specific professional contexts. (Messick, 1984; Gonzi et al., 1993; cited in Eraut, 1998, Westera, 2001).

In view of this lack of precision, before progressing into teacher training, it seems necessary to delineate the competencies a teacher should have in order to be able to teach in online university environments, and also to set out the methodological criteria cited in the literature for the design of formative actions. In the second place, and from the conceptual framework we are presenting, we will analyse a teacher training experience, which was designed taking into account the defined criteria, aiming at identifying the achievements and difficulties of a concrete experience, and with the ultimate purpose of assessing the suitability of the proposed framework for the design of formative proposals intended to contribute to the development of teacher competencies for virtual environments.

## **University teacher competencies for teaching/learning in a virtual environment**

The term competency has been subjected to multiple interpretations. For our research we chose an operative concept, appropriating the definitions by Eraut (1998) and DESECO (2002), which essentially define a competency as a system of complex actions including the knowledge, abilities and attitudes required for the successful completion of tasks. This configuration as a whole can be summoned to act effectively on certain demands from social practice, that is to say, external social demands, capabilities, individual disposition and context are all part of the complex nature of competency.

Bearing in mind this approach to the notion of competency, we also consulted other bibliographical materials clarifying it, in that they outline the teacher performances required in virtual learning environments (i.e. Bates & Poole, 2003; Campbell, 1998; Coppola et al., 2002; Jonassen, et al. 1999; Laurillard, 2002; Moore & Anderson, 2003; Salmon, 2000; Trill, 2001; Westera & Williams, 2003).

Even sharing the notion that teacher functions in virtual environments are in principle an extension and/or a transfer of the functions required to teach in a physical context, it seems obvious that a change in the nature of the environment calls for new competencies. Online teaching and learning requirements are not limited to only a set of knowledge and experience; the challenges a teacher faces are closely linked to the particularities of interacting and communicating online.

One of the pioneering studies dealing with this topic is Berge's (1995), whose main assertion is to highlight as a priority the demands made on communicative competencies. This author refers to the online teacher function as that of an instructor/facilitator and categorises teacher roles into four areas (pedagogical, social,

managerial and technical), for each of which he offers recommendations that may assist the teacher during the teaching-learning process, paying special attention to the particularities of ITC.

The definition of teacher functions and roles, specifically for virtual teaching-learning environments, is more recent; it results from observing and analysing the experiences of those teachers who in their daily practice respond to the challenge of teaching in virtual environments, and in general it is informed by this classification into four main areas proposed by Berge.

Among the most recent literature reviewed for this study, standing out from the rest for their methodological rigour are the studies by Williams (2003), Coppola et al. (2002) and Klein et al (2004). In view of the aims of our study, we will now proceed to comment on what we believe are the most relevant contributions made by these works to the matter in hand.

Williams defines four major dimensions to categorise teacher functions in environments introducing ICT: (1) Communication and interaction; (2) Instruction and learning (3) Management and administration and (4) Use of technology (transversal to all). These functions are defined by the competencies they require in practice, which in this study are identified and classified by utilising the Delphi technique.

For his part, Coppola et al focus their attention on the changes perceived by teachers as required for teaching in virtual environments. The most significant aspect of this research is the importance it places on the teachers' views on their functions; it shows that teachers view the change as a transition from "subject expert" to "performance coach" in a learning situation. The changes are linked to the styles of interaction with students and with other teachers; changes in the instructional design, particularly in organisation, management, control/assessment of the teaching-learning situation.

Taking these statements into account, three specific teacher roles are described for virtual environments: cognitive role, affective role and managerial role.

Although not dealing exclusively with online teaching, it is also worth mentioning the study published by the International Board of Standards for Training, Performance and Instruction – ibstpi - (Klein, et al. 2004). The list of competencies devised by ibstpi includes 18 clusters referring to five domains of teacher performance, which can be linked to their functions: professional foundations; planning and preparation; instructional methods and strategies; assessment and evaluation, and management. Besides detailing the competencies corresponding to each domain of performance, this study also describes 98 performance statements which allow for adequate representation of the competencies, both in terms of assessment and training. This study was validated globally with a sample of more than 1, 300 practitioners in all regions of the world.

Other research pieces reviewed in this study, despite not aiming at clarifying teacher functions and competencies, do bring to the fore and argue that a teacher in an online environment should aim at encouraging creative thinking or the strategic and meaningful building of knowledge, thus giving great importance to the communicative function (Salmon, 2000; Presteria & Moller, 2001; Guanawardena, et al., 2001; Laurillard, 2002).

In all these cases, the outlined functions are associated to different roles, which are in turn defined by the more or less precise set of competencies required by the teachers to perform in a virtual environment. A lack of agreement on what are the roles and how they are distributed can be explained by the fact that diverse roles are shaped in correspondence to the tasks performed by the teacher, paying attention to the particularities of each context, both organisationally and socially.

From analysing the various studies cited above we can identify the following specifications to each of the teacher functions/roles:

*a) Design / planning function:* Planning in a virtual environment lies in the fact that this is not only an action undertaken prior to the start of the course (in its design) but one that also requires a concerted effort for the successful completion of the online course. Organising and managing entail carrying out tasks to establish relationships between the teacher and other professional or administrative staff in terms of technological/educational coordination; among students themselves and between teacher and students with the aim of achieving the learning goals. Monitoring and follow-up actions determine the effectiveness of communication between participants; they have an effect on motivations and also relate to the evaluation of the learning process.

*b) Social Function:* This function includes actions related to teacher intervention to improve their relationship with the students, and among students themselves, during the teaching/learning process in a virtual environment. This function is particularly and distinctively important, through which it is difficult to achieve emotional expressions (non-verbal communication), which undoubtedly condition the nature of the working environment. This barrier reinforces the need to find new tools and behavioural patterns, so that fluent and cordial communication is achieved during the knowledge building process in virtual environments.

*c) Instructive function:* This function relates to the teacher's cognitive command (expertise in his/her subject matter) and his/her competencies, which contribute to deep, complex and critical learning. Teachers need a solid knowledge of the field of distance learning and possessing abilities to present content and facilitate learning by means of

technological tools and resources, an issue that is made even more complicated in collaborative learning environments.

*d) Technological domain:* Learning environments with ICT applications allow for the definition of a fourth command, which relates to the set of technological abilities required for the development of any of the functions described above. In specific, this refers to the knowledge of teacher support technological services, basic computer knowledge to be able to use the technology and some specific knowledge about multimedia and useful educational software.

*e) Management domain:* This function, together with the competencies associated to it, enables the teacher to carry out and adapt the planned actions: to meet learning expectations, motivations and needs; to handle the virtual classroom; to manage communication channels and spaces; in other words, to supervise and adjust the ongoing and online process.

It is worth highlighting that, in a more or less explicit manner, all the studies reviewed coincide in pointing out that the set of competencies required for the technical and managerial mastery of the teaching process in virtual environments is linked to all functions and roles. It is also necessary to emphasise the important role played by the teacher social function in relation to the traditional instructional function.

These conceptual delimitations contribute to clarifying teachers' formative needs and therefore, they enable us to establish methodological criteria for better planning of the required training actions, which we will refer to in the next section.



## **Criteria for the design and development of training actions for university teachers**

The approach we are presenting in respect of this methodological definition is the result of a review of various scientific contributions made in relation to training experiences incorporating and promoting the use of ICT (i.e. Chikering and Gamson, 1987; Rossman, 1999), as well as of an analysis of the diverse training actions being carried out in the various European countries taking part in the project eLene-TT Project (*e-Learning Network for Teacher Training*), which is the framework where this experience we are relating has taken place.

With the aim of achieving operative guidelines that may help in the development and even evaluation of the teacher training practice, we previously defined some methodological criteria that supported the design of training actions for the development of teacher competencies in virtual environments. These criteria have been organised into three essential aspects in planning formative proposals – objectives and goals, methodology and assessment. The following table summarises their content

### **Insert Table 1**

Table 1. Methodological criteria for the design of training actions in virtual environments

## **Method**

We attempt to analyse a teacher-training proposal that was designed taking into account methodological criteria that may assist in developing competencies from

training onwards. The criteria were defined from a conceptual approach to teacher functions, specifically in relation to the competencies and tasks that both differentiate and specify teaching and learning in virtual environments.

## **1. Sample**

The teaching training proposal consisted of a workshop for teachers from the Department of Psychology and Education Sciences at the Open University of Catalonia (UOC); it is a fully online university from the scratch, in which these teacher training needs were taken into account. 12 teachers took part and the workshop was conducted by three trainers (this paper's authors), who all worked collaboratively throughout the process. All the participants were teacher from the same subject area, who had great experience in online university teaching.

## **2. Design and procedure**

This study was based on the study case method. The case we refer to relates a typical teacher training experience for the development of competencies which allow the teacher to promote collaboration between the participants in virtual learning environments. This competency is highly relevant and teachers are increasingly demanding training on it.

Firstly, our workshop was designed in accordance to the methodological criteria previously defined for the design of training actions in virtual environments. Special attention was given to the concept of training aimed at developing competencies from within an educational context. For this reason, when setting the goals of the teacher training activity we took into account the current needs and previous experience of all the participating teachers (competencies required by the teachers according to concrete functions, roles and tasks). The activities devised essentially respond to the principles of

learning based on authentic tasks, learning which is guided, collaborative and constructive (learning by doing).

Secondly, we proceeded to assess the development and results of the training action. To this purpose we analysed the content of the messages exchanged during the workshop (n=125), which were recorded in the virtual classroom where the teacher training action took place. The categories for analysis are related to the implementation and effects of the methodological criteria proposed in the design and development of the training action for the development of teacher competencies. They focus on the development of teacher competencies aimed at promoting collaboration in virtual learning environments at university level.

These categories were agreed upon by two of the researchers and were double-checked with a third researcher to ensure that they enabled us to codify the message content in line with the goals of our study, and were representative of the messages being analysed. In all cases there was general agreement on the categories chosen for the content of the messages analysed.

## **Results and discussion**

### **1. Characteristics of the workshop: Methodology and instructive design of teacher training for online teaching**

Based on the “learning by doing” principle, the workshop demanded collaborative work, through which the participants were able to exercise and develop their own abilities. The objectives set were aimed at developing competencies for the design of collaborative activities, using the tools and resources available in virtual teaching and learning environments: 1) To learn and share current theoretical referents about collaborative learning in virtual teaching and learning environments; 2) To recognise

the different technological tools defined as Systems of Collaborative Learning, and their pedagogical potential, specifically the possibilities offered by the SYNERGEIA system for the design and development of online collaborative learning activities: 3) To design collaborative learning activities in virtual environments, applying new knowledge. These objectives are closely related to the development of competencies linked to the teacher's instructive and social function.

The learning activities consisted in debates and group work activities, with the assistance of guidelines (scaffolding). A continuous assessment system was implemented, based on personal and group contribution to the collaborative task envisaged, emphasising co-assessment (authentic, formative and systematic assessment).

In the **first activity** participants are presented with reading texts with the objective of debating their content in a forum. The study guide directs them to some key elements, such as: the concept of aid in a virtual environment; the teaching process in online environments as a joint activity between teachers and learners; the nature of collaboration and the types of tasks that should be designed, such as positive interdependence; task subdivision in the design of collaborative activities and some restrictions and potential uses conditioning this process in online environments.

The **second activity**, also via a forum, consisted in a joint assessment of the pedagogical potentials of a specific tool, designed with the objective of facilitating online collaborative learning. This aim is achieved through two tasks: a) analysing the pedagogical rationale of the Synergeia platform; b) identifying, through guided exploration via a learning guideline, the pedagogical and technological potentials of this tool. Synergeia is a Technological platform designed with the objective of facilitating

collaboration among participants. It is based on the BSCW environment (see <http://bscla.fit.fraunhofer.be>).

All the activities include knowledge building and negotiation practices within the Synergeia platform. The forum is chaired by the trainers; there is systematic feedback and at the end of the activity the class is given a summary highlighting the most important elements that arise from the discussion. This feedback is aimed at systematising and consolidating important concepts, whilst at the same time stimulating consensus among participants on key ideas about collaborative teaching and learning in virtual environments.

Our proposal to carry out the practice and assessment within the Synergeia platform is justified by the need to introduce an example of “good practice” and as encouragement to produce autonomous activities in which it is possible to apply the knowledge and abilities we want to develop. In turn, this task creates opportunities for increasing the level of interaction among participants, taking care of maintaining, all throughout the course, the required mediation actions in favour of dialogue and social construction of knowledge among the teachers taking part in the training practice. The trainers led and took part in the collaborative activities in all the groups, thus boosting mediation and personalisation of the pedagogical aids.

It is important not to lose sight of the need for contextualising and applying the results of the learning process. That is why **the third activity** requires the transfer of the knowledge being shared. The aim is for the participants, working as a team, to design a learning activity that promotes cooperative learning.

It is also important to pay close attention to the instrumentation of the learning process, anticipating its objectives explicitly and clearly. In order to facilitate learning

in this activity, we devised a guide containing basic aids to assist in achieving the main objectives of the workshop.

The guidelines informing the design aim at the following: a) To incorporate the proposal into the subject taught at the UOC virtual campus; b) To consider the pedagogical/technological principles and criteria of the teaching/learning process in virtual environments; c) To consider the technological and pedagogical design elements, analysed in the Synergeia platform, which may prove an interesting and essential addition to a given activity, bearing in mind the peculiarities of the UOC virtual campus.

This activity was group-based (in 4 teams). The grouping criteria was for the participants to be teaching the same subject, thus sharing the same referents and experiences, so as to facilitate decision making and cooperative work. This way, individual differences were taken into account – previous knowledge, occupational and cultural profiles and the characteristics of the participants' institutional environments.

The main concern in the methodological design was the need to create activities based on the development of *authentic tasks*, which are relevant both for the teachers and for the educational vision the university subscribes to. The task assigned to the teachers was perceived as an opportunity to work in a team in order to solve common problems and concerns. That is why it is important to promote collaborative learning and the exchange of professional experiences, encouraging a high level of interaction among participants. Obviously, this aim cannot be achieved without using certain resources that promote “social dialogue” and mediation (exchanges, partnering, personalised help, etc). This matter was given particular attention throughout the activity, which was possible thanks to the trainers' coordination and teamwork. The

trainers led and took part in the collaborative process in the various teams, thus strengthening mediation and personalisation of the pedagogical aids.

In accordance with the methodological guidelines previously highlighted, the course must include a process of authentic, formative and systematic assessment. In line with this, we instrumented a system of continuous assessment, based on personal and group contribution to the envisaged collaborative task, giving more weight to co-assessment. This consideration enabled us to establish and share the criteria of quality of learning, with an emphasis on examining the possibility of contextualising and applying the results achieved.

Once the task was completed, each group presented it to the class via a forum, so that it could be analysed and commented on by the rest of the course participants, by means of a crossed assessment activity. At the end, the participants were asked for their personal assessment of the learning experience, by means of a questionnaire that was intended to gather information on: innovating aspects of the course, relevant aspects, and what in their opinion would be worth repeating, including, omitting, improving and/or modifying in future editions of the course. This request enables us not only to assess the immediate results, but also to contribute to its improvement and necessary continuity.

## **2. Achievements and Difficulties**

In relation to the workshop's contribution to the development of competencies for teaching in collaborative teaching/learning in virtual environments, we have identified three main achievements, corresponding to each of the activities designed: a) structuring and consensus on the conceptual basis for collaborative learning in virtual environments; b) critical analysis of the technological resources available for

collaborative teaching and learning in virtual environments; and c) design of collaborative activities for virtual teaching and learning environments in correspondence with the methodological criteria we have presented.

a) Structuring and consensus on the conceptual basis for collaborative learning in virtual environments

The first result – corresponding to the first activity in the workshop – shows the strengthening of notions and knowledge at a conceptual level, with regards to the conceptual and methodological basis for collaborative online learning. The following assertions (see Table 2), taken from the content summary in the first debate carried out, support this first inference.

### **Insert Table 2**

Table 2: Evidences of the strengthening of notions and knowledge with regards to the conceptual and methodological basis of online collaborative learning.

b) Critical analysis of the technological resources available for collaborative teaching and learning in virtual environments

The second result of our workshop shows the teachers' adoption of a critical analysis position in relation to the usefulness of the technological resources available for collaborative learning processes.

In examining a specific tool – Synergeia – the teachers proved to have sufficient ability to assess the advantages and disadvantages of this technological tool for learning. A range of interesting references was discussed using the very space this platform contains for knowledge building and negotiation; which enabled the contextualisation of the knowledge being shared and built by the teachers participating in the course.



The strengths found in this system with regards to online collaborative learning relate to the technological aids available for the required interdependence during tasks entailing cooperative knowledge building. Some of the comments made by the student support this statement: *“It’s useful in bringing about interaction; it helps with structuring interventions and participation”*; *“It includes possibilities for categorizing individual opinions and proposals, which helps in collective knowledge building”*; *“The possibility of asynchronous cooperative knowledge building by means of the creation of conceptual maps is one of the system’s strongest points”*.

However, because it is a technological tool that was not designed for university environments, some limitations were also identified, mainly to do with its lack of suitability to the particularities of university teaching and the diverse range of cognitive activities of online university students: *“The environment design is overcrowded with stimuli, which may cause confusion or distraction and make self-management more complex in the learning process within the platform”*; *“The architecture of the spaces for knowledge building and negotiation turns out to be “corseted”; it does not take sufficient care of individual differences in learning styles, particularly with regards to scientific knowledge building, so characteristic of a university environment”*.

Taking into account these reflections stemming from what may be described as a “case study”, we can reach a consensus on some generalisations that may serve as guidelines with regards to decision-making on the introduction of technological tools and resources as a support for collaborative learning in a virtual university environment. In this respect, the opinions of the teachers taking part in the workshop concurred in pointing out two essential requirements a ICT tool and/or resource should meet for it to be considered useful in collaborative teaching/learning:

(1) As a support for the teacher's social function in a virtual environment in terms of facilitating and guiding learning:

- They must offer aids enabling the creation and management of collaborative work groups: decision making, task distribution, setting out responsibilities, addressing queries and problems, exchanging knowledge, motivating students towards joint learning, etc.

(2) As a support to online knowledge building and learning:

- They must offer diverse spaces for communication and organisation of content, with activities enabling decision making, exchange and personalisation of aids (an architecture adjusted to the nature of online collaborative tasks)
- Utilities encouraging problem discussion, querying, debate and consensus during joint knowledge building.
- Resources encouraging self-management of knowledge, self-regulation of the learning process, systematic and formative assessment (including self-assessment and co-assessment).

c) Design of collaborative activities for virtual teaching/learning environments in accordance to the methodological criteria

Lastly, the third result, which corresponds to the third activity "*Design of a collaborative activity in the context of their usual teaching practices*", demonstrates knowledge transfer, as the participants manage to convey content learned in practice, by designing collaborative study activities for their own subject matters.

The results achieved with this activity were significantly made possible because of the suggestion of carrying out the work in groups. During and after the development of the task assigned to the groups, all the proposals were revised and corrected jointly, which no doubt had an impact on the results achieved.

In this sense it is worth pointing out the great care taken in key design issues, such as: setting out the learning objectives and tasks; considering the characteristics of the materials; organisation and management of the classroom space; definition of student roles – both individually and in groups – and those of the teachers’ during the completion of the task; anticipating what aids or working guidelines were needed for cooperative knowledge building and proper collaborative functioning – interdependence and communication-; implementing the assessment system taking into account feedback and the diversity of procedures encouraging self-regulation and monitoring of the collaborative learning process.

Several proposals for collaborative teaching/learning in online environments arose from the four teams created for this purpose: (1) Case study, (2) Problem Solving, (3) Group Research and (4) Group Discussion. The strength of the design proposed lies in the definition of teaching aids as a guide and facilitator for collaborative learning, particularly for encouraging cooperative knowledge building in groups. It is worth pointing out that all the designs made by the participant teachers put emphasis on mediation and the teacher’s social function, which serves to confirm the statements made about the integration of teacher roles, as defined at the beginning of this paper.

In general, all the activity designs proposed by the participants showed their concern for meeting the essential requirements of collaborative teaching/learning, a fact which by itself highlights the contribution made by the workshop to the development of competencies related to the improvement of teachers’ social function. However, no adequate solution was found to meet the requirements of collaborative learning assessment in virtual environments, such as: criteria for assessing individual contribution, interdependence; specific procedures for systematic assessment, self-assessment and/or cooperative assessment, among others.

In relation to this, a consensus was reached in the joint evaluation made at the end of the workshop. The participant teachers pointed out that one of the course's innovating aspects was the possibility it offered for sharing experiences with others in the same situation (teachers of the same subjects) and for putting into practice common strategies for the improvement of teacher practices. With regards to the course's content, there was a positive response to the new collaboration tools, in particular the Synergeia platform. With regards to methodology, the systematicity of activities and tasks was considered to be a positive aspect, together with the co-assessment procedures, and above all the possibility of sharing and jointly assessing the learning results. Furthermore, the theoretical study of the matter was also considered relevant, as it helped clarify the concepts related to collaborative teaching/learning in virtual environments.

Lastly, the lack of sufficient time to devote to the course activities was singled out as the most unfavourable aspect. The recommendations for improvement and changes in future editions of the course focused on the possibility of going into an in-depth analysis of specific issues of collaborative activity design, such as communicative channels and spaces for building, sharing and discussing knowledge, and the procedures for its assessment.

### **Final considerations**

As pointed out at the beginning of this paper, we intended to analyse a teaching training experience for university teachers in online environments, the objective of which was to develop competencies related to collaborative learning in virtual environments, and with a view to identifying those methodological aspects that have

facilitated the development of the objectives set, and those that hindered its execution, in line with the criteria we have identified as key elements in the design of the practice.

In summary, we highlight the need to observe, in an integrative manner, the diverse teacher roles/functions whilst designing training proposals for the development of competencies, even if the formative action focuses on one specific competency, as in our case – the design of collaborative activities-, so that this re-conceptualisation of teacher functions is explicitly acknowledged in teacher training practices.

In this sense, our proposal intended to train teachers to develop the functions outlined at the beginning of this paper. Authors such as Williams (2003) and Marshal & Akdere (2005), propose teacher functions and competencies that in our opinion are difficult to develop in a single professional. For this reason, we also advocate for a teaching training model based on collaborative learning among different professionals: the teacher (an expert in the subject matter who is competent in the functions outlined), the tutor who guides the student throughout their university course, and management staff to deal with administrative, technological and other aspects.

In line with the above, the evidence presented in the teacher training experience we have described enables us to assert that the methodological criteria underpinning the experience facilitate the learning process required in the development of teacher competencies for collaborative teaching/learning in online environments. In this sense, and from our viewpoint, we believe that the methodological criteria presented and contrasted throughout the experience, may shed light on the process of planning and designing teacher training proposals intended to meet current needs in higher education, in terms of the development of competencies for teaching and learning in online environments.

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