

TEACHERS' BELIEFS ABOUT TEACHING AND LEARNING: AN EXPLORATORY STUDY

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Abstract:

Within the context of globalisation, the diversification of learning contexts and the implementation of national and transnational policy measures concerning teacher education, teaching competences and lifelong learning, teacher identity has emerged as being problematic and paradoxical. Drawing on recent research concerning teachers' professional identity, reflexivity, and cultural narratives of teaching and learning, we present an exploratory study of Portuguese teachers' beliefs concerning teaching and learning, as part of their professional knowledge. Contradictions and ambiguities were detected in the teachers' perspectives. They are analysed and discussed in order to highlight their implications and possibilities for further research on teachers and teaching.

Keywords: Teachers' beliefs; teaching; learning; teacher identity; professional knowledge.

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1. Introduction

Research on teachers' professional identity as a matter of interest for research in the field of education (Thomas & Beauchamp, 2011; Hall & Noyes, 2009; Flores & Day, 2006; Sumara, Davis, & Iftody, 2008) has been directly connected with the process of the "professionalisation" of teaching (Sachs, 2005; Roldão, 2007; McWilliam, 2008). The challenges of globalisation, the debate surrounding the role of public education in a changing and diverse society, the production, development and access to knowledge and the diversification of learning contexts have all revealed the complex nature of teaching in the 21st century and the difficulty for teachers of developing a strong professional identity. Within this complex and ever-shifting reality, teacher identity has been conceptualised as 'situated' (Phelan & Sumsion, 2008), 'emergent' (Sumara, Davis, & Iftody, 2008), 'multiple' (Sachs, 2007) and 'ongoing and dynamic' (Flores & Day, 2006).

At the same time, the discussion about teaching as a profession has led to a focus on teacher education and further professional development for teachers and has promoted the preeminence of the discourses and policy measures surrounding lifelong learning, teaching competencies (Organisation for Economic Co-operation and Development [OECD], 2005; European Commission [EC], 2010) and teacher education (EC, 2007), especially in Europe. These discourses and measures tend to normalise the language of professionalisation and teacher identity (Sumara, Davis, & Iftody, 2008; Biesta, 2012) in order to respond to the demands of the "knowledge society." We argue that there is a growing tension resulting from this increasing degree of convergence between discourse and policy relating to teaching (Biesta, 2012)

and the awareness of the complex nature of teachers' professional identity. As is stated elsewhere (Gonçalves, 2008, p. 286), "every identity is problematic, conflicting, multiple and dynamic." As such, identity is paradoxical: ambiguities, conflicts and contradictions lie at the very heart of teaching as a profession, and are constitutive of teachers' professional development. As stated by Clarke (2009, p. 189):

"... identity is at once a complex matter of the social and the individual, of discourse and practice, of reification and participation, of similarity and difference, of agency and structure, of fixity and transgression, of the singular and the multiple, and of the synoptic and the dynamic."

However, as has been increasingly acknowledged by research, within teachers' discourse about teaching and learning, there are often unresolved ambiguities and contradictions (Davis, 2004). On the other hand, the normative discourses about teaching (cultural, political and scientific) influence the production of identity from the "outside," and sometimes conflict with one another (Biesta, 2012; Nóvoa, 2008).

Our study explores teachers' perspectives on teaching and learning (conceptions, relations, conditions), which is a central part of their professional knowledge. We analyse the contradictions and ambiguities that emerged from the collected data, since we were able to identify traces of some of the tensions referred to above. Drawing upon recent research in the fields of teachers' professional identity (Thomas & Beauchamp, 2011; Jephcote & Salisbury, 2009; Hall & Noyes, 2009; Flores & Day, 2006), the epistemology of practice and reflexivity (Schön, 1983, 1987; Geerink, Masschelein, & Simons, 2010; Fendler, 2003), teachers' beliefs (Alger, 2009) and the cultural narratives of teaching and

learning (Davis, 2004; Davis, Sumara, & Iftody, 2008), we analysed the collected data in order to highlight some ambiguities and to problematise their implications for research about teaching and teachers' beliefs. We understand that, in some cases, the ambiguities and contradictions which we detected express what we have called *aporias*¹ of teaching as a profession: these *aporias* represent ambiguities in the construction of teachers' identity but also emergent possibilities for the current understanding of teaching and teacher identity.

As stated by Davis, Sumara and Luce-Kapler (2008, p. 192), "teaching is an enormously complex undertaking that is learned over a lifetime," meaning that teaching and becoming a teacher should be "mindful acts". Within this process of "becoming", the conceptions about teaching and learning – epistemological practices (Schön, 1987; Geerink, Masschelein, & Simons, 2010) – which underpin teachers' practice play an important role.

The study here presented focus on the beliefs about teaching and learning, drawing on recent research concerning teachers' professional identity, reflexivity, and cultural narratives of teaching and learning. This is an exploratory research which will allow us proceed with further research on these issues.

2. Research on teachers' professional identities: Between technical, critical and complex approaches

The body of educational research on

teacher identity, which has grown significantly over recent decades, seems to oscillate between an emphasis on methods, skills and techniques – the skill-focused competence approach – and critical and post-structuralist perspectives, which highlight the way in which instrumentalist and normative discourses of teacher education, practice and professional development constrain teacher identity by normalising the language of "professionalism" (Sachs, 2007).

The skill-focused competence approach and its focus on methods, teacher education, teachers' personal and professional lives, teacher induction and teaching practice is increasingly contributing to the recognition of the multidimensionality of the teaching profession and concomitantly of teacher identity (Thomas & Beauchamp, 2011). Flores and Day (2006) have shown the importance of context in shaping and reshaping new teachers' identities, thereby highlighting the powerful interaction between personal histories and the contextual influence of the workplace. In their research, it is suggested that the key mediating influences on the formation of teacher identity are biography, pre-service programmes and the school culture. From the authors' perspective, the tensions between these different dimensions of teacher identity need to be better understood in order to strengthen the focus on experience and reflection upon teachers' personal biographies and the cultural context of schools. Other studies refer to the tension between changes within the teaching profession which affect teachers' working conditions, contexts and careers – increasing levels of bureaucracy, increasingly managerialist institutional regimes in colleges and professional standards – and the emphasis on the ethics of care anchored on the recognition that "teachers matter" (OECD, 2005), in

¹ *Aporia* derives from the ancient Greek, ἀπορία; it means impasse or confusion. In philosophy, it means a philosophical puzzle or state of puzzlement. The Oxford English Dictionary includes two forms of the word: the adjective, "aporetic" which it defines as "to be at a loss," "impassable," and "inclined to doubt, or to raise objections"; and the noun form "aporia," which it defines as the "state of the aporetic" and "a perplexity or difficulty."

other words, that teachers and teaching are the most important variable at school influencing students' achievement and contributing to their personal and social well-being. Jephcote and Salisbury (2009), in a study of experienced teachers, found that teachers feel trapped between the new bureaucratic managerial requirements and their engagement with the students, meaning that the emotional dimension of their work is "threatened" by the managerial and bureaucratic demands of their profession.

Teachers' professional identities are being reworked from inside and outside of the teaching profession. Teachers as professionals are increasingly subject to external standards and codes of practice while, on the other hand, they are struggling to construct their own professional identities by exercising their own agency, prioritising the needs and interests of their students and classroom interactions and promoting "appropriate" professional practice. The European Union's Lisbon Strategy, the Bologna process, the creation of a European Higher Education Area and policy measures linked to lifelong learning have created a normalising discursive framework in which measurement, evaluation and prescription are instruments with which to control the whole educational system, to compare a wide range of different educational practices and to regulate teachers' work within different educational contexts. According to Biesta (2012, p. 3), when a particular discourse becomes hegemonic: It is not so much that the discourse has the power to change everything but rather that people begin to adjust their ways of doing and talking to such ideas. This then generates increased uniformity or [...] a reduction of diversity in educational thought and practice.

In the specific case of teachers'

professional identity, it seems that this adjustment is not without its problems: the normalising discourses of "good teachers," "excellent teachers" or "competent teachers" expose the emergent conflicts between discourse and self-image (Sumara, Davis, & Iftody, 2008), the tension between discourse and practice and the tension between teaching and learning through the learnification of education (Biesta, 2012). The "business" of teaching overshadows teacher identity. This functionalist or instrumentalist view of teachers' work erodes diversity and teachers' ability to respond effectively and creatively to the changing demands and contexts in which they work; this then creates a tension between what teachers are expected to do and what they think they should do.

The Portuguese teachers must develop their practice within these multiple and sometimes conflicting complex realities. The implementation of the policy measures emanating from European Union policy documents on lifelong learning, the Bologna Process and teachers' competencies, together with the policy measures concerning teachers' education, professional careers and assessment developed by the Portuguese government, have had a strong impact on Portuguese teachers, schools and students. These measures have prompted the revelation of latent conflicts between teachers and the government and have brought to the fore important issues about teacher education, teaching as a career, teachers' agency and teachers' competences. Within this context, teaching and teacher identity have become a matter of public debate and concern. We believe that we need to understand teachers' beliefs about teaching and learning and explore the existing ambiguities, contradictions and possibilities emerging from it.

3. Teachers' professional profiles and reflexivity

Within the framework of lifelong learning and professional development for teachers, research and policy have attempted to address the definition of teacher profiles in order to clarify what teachers are expected to know and to be able to do. The OECD report on teacher education (2005) and the EC documents "Improving the quality of teacher education" and "Common European principles for teacher competences and qualifications" have shown that issues relating to teachers are high on the international political agenda and are directly connected with the ongoing social and economical changes in our globalised societies (Alves, Gomes & Neves, 2010). These documents, together with a growing number of studies on teachers and teaching, express the widespread idea that teachers' professional activity is not only the sum of their subject matter knowledge, pedagogy relating to specific subjects or general pedagogical knowledge, but also a reflective practice entailing research-on-the-job (OECD, 2005). Reflection becomes a key competence for teachers as professionals. Fendler's (2003, p. 20) analysis of contemporary discourses of reflection shows that they incorporate different and sometimes conflicting meanings concerning:

[...] a demonstration of self-consciousness, a scientific approach to planning for the future, a tacit and intuitive understanding of practice, a discipline to become more professional, a way to tap into one's authentic inner voice, a means to become a more effective teacher, and a strategy to redress injustices in society.

These different interpretations may render the concept of reflection inoperative. Rationality, scientific expertise, intuitive

uncertainty and authenticity represent competing educational programmes and teacher education reforms; therefore "embody mixed messages and confusing agendas" (Fendler, 2003, p. 20).

However, within policy documents as well as in recent educational research, Donald Schön's (1983, 1987) epistemology of practice seems to prevail (Geerink, Masschelein, & Simons, 2010) with regard to teacher professionalism. The idea of teaching as a reflective practice and the teacher as a "reflective practitioner" fits with the current discourses of policy and reform in the sense that teachers need to act and perform successfully in a wide range of teaching situations. As a result, the knowledge and experience that teachers have achieved need to be constantly recalled, reframed and articulated within their teaching practice in ever-shifting and ever-evolving situations. According to Geerink, Masschelein and Simons (2010, p. 381), Schön's idea of reflection and reflective practice implies two "modes of knowing": "to look at oneself in terms of expertise" and "to look at oneself in terms of intuitive knowledge." If we consider Fendler's (2003) aforementioned critique, the question is: what can result from the combination of these different "modes of knowing"? What kind of identity is enacted through the combination of these two competing programmes?

Central to the idea of reflexivity is the notion of "reflection-in-action" (Schön, 1987), which regards teaching as a practice. Underpinning this perspective is the traditional and constantly debated relationship between theory and practice, knowledge and action. According to Schön (1987), professional practice is knowledge-based – it is practice knowledge-. This knowledge guides the practitioner in his or her daily activities and decision-making processes; however,

as practice becomes a repetitive routine, knowledge becomes tacit, i.e., implicit, intuitive and impossible to verbalise, reframe or reformulate. Reflection is understood to be an important instrument for the practitioner to think about what he or she is doing, to correct his or her direction, to reframe and reshape problems and situations, to redirect his or her actions and to make knowledge explicit. This implies a repertoire of knowledge (expertise) as well as intuitions (precedents, experiences, examples from the past) (Geerink, Masschelein, & Simons, 2010) and a sense of oneself: a “self-reflection” directed towards finding out “what works” or “may work” in new situations. Reflexivity, in the sense that it is described by Schön, is a kind of self-knowledge which presupposes a knowing subject. The idea of reflection implies that the teacher has the power to be self-aware of his/her actions and to reframe and improve them through his or her reflective practice. This also implies an awareness of the body of professional knowledge and expertise needed to make teachers’ actions meaningful and successful.

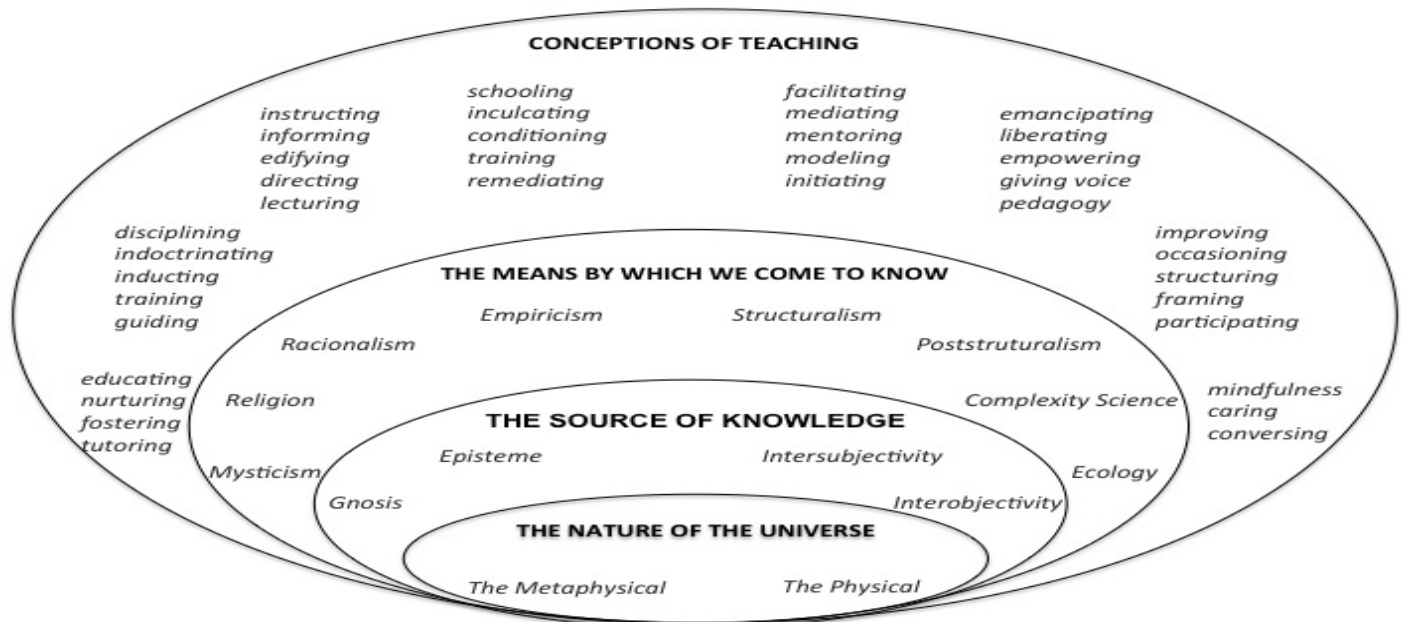
4. Narratives of teaching and learning

As previously stated, teacher identity is embedded in the social meanings and cultural narratives that influence and frame teachers’ identity, professional development and professional practice. This cultural background is not always explicit or stated. It shapes the meanings that teachers attribute to their work in sometimes ambiguous and contradictory ways. These narratives correspond to what Foucault defined as *episteme* in his work ‘The order of things’ (1994): they work as historical and cultural a priori that define the

necessary conditions for specific knowledge, discourses and ways of thinking to exist in defined historical moments and cultural contexts. An episteme defines a set of fundamental assumptions that ground actions and thoughts within a certain epoch and context; it represents the epistemological unconscious at work in a certain era or in a particular cultural setting. According to Foucault, different epistemes may coexist and interact at the same time, sometimes in opposing and contradictory ways.

In his analysis of Western worldviews and conceptions of teaching and learning, Davis (2004) explores these cultural narratives and proposes a genealogy of conceptions of teaching that emerged in and defined particular historical moments in the Western world. Davis then links these notions with their philosophical origins. Davis’ work is a genealogy of conceptions of teaching that have emerged out of different and sometimes contrasting worldviews. This genealogy is presented in the form of a tree (a genealogical tree – Fig. 1) that shows the different bifurcations of these worldviews: from attitudes towards the nature of the universe (the metaphysical and the physical), the sources of knowledge defined by these attitudes (episteme and gnosis in the case of metaphysics; intersubjectivity and interobjectivity in the case of the physical worldview) and the means by which we gain knowledge (mysticism and religion for gnosis; rationalism and empiricism for episteme; structuralism and post-structuralism for intersubjectivity; and complexity science and ecology for interobjectivity), to the conceptions of teaching which emerge from these different branches of the tree.

Figure 1. Contemporary conceptions of teaching (Adapted from Davis, 2004).



We have highlighted four aspects of Davis’ analysis that we consider to be relevant for our research about teachers’ beliefs on teaching and learning: (a) the focus on the discussion around the question “what is teaching?”; (b) the discussion of the relationship between teaching and learning; (c) the idea that “we have few common understandings of learning and teaching – despite the pretense [sic] that the meanings of these terms are settled” (Davis, 2004, p. 180); and (d) the awareness that teachers frequently hold incompatible and conflicting beliefs about teaching and learning. “It is not unusual, for example, to encounter references to teaching as *instructing* and *facilitating* in the same sentence despite that these terms actually point to conflicting, even contradictory, assumptions about learning” (Davis, 2004, p. 2).

These ideas guided the construction of some of the questions for our analysis. We wanted to understand what teachers think about teaching. As previously

stated, the debate surrounding teaching is usually centred on the curriculum, classroom management, teaching methods and skills, but hardly ever on the questions of “what is teaching?” and especially “what is teaching for teachers?” We also wanted to know what teachers think about the questions “what is learning?” and “what aspects influence learning and teaching?” as well as the way in which teachers understand the relationship between teaching and learning. We also wanted to explore possible contradictions. For this reason, we used Davis’ (2004) work as a point of reference, we defined conceptions of learning which were equivalent to those of teaching defined by Davis and we elaborated on two questions – one about teaching and one about learning – that mirrored one another. Overall, we wanted to know whether or not there are ambiguities and contradictions between conceptions of teaching and conceptions of learning.

5. The study

Our study aims to identify beliefs about teaching and learning within a group of Portuguese teachers according to their understanding of the nature of teaching, the nature of learning and the construction of their professional knowledge. Some of the questions that guided our research were: What are the theories of professional knowledge, teaching and learning which underpin teachers' professional practice? What do teachers think about teaching and learning? What are the theories underpinning their views? And are there ambiguities or contradictions between these theories? We wanted to understand what teachers think about their professional knowledge, what they value and how they see their role, taking into account the existing relations between teaching and learning. We designed a questionnaire that comprised questions concerning conceptions about teaching and learning and professional knowledge. The teachers were asked about:

- (1) The knowledge needed for teaching, e.g., "In order to teach, the teacher needs a knowledge of...";
- (2) The necessary conditions for student learning, e.g., "For teaching to translate into student learning, it is necessary to..." and "Learning is dependent on (age, gender, genetics, learning style, socio-economic context, family context, school context, teaching strategies, class characteristics, pedagogical relationship, teaching subject)";
- (3) The meaning of teaching and learning, e.g., "Teaching is ..." and "Learning is..."

The questionnaire included also some questions about personal and professional identification such as gender, level of school where they teach and professional

experience.

Considering the exploratory nature of the study, a convenience sample of 54 teachers was chosen. The 54 teachers who completed the questionnaire were participating in an in-service training programme in school management during the academic year of 2010-11. They made up a diverse group as they came from different schools and from different parts of the country. Of the 54 teachers, 37 were women and 17 were men (one missing response). The large proportion of women reflects the feminisation of the teaching profession in Portugal (71.0% in junior and secondary schools, 86.9% in primary schools are female) (GEPE, 2010). This survey shows that there was a significant degree of diversity among the teachers in terms of age (range: 29 to 57 years old, average: 45) and professional experience as teachers (range: 1 to 33 years, average: 21). Most of the teachers taught in junior (15/54) or secondary schools (13/54), while only two worked in primary schools.

6. Findings

6.1 Professional knowledge

The teachers were asked to name the *knowledge needed for teaching*. This was an open question and they were required to give five options in order to complete the sentence "for teaching the teacher need to have knowledge about...". Their answers were grouped according to the following categories: content knowledge; pedagogy/didactics knowledge; human relations; and knowledge about students. These categories emerged from the teachers' own words (Table 1).

Knowledge needed for teaching	Number	%
Content	50	92.6
Pedagogy/didactics	48	88.9
Human relations	8	14.8
Knowledge about students	13	24.1

Table 1. Knowledge needed for teaching.

The collected data concerning the teachers' views about knowledge needed for teaching (Table 1) show that the most valued aspects are knowledge about subject content (92.6%) and knowledge about pedagogy/didactics (88.9%). Other aspects were also referred to, such as knowledge about students (24.1%) and human relations (14.8%), although in a less expressive way. It is interesting to note that other dimensions relating to teaching as a profession, such as school organisation and culture (five mentions), norms and legislation (three mentions) and planning (two mentions), were not valued as highly. The teachers' answers stress the main goal of teaching – learning. They conceive their proper professional role primarily in terms of imparting a body of knowledge on the basis of subject expertise or pedagogical/didactic (technical/instrumental) expertise, rather than in terms of establishing supportive

relationships with their students, planning or organisational features.

6.2 Teaching and learning (conceptions, relations, conditions)

Different questions were asked in relation to teaching and learning, regarding the (a) *what is needed for teaching to translate into learning*, (b) *elements influencing students' learning*; (c) *the meaning of teaching* and (d) *the meaning of learning*. Question (a) concerning the teaching – learning relationship was an open question and teacher were required to give five options to complete the sentence “so that teaching will translate into student learning is necessary that...”. Their answers were grouped according to categories which emerged from the teachers' own words: student characteristics; classroom environment; family characteristics; strategies and materials used by the teacher and school environment (Table 2).

For teaching to translate into learning it depends on...	Number	%
Student characteristics	35	70.0
Classroom environment	7	14.0
Family characteristics	8	16.0
Strategies and materials	20	40.0
School environment	8	16.0

Table 2. The Teaching-learning relationship.

When asked about what is needed so that teaching will translate into student learning (Table 2), the teachers assigned the most value to student characteristics (70%) and the strategies and materials used by the teacher (40%), although there was a clear focus on the former. Other issues which were referred to included the school environment (16%), familiar characteristics (16%) and the classroom environment (14%).

The relevance of pedagogy/didactics was notable in the answers to both questions (the question about professional knowledge and this one), although it was less obvious in the answers to the question about the relationship between teaching and learning. However, when we compare these findings with the ones concerning professional knowledge, some questions may be highlighted: is the relevance

attributed to subject content in the previous question consistent with the relevance attributed to student characteristics in this question? If the most important determinant of learning is student characteristics, should not knowledge about students be the most relevant professional knowledge for teachers?

To know teachers perspectives about the (b) elements influencing students' learning, they were asked to choose from a list of factors three aspects that they regarded as determinants of learning (*"learning is dependent on..."*). Considering the diversity of the factors that influence learning (Gonçalves, 2010; Davis, Sumara & Luce-Kapler, 2008), we proposed a list comprising biologic, psychological, social and pedagogical factors.

Learning is dependent on...	Number	%
Age	1	2.3
Genetics	6	13.6
Learning style	10	22.7
Socio-economic context	8	18.2
Family context	9	20.5
School context	13	29.5
Teaching strategies	37	84.1
Class characteristics	18	40.9
Pedagogical relationship	27	61.4
Teaching subject	3	6.8

Table 3. Determinants of learning.

The key determinants of learning (Table 3) are teaching strategies (84.1%) and the pedagogical relationship (61.4%). The other aspects referred to by the teachers were the characteristics of the class (40.9%), the school context (29.5%), the students' learning styles

(22.7%) and family context (20.5%). Curiously, subject content was not considered to be an important factor (6.8%). The most relevant factors seem to be centred on the teacher's actions, as opposed to the previous question, in which the necessary conditions for

learning to occur were centred on the students' characteristics.

When comparing the answers given to the above three questions, we found some common aspects, such as the relevance attributed to pedagogic/didactic aspects. However, once again, some ambiguities emerged: the emphasis on pedagogical relationships in the last question does not seem to be consistent with the weak degree of relevance attributed to human relations in the first question.

Questions (c) and (d) concern the conceptions of teaching and conceptions of learning. The typology proposed by Davis (2004) was used. This typology

allowed us to define different conceptions of teaching and their correlative perspectives on learning by considering the conceptual commitments that have been implicit in Western thought at different historical moments – “the knots of belief and commonsense that have underpinned efforts at teaching over the past few millennia”, as proposed by Davis (2004, p. 2) in his genealogy. Davis explores “divergent beliefs about teaching that are rooted in various conceptions of learning” (p. 37). The teachers were asked to select the conceptions of teaching and learning with which they identified.

Teaching is...	Number	%
Educating, nurturing, fostering, tutoring	40	74.1
Disciplining, indoctrinating, inducting, training, guiding	10	18.5
Instructing, informing, edifying, directing, lecturing	38	70.4
Schooling, inculcating, conditioning, training, remediating	3	5.6
Facilitating, mediating, mentoring, modelling, initiating	29	53.7
Emancipating, liberating, empowering, giving voice, pedagogy	42	77.8
Improvising, occasioning, structuring, framing, participating	28	51.9
Conversing, listening, minding, caring	45	83.3

Table 4. Conceptions of teaching.

The most relevant conceptions of teaching referred to by the teachers (Table 4) combine the metaphysical and physical worldviews, although with a slight prioritisation of the latter. With regard to the physical worldview, the most commonly referred to conceptions were ecological perspectives (conversing, listening, minding, caring) (83.3%) based on interobjectivity, and poststructuralist perspectives (emancipating, liberating, empowering, giving voice, pedagogy) (77.8%) based on intersubjectivity. With

regard to the metaphysical worldview, the most popular conceptions were mystical perspectives (educating, nurturing, fostering, tutoring) (74.1%), based on the gnostic and rationalist perspectives (instructing, informing, edifying, directing, lecturing) (70.4%), which in turn were based on episteme. The structuralist (facilitating, mediating, mentoring, modelling, initiating) (53.7%) and complexity science perspectives (improvising, occasioning, structuring, framing, participating) (51.9%), based on

intersubjectivity and interobjectivity, were also noted as being relevant. The least relevant were the religious perspectives (disciplining, indoctrinating, inducting, training, guiding) (18.5%) based on

gnosis, and the empiricist perspectives (schooling, inculcating, conditioning, training, remediating) (5.6%) based on epistemes.

Learning is...	Number	%
Guessing, knowing, discovering, imagining, doing	19	35.1
Obeying, working, receiving, accessing, following	4	7.4
Inducting, progressing, achieving, organising, reasoning, acquiring, knowledge	48	88.9
Inducting, developing, skills, experimenting, chaining, progressing information, problem solving	50	92.6
Creating, experiencing, perceiving, modifying, developing, exploring, describing	45	83.3
Emancipating, interpreting, criticising, questioning, subverting, inventing, transgressing	22	40.7
Evolving, adapting, discovering, contextualising, structuring, participating, describing	42	77.8
Knowing, relating, integrating, setting, responding, acting ethically, engaging, sharing, interacting	48	88.9

Table 5. Conceptions of learning.

The teachers' perspectives on learning (Table 5) also combined the metaphysical and physical worldviews. The most relevant were perceived to be the empiricist (inducing, developing competences, experimenting, chaining, processing information, operationalizing, problem solving) (92.6%) and rationalist perspectives (deducing, progressing, attaining goals, organising, reasoning, acquiring knowledge) (88.9%), which are both metaphysical worldviews based on epistemes. In addition, ecological perspectives (knowing, relating, integrating, situating, responding, acting ethically, compromising, sharing, interacting) (88.9%), a physical worldview based on interobjectivity, and structuralist perspectives (creating, experiencing, perceiving, modifying,

elaborating, exploring, describing) (83.3%), a physical worldview based on intersubjectivity, were reflected in the teachers' perceptions about learning. A complexity science perspective (77.8%) was also identified as being important. Post-structuralist (emancipating, interpreting, criticising, questioning, subverting, inventing, transgressing) (40.7%), mystic (guessing, intuiting, discovering, imagining, realising) (35.1%) and religious (obeying, working, receiving, assenting, following) (7.4%) perspectives were the least valued. Symbolic and modern worldviews seem to have remained in conceptions of learning, although they now coexist with post-modern worldviews. The coexistence of contradictory perspectives on learning seems to confirm Davis'

(2004) idea that teachers hold incompatible and conflicting beliefs about teaching and learning.

The relevance attributed to rationalist and empiricist perspectives may be explained by the proximity of the concepts involved to contemporary policy discourse about teaching – terms such as information processing, problem solving and experimenting became common in the official discourse of learning. Curiously, this does not seem to have had the same impact on the discourse of teaching. It is interesting to note that, when we compare the answers to these two questions, there is no immediate equivalence between perspectives on teaching and perspectives on learning. We identified some existing contradictions between conceptions of teaching (conversing, caring and emancipating, empowering) and conceptions of learning (developing competences, processing information, solving problems and knowing, relating, integrating, sharing). While the perspective on teaching is grounded mostly in ecological and post-structuralist assumptions, in the perspective on learning, some rationalist and empiricist worldviews remain.

7. Concluding remarks

Discussions about teaching and learning are usually centred on methods, strategies and cognitive processes (instrumental/technical approaches), but the meaning of teaching and its relationship with learning is rarely problematized, especially with regard to some of the emergent claims in research about the ethical dimension of professional identity (Hall & Noyes, 2009; Geerink, Masschelein, & Simons, 2010). Taking into account research on teachers' professional identity, the epistemology of practice and reflexivity and personal beliefs and connecting it with cultural and philosophical

narratives and discourses (regimes of truth) may help us to reconsider/reconceptualise reflexivity in a more comprehensive and less technical way. Some questions can be raised for further research and theoretical reflexion: can the ambiguities in the answers of the teachers in this study be interpreted as a consequence of the contemporary professionalisation of teachers? How can different discourses (technical and instrumental, assessment and accountability, standards and competences/care, responsibility, commitment) work to shape teacher identity? How can research deal with these ambiguities and contradictions assuming their openness?

The ambiguities which we detected in the teachers' answers indicate that normative discourses (technical and instrumental, assessment and accountability, standards and competences) contribute to shaping teacher beliefs about teaching and learning. However, the complexity of the teaching profession prompts the coexistence of other relevant discourses (care, responsibility, commitment). These can be detected in the ambiguities in teachers' views on their own profession, i.e., the professional knowledge, conceptions, relations and conditions linked to teaching and learning.

The aim of this exploratory study was not to resolve these ambiguities, but to enable researchers to further explore them from a social, cultural and epistemological point of view. We acknowledged Nova's (2008) claim that there is a need to capture "the sense of a profession that does not simply fit into a technical or scientific conception" (p. 102). We also need to contextualise these ambiguities, taking into account the nature of the teaching profession and the conditions of practice in a

contemporary context.

Our data reinforce what has already been said about the ambiguities and contradictions embedded in the discourses relating to teaching and learning (Davis, 2004), and how the normative discourses of teaching influence the production of identity from the “outside,” sometimes in conflicting ways (Biesta, 2012). The teachers’ answers revealed differences in what they value when referring to teaching or to learning. For both teaching and learning, pedagogical strategies/knowledge are highly valued; nevertheless, teaching is perceived as imparting a body of knowledge (subject expertise) and learning is seen to be strongly dependent on student characteristics and pedagogical relationships. Taking Davis (2004) genealogy both conceptions of teaching and conceptions of learning combine metaphysical and physical worldviews. However, with regard to teaching, physical worldviews are predominant (ecological and poststructuralist perspectives), while for learning, metaphysical perspectives are the most highly valued (empiricist and rationalist perspectives). These differences in the teachers’ answers concerning teaching and learning reflect the ambiguities and paradoxes, which exist in teachers’ discourse. The predominance of empiricist and rationalist perspectives on learning indicates the existing normative discourse of teaching and learning. The political, social and cultural discourses reinforce the idea that learning involves inducting, developing competences, experimenting, chaining, processing information, operationalizing and problem solving. The discourse of teaching seems to reflect the image of the caring teacher and the teacher as an ethical subject – conversing, listening, minding and caring. Although they

absorb the prevalent discourse of learning, teachers’ perspectives about their own profession do not converge with it. Teachers’ discourse about teaching and learning is balanced between the technical and the ethical. Our analysis of the questions about the conceptions about teaching and learning are grounded on Davis (2004) genealogy. However, we acknowledge that the categorization presented may have some limitations concerning the way the words about teaching are used and grouped. To deal with this issue further in-depth research is needed.

Our findings highlight also the need for further research concerning individual beliefs and values about “what it means to be a teacher” and “what kind of teacher I am, may be or want to be.” The knowledge about teachers’ beliefs is a way to better understand the processes underlying teachers’ identity. We need to develop research within the framework of an understanding of identity as becoming. When it is assumed to be problematic, professional identity requires continuous negotiation. Research may become an instrument for identity development, promoting reflexivity, exploring possibilities and using teachers themselves as the subjects of research. Research must go beyond dualism in order to explore complexity, complementarity, emergence and “identity work.”

Taking into account the exploratory nature of our study, there are some other limitations that must be considered, such as the sample size, geographical boundaries and the nature of the instrument used. With regard to the latter aspect, we believe that the questionnaire used must be complemented with other research techniques such as interviews and discussion groups in order to understand how the respondents interpreted the questions and the options they were

asked to select from, especially with regard to the questions about the cultural narratives of learning and teaching. The nature of the ambiguities we detected and how and why they are rooted in teachers' discourses need to be further explored and analysed in greater depth.

Conceptions of learning and the relationship between teaching and learning also need to be further explored. As stated by Davis (2004, p. 23), "[I]earning is understood to be dependent on teaching, but not determined by it." Within contemporary conceptions of teaching (physical worldview) based on intersubjectivity and interobjectivity (structuralism, post-structuralism, complexity science and ecology), there has been a shift from direct causality towards the need for participation (e.g., facilitating, enabling, modelling, empowering and occasioning). In addition, Osberg, Biesta and Cilliers (2008), when referring to the relationship between teaching and learning within the framework of an epistemology of emergence based on complexity science, state that:

The main insight – relatively old, but for some reason education needs to be reminded of it from time to time – is that teaching does not determine learning. What students learn may have a link with what teachers teach, but the two are not necessarily identical. Through their participation in educational practices learners learn much more and much different things than that which they were supposed to learn. (Osberg, Biesta, & Cilliers, 2008, p. 216)

Further research needs to make explicit the socio-professional narratives underpinning the discourses relating to teachers and their implications for professional identity development. We also need to deepen the meanings given

to these concepts and reconcile the multiple understandings and different uses which exist in a definition of the professionalism of teachers. Comparing discourse and practice may be another enriching research path. Taking into account the different dimensions of reflexivity, such as temporality and purpose, and the need to surpass some of the ambiguous understandings of the term, theory and practice should be conceptualised as intertwining categories.

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