

## Professional Knowledge for University Teaching. Case Study in University Professors from the Universidad de Valparaíso

### Conocimiento profesional docente universitario. Estudio de caso en profesores universitarios de la Universidad de Valparaíso

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#### Abstract

The aim of this study is to describe and analyze the *professional knowledge for university teaching* emerging from the processes of Curriculum Innovation. Using a qualitative methodology and a case study design, we analyze the experience of two university teachers at the Faculty of Medicine of the Universidad de Valparaíso. Following an inductive, interpretative, and analytical process, we obtained a set of meanings organized around two topics: Possibilities and demands of the university context; and *development of the didactic knowledge of the discipline*. The results of this study show, from a qualitative approach, that development of this kind of subjective knowledge creates a complex web where multiple analysis entries emerge, characterized by the fact that this is not a type of knowledge transmitted by traditional instructional methods. On the contrary, this *professional teaching knowledge* for the university teacher is a dynamic subjective construction, as well being situated in the institutional context, their experience and personal career, and their disciplinary knowledge.

**Keywords:** higher education, professional teaching knowledge, professional training

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## Resumen

El objetivo de este estudio es describir y analizar el *conocimiento profesional docente universitario* que surge de los procesos de innovación curricular. Utilizando una metodología cualitativa y un diseño de estudio de caso, se analiza la experiencia de dos profesores universitarios pertenecientes a la Facultad de Medicina de la Universidad de Valparaíso. Siguiendo un proceso analítico, inductivo e interpretativo, se obtuvo una estructura de significados organizados en torno a dos tópicos: posibilidades y demandas del contexto universitario, y *desarrollo del conocimiento didáctico de la disciplina*. Los resultados de este estudio muestran, desde una aproximación cualitativa, que el desarrollo de este tipo de conocimiento subjetivo crea un entramado complejo donde emergen múltiples entradas de análisis, caracterizado por el hecho de que no es un tipo de conocimiento transmisible a través de métodos instruccionales tradicionales. Por el contrario, este *conocimiento profesional docente* del docente universitario es una construcción subjetiva dinámica, situada en el contexto institucional, su experiencia y trayectoria personal y su conocimiento disciplinario.

**Palabras clave:** educación superior, conocimiento profesional docente, formación profesional

This study describes and analyzes *professional teaching knowledge* for university emerging in contexts of curriculum innovation. Through a qualitative study and using a case study design, we analyze the experience of two university teachers at the Faculty of Medicine of the Universidad de Valparaíso.

*Professional teaching knowledge* is a multidimensional concept that encompasses the complexity of teaching work, focusing the view of the researcher on different domains of this experience. According to Angulo (1999), this is understood as the knowledge that teachers have about teaching situations, academic knowledge, and the practical difficulties they must face. Construction of this knowledge is dynamic and depends on various elements, such as the institutional context in which it takes place, teacher planning, decision making in classroom contexts, and teachers' ideas or beliefs about teaching, learning, and their students (Guzmán, 2011).

In this study we pose the following research questions: (a) what are the characteristics of *professional teaching knowledge* in university teachers working at the Universidad de Valparaíso whose academic units have participated in curriculum innovation projects?; (b) in what way are the demands of the higher education context and institutional features articulated to provide justification for their teaching practices?; and (c) how is the disciplinary didactic knowledge of these teachers formed?

### Changes in the higher education system in Chile and curriculum innovation

Since 1981 significant reforms have been made to the higher education area in Chile, where institutions have moved from an elitist and homogenous higher education system to a mass and diversified system. In figures, the number of places went from 165,000 in the early eighties to enrollment of more than 1 million students in 2012. The report from the Higher Education Information Service (Servicio de Información de Educación Superior, 2013) shows a 4.4% increase in enrollment compared with the previous year. It is precisely this massivity and heterogeneity which teaching practices have somehow had to deal with. González (2010) states that the 2009 OECD report mentions undergraduate teaching processes as a shortcoming of the university system. These have focused on memorizing content, emphasizing individual learning over collaborative learning, and assessment methods based on traditional tests of a reproductive nature. Some authors (Cuevas, 2013; González, 2010) explain this situation with historical education practices, in which students and their entrance characteristics do not influence the design or development of the programs, which are also poorly articulated with one other and with changes experienced by the different disciplines and the professional practice of these programs in complex and dynamic contexts.

These practices have been presented in various instances of public policy, such as the University Accreditation System and MECESUP projects (Projects to Improve the Quality of Higher Education). The report of the Presidential Advisory Council on Higher Education (Consejo Asesor Presidencial para la Educación Superior, 2008) states in its conclusions that accreditation of institutions should include «... teaching methods based on appropriate competencies for the objectives of the courses and student needs»

(p. 320); and the OECD report (2009) suggests promoting «...the use of pedagogical approaches based on competencies and increasing the participation of employers in the design of curriculums and courses» (p. 16). Both bodies have encouraged institutions to introduce curriculum innovation projects into their strategic development plans. One of the main concepts of such projects is innovation in teaching practices and assignation to a teaching model by competencies and learning outcomes, leading to teaching focused on student learning rather than the content (Ministerio de Educación, 2010).

Expansion of enrollment and the challenge of innovation form the scenario in which university teachers have addressed a range of challenges aimed at their teaching practices, such as the promotion and development of professional and transversal competencies with didactic methods that enhance the autonomy of students in their learning process. As stated by various authors, these challenges require teachers to transform not only the area of their practices, but also their disciplinary knowledge and conceptions about teaching and learning in a perspective that includes, among other things, the diversity of approaches and new teaching methodologies (Cruz, 2011b; Feixas, 2004; Zabalza, 2009).

### Professional University Teaching Knowledge

Studies of *professional teaching knowledge* in university contexts provide a complex and investigative view of training processes, highlighting their underlying dimensions of specificity and professionalization, and assuming an appreciation of the work and personal practical knowledge that the actors themselves have built on this subject (Cuevas, 2013).

This means outlining as an object of study a body of knowledge that teachers have been building and which is intersected by their encounter with contextual institutional conditions, disciplinary specifics, and pedagogy, knowledge that ends up articulating with their congruencies and contradictions in their teaching practices (Guzmán, 2011).

Research into careers reveals that most university teachers migrate to the world of teaching from professional areas or disciplinary research, and most of them lack formal pedagogical studies, a tradition reserved for the early stages of their training as teachers and which generally addresses issues of general teaching and planning (Cruz, 2011a; Feixas, 2004; Guzmán, 2011).

On the other hand, even when training professionals —and, therefore, teaching— is at the heart of universities' work, they have traditionally assigned greater value and incentives to production and dissemination of new knowledge related to the discipline at the expense of teaching, including its practice, research, application, and integration. At present, the teacher academic development is more associated with their scientific productivity and their competencies as a researcher than their competencies as a trainer of teachers (Montenegro & Fuentealba, 2010; Solar & Diaz, 2008).

As we go further into the sphere of *professional knowledge for university teaching*, we can state that the lack of specific pedagogical training does not mean that teachers intervene in the classroom without thinking and without a body of pedagogical knowledge of reference; on the contrary, based on their experience in university teaching, which implies a permanent relationship between the discipline and didactics, and their empirical knowledge of the outcome of their teaching practices, they have constructed a particular and idiosyncratic knowledge that merits study in the context of higher education, not only because of its contribution to the understanding of pedagogy, but also for its contribution to the understanding of new aspects of the discipline itself (Cruz, 2011b; González, 2010; Medina & Jarauta, 2013; Shulman, 2005).

These constructive processes have been studied in university contexts and in different disciplinary areas of broad research programs, known as research into *teacher knowledge*.

Specifically regarding the discipline-didactic relationship, it is demonstrated that teachers do not teach the subject as they studied it or as it is known by specialists and researchers in the discipline. Based on their experience, teachers adapt, reconstruct, transform, and simplify the content to make it comprehensible to students. According to various studies, this capacity of transformation distinguishes a teacher from a specialist in the subject, which professionalizes teacher knowledge (Cruz, 2011a, 2011b; Medina & Jarauta, 2013; Shulman, 2005).

This *professional teaching knowledge* articulates the beliefs regarding the learning that support teachers and their relationship with their own teaching practices. These beliefs are expressed as a set of knowledge of meta-empirical realities and ideas that teachers use as principal when thinking about, doing, and assessing their performance in direct teaching contexts. They thrive on the continuous practice of the subjects, where they test their suppositions about teaching and learning, and also construct and reconstruct new ways of thinking about teaching and learning by analyzing their results (Daura, 2014; Dávila, Leal, Comelin, Parra, & Varela, 2013; Feixas, 2004; Solar & Díaz, 2008).

The understanding that university teachers have of the scope of the demands and the contextual institutional constraints on their teaching practices and the products of reflection on the teaching discipline are articulated to account for the *professional knowledge for university teaching*, which is the object of study in this research.

### Methodology

As Van Driel, Verloop and De Vos (1998) state, since *professional teaching knowledge* is essentially «practical-personal» knowledge, its study requires a qualitative methodological approach that allows it to be understood from the perspective of its own protagonists. It involves a complex approach, where subjective, singular, and idiosyncratic dimensions predominate, for which research practices are needed that facilitate a dense description of the data, allowing the search for an explanation of the concepts, beliefs, and practices, among many other elements of a subjective nature that comprise educational practice. To achieve this, as some authors have stated, the qualitative method must follow approaches of an inductive-interpretative kind more closely (Cruz, 2011a, 2011b; Medina & Jarauta, 2013).

In this research the design involved studying cases in depth, where two cases were selected of teachers from the Faculty of Medicine at the Universidad de Valparaíso. As criteria of variability, it was taken into consideration that they belonged to different disciplinary areas and were of different gender. As inclusion criteria, it was required that the subjects had participated in their academic units in curriculum or teaching innovation projects from the disciplinary area and had 10 or more years' experience in university teaching. This criteria conforms to the characteristics of samples used in other studies with similar objectives (Cruz, 2011a; Medina & Jarauta, 2013), allowing teachers to be located in the period of transformations described above and considering the transition from a new teaching practice to one with greater expertise (Guzman, 2012).

Case 1 is a teacher at the Public Health Department, a doctor who holds a PhD in sociology and has 18 years' experience as a teacher and researcher. Case 2 is a teacher at the School of Nursing, a nurse with a master degree in education, with 20 years' experience as a teacher and researcher.

The data production highlights the constitutive dimension plurality of the object of study, complementing in phases the *semi-structured interview* techniques with *non-participant observation* in class contexts. As Flick (2004) suggests, the semi-structured interview is developed from a basic script that facilitates the suggestion of topics guided by the research questions; for our purposes, it allows the investigation of the implicit knowledge of the teachers about their teaching practices and, given its structure, facilitates the subsequent analysis of content. *Non-participant observation* allows an approximation of the natural environment in which the teachers operate and their practices are expressed (Medina & Jarauta, 2013), which were conceptualized by the actors in the interview stage.

The interviews were carried out in September 2013, at a place and date agreed with the participants. The duration of the interview for case 1 was 72 minutes; and the first interview for case 2 lasted 120 minutes, before a second interview of 46 minutes to address topics not covered. The interviews were preceded by an explicit statement of the research objectives.

Following a simple script, which includes questions about the institutional context and the dimensions that comprise professional teaching knowledge, the interviews inquired into the teaching practices that teachers habitually used in their subjects, and also requested that they describe an episode or teaching situation that reflected their conceptions about teaching and learning.

During October video recordings were made of 90-minute classes. When these were started, the teachers explained the presence of the researcher and their objective and consent was obtained from the group to film the class. A Canon 400 camera was used at one end of the classroom to provide a complete panoramic view, with the main focus on the teacher. During filming the researcher made no intervention, merely taking notes of observations that were later used to complement the analysis of fragments of teaching content.

The interviews were transcribed in full, the film recordings were reviewed in their entirety three times, and from them only certain extracts were transcribed which, in the opinion of the researcher, illustrated the actions of the teacher in class situations.

The data analysis used open and selective coding techniques proposed under the Grounded Theory model developed by Glaser and Strauss (1967, as cited in Strauss & Corbin, 2002). This is a generative, constructive, and inductive method, in which inductive coding of categories is combined with grouping into higher order categories, which are then related to one another.

Regarding the textual material, using the Atlas TI 6.2 program, the interviews were first coded, identifying words, phrases, topics, or concepts that were significant from the analytical point of view. Then, the resulting codes were organized into conceptual categories with a higher level of abstraction that were directly related to the questions arising from the research problem; the transcribed extracts of the classroom sessions were used as illustrative elements that enrich the understanding of the emerging conceptual categories.

## Results

Based on the analysis, a structure of meanings was obtained that was organized around two themes: 1) possibilities and demands of the university context and 2) construction of didactic knowledge of the discipline. A detailed analysis is shown below, with one or more direct quotations from the interviews and extracts of classes to allow the reader to understand the meaning and comprehension.

### Possibilities and demands of the university context

As explained above, the construction of *professional university teaching knowledge* draws on personal experiences and careers in teaching, contextualized in an organizational substrate in which these experiences take place. Thus, a contingent and relevant experience in recent years involves the curriculum innovation initiatives and assignment of academic units to the MECESUP (Improvement of Quality and Equity in Education) projects. This experience is understood by the actors as having a double meaning of potentiality (opportunity) and demand (requirement). The meanings in this core idea are organized into two large categories: on one hand, the story about their experiences in the innovation process, including learning, errors, thoughts, novelties, etc., and on the other, the weaknesses of institutional commitment, with the discrepancy in the adjustments that the institution had to make to maintain the viability of the innovation being central.

Regarding their experiences, both teachers disclosed that they had had a leading role in this process, acknowledging the necessary amount of power required to drive innovation. In general they gave a positive assessment of the impact of innovation, basing this opinion on the articulation of the curricular and instructional dimensions. In terms of the curriculum, they highlight a transformation of historical practices that fragmented the training process, in relation to over-specialization at the undergraduate level. Subsequent to the innovation, there are gains in integration and depth, which also affect the comprehension of the discipline. At the instructional level, innovation puts them into contact with knowledge and technical language about teaching that opens up possibilities for them to reflect and support their own practices, leading them to think of a model of their own for their discipline.

Yes, that has been achieved, I think. The things that have been achieved, which these specialists manage to understand that they're training general practitioners; therefore, a lot of content that was taught previously shouldn't be taught to them because it's for specialists. And the other thing that I think has been achieved is that the cardiologist is actually available

to talk or converse with the physiopathologist, the histologist that the basic sciences were a long way off and this famous basic-clinical integration ... that has been achieved (Teacher of medicine).

Experts came, that also helps improve the view, not agreeing with everything, but it's useful anyway, everything's useful, because deep down you start asking questions and arguing and defending what you think is best for teaching nursing, or you increase the range of vision, so you can make better-informed decisions; that's how I've been, and I think I've managed to be happy among the teachers, because I could have been in places of power, and power is important to make changes here, I have to admit it, that's how it is (Teacher of nursing).

On the weaknesses of institutional commitment, both assume a critical view, revealing the lack of leadership and willingness of the university and ministerial authority to support innovation processes, which is reflected in a number of shortcomings, such as the absence of an institutional educational model and scant intra-faculty coordination. The suspicion emerges that the drive for innovation is an institutional strategy to attract new resources, which delegitimize or dilutes the leverage effect of change in its mission of training teachers.

The institution doesn't give the elements of reflection, but rather, I'm not sure if it's incidental—it's not incidental, nothing is incidental in reality—but MECESUP instills, with the arrival of other experts, with a look at what they do in Europe, in other Latin American countries, maybe, it instills the seed of analysis and discussion within the academic collectives as such that's not implemented from the institution. I'm not sure if you understand me properly, this isn't implemented from the institution ... I think it was an incident in the institution, they needed money to finance various projects and the model was implemented for financing, that is, it does, but this is it, I think that the institution didn't realize what that meant, that's what I think (Teacher of nursing).

### Didactic Knowledge of the Discipline

*Didactic knowledge of the discipline* is a complex and dynamic constructive process that forms part of professional teaching knowledge. It comes from the personal career of teachers, including more or less formal approaches to the world of teaching and education, and reflections on the practical actions of teaching, encompassing questioning and positioning of the role of teachers in the teaching and learning processes and a critical pedagogical analysis of the limitations of the practices at the instructional, didactic, and assessment level. The meanings in this core idea were organized into two interrelated emerging categories which, in the research, were labeled as *didactic-disciplinary consciousness* and *ideal training model for the discipline*.

*Didactic-disciplinary consciousness*, based on the content laid out by the teachers, is characterized as a kind of procedural, implicit (although capable of being verbalized), and flexible knowledge; a kind of heuristic that guides their decisions in the context of classroom practices. In planning it operates by allowing pedagogical objectives and assessment methods to be proposed that simultaneously consider multiple input levels. As a subjective experience, it includes empowerment and appreciation of individual experience and the personally constructed knowledge, allowing teachers to calmly face inconsistencies or challenges imposed by pedagogical discussion. It involves a reflexive knowledge that enables them to make informed decisions at different levels of educational discussion: instructional, teaching, and curriculum, and generatively construct new knowledge about the processes of teaching and learning of the discipline itself.

This consciousness is supported by the premise that the university teaching practice is a professional practice in itself and is distinct from the disciplinary field, even though it obtains knowledge from the latter. In this sense, it is the product of the efforts of the professional who enters academia to integrate knowledge and experience, recognizing that both elements come from different logics.

... construction of thought as well call it doesn't... to us it has a double objective, that they learn ... triple objective: they learn to work in a team—one—two, they learn techniques of this kind of interactive adult education workshops so they can then apply it in the community; three, so they learn the content itself (Teacher of nursing).

One has to go somehow, when one understands the models behind the scenes, you can say «right, I'm going to do it like this» because the objective is that, not to the letter, not because it's new, not because it's being done here or there, but

when you understand that function, you can say, «Ah right, I'm going to play with this, I'll play with this other thing, this teaching strategy», whatever. And it's good, it's good because you position yourself regardless of the profession, you can move in that scenario and apply strategies that are ... you can put yourself in the shoes of that profession, that's what I mean, you can put yourself in the shoes of the profession and teach or create strategies or expand strategies that exist (Teacher of nursing).

As I'm a good professional I start with that: you're not a good teacher, because they are different logical fields. If you go through one logical field here and another over there, that never exists, at some time you have to get close to those logical fields, so that there's at least confluence, so that you have a conscience, because if you don't have conscience you're going to do it wrong, and not because you're bad, but because you have no conscience ... We're somehow forcing to be able to understand, and the didactic in teaching nursing... There are some didactics that they don't teach you in the pedagogies, but somehow, knowing how pedagogy is constructed, they give this didactic for nursing (Teacher of nursing).

The emergence of a didactic-disciplinary conscience comes about as specific knowledge of the expert teacher, who bases their decisions on planning and practices, and follows a personal path of subjective construction that is not subject to instructional transmission, but reflects the personal efforts of the teacher to organize disciplinary knowledge with their teaching experience. In autobiographical format, the actors refer to critical events that marked the development of this knowledge, including instances of institutional improvement or personal motivation that constituted the first instance of applying order to the discipline within a pedagogical framework and the first tests of teaching strategies.

They had done training courses for the generation of teachers who had been my teachers ... They were good, they had a focus on proposing objectives ... Bloom was behind those notes ... It was useful to me to start and understand a little bit about what pedagogy and real teaching was ... as a basis for what we had in the subjects, everything was done by objective and content, objective-content (Teacher of nursing).

It didn't seem right to me ... and I started trying to do more systematic studies. The ones the university does, those didactic ones, are totally useless, that's why I'm telling you, they don't respond to a reality, they're so theoretical ... they miss out certain stages of the mental construction that one has to have to understand what didactics are and the assessment ... [They're done] for a common teacher that doesn't exist, it's like we think that the teacher ... the typical student, that's who we're giving the class to, to this one too (Teacher of nursing).

I started to use elements on my own, as I was the course head ... new didactics, open problems ... the students weren't prepared for that, what can I say, there were some who could and others who couldn't, it doesn't matter, I insisted just the same, let me see, with the conceptual maps, using other tools, the portfolios ... (Teacher of nursing).

On the emergence of an *ideal training model* for the discipline, the construction of the professional knowledge of the teachers is represented in all its complexity in this category. Its corollary is a reflection that, from multiple entry points, integrates not only individual and professional teaching experience, but a conception of teaching itself as a transformative exercise of the student and the discipline.

It is a process in which the teacher becomes conscious of the limitations of initial pedagogical thinking, which usually has a partial view of the areas, losing sight of the overall training process. Gradually it becomes knowledge about the teaching and learning processes that are not solely focused on content, but rather based on a conception of the styles and characteristics of the students, their experiential transformation is proposed as an objective. The reflections of the teachers (both from health area) establish the underlying transformative dimension of the teaching-learning process, which includes the figure of the student and also the discipline and, ultimately, society too. A personal commitment emerges for their work as a trainer and not merely as an expert who transfers content.

To me it has always been clear that in medical training, the models, the teacher as a model is always fundamental in training. In the past it was the teacher, today there's no room for the teacher ... because there's so much knowledge, it's packaged, everyone has specialized, there is no general teacher who's capable of seeing everything. But yes, the boys and girls see you as a model. I've always tried, taking advantage of my status as a basic training doctor, that I'm a doctor and that one can be a doctor in a different way, so I always joke, make caricatures. Those are things that I use a lot in my classes regarding Doctor House, the «cool» doctor who struts down the hospital corridors, using all these symbols, the stethoscope around his neck, swinging around so people can see it. I joke and I make caricatures, I use it, I make extreme caricatures so they can see the differences ... So I take advantage of my status as a doctor to be, to deliver the content, and as I tell

them, often, for ideological infiltration, which basically is that I want to change the matrix, so I say it to them explicitly. One of the typical phrases I say is: «You may not agree with anything that I've said and you don't have to agree with what I said, but you do have to be conscious that you lost your virginity again. Why? Because you'll never again be able to say that no one ever told you this and, therefore, tomorrow you, unfortunately, are going to have to explain and argue why you disagree» (Teacher of medicine).

I couldn't tell you which model, what I will say to you is that we have to be cautious in what we do, what we don't do and where we send students to have their experience ... [The places for internship that] give me confidence that the student will fit in, that it'll be an experience, that it will be learning and not suffering ... Because that happens to us, they don't respect them, the nurse walks by and knows that the kids are in a corner and doesn't help them, and isn't very nice to them, you know, then that undermines the esteem that you generate towards the profession that you still don't even know very well, so in those first few years you have to be very careful with clinical experience, where you're going to send them, even though they may be very elementary. So, shadowing a professional ... I mean *shadowing*, put a professional behind while he works and I'm taking my notes and the student observes what the other one does, in his dimension of role, then the student can progressively help him. So that model, which is a good model, which treats people well, which has everything well in order, which relates well with the rest of the staff, that doesn't go around kicking stones ... that's what we have to look for; not allowing the clinical field to choose ... if you had the good luck to have this model, good, but there are others who don't even look them in the eye or leave the kids in a corner (Teacher of nursing).

I'm very happy with what I do, because I leave the classroom and I feel happy, very content. It's because I have this fantasy that I'm transforming and that I'm contributing to social transformation. That's the dream I have, that's the plain truth and that makes me happy and there are some student that have provide me right. That makes me feel delighted (Teacher of medicine).

In practice, the *didactic-disciplinary consciousness* interacts with the *ideal training model*. Based on a general reference about their practices, teachers outline a reflexive and critical position on certain assumptions of academia; they shift questioning of the supposed neutrality/objectivity which university teachers boast when giving their classes and question the meaning of certain didactics that are focused more on the product than on the learning process. Both reflections outline a position of teachers on teaching: it implies assuming their role as a non-neutral teacher and the responsibility associated with learning that highlights the commitment of the students. These meanings underpin certain teaching practices that are illustrated with extracts of class sessions.

Public health lends itself to that, the social sciences, the sociology of health lends itself more to this, but I also under the conviction that I do too, that's how I denounce it and that's why I say that I just carried out ideological infiltration, I'm passing on this content as if it was supposedly the only way of seeing reality, but you should know that it's not; that's why it's ideological infiltration, because in everything else there's pure ideological infiltration, but it's tinged with evidence-based medicine, in pure and hard scientism, not in this neutrality, this asepsis that the academic has (Teacher of medicine).

What I've been changing in teaching classrooms is that I've have become increasingly provocative and increasingly explicit in my own positions, in my own convictions, my own beliefs; I've been abandoning the stereotype of the academic who has to be neutral because he's an academic, not having an opinion and if he's talking about quality he has to show the five models of quality and he has to show all of them equally for the student to decide and see (Teacher of medicine).

The following extract shows the presentation of the didactic contract of the class, which involves questioning the presumed *neutrality* of knowledge. It implies recognition of the process of non-neutral selection of content done by the teacher (within a range of other possibilities), also specifying the generalist level of depth expected to be achieved and the meaning that this content will have for their future professional and academic practice. This is not content to that is present in the EUNACOM (National Examination of Medical Knowledge), so therefore the message is passed to the student that their commitment to this issue is not within the pragmatic logic of certification:

Today we're going to talk about one of the topics which, although it's not included in the contents of the EUNACOM, we have always considered that a medical student cannot leave without having been exposed to, even if it is to these generalities so they acquire a minimal element to converse intelligently and appropriately with other actors in the health services, whether public or private. I'm referring to strategic planning and some of its elements; this is a very short activity, so therefore, everything that I'm going to tell you is introductory in nature, that is, to do a lot more academic activities and certainly obliged content for all the postgraduates in Management [Medicine Degree; Course on Management in Public Policy, 27-09-13).



Finally, from this dialogue there emerges a critical pedagogical analysis based on accumulated teaching experience, which emphasizes the inconsistencies and defects of the training methods in the discipline. In terms of instructional aspects, it reveals errors when it comes to grounding the theory in the teaching space, while in terms of didactic aspects, it reveals a negative relationship between invested teaching resources and the quality of the learning product achieved. Regarding assessment processes, it questions the assimilation of training aspects in contexts of qualification, which erodes the potential pedagogical meaning of this teaching practice.

Even though you try and you evaluate it in a workshop, but it's playing, it's simulating, you put a bell on it or you do an Oski, you see? And there you see conceptual errors too. Who said that he should take so many minutes to carry out a procedure? If people are slow, they will have to take the time that the situation lasts depending on the patient. Who said? They aren't on a factory line. I criticize that. Besides, the Oski is a training assessment, this is how it came about, not to rank the student, it's not to rate, it's training-related, so that they, repeating a procedure so often, don't make a mistake when they do it for real, but I can't evaluate it beforehand if I'm training (Teacher of nursing).

Basically it was doing knowledge tests; knowledge tests don't affect anybody, and besides, seeing how they're constructed, sometimes I go into the tests ... irrelevant multiple choice tests such as «in which war did Florence Nightingale participate?» Who cares? Or rather, it's good that they know, and good that whoever wants to know about her life, but what relevance does that have for the profession? Please! Nothing. So you see that it has to be a consistent model, I construct with the other person, but in the same way I also ask them, I'm not going to be ... they're the constructivists, they talk, grow, seek ... and afterwards, wham! I send them this question or lots of other questions of that kind, no ... (Teacher of nursing).

From a critical reflection that the teacher sustains on the realization of the constructivist model in university education, the following extract reveals the specific action to construct an agreement with students about changing roles in conducting the class, with the intention of promoting active participation in their knowledge construction processes, since this is how they conceive the process of developing a problem with a course on research methodology:

Now, Barbara, I'll leave you the decision to you, based on your reading, to do the introduction to what we're going to look at now, and you have to take notes and direct the session, that's what we agreed on ... (Nursing degree; class on research methodology; 19-10-13).

## Discussion

Based on the results shown, we will focus the discussion on two levels of analysis that are closely related: (a) the political/institutional context in which curriculum innovation takes place and, therefore, the development of *professional university knowledge* on teaching, and (b) the qualities of this object of study and the potentialities of its reflection from the point of view of emergence of a thoughtful trainer.

Regarding the political/institutional context, curriculum innovation driven by public policy comes to be installed in a preexisting academic and institutional tradition which has historically subordinated the role of teaching and professional training to its research work and the creation of new knowledge (Montenegro & Fuentealba, 2010); disregarding the fact that the teaching practice of excellence at the university level can itself become a relevant object of study (González, 2010; Guzmán, 2012).

On the other hand, even when accreditation processes include the assessment of the training processes (Ministerio de Educación, 2010), the need to have comparable standards restricts the view of quality to a technical-instrumentalist vision that neglects more profound aspects that are based on the practice and the professional knowledge of teaching (Rodríguez, 2010). A need arises to abandon the naïve and simplistic view, in accordance with which professional training would simply be the transmission of expert knowledge, for which an adaptation at the didactic-methodological level would be sufficient, and which suggests that for the exercise of such teaching, complete mastery of the discipline or profession on the part of the teacher would suffice (Cruz, 2011a).

The results of this study show that when the subjective construction of this knowledge is addressed by the actors using a qualitative vision, a complex web of multiple entries emerges from which to analyze teaching and its substantive contents, which in the paper are presented as emerging categories of *didactic-disciplinary consciousness* and *ideal model training*.

On this point, reflection leads us to consider the need for public policy to have new indicators that fulfill the function of increasing understanding of the teaching-learning processes at the university level and from there drive a substantial improvement in terms of quality, and the role of universities as institutions that can generate valuable contributions in this area, as long as they emphasize the role of teaching and transform their practices into objects of systematic research. This involves introducing scientific rationality into teaching practices through systematic reflexive processes (Perrenoud, 2004, as cited in Guzmán, 2012). For this reason, the institutions are able to formalize collaborative spaces for reflection and study of the teaching-learning processes among their own academic staff and hold conferences and seminars on teaching, where individual innovative practices can be exposed to the collective, generating more complete knowledge about university teaching and their research methods.

Finally, as regards *professional university knowledge* as an object of study, as various authors have stated, even when the teacher may be an expert in the knowledge or specific expertise of their discipline, they have not necessarily learned how to teach it, and without any additional support than their own experience as a student and as a professional, they are immersed in the task of transforming and mediating the disciplinary knowledge, accompanying and promoting the professional development of their students in a process that, more than mere transmission of knowledge, fundamentally leads to reflection about the specific practices of the discipline in constructing a professional *ethos* (González, 2010; Montenegro & Fuentealba, 2010; Solar 2001; Solar & Díaz, 2009).

This knowledge follows the process of subjective construction of the teacher, which places this knowledge from their personal experience and knowledge, and criticizes the particular discipline to which it belongs. In this regard, the emerging categories presented as *didactic-disciplinary consciousness and the ideal training model for the discipline* would be part of what some authors have called *epistemology of practice* (Schön, 1992, as cited in Guzmán, 2012), which has the characteristics of being specific knowledge that is activated in specific contexts, including moral and emotional elements that can be made explicit by the subject in the form of ideas, narratives, and metaphors. In the opinion of the researcher, both categories highlight the transformative and generative nature of teacher reflection when it leads to expert levels of knowledge.

In the comprehensive model described, *didactic-disciplinary consciousness and the ideal training model* are supported by the premise that the university teaching practice is a professional practice in itself, distinct from the disciplinary-professional and teaching field, even though it takes knowledge from both. It is generative knowledge which, based on reflection about experience and discipline, perceives the limits of both and constructs new proposals with ethical and transformative meaning for training students, considering training as a process of construction of the other person, care for the other person, and accountability for the process of training the other person.

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