

Informal Learning about Teaching among Novice University Professors

Laia Encinar-Prat and Joaquín Gairín Sallán
Universitat Autònoma de Barcelona, Spain

In this article, we present results of a study on informal learning about teaching among novice university professors at one university in Spain. The study identified teaching competencies developed through informal learning, strategies of informal learning used, and organizational factors that might foster or hinder the acquisition of teaching competencies. We gathered data through 18 individual interviews with novice university faculty, two focus groups with university professors, a document analysis and a focus group of experts. We conducted content analysis of the transcripts of the interviews and focus groups, as well as the documents obtained. The results showed that the competencies most often acquired from informal learning are interpersonal skills, methodologies, planning and content mastery. They are primarily acquired through strategies such as peer interaction and experimentation in practice. The main support for informal learning is the organizational climate, while the main barriers are organizational culture and training policy. The research contributes to understand the phenomenon of informal learning about teaching by novice professors, which is a topic not covered widely at the level of Higher Education. Keywords: Informal Learning, Higher Education, University Professors, Novice Professors, Teaching, Qualitative Analysis

Introduction

In recent years, organizations have begun to value lifelong learning to such an extent that they are even taking it into consideration when establishing educational policies worldwide and designing mechanisms to recognize it (Regmi, 2015; UNESCO, 2012). Lifelong learning has been described as (Commission of the European Communities, 2000).

All purposeful learning activity, undertaken on an ongoing basis with the aim of improving knowledge, skills and competencies. It is no longer just one aspect of education and training; it must become the guiding principle for provision and participation across the full continuum of learning contexts. (p. 3)

Lifelong learning includes informal learning, given that the latter is acquired through experience (Eraut, 2004) and therefore throughout one's professional career and life. Informal learning emerges from everyday activities associated with work, family and leisure, and therefore it is neither structured, nor does it lead to any certification (UNESCO, 2012).

Within the context of higher education in Spain, university professors have increased their interest in their professional development and have improved their teaching in view of the need to provide students with high quality teaching-learning (Feixas, 2002; Thomas, Harden-Thew, Delahunty, & Dean, 2016). Although universities offer official training, it is still voluntary (Herrera, Fernández, Caballero, & Trujillo, 2011; Mas, 2011) and therefore only covers a small percentage of faculty (Davey & Tatnall, 2007). The fact that informal

learning takes place during daily practice in the workplace means that there are more training possibilities than in formal learning, since the latter occurs less frequently (Gairín, Muñoz, & Rodríguez-Gómez, 2009; Le Clus, 2011). Therefore, the evidence casts doubt on whether university professors' acquisition of teaching competencies primarily takes place via formal learning.

Furthermore, to foster informal learning, it is essential to have both personal learning conditions, such as self-awareness and a desire to learn, and organizational conditions (Marsick & Watkins, 1990). In this sense, organizations and the workplace are gaining increasing recognition as key factors in facilitating informal learning and are therefore encouraging their members to develop competencies as they perform their professional jobs (Gairín, Muñoz, & Rodríguez-Gómez, 2009; Le Clus, 2011). In fact, organizations should strive to enhance their workers' expert knowledge and promote a new professional model in line with today's society (Muntada, 2016), including the institutions of Higher Education.

In this study, we analyzed the teaching competencies acquired by novice professors through informal learning and the strategies of informal learning used. Furthermore, we included an organizational perspective, identifying the facilitators and barriers from the university that can determine the process of informal learning. The theoretical framework is organized around these three variables.

The Teaching Function of University Professors

In Spain, the professional profile of university professors encompasses three main functions: teaching, research, and administration (Decree 404/2006, 2006). Focusing on the teaching function, there is still no consensus on what is considered a "good teacher" (Tejedor, 2009). Nevertheless, the concept of Higher Education focused on student learning and innovation cannot be understood without considering the teaching competencies of faculty (Mas & Olmos, 2016). In this sense, there is a set of competencies that define the function of teaching (see Table 1).

Table 1. Teaching competencies of university professors

Competencies	Description
Content mastery	Having knowledge of the disciplinary field and interrelating it with other fields.
Interpersonal	Interacting with students, presenting a critical spirit, motivation, trust, empathy, and ethical commitment.
Methodology	Applying methodological strategies that are coherent with the needs, context, professional profile, objectives, and evaluation activities.
Communicative	Establishing effective, appropriate communication while contextualizing it in the various teaching-learning situations.
Teaching planning and management	Designing contents and training activities.
Evaluative	Evaluating the students' teaching-learning process.
Teamwork	Cooperating in a group, whether at university, school, or department level, in a responsible way oriented towards common goals.
Tutoring	Guiding the students' learning process by fostering their autonomy.
Innovation	Reflecting on one's own practice and undertaking initiatives to improve teaching and learning.

Source: Çakmak and Akkutay (2016); Cuevas (2013); Duță and Rafailă (2014); Grup Interuniversitari de Formació Docent (2011); Mas (2011); Pagès et al. (2014).

The professional development of faculty in the area of teaching is defined as the gradual evolution towards greater professionalism that allows evolution in the educational function accompanied by critical analysis (Tejada, 2013). Individually, the first phase occurs when professors are at the initial stage of their career and they are centered on the self. In this phase, their major concerns are the mastery of the subject and overcoming the insecurities that come with university teaching (Feixas, 2002).

Some studies consider novice professors those who have been teaching in higher education for less than four years (Feixas, 2002), while others extend this period to a maximum of five to seven years of experience (Rodríguez, 2015). In light of the various categorizations of novice university faculty, our study considers novice faculty the professors with a maximum of seven years of teaching experience in university.

Informal Learning

University professors' careers should include opportunities for formal, non-formal, and informal learning that would allow them to constantly improve their professional practice (Tejada, 2013).

Formal learning is composed by training offered by educational institutions and provide an official diploma. Non-formal learning is formed by training activities designed to complement formal learning and they cannot provide an official diploma. In both types of learning, there is a teacher (Commission of the European Communities, 2000). Informal learning is defined as implicit, unintentional and unstructured learning that happens without the presence of a teacher. Furthermore, it recognizes the social importance of learning with others and allows space for action and the individual desire to learn. The fact that there is no established structure brings greater flexibility and freedom than learning in formal and non-formal settings (Commission of the European Communities, 2000; Eraut, 2004). Schugurensky (2000) established a classification of informal learning according to intentionality and awareness of learning. In this sense, self-directed learning happens when people have an intentionality to learn and they are aware that they are learning. Incidental learning occurs when people are aware that they are learning, but at first there was no intention to learn. Lastly, socialization is a kind of informal learning that does not require intentionality to learn and learners are not aware that they are learning in the same moment. However, people can recognize this learning later through a process of reflection (see Table 2). Informal learning considered in our study includes the three types described by Schugurensky (2000).

Table 2. Typology of informal learning according to intentionality and awareness of learning

Typology of informal learning	Intentionality	Awareness of learning
Self-directed	Yes	Yes
Incidental	No	Yes
Socialization	No	No

Source: Schugurensky (2000).

In order to learn informally, university faculty use many different learning strategies, even though they do not learn as much as they could at their workplace (Quesada, Fernández-de-Álava, & Gairín, 2017). For example, strategies include informal conversations with other

faculty members, coordination among colleagues, reflective meetings, discussions of specific practices, self-teaching, attending teaching conferences and participating in virtual forums on teaching. To a lesser extent, professors also learn by preparing multimedia materials, observing fellow faculty teaching, preparing for tenure, writing publications on teaching in a specific field, studying teaching, exchanging experiences in their own field of knowledge, participating in a research group examining issues related to teaching, reading about their own discipline, preparing their doctoral thesis, or attending conferences on their specific field. Mentoring activities are also carried out between experienced and novice faculty members, along with communities of practice and teaching supervision by faculty pairs (Feixas, 2004; Hamilton, Fox, & McEwan, 2013; Herrera et al., 2011).

There are only a few studies on the strategies of informal learning among university faculty and specifically, among novice professors. This led to our literature review on informal learning in workers and teachers at other educational levels with the goal of validating if these strategies of informal learning are also used by university faculty in the context analyzed. The activities can be individual, which are done by teachers without interaction with other colleagues, or interactive, which are carried on with other people, both with professors and students (see Table 3).

Table 3. Informal learning activities

Individual activities	
Experimentation with practice (trial and error)	<ul style="list-style-type: none"> • Making changes to one's own practice. • Reflecting on one's own practice in terms of designing and planning classes, preparing materials, using them while teaching and evaluating student learning.
Search for resources	<ul style="list-style-type: none"> • Search and review of resources or articles on the Internet.
Carrying out complex activities	<ul style="list-style-type: none"> • Carrying out activities that are challenging.
Carrying out tasks that are different from the usual ones	<ul style="list-style-type: none"> • Temporarily switching job location, participating in projects that are different from the usual ones, or assignment to temporary tasks.
Interactive activities	
Unstructured peer interaction	<ul style="list-style-type: none"> • Discussion and exchange of experiences among colleagues on teaching-related subjects. • Sharing materials designed by oneself with colleagues. • Asking for/receiving support, advice, guidance, feedback, or help from colleagues. • Having colleagues correct errors in one's own practice. • Critical reflection on one's own teaching practice among colleagues.
Peer interaction in semi-structured activities	<ul style="list-style-type: none"> • Interest groups. • Supervision and/or tutorials for novice faculty by expert faculty. • Reflective group sessions on problems, impressions, and doubts relating to everyday practice. • Networks of experienced and novice faculty to exchange experiences, materials, and/or concerns.
Interactions with students	<ul style="list-style-type: none"> • Mentoring. • Reflection on teaching practice with students. • Awareness of students' needs.

Source: Eraut (2004); Feixas (2004); Cunningham and Hillier (2013); Schei and Nerbø (2015); Grosemans, Boon, Verclairen, Dochy, and Kyndt (2015); Hamilton, Fox, and McEwan (2013); Herrera et al. (2011); Davey and Tatnall (2007).

Organizational Supports for and Barriers to Informal Learning

If we focus on training institutions, there are various organizational factors that may facilitate or hinder workers' informal learning (Gairín, Muñoz, & Rodríguez-Gómez, 2009; Le Clus, 2011). Even though higher education organizations have little organizational learning (de Arteche, Polifrone, & Bonnin, 2016), the organizational factors that influence informal learning in university teaching have not previously been studied in any depth. For this reason, we have carried out a theoretical revision of factors that might be as both facilitators and hindrances to informal learning that encompasses studies in a range of contexts and teachers at various educational levels (Childhood Education, Primary Education and other professionals related to the education field). These studies have pointed out different organizational factors that can promote informal learning or not, depending on how they are developed within each organization. For example, in the case of the leadership factor, it can be a facilitator of informal learning if there are leaders that encourage initiatives about university teaching, but it can be a barrier if leaders of an organization do not give importance to informal learning (see Table 4). As each element can act as a facilitator or a barrier, it is important to analyze in depth each organization. For this reason, our research aims to discover if the following elements are seen as enhancers or hindrances for informal learning in the university analyzed.

Table 4. Organizational factors that can influence informal learning

Organizational factors	Description
Learning spaces	The existence (or not) of time and initiatives devoted to engaging in informal learning activities, whether individual or collective.
Culture	Inclusion (or not) of the members of the organization and a sense of belonging to it and its traditions.
Climate	Relationships among colleagues that allows or not them to learn from their experience and from the heterogeneity of practices coexisting within the organization.
Assignment of tasks	Existence of possibility (or not) of choosing new or complex tasks that pose a challenge.
Leadership	Existence (or not) of people with institutional positions that encourage or not informal learning.
Faculty labor policy	Policies about hiring, promotion, and accreditation of university faculty, job stability, and compensation.
Training policy	Planning the competence-based needs of faculty and fostering informal learning activities.

Source: Cunningham and Hillier (2013); Eraut (2004); Grosemans, Boon, Verclairen, Dochy, and Kyndt (2015); Feixas (2004); Schei and Nerbø (2015); Berg and Chyung (2008).

Objectives

The overarching objective of this research was to: "Analyze informal learning about teaching among novice university teachers at a Spanish university." The analysis done in this university aims to understand the phenomenon in a contextual way, describing the competencies developed by novice professors through informal learning, the strategies used, and the organizational elements that have influenced this process.

Although our research was conducted in one university, we want to contribute to fill a gap in the understanding of the phenomenon of informal learning at the level of Higher Education covering the three variables mentioned (teaching competencies acquired, strategies of informal learning, and organizational elements). Furthermore, our results point to factors

that can be studied in other institutions of Higher Education through further studies of informal learning of professors.

Consequently, the specific objectives were:

1. To identify the teaching competencies of novice university professors acquired through informal learning.
2. To determine the strategies of learning through which novice university faculty have informally learned about teaching.
3. To identify the organizational barriers and supports that influence the acquisition of informal learning about university teaching.

About the Authors

Both researchers are related with the educational field and, specifically, they are conducting research about informal learning. The lead author is a professor, researcher and a current doctoral student about informal learning among university professors. The second author is a researcher, professor and director of the Organizational Development Team (EDO) in Universitat Autònoma de Barcelona. This research widens the lines of research on professional development of university teaching staff and informal learning initiated by the EDO group. We have conducted the research without financial support.

Method

Our research is a descriptive exploratory investigation (McMillan, & Schumacher, 2005), since it aims to examine a phenomenon not studied before in depth in the level of Higher Education. We chose a qualitative inquiry in order to explore the topic from the participants' vision and to give rise to future research lines from our results. The perspective of this case study is to deeply understand the phenomenon of informal learning and the components that characterize it in a university of Spain (Yin, 2009).

The abstract and contextual nature of informal learning means that it is difficult to validate, since people often do not recognize it as informal learning and it is difficult to evaluate it using the same methods as in formal contexts (Eraut, 2004; Galanis, Mayol, Alier, & García-Peñalvo, 2016). For this reason, we triangulated data using various instruments and information sources. On the one hand, our research contemplates a contrast with the theoretical framework, which has been used as a pattern to compare empirical results of our case study (Yin, 2009). On the other hand, we have considered the triangulation of information sources, including novice faculty, degree coordinators, experts about the topic and documentation of current informal activities. Finally, we have considered the methodological triangulation in order to gather data in depth on a specific reality. For this reason, we included interviews, focus groups and document analysis (Jiménez & Tejada, 2007).

Participants

This research is a case study focused on novice university faculty at one university in Spain. The two common characteristics of the participants were having up to seven years of teaching experience and belonging to one of these three fields: Arts and Humanities, Social Sciences and Education. Novice professors that participate in our research had a variety of

professional categories: pre-doctoral researchers, post-doctoral researchers, adjunct lecturers, acting tenure-track lecturers and researchers with grant-funded research positions.

We also interviewed coordinators of degree. Their main characteristic was to be coordinators in the areas of Arts and Humanities, Social Sciences and Education in the same university.

Data Collection

To gather the data, we used semi-structured interviews of novice university professors (N=18) and degree coordinators (N=6), a focus group with novice university faculty (N=7), a focus group of experts (N=2) and document analysis (N=4) (see Figure 1).

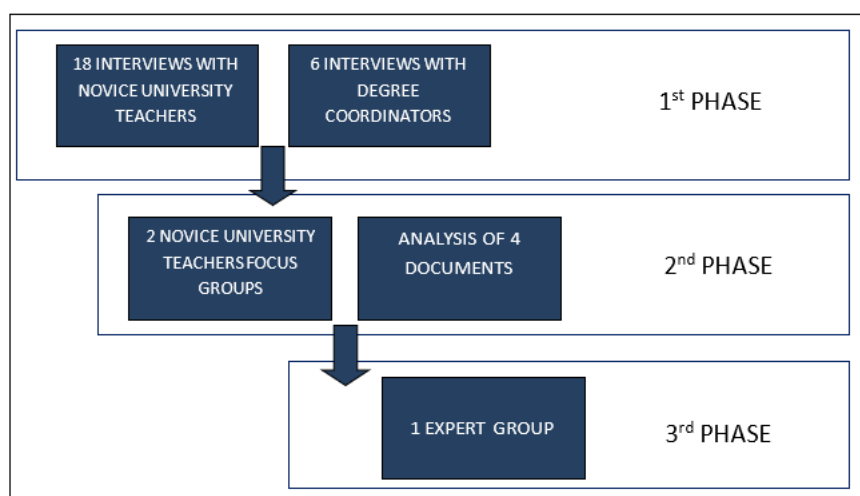


Figure 1. Instruments and information sources. Source: Authors.

In the first stage, we started a process of recruiting university professors and coordinators through the university's web directory and sending emails to them. In these emails there were an explanation about the research and an invitation of participation. In the case of professors, the requirement to participate was having less than seven years of teaching experience in university. We conducted 18 semi-structured interviews with novice university faculty, with six professors representing each of the fields included in the study (Arts and Humanities, Social Sciences, and Education).

We use interviews as they are considered an appropriate technique to get data about the informal learning process (Eraut, 2004; European Centre for the Development of Vocational Training, 2007). The objective of interviews was to inquire into the process of learning teaching competencies, and therefore the variables examined with this technique were the teaching competencies acquired through informal learning, strategies of informal learning and organizational conditioning factors. For example, we asked novice professors about what strategies they used to learn about teaching or which life experiences made them learn about teaching, what skills they had acquired through informal learning or what media or barriers they encountered on the part of the university. In parallel, we held six semi-structured interviews with degree coordinators (2 for each field) in order to get a more institutional picture and be able to identify how informal learning about teaching is encouraged by these coordinators. For instance, we asked them about how they facilitate the informal learning about teaching of the novice faculty of their department or which activities were carried out from the institution to promote learning about teaching.

In the second phase, we recruited novice university professors with the same method that we used in the first phase. The criteria for participating in the focus groups were having at most seven years of teaching experience at one of the three epistemological fields included in the study and not having participated in the first phase of the research. All the participants were pre-doctoral researchers. We held two focus groups with a total of seven novice professors with the goal of debating and comparing the results extracted from the instruments applied in the first stage (Lochmiller & Lester, 2017). In this sense, we showed the results of previous phase to the participants and they could discuss them with the other participants from their own experience.

In parallel, we also compiled documentation related to four institutional initiatives for the promotion of informal learning that emerged in the interviews with the degree coordinators, such as the content of seminars on teaching or a journal on teaching spearheaded by an initiative from one university department. The coordinators sent to us the documents of this initiatives. Finally, we held a focus group with two experts on informal learning and university organization in order to analyze the results that emerged from the interviews with the novice faculty.

Lastly, we considered ethics aspects (Punch, 1994; Sandín, 2003) in order to ensure the privacy and confidentiality of the participants. When we contacted participants, we included an informed consent form, informing them about the objectives of the research and their participation. Therefore, data has been analyzed anonymously because we do not have used the real names of participants, but codes. Finally, we sent a report of results to participants.

Data Analysis

All of the information-gathering techniques explored the three variables established for the research: teaching competencies acquired through informal learning, strategies of informal learning and organizational conditioning factors. The purpose of using different techniques was to assess if the results were coherent between data from each source of information.

For the analysis, we transcribed the audios of the interviews and focus groups and we analyzed the significance of each data fragment. The data were processed via a content analysis and organized into deductive and inductive categories (Creswell, 2007). Deductive categories were based on Tables 1, 3 and 4, and we also considered some new inductive categories that emerged from the data. After this, we calculated the frequency of each category in order to know the tendency of the answers in each variable (Hernández, Fernández, & Baptista, 2007).

The results were analyzed globally for all the participants, so demographic variables were not taken into account and we did not compare the results between the different areas of knowledge (Humanities, Education and Social Sciences). The results explore a topic not thoroughly covered by previous research in a specific university in Spain and give a categorization as a basis for further studies to find if there are differences among novice professors' process of informal learning depending on age or their field of knowledge, among others.

Results

Results are structured in three sections. Each section presents the results of a research variable. Firstly, there are the results about the teaching competencies that novice professors have developed through informal learning. Secondly, we present the results about the

strategies of informal learning they have used in order to learn about teaching. Finally, we include the results about the organizational elements that can be facilitators and barriers for the informal learning in the university analyzed.

Teaching Competencies

Even though all the teaching competencies considered (see Table 1) were cited in the interviews and focus groups, participants considered some of them to be more important than others. In this sense, novice professors, coordinators and experts considered interpersonal competency as the one most likely to be acquired through informal learning. Specifically, learning occurs in aspects such as defining the role of student and instructor role, interaction and dialogue with students and classroom and conflict management.

Interpersonal competence, which I understand as the relationship with students, yes, because often when you begin, you're not sure what tone to take, especially at certain times, such as with grades or certain sorts of problem. "What should I do if this happens?" "Well, you could do this or try that." (Novice professor 10, 7 years of teaching experience, Humanities-Interview)

Other competencies that are often acquired from informal learning are methodology and lesson planning, with particular emphasis on reframing classes based on informal learning. These competencies were more common in interviews of novice faculty than in focus groups and interviews of coordinators, but they are more cited in these last two techniques than other competencies.

I noticed it in the first year because being in charge of a class is totally new and you can seldom calculate properly whether this content will be enough for an hour and a half or two hours. So, I've often prepared too much and sometimes not enough. And so I was able to correct it the following year. (Novice professor 11, 2 years of teaching experience, Humanities-Interview)

Novice professors, both in the interviews and in the focus groups, also mentioned learning the contents of their own discipline through informal strategies, as well as cross-curricular themes that can enrich their classes. Coordinators also indicated the importance of informal learning in the own discipline's content, whereas the experts did not.

I find content mastery [...] to be essential. In front of the class you have to have a clear grasp of the concepts you are going to teach because everything is available in books and you can do it theoretically, but you have to master much more material than what you're going to teach, than what's going to be in the exam, which is what you want the students to learn [...]. And so you do this by reading and talking with colleagues. (Novice professor 4, 4 years of teaching experience, Education-Interview)

On the other hand, the competency that novice faculty thought they had learned the least through informal learning is teamwork with other professors, thus revealing the lack of a culture of teamwork among university faculty. Both novice faculty and coordinators agreed in not having learned how to learn with other colleagues.

Compared to other teaching experiences I've had, I think that perhaps in this context [...] there is not much space for teamwork and cooperation. It's not like: "Hi, this is my part and here's your part." It's not like that. I think that it can't be tackled collaboratively and you can't really engage in teamwork. (Novice professor 23, 6 years of teaching experience, Education-Focus group)

Finally, in focus groups we identified a competency that had not been identified previously, although it is essential in developing one's professional practice: language competency in relation to acquiring a new language, either Catalan or English in this case.

Yes, and Catalan [...]. I'm from the Basque Country and I began to teach in Spanish, and I remember that the material was in Catalan, the students spoke to me in Catalan, and there was a moment in the middle of the class when I switched. (Novice professor 19, 3 years of teaching experience, Education - Focus group)

Finally, competencies such as communication, evaluation, tutoring and innovation have been developed by novice faculty without being the most or least competencies acquired through informal learning.

Strategies of Informal Learning

About the strategies of informal learning (see Table 3), there was agreement among novice professors, coordinators and experts that the main strategy of informal learning used by novice faculty is unstructured peer interaction, whether in informal conversations or active faculty observations. Talking with colleagues, whether veteran or novice, is a powerful activity of learning that allows novice faculty to ask questions, enlist advice and learn from the experience of others. Nonetheless, novice faculty tend to find interactions with professors with more university experience to be most useful, since they think that their senior colleagues are better placed to guide them and answer their questions.

Usually the more veteran ones have more experience [...] whenever you have a question like that you know who to ask because they're sure to know since they've been around for 30 or 40 years. (Novice professor 10, 7 years of teaching experience, Humanities-Interview)

In this sense, coordinators also mentioned the role of interaction with more veteran faculty members in replying to informal requests from novice professors and sharing teaching styles, in the case of both positive and negative referents.

When you talk to people with more experience, their past experiences are useful because you can either take them as a referent or figure out what you don't like and don't want to apply. People always think that everything others have done will work for them, but it's also useful to figure out what not to do. (Degree coordinator 5, Social Sciences-Interview)

Another major source of learning is interaction with peers through participation in semi-structured activities geared towards teaching. Activities in this category are far-ranging, and the most important for novice professors are meetings, either at subject level or with faculty from the entire degree program. Other semi-structured activities engaged in by novice faculty

include the creation of teaching teams and peer mentoring from fellow instructors from the same discipline. This strategy appeared in most of interviews and it was cited also in focus groups, but with less intensity.

In my case, for example, I taught this class last year with mentoring, from preparing the syllabus right through to grading exams and including the actual classes. And, of course, between one year and the next I'm very grateful I was able to share it; I was introduced into the course with informal learning. (Novice professor 9, 2 years of teaching experience, Humanities-Interview)

The teaching experience itself was another strategy of learning strongly mentioned by novice professors in interviews and experts in terms of the usefulness of experience, reflection on their own practice and trial and error. However, it was less mentioned in focus groups and interviews of coordinators.

Seeing how the classes develop from one year to the next. Seeing how to approach things, how to approach certain topics, how not to approach them, selecting the evaluation activities that work the best or worst, grading exams, reviews. You try one thing, you see that it works and so you do it. You try another thing, you see that it doesn't work and so you eliminate it. And that's kind of how you consolidate a teaching style. (Novice professor 13, 6 years of teaching experience, Social Sciences-Interview)

The various participants also mentioned experiences outside their workplace as major sources of informal learning. These include the memory of teachers who were a referent for them when the interviewees were still students; teaching experiences at non-university level; taking part in sociocultural activities such as acting, music or being member of clubs; or having family members who teach at different educational levels.

In my past as a student, I clearly remember times in the classroom when I felt great, when I found a lesson or a class fantastic, where I learned a lot and I thought: "If I'm ever a teacher myself, that's the way I'll do it." (Novice professor 4, 4 years of teaching experience, Education-Interview)

Also highlighted in interviews and focus group of professors, albeit to a lesser extent, is the fact that interaction with students allows novice faculty to learn about teaching, especially based on the comments that students make about the class and their teaching, institutional satisfaction surveys conducted by the university or the training activities the students take part in.

If I notice that I didn't explain something very well because I see in the evaluation or somewhere else that the students didn't understand it or didn't realize they were supposed to know something, then I realize I have to change my approach, the content, my way to teach... (Novice professor 13, 6 years of teaching experience, Social Sciences-Interview)

Finally, activities that lead to informal learning but that have been used less by the novice professors participating in this study include the search for resources in books or on the Internet; performing other professional duties, such as presenting papers at conferences or

attending research seminars; and performing tasks other than the usual ones, such as stays at universities abroad.

Organizational Supports for and Barriers to Informal Learning

Regarding the organizational elements (see Table 4), they can enhance or hinder the informal learning of faculty depending on the university. Respondents were able to identify whether they act as facilitators or barriers of informal learning about teaching. In this sense, participants were able to identify more barriers than facilitators of informal learning in their university. Therefore, although there are aspects of university structure that promote informal learning, there are more elements that are obstructing it in the context analyzed.

If we focus on facilitators, one of the main supports for informal learning for novice faculty is the existence of a favorable climate in the institution, especially in terms of access to faculty at higher echelons, such as degree coordinators, unit heads or faculty members with a higher rank, as well as colleagues at the same job rank. These close relationships allow the communication between different professors and promotes exchange and learning about teaching.

So, the support or strengths of this would be accessibility, for example access to people in certain positions [...] which allows you to ask them direct questions or even to make suggestions yourself. (Novice professor 3, 6 years of teaching experience, Education-Interview)

However, despite the good influence of organizational climate in informal learning, climate has not been seen as a facilitator for most of the coordinators interviewed. They mentioned the lack of communication between professors and conflicts in Departments, which they think that can hinder informal learning.

I have been working in High School for six years and I believe that at High School it [climate] is much more encouraged. Only the fact that once a week you meet with your Department, this already facilitated much coordination. Here [in university] this does not happens. (Degree coordinator 1, Humanities-Interview)

Leadership among senior faculty members is considered essential in promoting informal learning by professors in interviews and focus groups and some of the coordinators. They mentioned that faculty leaders tend to support novice professors when they organize teaching initiatives that allow them to learn. The aspects more valued are the predisposition of these senior faculty members towards informal learning, the dissemination of a range of initiatives on teaching to the faculty and greater sensitivity towards female leadership.

There has been an implication of the different parts and different roles of hierarch. You explain them your teaching project, the dynamics, the advantages and disadvantages and they tell you "Next, we have to energize the faculty." (Novice professor 1, 5 years of teaching experience, Education-Interview)

That would be my or our function: to be promoters. A promoter of change is not someone who makes the change; rather it's the person who says, "Hey, I

really believe in your project [...] and I'd like you to drive it and work on it.”
(Degree coordinator 1, Education-Interview)

Another type of support mentioned by professors, coordinators and experts is having learning structures available, where faculty members can interact, such as meetings or committees. To a lesser extent, the interviewees also mentioned mentoring for faculty in shared classes promoted by the institution, sharing offices with colleagues and holding specific informal learning initiatives.

Plus, because I get involved in all the committees [...]. So, all of these spaces help you learn, too. Apart from your own experience, another source of informal learning, in my opinion, is other people's experience, not just your own. (Novice professor 3, 6 years of teaching experience, Education-Interview)

One such activity for organizing specific informal learning initiatives promoted by the university are research seminars, where current research is presented, which is also a source of new content for teaching. Respondents also mentioned various activities concerning teaching in different formats, such as lectures, seminars, and even a conference on university teaching within a specific field. There are also occasional activities such as working groups, institutionalized monitoring of faculty in shared classes, participation in teaching innovation projects and training visits and social activities in which faculty get together. Nevertheless, the failure of some activities to continue over time because of a lack of faculty participation was mentioned.

We have a space for novice teachers, training of grant holders, in which we meet once a month with the research director, who suggests situations not only in teaching, but also about research and professional development, where we can raise problems or situations for general discussion. (Novice professor 22, 2 years of teaching experience, Education-Focus group)

In this sense, we analyzed four documents related to different activities carried on by some departments of university. In the area of Education, we identified two seminars for professors about educational content, whereas in the area of Humanities we identified a congress and a journal about university teaching strongly focused in pedagogical methodologies and less in humanities content. We could not have access to documents about organizational activities for faculty about teaching.

Nonetheless, in interviews and in focus groups they talked also about the lack of spaces in some Departments to share knowledge about teaching or the lack of continuity of some of the initiatives started. Novice professors have highlighted too their duty in generate these spaces: “Meeting spaces are few, but also because we do not create them, not because the institution does not. So we have to generate this kind of resources too.” (Novice professor 20, 2 years of teaching experience, Education-Focus group).

In regards to organizational barriers that hinder informal learning about teaching, the barrier most mentioned by novice faculty, coordinators and experts was a university's organizational culture. In this sense, some university faculty show a clear lack of interest in their teaching function, as well as the tradition of teaching individually, in isolation from colleagues.

Everyone has their own schedule and we don't get together very often, only every now and then or only when we have research projects. But of course, when we don't have these research projects, then everyone has their own teaching and research tasks, their own work, and of course it's not that they want to be isolated, but in the end we simply don't get to see each other. (Novice professor 15, 3 years of teaching experience, Social Sciences-Interview)

Relating to culture, respondents also mention that some faculty do not come to work regularly in person and there is also some reluctance to engage in teamwork and evaluation and to change their own practices. It is also clear that some professors do not value informal learning about teaching, as they regard it as a waste of time that they could be spending on other tasks.

[The university] does not encourage reflection, it does not also encourage spaces for interaction with others, and so people are increasingly isolated and only get together for very specific reasons, with a very specific goal in mind, and with the classic excuse of, "We can't waste time because we're about to publish something, we're about to submit something for publication." And that's just a pretence. (Novice professor 4, 4 years of teaching experience, Education-Interview)

Another barrier identified through all the techniques of gathering information is the faculty training policy on informal learning initiatives, in which the respondents emphasized the lack of support and mentoring structures for novice teachers from the degree coordinators or the department, among others.

The fact is that this is the first time I've thought that, you know, there may be novice faculty, like you say, thinking about those doctoral candidates, among the ones who teach classes. I've never considered spending time with them to give them a few pointers. [...] I've never given them any support. (Degree coordinator 6, Social Sciences-Interview)

It also was shared by both professors in interviews and focus group, coordinators and experts that the faculty labor policy also influences negatively the opportunities for informal learning, especially the contractual conditions of adjunct lecturers, which results in them rarely being present at the university because of their work obligations at other jobs and uncertainty about their future at the university. It is also clear that the greater recognition of research in faculty accreditations for promotion contributes to reducing the amount of time and energy they spend on teaching.

I get the feeling that teaching is gradually being marginalized at the university because it's being replaced by research. You could say that it's those who have research accomplishments who have the privilege of stability. So, teaching is something they do because they have to, but they always try to do as little as possible. (Novice professor 16, 4 years of teaching experience, Social Sciences-Interview)

To a lesser extent, respondents also mentioned that too much work in the professional tasks assigned, the institutional climate -in particular the lack of communication among faculty-

and leaders who assign no importance to informal learning about teaching, can prevent it from taking place.

In conclusion, novice professors think that university in general provides no explicit incentives for informal learning about teaching, although they also mention that the passivity of the institution on this issue forces professors to learn informally.

University encourages informal learning but does so in a random kind of way. The moment you're left in the classroom without really asking yourself whether you have done some kind of introductory course on the topic and you start to teach class, obviously this encourages informal learning, but it does so among those who want to learn from what they do or those who want to analyze their possible mistakes or strengths. Does it encourage it? It leaves it to each individual, to each person's understanding and wish. (Novice professor 13, 6 years of teaching experience, Social Sciences-Interview)

In this sense, it is also clear how important each individual's personal interest in learning this way is, a factor that the experts interviewed also emphasized.

Discussion

As for **teaching competencies** acquired via informal learning, novice university professors admit to having developed specific competencies more intensely. Interpersonal, methodological and classroom planning and management competencies were widely developed through informal learning in the context studied. This matches the socio-interpersonal and didactic-pedagogical dimensions of novice faculty, who are in a stage when they are beginning to develop emotional control stemming from their interactions with students, have difficulties planning classes, and tend to stick with whatever methodological strategies have worked well for them (Martín-Gutiérrez, Conde-Jiménez, & Mayor-Ruiz, 2014).

In addition to pedagogical competences, informal learning also allowed people to acquire competency in content mastery. In particular, one of the most pressing concerns among novice faculty is mastery of the material (Feixas, 2002), so it is understandable that learning the contents in one's field largely takes place informally.

Regarding **informal strategies of learning** through which teaching competencies are acquired, our study found that the main strategy used by the faculty researched is unstructured peer exchange, which can take place via conversations or faculty observations. Indeed, Feixas (2004) identified informal conversations with other faculty members and, to a lesser extent, peer teaching observations as sources of professional development, as was also found in our study. This strategy is also one of the most used at other educational levels (Grosemans, Boon, Verclairen, Dochy, & Kyndt, 2015; Schei & Nerbø, 2015) and among public-sector workers (Cunningham & Hillier, 2013; Fernández-de-Álava, 2014).

On the other hand, peer interaction through participation in semi-structured activities about teaching is also a source of informal learning that is widely recognized by faculty. In this sense, previous research has identified collaborative strategies such as coordination meetings, reflections on specific practices, and mentoring as strategies of professional development (Eraut, 2004; Feixas, 2002; Herrera et al., 2011).

Furthermore, one's own teaching experience is another strategy of individual learning for novice professors. The importance of this source of learning has been recognized in previous studies among teachers at other educational levels (Grosemans, Boon, Verclairen, Dochy, & Kyndt, 2015; Schei & Nerbø, 2015), in the public sector (Fernández-de-Álava,

2014) and also in higher education. Nevertheless, in some cases the learning that can take place may not be appropriate, since learning individually from one's own experience depends on a single person and cannot be compared to other practices (Herrera et al., 2011).

In terms of the organizational **supports** for informal learning, this study revealed the importance of having a favorable organizational climate and university leadership that provides access to more experienced faculty and to colleagues with the same job status. This coincides with previous studies, which found that the relationship dynamics among the members of an organization contribute to informal learning and professional development (Cunningham, & Hillier, 2013; Eraut, 2004; Feixas, 2004; Schei, & Nerbø, 2015).

On the other hand, spaces of interaction that already exist in the organization, as well as those created with an orientation towards informal learning about teaching, were also highly rated. In this sense, spaces of interaction had not been explicitly cited as a support in previous studies, since the factors considered as facilitators were positive relationships among faculty, heterogeneity of people, and feedback among colleagues (Eraut, 2004; Schei & Nerbø, 2015), which can coexist in shared spaces that organizations provide.

About the **institutional barriers** for informal learning, the main hindrance identified was the culture of the organization. This had already been found in previous studies (Feixas, 2004; Schei & Nerbø, 2015), although cited as a barrier that did not strongly condition learning (Berg & Chyung, 2008). More specifically, the lack of interest in teaching among some professors who have participated in our research and their reluctance to change certain teaching practices are factors that can hinder informal learning (Berg & Chyung, 2008; Marsick & Watkins, 2001). Similarly, the individualization and isolation of the faculty in their day-to-day professional lives and the lack of regular presence of professors at university were also rated negatively. Furthermore, previous studies at other educational levels had already found that teacher isolation limits informal learning, especially the learning resulting from contact with others (Grosemans, Boon, Verclairen, Dochy, & Kyndt, 2015).

The faculty training policy regarding informal learning initiatives is another barrier, especially the lack of support and mentoring structures for novice instructors. In this sense, planning processes of learning is necessary in order to foster informal learning of the workers in an organization (Cunningham & Hillier, 2013). In the university we have analyzed, this factor had not been taken into consideration and it is seen as a barrier. For this reason, Feixas (2004) identified the importance of having faculty training programs devised by the universities but made no mention of initiatives for informal learning.

Similarly, the faculty labor policy has also been identified as a barrier for informal learning, specifically the contractual conditions of part-time faculty members, job instability and the greater recognition of research in the promotion of university faculty in comparison with teaching. Indeed, previous studies stress that job instability negatively affects the development of instructors' teaching and research responsibilities, although university policy is considered to be unimportant for the changes in teaching style (Feixas, 2004).

To a lesser extent, the lack of time because of an overload of professional tasks is another factor that the faculty mentioned within the context analyzed and this matches the results of studies with teachers at other educational levels (Eraut, 2004; Schei, & Nerbø, 2015). The climate of the institution and having leaders that do not consider informal learning about teaching to be important are other aspects that are deemed to limit learning, which have also been considered important in previous studies (Eraut, 2004). Nonetheless, in the university context the notions of support and leadership had not previously been considered to be crucial factors in faculty's professional development (Feixas, 2004).

About the limitations of our research, the sample was small compared with the total number of novice professors in the university analyzed. Although we obtained a description

of the phenomena of informal learning in detail, it could be perceived in a different way depending of the experience of each professor.

Furthermore, participants were professors from three different areas of knowledge, but our analysis did not compare the results between the areas because it aimed to explain the phenomena globally. In the same way, participant professors have different professional category, which could influence the results of the research.

Our research provides insight into the phenomenon of informal learning in teaching by novice professors in higher education. Future research could be focused on analyzing different sociodemographic variables, since previous studies carried out in other educational levels have found differences in the use of some of the strategies of informal learning by age (Grosemans, Boon, Verclairen, Dochy, & Kyndt, 2015; Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011). Similarly, differences have also been identified in the professional development stages of university teaching staff according to the areas of knowledge in which they are framed (Feixas, 2002). For this reason, it would be interesting to amplify the areas of knowledge of the study and analyze if there are differences between them. Other variables to be considered could be the professional category or the university's ownership.

Although we consider that informal learning about teaching should be analyzed contextually in order to understand in depth the phenomenon in a particular institution, our research could bring an orientation about the process of informal learning and it can be the basis for other studies in this field. Furthermore, the results found can lead to proposals for university lecturers and the coordinators in the faculties in order to promote an effective informal learning about university teaching.

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Author Note

Laia Encinar-Prat is doing her PhD in Education at Universitat Autònoma de Barcelona (UAB) about informal learning of university professors. She is also coordinator of the Bachelor's Degree in Tourism and professor of research methods at School of Tourism, Hospitality and Gastronomy CETT-UB, affiliated to Universitat de Barcelona. She has also worked in different projects related to educational research, quality of socio-educational services and education for sustainable development in Higher Education. Email: laiaencinar@gmail.com.

Joaquín Gairín-Sallán is a professor of Pedagogy at Universitat Autònoma de Barcelona (UAB). He has been dean of faculty, educational center director and commissioner of the Education and Training Cluster in UAB. He is also the director of EDO's research group (<http://edo.uab.cat/en>), the network of support to the educational management redAGE (<http://www.redage.org>) and the European project ORACLE (<https://observatorio-oracle.org/en/home>). His areas of specialization are: assessment and management of educational institutions, management of collective knowledge (education systems, public administration and companies) and issues related to training and learning communities. Email: joaquin.gairin@uab.cat.

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