ONOMÁZEIN
Revista semestral de lingüística, filología y traducción

PONTIFICIA UNIVERSIDAD
CATÓLICA DE CHILE
FACULTAD DE LETRAS

Knowledge in your classroom: A model of analysis for specialization codes in classroom discourse

Margarita Victoria Vidal Lizama
Pontificia Universidad Católica de Chile
Chile

ONOMÁZEIN Número especial SFL (2017): 149-178
DOI: 10.7764/onomazein.sfl.06

Margarita Vidal Lizama: Facultad de Letras, Pontificia Universidad Católica de Chile, Chile.
| Correo electrónico: mvvidal@uc.cl

Fecha de recepción: 11 de enero de 2015
Fecha de aceptación: 29 de enero de 2016

Número especial
SFL

Abstract

The paper proposes a model of analysis of specialization codes in classroom discourse. This model aims to explore the nature of the knowledge being construed in the interaction between teacher and student in the classroom. The model offered emerges from the study of teaching practices in popular education in Chile. The model integrates two theoretical bodies: Legitimation Code Theory for understanding the organizing principles of knowledge and Systemic Functional Linguistics for exploring the meaning resources construing knowledge in classroom discourse.

Keywords: specialization codes; knowledge; classroom discourse; Legitimation Code Theory; Systemic Functional Linguistics.

1. Introduction

Classroom activity is an important object of study within educational research. This object is conceptualized in various ways—as classroom practice, classroom discourse, teaching practices and so on—and studied with diverse theoretical frameworks. Recent studies have focused on issues of teaching and learning (Salerno & Kibler, 2014; Smith, 2014), including student participation in relation to issues of ethnicity, gender, class and language (Anderson, 2009; Davies, 2004; Martínez, 2013) and classroom management and discipline (Margutti, 2011; Tainio, 2011). From a linguistic perspective, classroom activity is conceptualized as classroom discourse and its study has focused recently on patterns of interaction among participants in the classroom (Bannink & Van Dam, 2006; Candela, 1998; Shepherd, 2014; Wells, 1993). One important issue emerging from the current body of research concerns what Maton (2014) terms "knowledge blindness", namely a generalized overlooking of *knowledge* in educational research. This is no minor affair, as "knowledge is the basis of education as a social field of practice—it is the creation, curricularization, and teaching and learning of knowledge which make education a distinctive field" (Maton, 2014: 3). This blind spot has been addressed by Legitimation Code Theory (LCT), a conceptual toolkit for researching and changing social practices.

An important number of studies of educational practices using LCT have integrated Systemic Functional Linguistics into the research of their objects of study (see Maton & Doran, 2017). These studies explore diverse educational contexts and dimensions and their relation to knowledge (Christie & Martin, 2007; Christie & Maton, 2011; Hood, 2007, 2011, 2012; Martin et al., 2010). Within this body of research, some studies have focused on the exploration of teaching practices and how knowledge is constructed in particular disciplines in school and in other teaching contexts (Macnaught et al., 2013; Matruglio et al., 2013). However, exploration of classroom discourse from the combined perspective offered by LCT and SFL remains a relatively new frontier.

The aim of this paper is to propose a model of analysis of classroom discourse designed to explore the nature of the knowledge transmitted in teaching practices. This model emerged as part of a broader research on popular education in Chile (Vidal-Lizama, 2014). It draws on the LCT concepts of *specialization codes* (Maton, 2014) and integrates discursive analysis in order to empirically explore teaching practices. The model of analysis offers a means to study specialization codes in diverse contexts of teaching practice in primary, secondary and tertiary education, as well as sites of informal education.

From a theoretical perspective, the model aligns with an important body of research combining Systemic Functional Linguistics (Martin, 1992; Martin & Rose, 2010; Rose & Martin, 2012) and Legitimation Code Theory (Maton, 2014). Together, these theories allow, on one hand, for the systematic exploration of meaning resources construing knowledge in the classroom discourse (SFL), and on the other, for the interpretation of the discursive patterns as ways of realizing in

discourse the organizing principles of knowledge practices (LCT) (see Maton et al., 2016). The combined framework contributes a theoretically informed exploration of teaching practices.

The paper has four principal sections. Section 2 introduces the theoretical foundations of the model. These include the domain of knowledge practices and specialization codes of legitimation and a linguistic perspective on the issue of knowledge practice, elaborated in terms of *classroom discourse* (Christie, 2002). Section 3 describes the proposed model of analysis for specialization codes in classroom discourse. This section introduces the relevant analytical tools taken from SFL and explains their interpretation in terms of specialization codes. Section 4 exemplifies the model of analysis through the exploration of a particular instance of classroom discourse from the domain of popular education in Chile. Finally, section 5 provides a discussion of the model and its potential value for the analysis of classroom discourse.

2. Theoretical foundations of the model
2.1. Understanding teaching as knowledge practice

Teaching practice will be conceptualized here as a form of *knowledge practice* (Maton, 2014), a notion that emphasizes the role that knowledge plays in this social practice. As knowledge practices, pedagogy is characterized by its focus on the teaching and learning of particular forms of knowledge in relatively formal settings. In other words, a teaching practice is any form of social activity where someone passes on some kind of knowledge to others and assesses, by diverse means, the learning of that knowledge.

Two main dimensions can be distinguished within a teaching practice: *the knowledge* being taught and *the relation* that teacher and students establish around the process of teaching and learning that knowledge. These dimensions will be conceptualized here in terms of *content* and *pedagogical relationship*, respectively. Content corresponds to the specialized knowledge that is selected and pedagogized to be taught as part of a particular teaching sequence in a pedagogic practice. The second dimension, pedagogical relationship, concerns the relation enacted between teacher and student in the teaching and learning of knowledge in pedagogic practices. Traditionally, this relation has been considered intrinsically hierarchical—the teacher adopts a more authoritative position than the student as the one in possession of the knowledge being taught. However, some pedagogic frameworks, such as critical pedagogy and popular education, have questioned this understanding of the pedagogical relation (Freire, 1970; Giroux, 2004).

The two educational dimensions distinguished (i.e. content and pedagogic relationship) are central aspects of the understanding of teaching practices as knowledge practices. These two dimensions are intertwined in this knowledge practice: the shape that knowledge takes in its construal in the classroom cannot be separated from the way it is taught.

The nature of the knowledge taught in any particular teaching practice can be explored in terms of its underlying principles, i.e. the principles that define the shape taken by knowledge in any particular practice. In the model proposed here, these principles are explored through the theoretical framework offered by LCT, particularly the concepts of specialization codes.

2.2. Exploring the nature of knowledge in teaching practices: Specialization codes

Legitimation Code Theory (LCT) is a framework for exploring and changing practice. LCT is modelled around five 'dimensions', each one exploring a different organizing principle of social practices (Maton, 2014). The focus of the model proposed here is the Specialization dimension and specifically the concepts of *specialization codes* (Maton, 2010, 2014). Specialization "can be introduced via the simple premise that practices and beliefs are about or oriented towards something and by someone" (Maton, 2014: 29). In other words, knowledge claims are simultaneously claims to *knowledge of the world* and *by authors*. Analytically, two relations are distinguished within specialization codes (Maton, 2007, 2010, 2014):

— *epistemic relations* (ER) between knowledge and its proclaim object (that part of the world of which knowledge is claimed or towards which practices are oriented); and

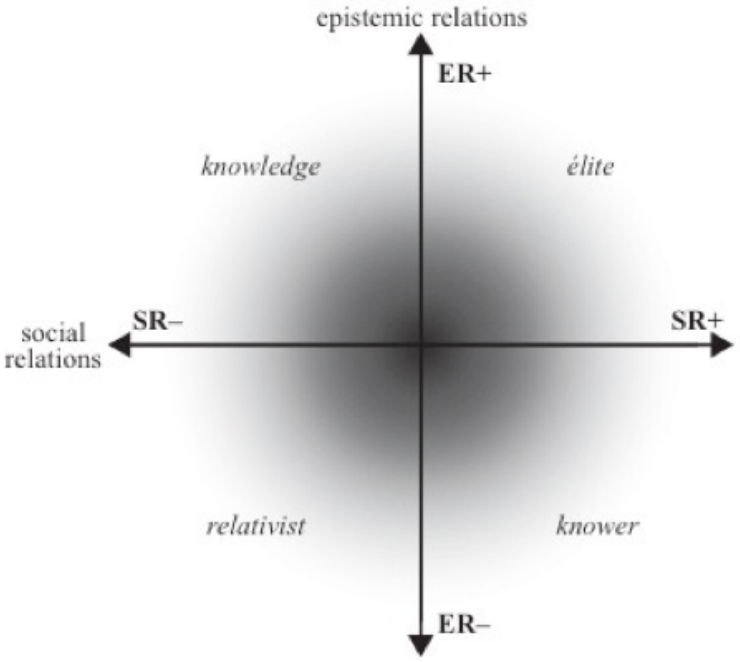
— *social relations* (SR) between knowledge and its subject, author or actor (who is making the claim to knowledge or action) (Maton, 2014: 29).

The relative strengths of epistemic relations and social relations can vary independently. This is represented as ER (+/–) and SR (+/–). The combination of these strengths creates a topology distinguishing four spaces realizing different specialization codes. These codes are *knowledge codes*, *knower codes*, *élite codes*, and *relativist codes*, as shown in Figure 1.

The domain of specialization within LCT offers a means for the description of the underlying principles that determine the nature of the knowledge being taught in a teaching practice. The notions of ER (+/–) and SR (+/–) constitute analytical tools, with no predetermined empirical correlates. Specialization codes thus constitute an 'internal language of description' (Bernstein, 2000) for the model proposed—that is, a conceptual language for the interpretation of organizing principles in knowledge practices.

The exploration of the nature of the knowledge taught in teaching practices requires the study of empirical data. In the case of the current study, this is carried out from a linguistic perspective informed by Systemic Functional Linguistics (SFL). The analytical tools provided by this framework thus constitute the 'external language of description' of the model for this study (Bernstein, 2000), enabling the systematic exploration of empirical data that can be then interpreted in terms of specialization codes. The specific manner in which these two

FIGURE 1
Specialization codes of legitimation (Maton, 2014: 30)



theories contribute to the exploration of the nature of knowledge in teaching practices will be detailed later. At this point, the linguistic perspective is introduced.

2.3. Understanding teaching practices as *classroom discourse*

From a linguistic point of view, teaching practices will be understood here as *classroom discourse*. Classroom discourse is described within SFL as a social practice that unfolds through a negotiation of meaning (cf. Christie, 2002; Rose & Martin, 2012). Classroom discourse is thus a particular kind of discourse that construes meaning and enacts roles as part of the social activity of knowledge teaching. The kinds of meanings construed and the roles negotiated are specific to this social practice. Thus, from the perspective of register (Martin, 1992), classroom discourse necessarily involves particular meaning choices construing *field* and enacting *tenor* in this social practice[1].

1 Classroom discourse also involves particular meaning choices in mode, i.e. a specific way of organizing the linguistic resources construing this discourse. However, as the focus of this exploration is the content and the pedagogy enacted in teaching practice (i.e. field and tenor, respectively), the study will not attend at this point to the meaning choices in mode.

These register variables, field and tenor, serve as a bridge for connecting the educational dimensions of teaching practices with its empirical realizations in language. First, content or knowledge being taught in a teaching practice can be understood in terms of field (Martin, 1992), and more particularly, as the *field of educational knowledge* (Hood, 2011). The field of educational knowledge corresponds to the disciplinary content being taught in the educational practice and relates primarily to the ideational metafunction in classroom discourse. Second, the pedagogical relationship can be interpreted in terms of tenor—that is, the social relations established among interlocutors, varying according the dimensions of status and solidarity (Martin & Rose, 2008). Tenor relates to the interpersonal dimension of classroom discourse.

In order to study classroom discourse, a relevant unit of analysis needs to be proposed. Two complementary models have been proposed for the identification of the internal structuring of classroom discourse, highlighting ideational and interpersonal aspects, respectively. These models, namely learning activity (Rose & Martin, 2012) and pedagogic exchange structure (Martin, 1992) are described below.

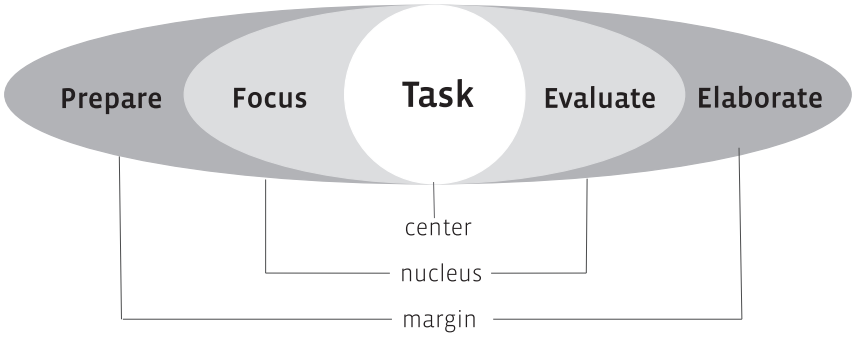
2.3.1. The internal structuring of classroom discourse: learning activity

Different levels of organization can be identified within classroom discourse, based on the principle that learning occurs through the performance of *tasks* around which the teaching/learning practice is organized (Rose & Martin, 2012). A task corresponds to an activity carried out by students, such as drawing a picture, answering a question or writing a text. Researchers drawing on SFL to analyze pedagogic activity have identified tasks of different sizes in classroom discourse, ranging from a minimal, basic interaction between teacher and student, to the curriculum units of a subject (cf. Rose, 2010; Rose & Martin, 2012).

The basic pedagogic unit in classroom discourse is learning activity. A learning activity is the minimal complex unit unfolding around a micro task. Its internal structure comprises at least an obligatory Task phase, around which up to four other phases may occur. These phases are introduced in Figure 2, organized around the orbital structure of the learning activity.

The *Task* phase is the central and only obligatory phase in a learning activity. It strongly predicts the phases at the nucleus, *Focus* (which specifies the following task to be performed), and *Evaluate* (an assessment of the Task provided by the teacher). At the margin there are two other phases: *Prepare*, where the teacher provides context or knowledge relevant to performing the Task; and *Elaborate*, where the Task performed by the student is used as a stepping stone for initial knowledge or concepts to be further developed (Rose & Martin, 2012).

FIGURE 2
Internal structure of the learning activity (adapted from Rose & Martin, 2012: 306)



2.3.2. The interpersonal dimension of learning activity: Pedagogic exchange structure

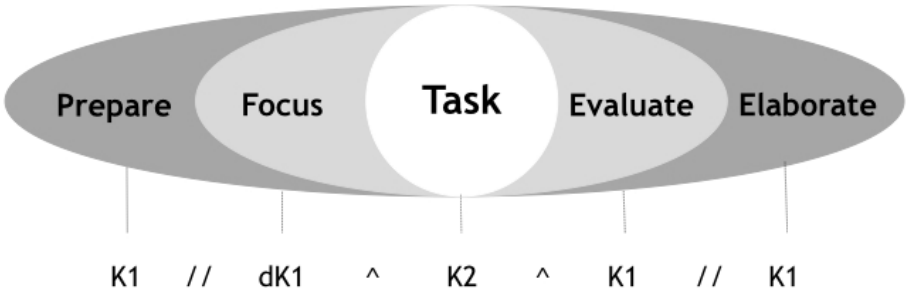
Pedagogic exchange structure (Rose & Martin, 2012) enacts the interpersonal dimension of the learning activity, and functions as the basic interactive unit within classroom discourse described by SFL. Exchange structure models the way knowledge is negotiated through language in the classroom interaction. The structure of the pedagogic exchange is as follows:

(K1) ^ dK1 ^ K2 ^ K1 ^ (K1)

Negotiation in the context of classroom interaction mainly involves the provision of information, which means that it primarily unfolds through knowledge moves (*K* in the formula). The primary knower move (K1) corresponds to the move performed by the person in the interaction who is the authoritative source of the information being negotiated (Martin, 1992: 48). Secondary knower moves (K2) corresponds to moves in which a request for such knowledge is enacted.

The roles of primary and secondary knower in the pedagogic exchange are strictly defined by the social practice of teaching in formal settings. Teachers typically take up the role of the primary knower (K1) as they control the knowledge at stake in the subject being construed. In turn, students are the secondary knower, because they are generally positioned to receive information. In a pedagogic exchange, teachers typically ask students questions, demanding information. When this occurs however they are still acting as a primary knower, because they 'know the answer'—their question fulfils the pedagogic function of assessing students' understanding rather than genuinely acquiring new information from students. When teachers ask questions, this move corresponds to a delayed primary knower move (dK1). In pedagogic exchanges initiated by a dK1 move, the exchange has to be completed with a K1 move by the teacher, confirming student responses. This pedagogic exchange structure is correlated to the learning activity in Figure 3.

FIGURE 3
Learning activity and pedagogic exchange structure (Rose & Martin, 2012: 301)



The pedagogic exchange structure comprises one central Exchange in its nucleus, constituted by the moves dK1 ^ K2 ^ K1. These moves correspond to the phases Focus, Task and Evaluate, respectively. The phase Prepare and Elaborate can correspond to a single move or a move complex. They can also be expanded as exchanges between teacher and student. This means that the Prepare and Elaborate phases can be negotiated in dialogue with the students instead of unfolding as a monologue of the teacher. The learning activity comprises then potentially three different pedagogic exchanges.

Understanding teaching practices in terms of classroom discourse enables the identification of a pedagogically oriented unit of analysis (i.e. the learning activity). In addition, the notion of classroom discourse allows for a simultaneous consideration of both the content being transmitted and the pedagogical relationship, through the variables of field and tenor in register, respectively. The model of analysis for specialization codes in classroom discourse is grounded on this conceptualization of teaching practices.

3. The model of analysis for specialization codes in classroom discourse

The model of analysis proposed in this paper enables examination of the specialization codes underlying teaching practices. In doing so, the model involves two steps, one analytical and one interpretive. The analytical step corresponds to the discourse analysis of classroom discourse using the tools provided by SFL, particularly those related to ideational and interpersonal metafunctions. The interpretive step corresponds to the translation of discourse semantics patterns of ideational and interpersonal meaning in terms of varying strengths of epistemic relations and social relations in LCT, respectively. This section further elaborates on the way the model works and the relation established between discourse semantic analysis of empirical data and sociological translation of the meaning patterns construing knowledge in classroom discourse in terms of specialization codes.

3.1. Tools for the discourse semantic analysis of classroom discourse

The analysis of field and tenor of classroom discourse is organized around two sets of analytical tools. The analysis of field is carried out through resources for the construal of specialized languages (Martin, 1992, 1993a, 1993b), while the exploration of tenor considers different interpersonal resources organized around the dimension of status of participants (Poynton, 1985) and particularly the principle of reciprocity of choice. (It should be emphasized that the notion of specialized language in SFL corresponds to the meaning choices characteristic of specialized social activities and particularly of practices of production of knowledge. It should not be confused with the dimension of Specialization or specialization codes from LCT).

Resources for the construal of specialized languages involve meaning choices from the IDEATION system as well as other specific discursive resources. From the IDEATION system, the analysis includes the study of *taxonomic relations*, that is, relations between lexical elements from clause to clause (Martin & Rose, 2007; for more details, see Martin, 1992; Martin & Rose, 2008). Taxonomic relations construe classifications of experience in language, with diverse degrees of specialization or "uncommonsensicality". Other resources considered for the analysis are definitions, technicality, abstraction and ideational metaphors (see Martin 1993a, 1993b).

The analysis of tenor is founded on Poynton's status oriented realization principle, namely *reciprocity of choice*. As Martin & Rose (2008: 13) explain, participants in an interaction can make different kinds of linguistic choices according to their social position: "social subjects of equal status construe equality by having access to and taking up the same kinds of choices, whereas subjects of unequal status take up choices of different kinds". The social practice of teaching has been described as one where participants have unequal statuses, as teachers hold most of the choices and organize the unfolding of the interaction—they decide what to talk about, who talks and when, and which meanings are 'correct' for the purposes of pedagogic evaluation (Bernstein, 1975; Rose & Martin, 2012). The model of analysis discussed here explores tenor in terms of the choices available for teacher and students in their interaction in the classroom.

Reciprocity of choices is examined considering tools from two areas of interpersonal meaning. First, the analysis draws on tools from the system of NEGOTIATION, particularly in relation to the pedagogic exchange structure (Rose & Martin, 2012). The analysis of NEGOTIATION is complemented with tools from the system of APPRAISAL, particularly the sub-system of ENGAGEMENT (see Martin & White, 2005; Hood, 2010). The analysis of ENGAGEMENT examines those instances where the pedagogic exchange structure appears to be contested by either participant in the interaction. ENGAGEMENT provides resources to look at the way participants aim to create an 'expert voice' in discourse.

3.2. Interpreting field as epistemic relations and tenor as social relations

The model of specialization codes offered here constitutes one possible approach to this issue, amongst other possible paths of exploration. In this model, each of the dimensions of register examined in the discourse analysis of classroom discourse is interpreted in terms of one of the relations comprising specialization codes. The dimension of field is interpreted in terms of epistemic relations (or what can be known and how), and the dimension of tenor is interpreted in terms of social relations (or who gets to make a legitimate claim of knowledge). It should be noted that epistemic relations and social relations are not equivalents to field and tenor; they constitute distinct concepts within two different bodies of knowledge. However, as research is showing (Christie, 2016; Hood, 2007, 2011; Meidell-Sigsgaard, 2012), these concepts usefully complement one another in the exploration of educational problems.

In this study, epistemic relations (ER) refer to relations between knowledge practices and their objects. As Maton (2014: 29) explains, they "highlight questions of *what* can be legitimately described as knowledge". These relations to the objects of knowledge can be traced in their realization in discursive practices producing and teaching knowledge. Thus one way of exploring epistemic relations in language is to consider field, which corresponds to a social activity of construal and transmission of knowledge through language (cf. Martin, 2007). Thus, complexes of discursive resources deployed to construe the particular knowledge taught in classroom practices can be interpreted as representing varying strengths of epistemic relations.

The exploration of epistemic relations in terms of field considers the diverse ideational resources deployed in classroom discourse. For instance, the presence of uncommon sense taxonomies is translated as exhibiting relatively strong epistemic relations (ER+), as it suggests the creation of specialized (in the LCT sense) knowledge for understanding the object of study. In general terms, epistemic relations are interpreted as emphasized when classroom discourse features uncommon sense taxonomies, technical lexis and definitions. This is because these patterns in discourse reflect a greater emphasis on *what is known and how*. In turn, the absence of these resources or the recurrent use of others such as common sense taxonomies and abstractions are interpreted as weaker epistemic relations (ER–).

The concept of social relations (SR) refers to relations between practices and their subject, author or actor. According to Maton (2014: 29), within knowledge practices they highlight questions of "*who* can claim to be a legitimate knower". One way in which these relations between knowledge and its knowers can be explored in classroom discourse is by considering who gets to propose knowledge in the interaction. More technically, in terms of the model of language proposed by SFL, one way social relations can be explored in terms of language is in relation to *how roles and meanings are negotiated in the interaction of classroom discourse*. In this regard, one way of thinking about social relations in language is in terms of tenor and

patterns of interpersonal meaning in the discourse, including aspects of the pedagogic exchange interaction and resources of engagement from the APPRAISAL system.

The explorations of field in terms of epistemic relations and tenor in terms of social relations complement each other in the model. This is because social relations relate not only to 'who can say' but also to the basis that legitimates the author or subject of that claim. In some cases, the basis for that legitimacy might be the author's dispositions or attitudes, which would imply relatively stronger social relations (SR+). In some other cases, the basis for that legitimacy might be the author's expertise and knowledge, which implies relatively weaker social relations (SR–), as it does not matter *who the author is* but rather *what s/he knows*. Accordingly, the interpretation of the relative strengths of social relations in the texts will have to consider, in some instances, the knowledge claim at stake. From a language perspective, this means correlating the analysis of tenor and field with the proposed interpretation in epistemic relations and social relations. Note that this interpretation constitutes one possible way of approaching the study of specialization codes, among other possible relations (cf. Maton & Chen, 2016; Hood, 2011).

The analytical tools emerging from SFL constitute the 'external language of description' (Bernstein, 2000) of the model or means of relating the 'internal language' to empirical data. Elaborating an external language of description for the exploration of specialization codes is a key issue, as these concepts take different forms in different objects of study. In other words, specialization codes of legitimation do not constitute distinctive and a priori determined kinds of texts or practices of knowledge (Maton, 2010; Maton & Chen, 2016). They need to be explored in their realization in these texts and practices, and this exploration is performed in this study through SFL-informed discursive analysis.

3.3. Interpreting meaning patterns as epistemic relations and social relations

This section specifies the interpretation of discourse semantic patterns in field and tenor in terms of epistemic relations and social relations, respectively. The interpretation offered here emerged from the analysis of a particular instance of classroom discourse from a specific form of teaching practice in Chile. Thus, while the model aims to be applicable to different contexts and teaching settings, it has to be appreciated with respect to its adaptation to the particular teaching practices analyzed. It is also relevant to mention that the classroom discourse analysed is originally in Spanish and therefore the analysis and interpretation of texts have been carried out in this language. For reasons of space, translations of fragments to English are provided throughout as examples without its original version in Spanish. Translations aim to show general discourse-semantics patterns in the examples, as analysed in the Spanish version.

Table 1 presents in the first column the discourse semantic patterns explored in the linguistic analysis, and in the second column its corresponding relative strengths of epistemic relations or social relations. A third column in the table provides an explanation of the SFL/LCT 'translation' carried out.

TABLE 1

An external language of specialization codes in classroom discourse

DISCOURSE SEMANTIC PATTERNS (SFL)	RELATIVE STRENGTH OF EPISTEMIC/SOCIAL RELATIONS (LCT)	EXPLANATION
FIELD		
IDEATION		
Taxonomies (+) uncommon sense taxonomies (–) uncommon sense taxonomies	ER+ ER–	The construal of uncommon sense taxonomies highlights the relevance of the object of study; i.e. it is important *what* is known
Definitions (+) definitions (–) definitions	ER+ ER–	The definition of a term contributes to propose 'objective' meanings regarding the object of knowledge, highlighting the known
Technical terms (+) technical terms (–) technical terms	ER+ ER–	Technicality provides 'objective' meanings regarding the object of knowledge, highlighting the known
Abstraction (axiologized) (+) abstraction (–) abstraction	ER– ER+	Abstractions appear in this context generally charged with axiological value, therefore positioning the perspective of knower dispositions as significant
TENOR		
NEGOTIATION		
(+) reciprocity (-) reciprocity	SR– SR+	The greater reciprocity of choice between participants in the pedagogic relation, the less relevant are their personae as teacher or student; the opposite highlights the importance of the persona. Reciprocity of choice is interpreted in terms of choices for opening and closing interaction, giving or biding for the turn, and the proposal of new topics, as well as ideational and interpersonal meaning resources available for each participant.

ENGAGEMENT		
Contract (+) contracting	If ER+, then SR– If ER–, then SR+	If the knowledge claim at stake exhibits relatively strong ER, the contraction of the dialogic space contributes to weakening the strength of SR, as the legitimacy of the claim is given by the knowledge itself and not by who claims it. If the knowledge claim exhibits relatively weak ER, the contraction of the dialogic space contributes to position the speaker as expert on the basis of his/her persona in the interaction and not on the knowledge possessed, i.e. who knows is more significant and what is known is downplayed
Expand (+) expanding	If ER+, then SR– If ER–, then SR–	If knowledge claim exhibits relatively strong ER, then the expansion of the dialogic space aims to reduce the distance between participants of the pedagogic relation, thus weakening SR. With a knowledge claim exhibiting relatively weak ER, the expansion of the dialogic space indicates that who get to claim something about knowledge is not relevant; this reveals weaker SR (SR–).

The first section of the table introduces the resources of IDEATION used in the analysis of field of classroom discourse. There are four resources considered: taxonomies, definitions, technical terms and abstractions. The presence and absence of these resources in the discourse semantic patterning of classroom discourse can be interpreted as varying the strength of epistemic relations, as outlined in Table 1. As an example, consider the following explanation offered by the teacher in relation to the discussion around the concept of *moral*:

Teacher: I'm therefore establishing a criterion that is not an **ethical criterion**, it's a **pragmatic criterion**, OK?

In this explanation, the teacher construes a classification of criteria in the nominal groups *ethical criterion* and *pragmatic criterion*, where the functions Thing (*criterion*) and Classifier (*ethical* and *pragmatic*) appear. From the perspective of language, this construes an uncommon sense classification of this entity, which contributes a technical definition of the concept *moral* later on. Using the framework of LCT, the classification of *criterion* in this explanation is interpreted as reflecting relatively stronger epistemic relations (ER+), as this explanation highlights the object being taught and known.

The second section of Table 1 introduces the interpersonal resources related to the enactment of tenor in the classroom discourse. Two sets of resources are distinguished here: resources of NEGOTIATION and resources of ENGAGEMENT. The first correspond to reciprocity of choice in terms of the initiation and closure of interaction and the proposal of topics in the exchange. A more even distribution of initiating and closing exchanges in the classroom discourse signals stronger reciprocity among participants. The resources of ENGAGEMENT are introduced in Table 1 in terms of expanding and contracting the dialogical space (see Martin & White, 2005). Different engagement resources at the level of discourse semantics are considered within each principle. As an example of the interpersonal patterns analyzed and its interpretation in terms of social relations, consider the following exchange.

Student: (RAISES HAND)
Teacher: yes
Student: ((may I say something))
Teacher: sure
Student: it's just that I'd heard that (( )) and that is proven in the film, that these underbelly people have a certain, let's say, some kind of ethic, in the sense that... in the sense that... they, he is interested in fulfilling his part of the deal

In terms of NEGOTIATION, this exchange is initiated by the student, through a Bid move (Martin, 1992: 80) where he requests the turn to the teacher. In addition, here the student is actively proposing meaning related to the general discussion. Considering that the pedagogic exchanges are typically initiated by the teacher and that he or she tends to propose new meaning, the options taken by the student in this exchange show greater reciprocity of choice for the participants. Accordingly, the reciprocity of choice is interpreted in terms of LCT as reflecting weaker social relations (SR–).

This analysis can be complemented with an exploration of resources of ENGAGEMENT that contribute to describe in more detail the enacting of interpersonal meanings and its related LCT interpretation in terms of social relations. As the table suggests, the interpretation of the resources of ENGAGEMENT in terms of the relative strength of social relations depends on the kind of knowledge being claimed and, therefore, on the relative strength of epistemic relations. This will be further explained in the following section, where the analysis of an instance of classroom discourse is presented.

4. Analyzing specializations codes in the classroom discourse of popular education in Chile

This section exemplifies the analysis of specialization codes in an instance of classroom discourse. The examples provided are drawn from a research project focusing on popular educa-

tion in Chile (Vidal, 2014). The data explored involve transcribed lessons from a popular education site in Santiago de Chile called Uabierta. Four lessons were recorded from the subject of Philosophy I within the Social Studies Program of Uabierta. The first of these lessons is a discussion based on a movie that students watch in the class. The other three lessons cover different topics within the field of Philosophy and are fairly monologic, with the teacher doing most of the talking. Two units of analysis were chosen for the exploration of lessons: *learning activity* and *lesson stage* (see Rose, 2010 and Rose & Martin, 2012). These units enable the analysis of field and tenor in classroom discourse from both micro and macro perspectives. In order to exemplify the model of analysis, the focus will be set here on learning activities, which corresponds to the micro level.

The exploration of specialization codes in classroom discourse begins with the segmentation of the flow of discourse in learning activities. Once the units of analysis have been distinguished, discourse analysis is carried out—considering both ideational and interpersonal meanings (as described in section 3). Then, the meaning patterns in learning activities are interpreted as diverse strengths of epistemic relations (ER+/–) and social relations (SR+/–). These two kinds of relations are finally combined to determine the particular specialization code underlying the classroom discourse explored. This analytical and interpretative process is exemplified in the following subsection.

4.1. Field and epistemic relations

The discourse analysis shows that the nature of field varies in relation to the different learning activities constituting the lessons. The variation occurs in a continuum that moves between (+) uncommon sense and (–) uncommon sense fields. Different points in this range can be interpreted as varying strengths of epistemic relations. The analysis of a field as more or less uncommon sense as well as the varying strength of epistemic relations is a question of *contrast*: a particular learning activity can be deemed as more uncommon sense in comparison to the rest of learning activities of the lesson. The degree of 'uncommonsensicality' in the field can be determined based on the discourse-semantic resources at stake in its construal.

4.1.1. Common sense field

The construal of less specialized fields is characterized by common sense lexis with a high degree of context-dependency. In addition, lexical relations serve mainly to provide coherence to the learning activity rather than to classify an entity. Consider the following example of a learning activity.

SPEAKER	TRANSCRIBED TALK	PHASE
Teacher	Well, we had warned that this was a Yankee comedy that had no big pretensions, but it isn't either a trivial comedy. Several of you I saw scribing lots of things, ((I think)) there are lots of moments in which there are dialogues that have a great importance from the ethics point of view	Prepare
	Eh, let's see, in which moment are there situations in which there are at stake very intimate things, very transcendental things from the point of view of human behaviour, of human conduct? Which one do you remember like	Focus
Student	Well, he, in the first place, when he, he describes himself, when the girl asks him who he is, a vigilant delinquent	Task
Teacher	[OK]/ for example, that is an interesting thing	Evaluate
	he says, the little fellow says, 'ah, you don't look like, you don't seem bad, you don't look like a delinquent', 'it's just that I'm a vigilant delinquent'	Elaborate

The common sense nature of the field construed in this learning activity can be observed in the lexical strings used to refer to participants in the discourse. Indicative strings are shown in Table 2[2].

TABLE 2
A common sense field in a learning activity

LEXICAL STRING THINGS	LEXICAL STRING MARDUKAS	LEXICAL STRING GIRL
things x very intimate	vigilant = delinquent	girl
| repetition	**| contrast**	**| hyponym**
things x very transcendental	delinquent	fellow + little
| repetition	**| contrast**	
things x interesting	vigilant = delinquent	

The participant *intimate things* refers to the ethical issues that students are expected to identify in the film they have watched as part of the development of the lesson. As the string shows, the word *thing* is used in this learning activity to refer in very general terms to this

2 Symbols =, + and x represent the general logico-semantic relations of expansion proposed initially in Halliday (1985) and applied by Martin (1992) for the analysis of nuclear relations. They correspond to elaboration (=), extension (+) and enhancement (x).

entity. This word is non-technical and non-field specific and commits very little meaning—it is a 'general noun' in the terms of Halliday & Hasan (1976).

The second string refers to *Mardukas*, one of the characters of the film. The lexis associated with this character is *vigilant delinquent*, at the end of the student's move in the interaction. The last string, which refers to the participant *girl*, is constituted by two lexical *items girl* and *fellow*—which are also fairly general nouns. The lexical relations in the three lexical strings analyzed are not oriented towards the construal of a taxonomy; rather, they appear to be oriented towards the formation of relevant identification chains (cf. Martin, 1992).

The 'commensensicality' of the field construed in this learning activity can be interpreted as involving weaker epistemic relations (ER–). This is because the construal of common sense fields evidences a relatively weak emphasis on *what can be known*. In other words, it implies that what counts as legitimate knowledge is weakly bounded and controlled—(almost) anything counts as a claim of knowledge in this learning activity. The interpretation of this strength of epistemic relations in the learning activity depends, as it has been stated before, on the contrast that occurs between the field of knowledge construed here and other possible fields knowledge that might have been construed in the lesson.

4.1.2. Uncommon sense field

The construal of uncommon sense fields is characterized in the data analyzed by the classification of entities on the basis of specialized knowledge, involving resources such as technical terms and the definition of concepts. An example of the construal of an uncommon sense field is provided in Table 3.

There are two learning activities in Table 3; both of them are oriented towards the construal of an uncommon sense field, drawing on the general domain of Philosophy. Lexical strings in these learning activities show relatively more variation in terms of the lexical items used and the lexical relations between them (compared to the learning activity in Table 2 above). In addition, lexis appears to be more field-specific, particularly in relation to the specialized field of ethics. Relevant lexical strings unfolded in these learning activities are shown below.

LEXICAL STRING MORALS	LEXICAL STRING SOCRATES	LEXICAL STRING CONVICTION
(the) moral	Socrates	conviction
| =	**| repetition**	**| repetition**
behaviour = exterior	Socrates	conviction + internal

| contrast	**| hyponymy**	**| repetition**
behaviour + conviction	guy	conviction
| hyponymy	**| hyponymy**	
issue	Socrates	
| hyperonymy		
behaviour		
| repetition		
behaviour = human		

TABLE 3
An uncommon sense field in a learning activity

SPEAKER	TRANSCRIBED TALK	PHASE	LEARNING ACTIVITY
Teacher	that is, the moral (( )) the word (the) moral derives directly from the word morals, eh?, behaviour, exterior behaviour, not behaviour that arises from what thing? (AWAITS REPLY FROM STUDENTS)	Elaborate/ Prepare Focus	1
Student	—	Task	
Teacher	from conviction, from internal conviction and that's what we saw with Socrates, right? that if it occurred, the case of Socrates is very peculiar (PETER GETS UP FROM HIS SEAT AND WALKS AROUND), he is a guy that is trying to teach Athenians in a time where this issue is still in its rudiments, he is teaching them that behaviour,	Elaborate/ Prepare	2
	human behaviour is determined by, by what thing? (LOOKS AND AWAITS ANSWER)	Focus	
Student	—	Task	
Teacher	by conviction, just and good are defined by myself, faced by my conscience and that is a thing that the tribunal in Athens couldn't, couldn't take, and sentences Socrates to die.	Elaborate	

These learning activities are oriented towards a discussion of the concept of *morals* and the contribution of Socrates' philosophy to its understanding. This discussion seeks to oppose a pre-Socratic notion of morals with the understanding proposed by the philosopher. The first major string is initiated thus by the term *morals*, which is a specialized term from the field of ethics. The term is glossed as *behaviour*, which is in turn classified through the Clas-

sifier *exterior*. This kind of behaviour is then contrasted with its understanding as *behaviour + conviction*[3], which constitutes the *issue* being dealt with by Socrates' reflections. Finally, the discussion around *morals* is oriented towards the more overarching concept of *human behaviour*, which overcomes the contrast between the other two kinds of behaviours introduced in the string. The proposal of the concept of *morals* arises in these learning activities from a taxonomy of *behaviours*. This taxonomy emerges from the use of Classifiers—as in *exterior = behaviour* and *human = behaviour*—, as well as from relations of hyperonimy. Overall, these resources—the classification of entities and taxonomic relations of superordination—contribute to the uncommon sense philosophical interpretation of the word *moral*, construing thus a specialized field.

The second string revolves around *Socrates*. The importance of this string is that it shows the extent to which discourse has shifted from common sense shared experience to a more uncommon sense field, where participants involved in the Philosophy field are particularly authoritative figures of knowledge. In addition, this string evidences how references to specific participants have to be made explicit, as the field at stake is not drawing on shared knowledge arising from the inter-text of the film (as in the example in Table 2). Finally, the last string *conviction* further indicates the unfolding of abstractions in the construal of field in these learning activities. This string also reinforces the specialized taxonomy for *behaviour* construed in the string *morals*.

The discourse semantic resources construing field in these learning activities enable an interpretation of field as emphasizing epistemic relations (ER+). What counts as a legitimate claim of knowledge in these learning activities is specialized disciplinary knowledge from the domain of Philosophy. In order words, what can be claimed to be valid knowledge in this instance is strongly bounded and controlled. The emphasis on epistemic relations in this learning activity can be interpreted as a function of the contrast between this construal of field and other possible alternatives (such as the learning activity in Table 2 above).

4.2. Tenor and social relations

The analysis of tenor also reveals a continuum along which the nature of the interaction between participants can be positioned. This continuum moves from (–) reciprocity to (+) reciprocity of choice, and thus enacts varying degrees of status in the relations between participants in the interaction. Importantly, the enactment of different choices of tenor emerges in this data from different meaning resources. (+) Reciprocity of choice is enacted here through

3 See note 2 on the meaning of (+)

resources of APPRAISAL and is in fact dependent on the construal of a (+/–) uncommon sense field. In turn, (–) reciprocity of choice is here enacted through interpersonal resources of NEGOTIATION and is dependent on the construal of (+) uncommon sense fields. This interplay between tenor and field in the classroom discourse has to be taken into account in relation to the interpretation of meaning patterns enacting tenor in terms of social relations.

4.2.1. Uneven reciprocity of choice

The enactment of non-reciprocal interactions between participants is realized through two syndromes of interpersonal and ideational meaning. In general, the unevenness of the positioning of participants is realized through resources of NEGOTIATION. More specifically, the hierarchy of participants is signalled through the choices available for each one in the pedagogic exchange structure. The teacher has meaning choices related to initiation and closure of exchanges and, most importantly, to the positioning of a primary knower in the interaction (Martin, 1992). In terms of the structure of the learning activity, this means that the teacher has the option of evaluating the Task carried out by the student, an option materializing in the Evaluate phase of the learning activity (Rose & Martin, 2012).

The positioning of the teacher as a primary knower (K1) and the enactment of an Evaluate phase in the learning activity are realized whether the field at stake is (+) uncommon sense or (–) uncommon sense. Examples of learning activities where the positioning of participants is uneven have already been provided in Tables 2 and 3 introduced above. In both these examples, the interactive pattern is characterized by the positioning of the teacher as primary knower (K1), demanding information from the student and evaluating the accuracy and correctness of the knowledge proposed by the student (who holds the position of a secondary knower (K2)). The learning activity of Table 3 shows the extent to which meaning choices can be unevenly distributed in the pedagogic interaction, as the student is unable to provide the specialized meaning demanded by the teacher.

These patterns of interpersonal meaning can be interpreted in terms of social relations according to their interplay with patterns in field. When the field construed is (+) uncommon sense, the relative strength of social relations in LCT is interpreted as SR–, since the basis for legitimation of that knowledge claim is not *who* is making the claim but the *knowledge* itself. In other words, as the knowledge construed in that learning activity is specialized knowledge, what counts as valid knowledge is determined by the knowledge itself and not by who proposes it. Table 3 above exemplifies this. In this learning activity, who gets to propose knowledge is determined by the possession of specialized knowledge, which traditionally belongs to the teacher in the pedagogic exchange. In this learning activity, what positions the teacher as the primary knower is precisely the possession of specialized knowledge and not his personae as teacher.

In contrast, when field is (–) uncommon sense, reciprocity of choice between participants is uneven not because of a difference in knowledge, but due to their personae. When the learning activity revolves around common sense knowledge, as in the example in Table 2 above, what creates the uneven relation between teacher and student is not the knowledge they possess—as they both share the same common sense knowledge in this case—but their *social positioning* as teacher and student, respectively. This unevenness is revealed in the fact that the teacher can still enact an Evaluate phase in the learning activity, even though both participants "know" the knowledge at stake. In cases where the field is common sense, social relations are interpreted as stronger (SR+), as the basis for the validity of the knowledge claim is the personae of the teacher. This kind of learning activity is exemplified in Table 2 above.

4.2.2. Even reciprocity of choice

The interpersonal analysis shows that the negotiation of roles can be problematic in some learning activities. Sometimes, students push to position themselves as primary knowers in the interaction, enacting an important shift in the tenor of the learning activity. Relevant interpersonal resources here come from the system of APPRAISAL, and particularly the sub-system of ENGAGEMENT. These resources enable the student to close the dialogic space in relation to his or her proposal of knowledge, replicating the voice of an expert in the interaction. In addition, the pattern of interaction also shows the teacher providing feedback during a student's speaking turn, rather than waiting until it is finished. Interestingly, this 'back-channeling' appears to have the function of showing that the teacher is attending to the student's contribution, rather than that of evaluating the student's proposal. An example of the problematic negotiation of roles is provided in Table 4. For a more detailed explanation of the enactment of tenor in cases such as this, see Vidal-Lizama (2014).

TABLE 4
Negotiating the primary knower role in a learning activity

SPEAKER	TRANSCRIBED TALK	PHASE	EXCHANGE STRUCTURE
Teacher	What do we know about Socrates and who is the principal biographer he has. I don't know if you know that there is around there, I don't know if nowadays there are important researchers that affirm this, but for long time it has been a matter of discussion whether Socrates really existed. I don't know if you knew. There are people around there that have proposed very seriously that he is a character of Plato and nothing more. That everything that is said about him is fable, it's fiction, that Socrates wouldn't be really a flesh and bone character	*Elaborate	K1 move complex

Student Teacher	(RAISES HAND) Yes (GIVES TURN TO S)	Direct	Bid Summons
Student	I, eh, well, just complementing that, I have read some specific studies of the life of, by some English men around there, that indicate that he was (( )), he was a soldier	*Task	K1 move complex
Teacher	[yes		backchannel
Student	and that **in fact** he passed, he precisely participated in various conquers and battles		K1 move complex
Teacher	[yes, yes, sure, right		backchannel
Student	and **in fact** he was like very		K1
Teacher	[he was very well regarded		K1
Student	[and besides that he didn't wear shoes in that time, **it seems**		K1
Teacher	[right, right		backchannel
Student	bare foot, he was a Flintstone, **it seems**		K1 move complex
Teacher	yes, yes, sure	*Evaluate	K1
	Now, the testimonies that indicate that Socrates existed are so... overwhelming **apparently** that now, **as far as I know** (( )), but for a long time it did – well, it was a discussion **anyway**, there's people who like that	*Elaborate	K1 move complex

Definitive determination of phases of the learning activity is problematic in this kind of interactive pattern, an issue signaled in the table by the * in the phases. The * indicates that the analysis of the moves of teacher and student do not necessarily fit the description of the phases of the learning activities. This problem relates to the particular nature of the roles being negotiated in this interaction. In this example, the student is proposing relevant knowledge even when there has not been a demand for this knowledge by the teacher. The student bids for a turn and once the teacher has allocated the turn the student proposes new relevant knowledge in relation to the topic 'what do we know about Socrates'. The knowledge proposed by the student is not directly relevant in relation to the specialized field of Philosophy that is being dealt with in the lesson. However, the (+/–) uncommon sense knowledge that he proposes allows for his positioning as a K1 in this interaction.

Interpersonally speaking, the positioning of the student as a K1 also involves resources of ENGAGEMENT. A first engagement resource used by the student is an attribution (some specific studies [...] by some English men... indicate), which opens up the dialogic space through the inclusion of another voice in the discourse. Along with the expansion of the dialogic space, this attribution allows the student to provide some 'authority' for his discourse—he is proposing

something that some studies have said, not his own personal thinking. The attribution is followed by a proclaiming move (**in fact**), used by the student twice in this intervention. Proclaim resources are oriented to closing down the dialogic space; they thus appear to be opposed to the attribution at the beginning of the student´s talk. However, both resources—attribution and proclaim—contribute to positioning the voice of the student as an 'expert voice', adding veracity to his knowledge proposal. These resources help the student to position himself in the interaction as an authoritative K1.

By the end of the exchange, both participants use engagement resources to open up the dialogic space (**it seems**, **apparently**, **as far as I know**, **anyway**). The way these resources are used in this learning activity enacts a more even relation between teacher and student. Here the interpersonal options of meanings available for them are more reciprocal: the student can close down the dialogic space and thus position himself as K1, and the teacher contributes to the opening up of the dialogic space, which creates a less authoritative stance on his part. This greater reciprocity positions both participants as K1, enacting therefore a crucial shift in register.

The interpretation of interpersonal meanings in terms of social relations involves two concerns. First, in terms of reciprocity of choice, the learning activity analysed shows greater reciprocity, which can be interpreted as reflecting weaker social relations (SR–). In other words, the more even availability of meaning resources is seen as indicating that the legitimacy of the knowledge claim does not emerge from *who claims it*, as both participants have access to comparable meaning resources.

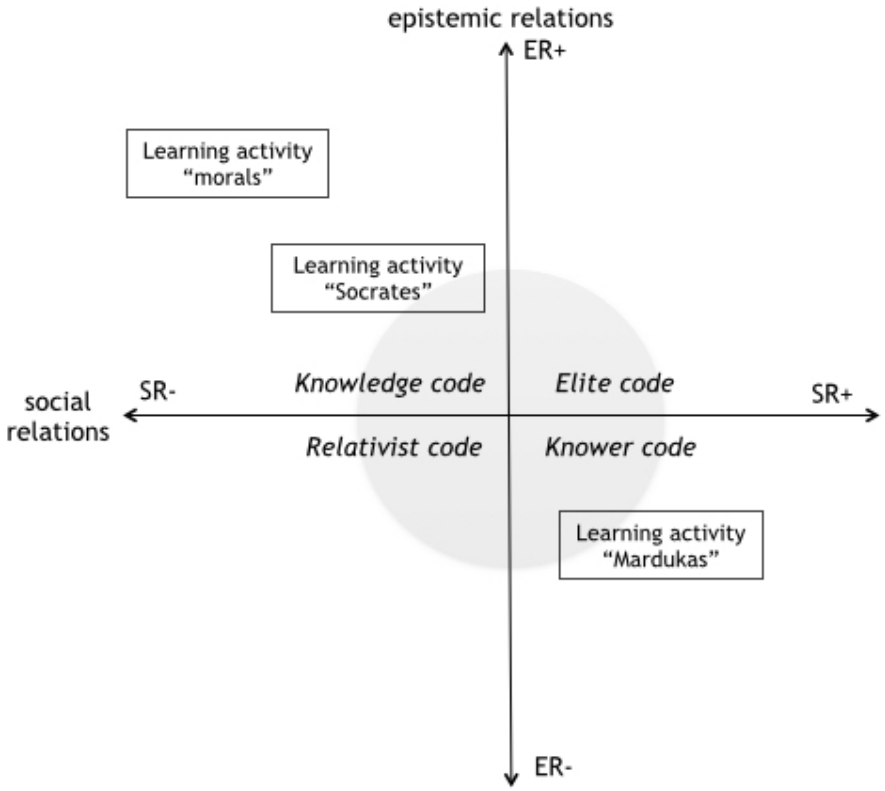
A second aspect to consider in the interpretation of interpersonal meanings as social relations is the nature of the knowledge claim put forward. In this case, the student is offering some information that he construes as relatively uncommon sense—although not as specialized as the knowledge taught by the teacher. The fact that the student is able to propose this relatively uncommon sense knowledge can be interpreted once again as reflecting weaker social relations (SR–). In other words, the legitimacy of the knowledge claim is not given by the social position of the knower proposing it (as it is the student who proposes it), but rather by the relatively uncommon sense nature of the knowledge offered.

4.3. Identifying specialization codes in classroom discourse

The discursive analysis of learning activities and the interpretation of meaning patterns in terms of varying degrees of epistemic relations and social relations has been designed to reveal the underlying specialization codes in an instance of classroom discourse. As shown by the analysis of learning activities, there can be different combinations of varying degrees of epistemic relations and social relations. Each possible combination constitutes a particular

specialization code. In order to exemplify the diverse possibilities, the three learning activities analyzed, that can be termed *Mardukas* (Table 1), *morals* (Table 2) and *Socrates* (Table 3 and 4), are positioned in the specialization plane in Figure 4.

FIGURE 4
Positioning of learning activities in the specialization plane



The specialization plane allows us to graphically position the learning activities analyzed in one of the regions determined by the interplay of epistemic relations and social relations—and thus to show differences in degrees within each quadrant (i.e. each point in the quadrant is significant). This contributes to showing the differences between the learning activities "morals" and "Socrates" in terms of their varying strengths of epistemic relations, even though when both are placed in the positive side of the plane. In a more extensive analysis of classroom discourse, the plane would serve to show the dominant specialization code as well as the possible code shifting that may occur in that particular knowledge practice.

The analysis of specialization codes contributes to revealing *what kind of knowledge* and *what kind of knower* are legitimate in a particular knowledge practice, or, in this case, in a particular teaching practice. In the examples studied, the analysis shows that the classroom discourse analyzed evidenced an orientation towards a *knowledge code* (ER+, SR–). This means

that in the particular learning activities analyzed what counted as *legitimate knowledge* was specialized knowledge (or semi-specialized) knowledge from the field of Philosophy; the *legitimate knower* was one in possession of that specialized knowledge. This description contributes to enhance our understanding of teaching practices and the principles that shape them. In addition, such a description allows for a principled comparison between different kinds of teaching practice in future studies.

5. Discussion

The model of analysis presented in this paper contributes to the empirical study of knowledge and its underlying principles, with special reference to teaching practices in the classroom. The model provides the basis for a theoretically informed study of teaching practices, with a focus on the knowledge transmitted and the positioning of teacher and student in that interactive process. The exploration of specialization codes in classroom practices enables a understanding of what counts as the proper knowledge within a particular classroom and also what counts as the proper knower in that practice.

The model of analysis combines discourse analysis from the perspective of SFL with sociological interpretation from the framework provided by LCT. In this paper these two theories provide the external (SFL) and internal (LCT) languages of description, respectively (Bernstein, 2000). The interplay between discourse analysis in SFL and specialization codes in LCT has been productive in terms of proposing more systematic descriptions of teaching practices and its principles. On the one hand, the model goes beyond the study of patterns in language, interpreting those patterns from a more abstract sociological point of view. On the other, the model connects abstract sociological concepts with possible realizations in empirical data, providing a ground for the sociological interpretation. Along with the potential opened up for the study of the underlying principles of teaching practices, the model proposed also opens up the space for comparisons between different teaching practices that can be examined within the same frame—and possible action research projects reconfiguring teaching practices based on these insights.

6. Bibliographic references

Anderson, K., 2009: "Applying positioning theory to the analysis of classroom interactions: Mediating micro-identities, macro-kinds, and ideologies of knowing", *Linguistics and Education* 20 (4), 291-310.

Bannink, A. & J. Van Dam, 2006: "A dynamic discourse approach to classroom research", *Linguistics and Education* 17 (3), 283-301.

Bernstein, B., 1975: *Class, Codes and Control, Volume III: Towards a Theory of Educational Transmission*, London: Routledge.
Bernstein, B., 1990: *Class, Codes and Control, Volume IV: The Structuring of Pedagogic Discourse*, London: Routledge.
Bernstein, B., 2000: *Pedagogy, Symbolic Control and Identity: Theory, Research, Critique*, Lanham, Md.: Rowman & Littlefield.

Candela, A., 1998: "Students' power in classroom discourse", *Linguistics and Education* 10 (2), 139-163.

Christie, F., 2002: *Classroom Discourse Analysis. A Functional Perspective*, London: Continuum.
Christie, F., 2016: "Secondary school English literary studies: Cultivating a knower code" in K. Maton, S. Hood & S. Shay (eds.): *Knowledge-building: Educational studies in Legitimation Code Theory*, London: Routledge.

Christie, F. & J. R. Martin (eds.), 2007: *Language, Knowledge and Pedagogy. Functional Linguistic and Sociological Perspectives*, London: Continuum.

Christie, F. & K. Maton (eds.), 2011: *Disciplinarity: Functional Linguistic and Sociological Perspectives*, London: Continuum.

Davies, J., 2004: "'We know what we're talking about, don't we?'. An examination of girls' classroom-based learning", *Linguistics and Education* 15 (3), 199-216.

Freire, P., 1970: *Pedagogy of the Oppressed*, New York: The Seabury Press.
Freire, P., 1998, *Pedagogía del Oprimido*, México: Siglo XXI.

Giroux, H., 2004: "Critical pedagogy and the postmodern/modern divide: Towards a pedagogy of democratization", *Teacher Education Quarterly* (Winter), 31-47.

Halliday, M. A. K., 1985, *An introduction to Functional Grammar*, London: Edward Arnold.

Hood, S., 2007: "Arguing in and across disciplinary boundaries: Legitimising strategies in applied linguistics and cultural studies" in A. McCabe, M. O'Donnell & R. Whittaker (eds.): *Advances in Language and Education*, London: Continuum, 185-200.
Hood, S., 2010: *Appraising Research: Evaluation in Academic Writing*, London: Palgrave Macmillan.
Hood, S., 2011: "Writing discipline: Comparing inscriptions of knowledge and knowers in academic writing" in F. Christie & K. Maton (eds.): *Disciplinarity: Functional Linguistic and Sociological Perspectives*, London: Continuum, 106-128.

Hood, S., 2012: "Voice and stance as appraisal: Persuasing and positioning in research writing across intellectual fields" in K. Hyland & C. Sancho Guinda (eds.): *Stance and Voice in Written Academic Genres*, Basingstoke: Palgrave Macmillan, 51-68.

Macnaught, L. et al., 2013: "Jointly constructing semantic waves: implications for teacher training", *Linguistics and Education* 24 (1), 50-63.

Margutti, P., 2011: "Teachers' reproaches and managing discipline in the classroom: When teachers tell students what they do 'wrong'", *Linguistics and Education* 22 (4), 310-329.

Martin, J. R., 1992: *English Text. System and structure*, Amsterdam: John Benjamins Publishing Company.
Martin, J. R., 1993a: "Technology, Bureaucracy and Schooling: Discursive Resources and Control", *Cultural Dynamics* 6, 84, 84-130.
Martin, J. R., 1993b: "Technicality and Abstraction: Language for the Creation of Specialized Texts" in M. A. K. Halliday & J. R. Martin (eds.): *Writing Science: Literacy and Discursive Power*, London: Falmer Press, 203-220.
Martin, J. R., 2007: "Construing knowledge: a functional linguistic perspective" in F. Christie & J. R. Martin (eds.): *Language, Knowledge and Pedagogy. Functional Linguistics and Sociological Perspectives*, London: Continuum, 34-65.
Martin, J. R., 2013: "Embedded literacy: Knowledge as meaning", *Linguistics and Education* 24, 1, 23-37.

Martin, J. R., K. Maton & E. Matruglio, 2010: "Historical cosmologies: Epistemology and axiology in Australian secondary school history discourse", *Revista Signos* 43, 74, 433-463.

Martin, J. R. & D. Rose, 2008: *Genre Relations. Mapping culture*, London: Equinox.

Martin, J. R. & P. White, 2005: *The Language of Evaluation*, New York: Palgrave.

Martínez, R. A., 2013: "Reading the world in Spanglish: Hybrid language practices and ideological contestation in a sixth-grade English language arts classroom", *Linguistics and Education* 24, 3, 276-288.

Maton, K., 2007: "Knowledge-knower structures in intellectual and educational fields" in F. Christie & J. R. Martin (eds.): *Language, Knowledge and Pedagogy. Functional Linguistic and Sociological Perspectives*, London: Continuum, 87-108.
Maton, K., 2010: "Analysing knowledge claims and practices: Languages of legitimation" in K. Maton & R. Moore (eds.): *Social Realism, Knowledge and the Sociology of Education. Coalitions of the Mind*, London: Continuum, 35-59.

Maton, K., 2014: *Knowledge and Knowers: Towards a realist sociology of education*, London: Routledge.

Maton, K. & R. T-H Chen, 2016: "LCT in qualitative research: Creating a translation device for studying constructivist pedagogy" in K. Maton, S. Hood & S. Shay (eds.): *Knowledge-building: Educational studies in Legitimation Code Theory*, London: Routledge, 27-48.

Maton, K. & Y. Doran, 2017: "SFL and code theory" in T. Bartlett & G. O'Grady (eds.): *The Routledge Handbook of Systemic Functional Linguistics*, London: Routledge.

Maton, K., J. R. Martin & E. Matruglio, 2016: "LCT and systemic functional linguistics: Enacting complementary theories for explanatory power" in K. Maton, S. Hood & S. Shay (eds.): *Knowledge-building: Educational studies in Legitimation Code Theory*, London: Routledge, 93-114.

Matruglio, E., K. Maton & J. R. Martin: 2013: "Time travel: The role of temporality in enabling semantic waves in secondary school teaching", *Linguistics and Education* 24, 1, 38-49.

Meidell Sigsgaard, A.-V., 2012: "Who has the knowledge if not the primary knower? Using exchange structure analysis to cast light on particular pedagogic practices in teaching Danish as a Second Language and History" in J. Knox (ed.): *To Boldly Proceed: Papers from the 39th International Systemic Functional Congress*, Sydney: ISFC, 9-14 [http://www.isfla.org/Systemics/Conferences/ISFC39_2012_proceedings.pdf, consulted on August 28th, 2017].

Poynton, C., 1985: *Language and Gender: Making the difference*, Geelong, Vic.: Deaking University Press.

Rose, D., 2010: *Reading to Learn. Teacher resources books*, Sydney: Reading to Learn.

Rose, D. & J. R. Martin, 2012: *Learning to Write, Reading to Learn. Genre, Knowledge and Pedagogy in the Sydney School*, London: Equinox.

Salerno, A. & A. Kibler, 2014: "Understanding how pre-service English teachers adopt stance toward academic teaching inquiry", *Linguistics and Education* 28, 92-106.

Smith, B., 2014: "Metacultural positioning in language socialization: Inhabiting authority in informal teaching among Peruvian Aymara siblings", *Linguistics and Education* 25, 108-118.

Shepherd, Michael, 2014: "The discursive construction of knowledge and equity in classroom interaction", *Linguistics and Education* 28, 79-91.

Tainio, L., 2011: "Gendered address terms in reproach sequences in classroom interaction", *Linguistics and Education* 22 (4), 330-347.

Vidal-Lizama, M., 2014: *Theorising popular education as a knowledge practice: The case of Chile*. PhD Dissertation, University of Technology, Sydney.

Wells, G., 1993: "Reevaluating the IRF sequence: A proposal for the articulation of theories of activity and discourse for the analysis of teaching and learning in the classroom", *Linguistics and Education* 5 (1), 1-37.