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Understanding and communication in expositive discourse: an analysis of the strategies used by expert and preservice teachers.

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Much of the knowledge acquired during our lives comes from oral and written communication. [1] Therefore, little justification is required for studying the conditions under which we can construct, with the words of others, a richer and more complex representation of the world. In fact, many previous works have attempted to identify such conditions, particularly regarding written instructional texts. Schematically, work devoted to the analysis and revision of written texts has underscored the importance of resources that serve to:

- (a) Clarify the coherence between the ideas of the text.
- (b) Facilitate integration between the information presented in the text and the knowledge already held by the readers.
- (c) Elicit the engagement of the readers in the task.

According to most models (van Dijk & Kintsch, 1983; Kintsch, 1988; Britton & Graesser, 1996), these resources facilitate the performance of the core processes involved in the interpretation of a text.

Essentially, these processes consist in:

- (a) Encoding, from the meaning of the words, the network of propositions that must be interconnected linearly (microstructure) and globally (macrostructure), the textbase.
- (b) Integrating the information gained from the text with prior knowledge stored in long-term memory, hence elaborating a situation model.
- (c) Planning a reading goal and regulating the processes involved in both (a) and (b).

Here, based on this framework, we attempt to analyse another type of text of equal or even greater importance: teachers' explanations (Edwards & Westgate, 1987; Cazden, 1988; Leinhardt, 1993). This type of text has received considerable attention (Renninger, 1998) but – and we believe that the novelty of our work lies in this – has not been explicitly studied from the perspective of models based on understanding such as those just mentioned (see, for example, Chilcoat, 1989).

The present work seeks to design a system for the analysis of oral explanations, which should allow us to establish theoretically relevant differences between expert and preservice teachers in secondary education.

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The paper first defines the theoretical framework that guided our work. Secondly, an analytical system is proposed and, finally, illustrations of the benefits of this system in understanding the differences between expert and preservice teachers are offered.

1. A framework for the study of oral explanations

As reported above, the aim of this work is to study the explanations or expositive discourse of teachers, taking into account theories of understanding. Much of the evidence involved in such theories has been obtained by studying the behavior of readers confronted with written texts; hence our interest in reviewing the data gathered in the field before formulating the framework in which our analytical system is to be grounded.

1.1. *Coherence, knowledge and engagement. Critical variables in the processing of texts*

The literature has emphasized three types of variables that, as will be detailed below, are intimately related with one another: coherence, text/knowledge integration and learner engagement.

1.1.1. *Coherence*

Regarding coherence, in the literature two types of very common problems have been identified:

(1) Texts may be opaque as regards how ideas are interrelated.

(2) Texts sometimes assume that readers have knowledge which in fact they do not possess and yet which is crucial if coherence among the different ideas is to be upheld.

Accordingly, understanding improves considerably when the relationships (local and global) among ideas are underlined and the knowledge necessary for such relationships to be created is explained. Two lines of research serve to illustrate this. The first, developed by Bruce Britton, has shown that understanding improves when texts are rewritten and analyzed according to the following three principles:

(a) using the same words to refer to the concepts that serve as links between two propositions;

(b) presenting the information in such a way that already known concepts are presented before new information is introduced, and

(c) avoiding the reader having to make inferences in order to connect two ideas.

The work of Isabel Beck is also paradigmatic in this respect. In textbooks from primary school (4th and 5th years) about geography and science, Beck et al. (1989) found evidence of both these problems. Thus, (1) the texts appeared to be a mere collection of facts, with no order or structure able to interrelate them, and (2) the texts assumed knowledge that the readers did not have (McKeown, 1990). To remedy these problems, those authors proposed a causal/explanatory style in which the causal and motivational nature of the phenomena being studied was underscored. According to Beck et al., (1991), this style helps students to remember events better, that is, more causally

It is striking that although the conclusions of both lines of enquiry are similar there is an important difference between them. Whereas Britton focuses on local coherence, and hence on the resources that facilitate the connection between contiguous ideas or propositions, Beck focuses on global coherence, which allows the text to be understood as an explanation of a given phenomenon.

1.1.2. *Text/prior knowledge integration*

Regarding this issue, which is the nexus of the whole process of understanding, the evidence indicates that all or some (see below) of the following three conditions should be met:

(a) The most obvious is that readers should have the necessary knowledge.

(b) More subtly, readers should be able to find keys in the text that will allow them to activate such knowledge. In other words, the text must be explicit and coherent.

(c) Finally, readers must become actively involved, or engaged, by self-questioning and self-explaining, in creating that integration.

The evidence suggests that the text is a complex interaction among these three variables.

(1) On one hand, as demonstrated by McKeown et al., (1992), when the readers do have prior knowledge but the text, owing to its lack of coherence

does not arouse this, text/knowledge integration does not occur.

(2) There is also evidence to suggest that if the text is not coherent but readers do have knowledge of the issue in hand, text/knowledge integration can occur, very probably because readers are obliged to supply the information missing from the text from their own knowledge (McNamara et al., 1996; McNamara & Kintsch, 1996). Running against intuition, these latter works show that a coherent text may in fact be counterproductive for readers with good prior knowledge of the topic in hand precisely because it may give the impression that no specially active participation is required of them. In this case, in their minds readers construct a coherent textual representation (textbase) but not a situation model.

(3) Finally, if readers have prior knowledge, if the text is coherent and if challenges inviting the readers to become engaged in the task are posed (either in the form of problem-solving tasks that they must solve or self-explanations that they must give) integration is facilitated (Kintsch & Kintsch, 1995).

1.1.3. *Learner engagement*

In view of the above, a decisive variable for text/knowledge integration to occur is that readers must become engaged in the reading process. According to most authors, this engagement depends on readers assuming the goals of the activity as their own and participating actively in regulating its course and evaluating the achievements obtained (Bereiter & Scardamalia, 1989; Newman et al., 1989; Rogoff, 1990; Leinhart, 1993; Pontecorvo, 1994; Greeno et al., 1996). For many subjects, however, these are very complex tasks (Baker and Brown, 1984).

Returning to the aims of the present work, our goal is to study how these different issues are resolved in an oral explanation and to identify the resources created by teachers of accredited professional competence.

1.2. *The given vs. the new contract: a scheme for the analysis*

With this goal, we propose a model of analysis in which it is understood that an oral explanation is

a communicative event that follows the rules of the so-called *Given vs. New Contract* (Haviland & Clark, 1974; Clark & Haviland, 1977; Grice, 1989). As discussed below, this model allows us to integrate the variables we have just reviewed – shared prior knowledge, shared goals, local coherence, global coherence, supervision and assessment of the process – in a coherent scheme.

According to this engagement at the start of the discourse participants are “obliged” to specify which knowledge can be taken as already known and will not require direct comment. This is *the given*: it can be taken as assumed and comprises the base or background on which the communication is to be based. It should be stressed that the interlocutors may share a huge volume of knowledge and that is why it is necessary to select as *the given* the kind of knowledge that is really necessary as a starting point in the communication. Also, again referring to the set of shared ideas, it would be necessary to take into account the need or interest (Renninger, 1993) in reaching a deeper or more complete understanding that will motivate and give meaning to the explanation. That is, the need to share a goal should be aroused.

Having defined *the given*, the process continues with the stating of ideas considered to be informative and germane to the line of enquiry. This is *the new*. Stating *the new* should be done in such a way that it will help the interlocutor to interconnect the different ideas expressed in a linear and global fashion.

Finally, the participants are also committed to assessing the course of this complex process, and hence to confirming (a) whether the ideas being proposed (*the new*) are really perceived as being relevant or appropriate to the initial overall definition and (b) whether those ideas are in fact incorporated by the interlocutor. In the light of the above, it is clear that this latter aspect depends on whether resources that lead participants to review (question) the contents expounded are used (see all the above about text/knowledge integration).

Once this integration has been confirmed, what was or proved to be new becomes part of *the given* and the process can continue, with more new information being transmitted. If, by contrast, all or

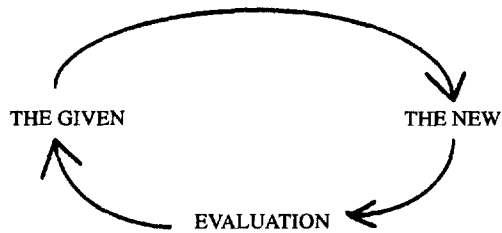


Fig. 1. Relationship between the three dimensions of discourse.

some of these aspects cannot be confirmed, the interlocutors must search for ways to redo the process by delimiting what can be assumed with greater clarity, selecting relevant ideas better or making their formulation more articulate or coherent. This can be seen in the scheme given in Fig. 1.

In ordinary face-to-face conversation, in which there are many eloquent pointers that facilitate understanding, this contract does not find undue obstacles. A gesture or a question is all that is required to show that something is not being understood or is not relevant.

But what happens when the communicative situation approaches a monologue, which is what occurs in a written text or a class? One could speculate that since in both these cases participation on the part of the receiver is less perceptible, it would be more difficult for the given/new contract to be satisfied: hence the interest in studying this type of educational experience, half-way between conversation and text.

Finally it should be stressed that although our focus of analysis is study of the rhetorical or discursive resources that facilitate the connection of ideas with one another (coherence) and with prior knowledge, many such resources also have a motivational and emotional facet that, although it will not be studied directly, can at least be glimpsed. Suffice it to say that to the extent that the vision of the listener is required and accepted (for example, on creating the given or on assessing the process) his/her role as an active and necessary member in the processes of learning and teaching will be reinforced, with all the emotional and motivational consequences deriving from this. (Borkowski et al., 1990; Greeno et al., 1996).

In any case, the model we have presented allows us to anticipate certain critical aspects that are equally relevant for understanding and for the personal development of students. These aspects are:

(1) to what extent it is possible to make readers participate actively in delimiting what can be assumed to be known,

(2) to what extent it is possible to guarantee that readers have conceived the need to broaden their knowledge or gain deeper insight into the issue in hand,

(3) to what extent readers are allowed to integrate ideas with one another,

(4) to what extent readers can reconsider new ideas from the perspective of what they already know.

Despite this, we stress that even assuming that these issues do have emotional resonance, our interest lies in analysing their cognitive dimension.

With this type of analysis we compared the verbal discourse of teachers with two extreme levels of competence: preservice teachers and expert teachers with good reputations as such. Additionally, we decided to study the type of discourse delivered in Secondary Education because we felt that it represented a communicative situation that is intermediate between the manifestly conversational and the monologue.

2. Data collection and preparation

To create the system of analysis, we analysed the verbal discourse of 9 in-service secondary education teachers with more than 3 but less than 10 years experience and 9 student teachers. Two lessons given by each of the 18 teachers were video-recorded and their contents transcribed and analysed. All the lessons, 36, shared two requisites. First, they had to introduce a thematic unit; that is, in each class a new topic was introduced. Secondly, the contents had to be declarative; that is during the course of the lesson the teacher never attempted to teach any procedures at all. For instance one of the lessons dealt with the features of Multinational Companies, another one was about the Middle Ages, and another presented the Workers' Movement. In these lessons the task of the teacher was to

explain in an expository way a whole series of contents and the pupils (20 to 30 aged between 15 and 16 years old) had to listen while trying to understand the information they were receiving.

Unfortunately, three of the lessons (two lessons of in-service teachers and one lesson of student teachers) had to be rejected because they did not meet the first criterion and another one (one lesson of student teachers) was rejected because it did not fulfill the second one. All subjects participating in the work did so voluntarily.

The 32 lessons were analysed by all the members of the research team using the following procedure. First, the most representative episodes of each lesson were isolated in order to discriminate the given, the new and the episodes dedicated to evaluation, as well as to analyse *grosso modo* the resources employed. Next, four lessons were selected (two of which had been given by expert teachers – in our opinion the best ones of the sample – and two of them given by preservice teachers) and studied in depth. Finally, these four lessons were set against one another to facilitate the identification of the strategies used by the teachers.

The two expert discourses were chosen attending to the following criteria: (1) they were ranked as the best by the research team as regards their understandability; (2) they had been addressed by teachers well appraised by their fellows and (informally) by the students; (3) this evaluation was confirmed by the school counsellor of the institution. The discourses of the preservice teachers were chosen randomly from among the 16 available.

Finally, the analysis was applied to all the lessons to confirm its validity as well as the “representativity” of the discourses chosen. From this analysis, we observed that all the explanations given by teachers with experience used the same strategies as those used in the two discourses selected (hereafter, “expert discourses”), although strategies for the latter were more systematically exploited. With respect to the discourses of the preservice teachers, we observed that those selected were completely representative of the whole set.

In the light of this, we believe that we were comparing especially good examples of discourse with others that were not as good. Accordingly, the results obtained on analysing the four lessons

(see below), can be considered to describe two ends of a continuum.

The decisions related to the analysis of these four lessons were always adopted by consensus and no appreciable differences were found by the different judges as regards that analysis. More specifically, to estimate the degree of agreement one of the lessons was analysed 12 months later. To determine reliability, two measurements were made. These corresponded to the variables presenting the greatest controversy in the analyses. One of them was the number of ideas and the level of importance of these; in this, a correlation coefficient of 0.87 between the scores of both analyses was obtained. The second one was the overall rhetoric coefficient, a measurement that relates the number of ideas to the supports received by those ideas; a correlation of 0.94 was obtained in this measurement.

We now offer a scheme showing the main steps of the procedure followed in the study. It should be noted that there are two clearly differentiated parts; (1) elaboration of the system of analysis and (2) a comparative description between expert and preservice teachers (Fig. 2).

It should be stressed that the lessons chosen were of different durations. This is why parameters independent of amplitude or extent should be used to compare them. Finally, it should also be noted that all the lessons dealt with the introduction of a new topic within the social sciences. Regarding this point, it should be mentioned that to a large extent the discourses given depend on the type of content to be developed (see Leinhardt, 1993) and that is why our analysis was limited to this specific content.

3. The system of analysis; the given, the new and evaluation

The categories of the system of analysis are grouped around the three dimensions distinguished above: the given, the new (and within this dimension the three above-mentioned levels: micro-, macro- and super-structure) and evaluation. In a later analysis, we constructed different measurements from those categories. These measurements are guided theoretically in such a way that they

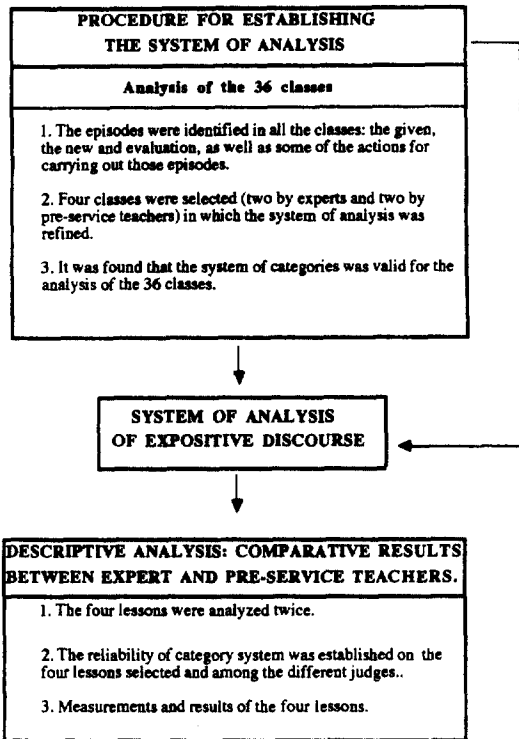


Fig. 2. Main points of the study procedure.

attempt to reflect the critical aspects upon which the understanding of a text/discourse seems to depend. To help in understanding this, we shall first offer the categories and then the measurements used and their meaning. (Table 4 shows the connections between the analytical categories and the measurements based on them).

3.1. Categories of the Given

From an analysis of the transcriptions we were able to distinguish six categories which served to create a common starting point. Three of them, evocation, investigation and reflection, refer to the updating of relevant knowledge and are grouped under the heading of **CONTEXT**. The other three have to do, in one way or another, with the involvement of the pupils in a common task: giving meaning to what is being said and explicitly posing objectives and roles; these are grouped under **COMPROMISE**.

3.1.1. Categories of the "The Given" dimension

3.1.1.1. Context

Evocation (Ev). Evocation refers to the utterances of the teachers in which knowledge assumed to be known by the pupils is referred to (eg., As you saw the other day in class... As you must have often seen on television ...). Evocation may refer to knowledge about extracurricular life or to other academic activities, a distinction which, however, will not be taken into account in the analyses to be made below.

Investigation (In): Investigation refers to the utterances of the teachers which explicitly explore ideas already known by the pupils about the topic to be dealt with (eg., What do you know about ...?)

Reflection (R). Reflection refers to those utterances in which the teacher stresses the assumption that s/he is making about what the pupils are thinking (e.g., Surely many of you will be so accustomed to seeing reproductions of La Gioconda that you can hardly imagine that the picture is so valuable ...).

3.1.1.2. Compromise

Meaning (M): Meaning refers to the utterances by which the teacher justifies the value and/or functionality of what is going to be dealt with (e.g., This is important for understanding ...). In this case, a distinction is also made between an academic meaning and an extracurricular one, although such a distinction will not be taken into account

Objective (O): The objective refers to the utterances of the teacher indicating his/her aims with the lesson s/he is attempting to explain (e.g., By the end of this lesson, I would like you to be able to ...)

Roles (R): The roles refers to the utterances through which the teacher attempts to fix roles, attitudes, mutual compromises that s/he judges necessary for a good development of the lesson (e.g., You must tell me during the class ...).

Naturally, the creation of a common starting point is something different from using each of these resources. The given is not merely a sum of skills, nor does it require that all these should occur at the same time. One should therefore not confuse this list of strategies with what is the given itself: the assurance of sharing relevant knowledge.

3.2. *Categories of the New*

As mentioned above, the dimension of the new refers to the ordered development (micro, macro and super) of what is new, which is what is to be learned. With respect to this second dimension, ideas, supports and links are differentiated as follows:

Ideas are basic units of meaning. They have a full and complete significance that admits judgments concerning veracity; an idea may be true or false. The semantic-linguistic amplitude of an IDEA corresponds to the notion of a propositional scheme (Van Dijk & Kintsch, 1983). Each idea is enumerated according to its level of importance with respect to the text. Level I ideas correspond to those of greatest importance while level II ideas are those that elaborate or complete what has been expressed in level I ideas and are, therefore, considered to be elaborations of these. Such level II ideas may give rise to later elaborations and hence to level III ideas and so on. The criterion for establishing the hierarchical relationship between ideas is argumentative repetition (Kintsch, 1974), such that if an idea (a) takes an element (argument) previously presented in another earlier idea (b), (a) is understood to be an elaboration of (b). For example:

Social structure was basically based on the family (Level I IDEA)

This family, in turn, was linked by tribes (Elaboration of Idea I and hence level II idea).

The supports are ideas that lack informative value because they are limited to repeating contents that have already been expressed; they are either literal repetitions of previously expressed ideas or they propose a simple example that supports those ideas. A distinction is therefore made between ideas in the strict sense (expressing new information) and support for ideas (examples, repetitions, etc).

Finally we consider links, which are connectors that serve to expressly articulate the discourse at its different levels (micro, macro and super).

3.2.1. *Categories of "The New" Dimension*

3.2.1.1. *Ideas and supports*

Ideas (I). These are basic units of meaning that comprise the content of the lesson. As has been

mentioned earlier, they form the minimum units of meaning, which may be true or false. When an Idea broadens the meaning of another already presented Idea, linking it with some of its arguments, we say that it is an Elaboration of that Idea. It is situated, by definition, on a lower level with respect to it, giving rise to a hierarchical structure.

Supports (S): These refer to the manifestations of the teacher that enrich ideas, although they do not add new information. Within supports we differentiate the following issues: (1) telling the idea with other words (ToW); (2) repeating the expression of an idea literally (R), or (3) giving a simple example (Ex). These subcategories (ToW, R and Ex) into which we group the supports will not be taken into account in this study. Additionally, supports do not imply a leap into a higher level within the hierarchy since they do not introduce new contents.

3.2.1.2. *Rhetorical links*

Index (I): Utterances by the teacher referring to the contents to be developed during the class, in which both the identification of the topic and enunciation of its components are present (e.g. In today's lesson we are going to look at the following aspects ...)

Signal of continuity (Sct): These are signals that indicate that the teacher is going to speak about the same topic, maintaining a thematic continuity (e.g., Let us go on to ...)

Signal of topic (St). This refers to utterances that serve to signal that a new topic is about to be addressed (e.g., Another aspect ...).

Identification of topic (It): This refers to manifestations that not only warn us about the introduction of a new topic but also fully identify it (e.g.: Another aspect to be dealt with refers to the economy of ..., I shall now explain the first characteristic, which refers to the work of artisans).

Return to index (Ri): Return to index corresponds to the utterances that serve to return to the original index and place the discourse in relation to it (e.g., Another topic is one that I mentioned at the beginning of the class ...)

Recapitulation: (Rc): This type of manifestation serves to underline the final meaning of what is being explained. Recapitulations are usually introduced by phrases such as: In sum, or And so ... etc).

Recapitulations can also be considered to act as supports since they again refer to an idea or ideas already presented; however, to the extent that they serve to articulate the discourse, here they are considered as links.

Regrouping signal (Rs): These signals indicate that the explanation of a category of contents has finished and that a new one is about to be introduced (e.g., We have seen all the characteristics of the issue so let us now look at some of its manifestations).

Signal of superstructure (Sorg): This refers to indications that reflect the overall organization of what has been dealt with together with the type of relations that will articulate the different ideas: cause, problem/solution, description, comparison, sequence.

3.3. Categories of evaluation

Evaluation may be understood as a means to ensure that the ideas presented are being assimilated by the listeners. It can, therefore, be thought of as a link between the given and the new. Evaluation in the strict sense of the term involves a specific question or a set of questions through which it is possible to appreciate whether the pupils have understood what has been said or not.

3.3.1. Categories of the “Evaluation” dimension

Problem-solving task: This involves tasks that pose students a new problem to be solved by referring to what has been explained previously. According to the evidence discussed in the introduction, this type of task obliges subjects to review contents and integrate them into their prior knowledge. For example, in one of the explanations that we analysed the teacher explains the most important characteristics of multinational companies. One such characteristic is that these companies set up business in many countries at the same time and that they manufacture one component of the final product in each country. Once this information has been presented, the teacher asks the students to imagine how a given multinational company would function. Specifically, the question asked was “How would a company such as Phillips, which makes televisions, computers, video recorders, etc., func-

tion?” In this case, we say that the teacher is posing a problem-solving task.

Literal questions: These are questions or tasks that require the subjects to operate with the information presented in the text. It is still necessary to distinguish whether literal questions aim at core issues (macrostructure) or details. However, this distinction will not be necessary since we indicate which ideas are assessed in the analysis below (see tables). In any case, this type of task reinforces a coherent representation. Following the same example as above, we say that the teacher has formulated a literal question when the students are asked, for example, to “Name one of the most important characteristics of multinational companies”.

In Appendix A, we offer some examples of the analysis of discourse sequences’.

4. Measures

4.1. The Given

To evaluate the quality of the given, we created an indicator: the context episode. This indicator is an overall measurement which attempts to reflect to what extent the aim of creating a common starting point has been achieved before going on to develop the ideas. To do so, we compiled the following scale:

Zero: When nothing of this episode has been carried out.

One: Indicates that previous contents have been evoked, even though they lack connection or/and confirmation

Two: When previous contents related to new ideas have been evoked but not all of them are shared or confirmed with the students through investigation

Three: This reflects the complete context episode. Accordingly, apart from selecting previous contents close to the new ones, there is full confirmation that such contents are really present in the minds of the pupils through direct investigation.

It should be stressed again that the creation of context is not achieved merely through an accumulation of evocations, meanings or investigations; rather, it is necessary that these evocations,

meanings and investigations should be arranged strategically for a purpose, i.e., to select and confirm acquired knowledge in order to connect this with other new areas of understanding.

We also noticed the existence of the compromise component of the context episode; that is, objective, roles and meaning. However, with the exception of the meaning category we were barely able to observe the presence of these actions.

4.2. *The New*

The measures to be used were chosen to highlight the following aspects linked to the three organizational levels of the discourse.

4.2.1. *Microstructure*

Regarding the microstructural organization of the discourse, we focused our interest on two issues: (1) to what extent the linear relationship among ideas is preserved (topical continuity) and (2) the volume or density of new information that the discourse offers (overall rhetoric coefficient).

As indicated above, the topical continuity between ideas is guaranteed by the repetition of arguments between two close ideas or propositions. Accordingly, where continuity is not preserved we compute a thematic break. The number of breaks would, therefore, be an indicator of thematic discontinuity.

The rhetoric coefficient expresses the relationship between the number of ideas and the supports that these receive. The greater the support received by the ideas, the lower the semantic density or volume of new information of the discourse. Conversely, the fewer the supports the greater the density. In more precise terms, the coefficient is obtained by a very simple operation consisting in dividing the number of supports by the total number of ideas. It should be noted that the total number of ideas includes the same supports plus the ideas that convey the new information. The result of the quotient is multiplied by one hundred in order to operate with simpler numbers. In turn, this coefficient is estimated for each of the levels of importance of the text. The rhetoric coefficient is comparable to another indicator widely used in the psychology of text comprehension; that is, the num-

ber of new arguments per proposition (Kintsch, 1974).

Thus, the microstructural quality of the discourse will be a function of whether continuity is preserved among the different ideas and whether the volume of new information is reasonable.

4.2.2. *Macrostructure*

To evaluate macrostructural organizational quality, we were interested in evaluating to what extent the macropropositions become manifest. To discover this, we selected two measures: the presence of topical signals (IT and ST) and the use of recapitulation. A second aspect is the support to the overall ideas and for this we used the differential rhetoric coefficient.

The differential rhetoric coefficient is the rhetoric coefficient of each of the levels of importance. It is expected to become larger as the level of importance of the ideas increases.

4.2.3. *Superstructure*

Regarding superstructure, and hence the overall organization of ideas, our interest lay in detecting to what extent it is indicated expressly – signals of organization – and to what extent its relevance can be appreciated during the development of the discourse: return to index.

Signals of organization: These indicate the overall organization of the discourse and show which type of relationships exist among the ideas: cause/effect, means/ends, comparison, part/whole, etc.

Return to index: These are signals that allow one to situate the explanations of the teacher with respect to the initial index. They are therefore indicators of the superstructure of the discourse since on returning to the index of the lesson, a return is made to the overall organization.

4.3. *The evaluation*

With respect to the evaluations, first the number of evaluation episodes was identified. We understand by evaluation episode the time devoted to evaluating the contents explained. Each episode may contain more than one question and answer. However, in each case it is of interest to determine which ideas are evaluated and from which level. It

is well known that more than one question can be used to evaluate the same idea or that one question may evaluate more than one idea. Accordingly, with each question we identified which ideas were being referred to, also signalling the level of those ideas. Thus, what we wish to reflect is: (1) the number of evaluation episodes, distinguishing the number of questions of such episodes, (2) the ideas and levels which those questions refer to and (3) the type of task posed: problem solving task vs. literal questions

It should be noted that evaluation is what guarantees that such ideas will become incorporated as something shared in the process of discourse exposition. Hence our interest in studying the phenomenon.

4.4. Prototypical sequence

Finally, and as in the case of the given, we feel it necessary to stress that suitable structuring is not produced by a simple accumulation of characteristics but rather that it is necessary to find a relationship among such characteristics; this relationship is given by the last measure, the prototypic sequence, which predominates in the discourse of expert and novice teachers. (Fig. 3).

5. Results and discussion

We found very important yet predictable differences in the three above-mentioned dimensions among the two groups of teachers.

	Analytical categories.	Measurements	
The Given.	CONTEXT. Evocation. Investigation. Reflection.	The context episode indicator (Scale 0 to 3)	
	COMPROMISE. Meaning. Objetives. Roles.		
The New.	IDEAS. Ideas. Elaborations	MICROSTRUCTURE. Topical continuity. Overall rhetoric coefficient.	
	SUPPORTS. Telling the idea with other words. Repeating the idea. Example. Recapitulation.		

	RHETORICAL LINKS. Signal of continuity. Identification of topic. Recapitulation. Signal of topic.		MACROSTRUCTURE. Presence of topic signals Recapitulations. Differential rhetoric coefficient.
	Signal of superstructure. Index. Return to index. Regrouping signal.	SUPERSTRUCTURE. Signals of organization. Return to index.	
The evaluation.	EVALUATION. Questions. Tasks of Evaluation	n° of evaluation episodes ideas and levels of questioning problem solving task and literal questions	
Prototypic sequence.			

Fig. 3. Connections between the analytical categories and measurements.

Table 1

Context episode: The quality of the context episode is an overall measurement which attempts to reflect to what extent the aim of creating a common starting point is achieved

Teacher	Context episode
Expert I	3
Expert II	3
Preservice I	1
Preservice II	0

5.1. *The Given*

5.1.1. *Context episode*

In Table 1, referring to the quality of the context episode, it can be seen that the expert discourses create a complete cognitive context, as indicated by the scoring of three of the measures scales; this, however, is not the case with the novice discourses. This is not surprising since the experts were chosen precisely because they were highly understandable.

In more interpretative terms, these findings show that the expert teachers evoked contents already known by the pupils that were in turn confirmed by direct investigation. By contrast, the novice teachers displayed few signs of such activity. Only one of them evoked some contents but did not manage to establish the necessary relationship with “the new” and there was no confirmation that the contents were shared. Thus, the experts use a greater number of strategies of a diverse nature than the pre-service teachers and, above all, they have them available in a strategic fashion. Even then, we should point out that neither the expert teachers nor the novices displayed many actions directed towards achieving a compromise with their pupils with respect to the task they have in common. Possibly, the fact that not many explicit manifestations about objectives or the type of relationship expected were found is because these questions were indicated through less explicit resources or they were simply remembered and assumed. Although this result is interesting, there is no scope here for going further into it.

5.2. *The New*

The second set of results refers to the exposition of new ideas. The results that we offer attempt to show the different aspects tied to the three levels of discourse organization: microstructure, macrostructure and superstructure.

5.2.1. *Microstructure*

The first indicator is break in topical continuity. As expected, we did not find the presence of such breaks in the expert discourses whereas they were, as also expected, present in those of the novices. In particular we identified four breaks in one of them and three in the other one.

The second indicator, Fig. 4, shows the results of the overall rhetoric coefficient of the discourse.

In the expert discourses, the repetitions, simple examples and recapitulations, i.e., supports, constituted 60% of the total ideas presented in the discourse whereas in the case of the novice discourses less than 30% of the total ideas of the discourse were supports.

These data suggest that the expert teachers are more reiterative and rhetorical in their discourse than the novice teachers, whose discourse is devoid of supports and reflects a high semantic density. Likewise, the expert teachers guarantee a central core to the discourse since thematic unity is preserved at all times. Both aspects—the presentation of a reasonable volume of information and the absence of thematic breaks—facilitate the interpretation of the discourse at microstructural level.

5.2.2. *Macrostructure*

Fig. 5 shows the rhetoric coefficient of the different levels of importance. It may be seen that in the case of the expert teachers this is considerably higher in levels I and II than in the following levels. By contrast, in the novice teachers this differentiation in the rhetoric coefficient by levels seems to be less marked.

This sensitivity to the levels of importance of the teachers' own discourse indicates that the use of supports and recapitulations by the experts is specially relevant for the macrostructure of the discourse whereas this does not happen in the novice teachers.

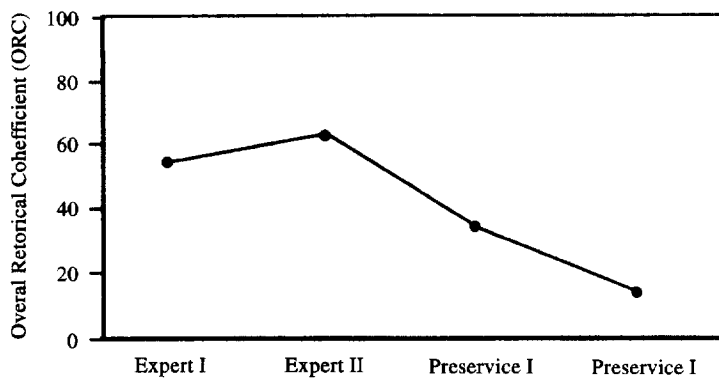


Fig. 4. Overall rhetoric coefficient: This is obtained by dividing the total number of supports (supports plus recapitulations) by the total number of ideas (supports plus ideas and elaborations), multiplied by 100.

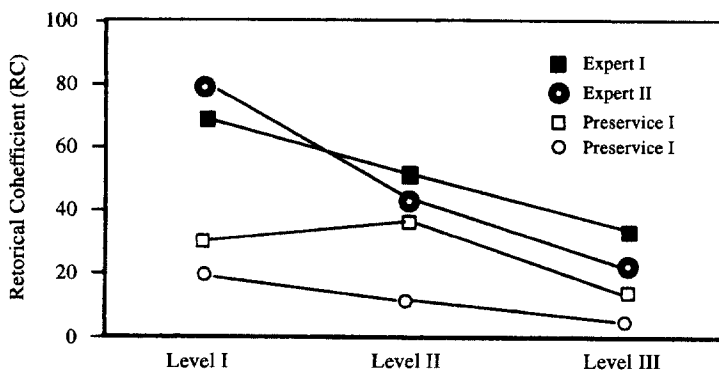


Fig. 5. Rhetoric coefficient by levels of importance of the discourse. (The rhetoric coefficient by levels is the same as the overall rhetoric coefficient but only takes into account the ideas and supports for each level).

On the one hand, it should be noted that the expert teachers are more rhetorical and convey less new information whereas the novice teachers tend to strip their discourse of supports and at the same time make it semantically denser. On the other hand, the rhetoric coefficient by levels shows that the expert teachers give greater support to higher level ideas.

Fig. 6 shows the number of links: signals of topic, of identifications of topic and of recapitulations, all this in relation to the total number of ideas in each of the discourses. It is evident that both types of explanation are clearly differentiated.

These differences are even more relevant if one explores the presence of these links in each of the levels of importance of the ideas. The same can be appreciated in Table 2.

In the expert teachers, most links are situated at level I while in the pre-service teachers the distribution is less selective. Note that for a correct interpretation of the table the absolute number of signals, recapitulations, may be misleading if the number of ideas formulated is not taken into account. We show this in Fig. 7.

It may be concluded that the expert teachers not only have more links but also that they use them more selectively. Thus, through signalling and identifications of topics they always indicate exactly what they are talking about or which topic they are addressing, announcing when a topic or subtopic can be considered finished with and when a new one is being started. Using recapitulations, they express the overall ideas directly. With all this, the

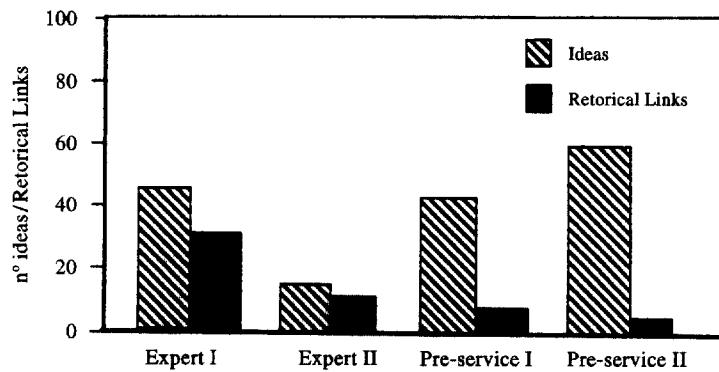


Fig. 6. Number of rhetorical links (signal of topic, identification of topic, and recapitulations) vs. ideas in the discourse.

Table 2

Theoretical macrostructural links. Identifications of Topic (IT), Signals of Topic (ST) and Recapitulations (REC) in relation to the levels of importance of the discourse

	Level I			Level II			Level III			Level IV		
	IT	ST	REC	IT	ST	REC	IT	ST	REC	IT	ST	REC
Expert I	9	8	9	0	1	2	0	0	3	0	0	0
Expert II	1	5	3	0	1	0	0	0	0	0	0	0
Preservice I	5	2	1	9	6	0	0	0	0	0	0	0
Preservice II	2	2	0	0	3	0	0	3	0	0	0	0

macrostructure of the discourse is highlighted for the receiver.

It is, therefore, very clear that the expert teachers are very careful to ensure that their discourses will be coherent (locally and overall). In face-to-face conversation, in which ideas and their development are created jointly and collectively, there is greater ease for checking the topic being spoken about and guaranteeing thematic continuity. From this point of view, the emphasis placed by the expert teachers on structuring their discourse seems totally justified in this quasi-monologue situation. On the other hand, at first sight redundancy seems to be a common feature of face-to-face conversations; much more so than would be expected in written texts, as we shall see below.

5.2.3. Superstructure

With respect to superstructure, we found little evidence of the categories related to this level

and found no clear superstructure in the discourse of either type of teacher (expert or novice). The explanations are, by default, descriptive even though they could have been presented either in a causal/explanatory style or a comparative style.

5.3. Evaluation

Table 3 shows the number of discourse evaluation episodes produced and the number of questions formulated by the teachers in each exchange.

The data in the Table 3 are eloquent. Evaluations were only made by the expert teachers whereas the preservice teachers made none at any time during their discourse.

The results about the contents that were evaluated by the two expert teachers are shown in Table 4. The data refer specifically to the number of ideas and levels of importance present in each

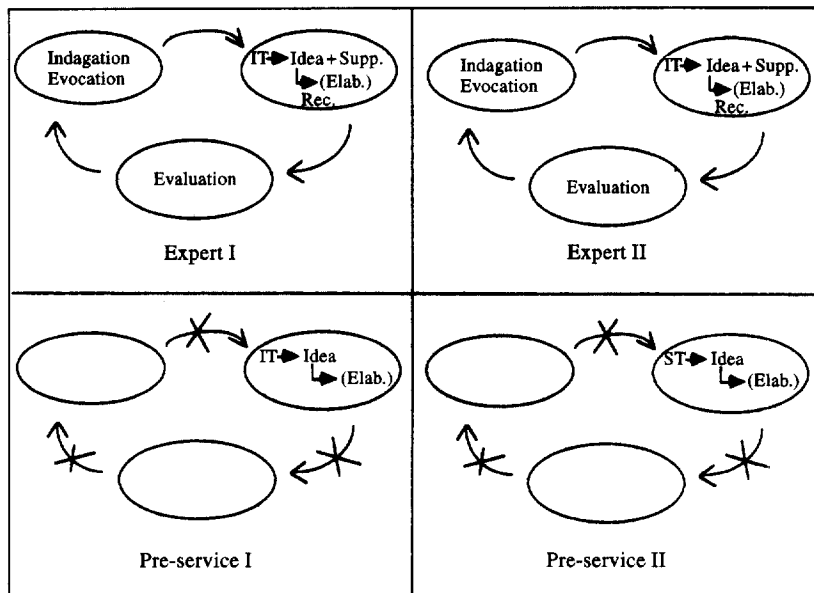


Fig. 7. Prototypical sequence of the discourse of expert and novice teachers. Each oval represents an episode (the Given, the New, and Evaluation) and inside each oval appear the categories making up each episode. The arrows represent the relationships among the different episodes within the discourse. Thus, when a whole arrow appears (not crossed out) between the different episodes, we mean that those episodes have been connected in the discourse. The crossed-out arrows mean that there is no connection between them.

discourse together with the number of ideas evaluated by the questions of the expert teachers.

As regards the contents evaluated by expert teacher I, which we assessed by taking into account the levels of importance of the ideas, we observed the following: of the 11 level I ideas presented by that teacher, eight were evaluated. The second-level ideas evaluated numbered three out of a possible total of 15. Five out of 17 level III ideas were evaluated. Finally, 1 idea out of 3 fourth-level ideas was evaluated. Although the number of first-level ideas evaluated, with respect to the other ideas, was higher, it should not be overlooked that 5 ideas of the third level of importance were also evaluated. In the case of expert teacher II, of 5 level I ideas appearing in the teacher's discourse, 3 were evaluated. By contrast, none of the 11 remaining ideas were evaluated.

The results obtained on the type of evaluation tasks posed to the students are also conclusive. In particular, in the two explanations only one problem-solving task appeared. All the tasks were literal and hence it may be said that there is a tendency to

Table 3

Number of exchanges and number of questions appearing in the discourse of both groups

Teachers	No. of episodes	No. of questions
Expert I	5	23
Expert II	2	5
Preservice I	0	0
Preservice II	0	0

induce a coherent textual representation in the students that does not necessarily involve integration with their prior knowledge.

These data allow us to conclude not only that more evaluation episodes occur in the discourse of the expert teachers than in preservice subjects but also that in those episodes the expert teachers lead their questions to the most important ideas in the discourse. Thus, evaluation, as used in the expert discourses, fulfills the function of ensuring a good development of the communicative process of the explanations. Additionally, since in it all the most

Table 4

Number of ideas evaluated in relation to the levels of importance presented in the discourses of the expert teachers

Expert I	No of Ideas	Evaluated ideas	Expert II	No of Ideas	Evaluated ideas
Level I	11	8	Nivel I	5	3
Level II	15	3	Nivel II	6	0
Level III	17	5	Nivel III	3	0
Level IV	3	1	Nivel IV	2	0

important ideas are addressed, the evaluation becomes another mechanism specially relevant for the macrostructure. Despite this, it is striking that the evaluation is aimed only (with the exception of one case) at confirming what has been said but not at reconsidering it.

5.4. Prototypical sequence

It is possible to find a prototypical sequence for each of the discourses. Fig. 7 shows the four discourses studied here. Each of these model sequences is repeated along the discourse, thus configuring its basic episodes. It should be noted that the sequences have been represented graphically in an attempt to reflect the time course of the discourse in such a way that if the categories are read from left to right and from top to bottom the time sequence can be reconstructed. When a category appears in brackets this means that the category did not always appear, even though it did so an appreciable number of times (at least 30% of the times). By contrast, when a category does not appear in brackets this means that it appeared more than 50% of the times in which it could have appeared.

Therefore, on starting their discourses the expert teachers evoke a set of ideas; then, or at the same time, they explore whether such ideas are present in their pupils by direct questions. Next, on the basis of the reformulation they make of the responses of their pupils they begin the explanation of the new ideas. The development of ideas also follows a regular rhythm. A topic is presented and an idea is announced; this idea is elaborated, recapitulated and evaluated. The sequence is then repeated. By contrast, the pre-service teachers are much more

austere. They begin their discourse immediately with the presentation of new ideas. These ideas are presented in such a way that one idea follows another, with no support or recapitulation. Also, in this study the novice teachers did not appear to be interested in evaluating the development of the whole process.

6. General discussion

Above we have pursued three different aims that we wished to review from the perspective of the data obtained: the first one is the justification for, and elaboration of, a system of analysis for oral discourse. The second is the description of the oral discourse of expert and novice teachers. The third has to do with teachers' training in discourse abilities.

With respect to the first objective, at the beginning of this article we mentioned that our aim was to create a system that would serve to analyse the resources used in verbal discourse. We believe that we have shown that with this system it is possible to analyse the discourses of teachers and interpret such discourses within the initial theoretical framework. In this sense, not only did we observe the presence of each of the actions but also their role within the discourse as a whole. That is, we observed the presence not only of evaluations, recapitulations, thematic signals, and supports but also we were able to determine which ideas and at which level of importance they were evaluated, supported and recapitulated. In sum, we have been able to assign a meaning to each of the actions.

On the other hand, the system also serves to identify important differences in all the dimensions

that we have distinguished in the discourses of the expert teachers and in those of the preservice teachers. Moreover, we saw that these differences refer to relevant issues as regards understanding, learning and communication. More specifically, we should like to stress certain issues that emerge from the results obtained that have to do with their usefulness in training processes

6.1 It is very difficult to explain how expert teachers teach

A first point is that expert teachers show great skill in fitting their way of developing the explanation to the limited attentional and memory resources of human beings. Let us take as an example the proportion of new ideas with respect to the total number of ideas presented (the rhetorical coefficient). In the case of expert teachers, the new is presented in such a low proportion (only 1/3 of what is said) that the receiver can construct and, above all, interconnect the different propositions while the teacher is continuing with other new propositions. It should be stressed that here we are dealing with one of the most elementary operations involved in understanding (Kintsch, 1974), which would surely be truncated during an explanation by a preservice teacher.

Another aspect to be stressed is the strategic presence of recapitulations that directly express the ideas that provide global coherence. It should be noted that the idea is not merely to recapitulate but to do so in a strategic way. Fig. 6 shows that expert teachers seem to operate from a very simple principle: they do not allow there to be more than three different ideas without globally reconsidering the overall significance of all of them. If one takes into account the limitations of working memory, this kind of behaviour is again very reasonable. In the case of preservice teachers the picture is very different and deserves no further comments.

Finally, to give a last example, the assessments are intercalated systematically during the explanation by evaluating the understanding of the most relevant ideas in different ways. The most sophisticated procedure of all consists in posing tasks that make both the explainer and the listeners reconsider what has been explained from a new point of

view. In this way, the explanation consists not only in presenting the information in an orderly fashion but also in reconsidering that information from different perspectives.

From all the above, we may conclude that the way expert teachers explain their material is highly sophisticated and differs qualitatively from the way used in daily life. Hence the vast difference between the ways that expert and preservice teachers use to explain their material. It should be stressed that this distance seems very difficult and costly to reduce. In a recent work (Loureiro, 1996), we found that after one year of professional practice the changes that did occur were very small.

6.2. Being experienced is not the same as being an expert

Another aspect that should be underscored is that being experienced is not the same as being an expert. This has to do with a methodological problem, which should also be addressed; namely, generalization of the results. Indeed, it is clear that with the initial sample of 36 lessons plus an additional selection of the four lessons studied in depth it is not possible to generalize the results to all expert and preservice teachers. However, we do wish to stress that this was not an aim here. We, therefore, assume that the pattern found in our two expert teachers is not a necessary pattern for an explanation to be comprehensible and that other equally valid patterns may exist. Despite this, with the analytical system proposed by us it should be possible to identify such patterns.

We should also like to point out that the other discourses of the experienced teachers, even though they included some of the resources discussed, did not always manage to create a common, or shared, starting point. Neither were the evaluations as systematic nor was the presence of supports as high. In sum, having experience is not equivalent to being an expert, although other forms of expertise may exist. With respect to the discourses of the novice teachers, we can say that those chosen by us were an adequate representation of the 18 analysed in the study. In fact, in later studies (Rosales, 1994; Sánchez, et al., 1996) we have analysed another 20 novice teachers displaying this same pattern.

It might be argued that we could have offered the average scores of 32 measurements. With this, however, we would not change the image of the novice teachers whereas we would – and to a very considerable extent – alter the image of the expert teachers. The reason is evident, as suggested above: being experienced is not synonymous with being an expert, and, following the logic of this study, it was the experts who were to be studied.

6.3. Expert teachers are not an ideal

Along these pages we have addressed different aspects that suggest more suitable ways of solving the task of explaining materials. Thus, for example, we have seen that the expert teachers studied here take great care in creating a starting point in common with their students although they do not show the same enthusiasm when agreeing on goals and commitments.

It has also been mentioned that most assessment tasks serve only to confirm that a textual representation has been created, but the time devoted to reconstruction of the knowledge presented is conspicuous by its absence.

Finally, explanations could be improved if it were possible to expressly give some kind of scheme for interpreting the information (for example of the causal explanatory style type as suggested by Beck and others (1991))

In this way, the usefulness of our model does not lie in determining what an explanation should be but rather in “reading” what is already being done and advancing new ways to do this. This idea leads us to one last question: the use of these studies for the training of teachers.

6.4. What use do these studies find in teacher training?

Above we have shown that the differences between expert and preservice teachers are very important, that not all teachers with experience show the same mastery as those studied here, and that change seems to be very difficult. What use could this characterization of expert and preservice teachers have?

The first use is to serve as a tool for drawing attention to professional activities in the field. In this sense, it should be noted that the professional knowledge of expert teachers, which is undoubtedly noteworthy, is a type of knowledge that is not accessible to the teachers themselves. In any case, it would be an explicit, but not yet conscious, knowledge, in the sense of Karmiloff-Smith (1992). Thus, theoretical proposals such as “meaningful learning” or the mere formulation of the contract between the new and the given may be too distant for us to be able to “read” actual behaviour from them. As a result, the connection between what is done and what could be done on the basis of that theoretical knowledge becomes very difficult.

Comparison between expert and preservice teachers is important because it allows us to elaborate what we could call a *conceptual structure intermediate* between the spontaneous behaviour of teachers and the theories stipulating the conditions that facilitate learning or understanding.

Based on this intermediate conceptual structure, it would be possible to initiate a process of change that – and it is important to stress this – will never be completely foreseeable. Thus, for example, it would be feasible to envisage that, convinced of the need to guarantee a higher level of participation and responsibility on the part of students, we might see ourselves enticed to developing more interactive ways of teaching (Renninger, 1998) that complement and enrich traditional teaching methods. In this sense, the description theoretically motivated between experts and preservice teachers could act as a bridge between the present (almost ineffable) and the future (so far away); a bridge between what is being done and what could be done. Actually, such *intermediate conceptual structures* would help us to discover that the future (what we would like to do) to a certain extent already is in the present (what we are doing now). Once within that process of description and redescription, the change is inevitable and, as stated above, unforeseeable. What then is the use of these descriptions? The answer is very simple: to make the present accessible and the future credible.

Based on these ideas, we have designed a training program in which we have put to the test the possibility of teaching the strategies of the expert

teachers to beginner teachers (Sánchez et al., 1996). Specifically, in this study, each of the strategies taught provided specific instruments which enabled beginner teachers to reflect before, during and after their own performance. In brief, we introduce a tool to speak to ourselves while addressing our pupils.

6.5. Dialogues and monologues

We also believe that the potential usefulness of this analysis could lie in the comparison between the discourses studied here and other communicative situations: discourses developed in an overtly conversational context, such as in primary school or covertly in lectures or written texts. This has been addressed in other studies conducted by us (see Sánchez et al., 1995; Sánchez, 1996). On analysing the obtained results from this point of view, we can venture that the discourses of expert teachers in secondary education contain a mixture of components from conversation (the enormous redundancy, direct contact between teacher and pupil in the evaluations, and in the creation of the given) and text (with the effort made to endow the discourse with coherence). This is an intermediate communicative situation between what is overtly conversational and a monologue. It would be hard to find a text as redundant and so well contextualized and it would be difficult to find a conversation whose contents are so well structured.

With respect to the type of explanation explored above (at secondary education level), those given in Primary Education seem to consist of a conversation that leads to a co-constructed “text” while at university level they would involve a “text” that could include a covert conversation. It is clear that we are not saying that explanations should be given in one way or another at each educational level; rather, each of these ways of developing oral

explanations demands of both teachers and students different skills that are located on a continuum ranging from dialogue to monologue. This is a continuum that a person of some schooling should apparently be able to follow with certain ease.

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Appendix A

This appendix offers some examples of discourse sequences illustrating the analysis of the three episodes studied; the Given, the New, and Evaluation.

A.1. *The Given*

With respect to *the given*, we offer a fragment of the discourse of an expert teacher. At the right is the text of the teacher’s discourse. In the left hand column we show the categories of analysis (in bold type) (exploration, evocation and meaning), adding some comments (in brackets) that may give the reader a broader view of the role of each category within the different episodes of the discourse.

Here, we see that the teacher (1) confirms the contents evoked, ensuring that they are known by her pupils; (2) connects this evoked and shared knowledge with the new and (3) to achieve (1) and (2), she makes a strategic selection of the information evoked.

Discourse sequence 1: The Given

Categories and comments	Teacher’s discourse
Investigation	Do you know what Multinational companies are?
Evocation (we see that since the teachers receives no answer from the students she makes an evocation to approach the issue)	Surely you are familiar with the term from the press, the Trade Unions or from the television?

Discourse sequence 1: The Given

Categories and comments	Teacher's discourse
Investigation (The exploration is made again after approaching the issue through evocation)	So what is a multinational company? (hereafter, mc) What is a mc?
Identification of topic (Since the teacher had no confirmation to her explorations. She locates the topic of identification)	You will find the characteristics defining a mc on page 164, so the argument is devoted to the characteristics defining what these companies are.
Investigation (After identifying the topic, She makes a new exploration in a more direct way, addressing one student in particular)	Well, does anybody want to tell us what these companies are, without looking Sandra?
Student's reply	I do not know.
Investigation (She now addresses another student but is more specific with respect to content)	Miguel, do you now what mc are? What does the name suggest to you?
Student's reply	Companies spread all over the world.
Evocation (Here the teachers makes the evocation by taking up the last reply of the student and broadening it so that it will confirm the chain of explorations)	Companies spread all over the world, at least companies present in many nations, which is what the word, the word "multinational", suggests. It suggests that they are present in many countries.
Evocation (to finish the context the teacher performs an extensive evocation that situates the topic of mc) and	Well, when we saw that the capitalist system developed, we reached
Meaning (explaining why the topic of mc is important)	a point, especially after the Second World. War, where they were going to be very important for understanding a bit about today's economy and what is happening today at international level; a type of company began to be developed that is known under the heading of cm.
The new (She begins to explain new information)	The first feature that defines these companies . . .

A.2. *The New*

To illustrate the episode dealing with the new, we have chosen a fragment from the development of ideas from the lesson given by another expert teacher. This example includes most of the categories defining this episode; the ideas and supports, on one hand, and the rhetorical links on the other. The following scheme shows the example of analysis.

As may be seen, this sequence of the development of ideas is begun by contextualizing the explanation of the new information to be presented (evocation of contents and meaning). Afterwards, by identifying the topic (IT) the teacher makes explicit the topic she is going to explain. She then formulates the first-level idea (I) and then supports it by saying it with other words (ToW), elaborates on it with a second- and third-level idea and then recapitulates (Rc). Finally, she again identifies and

formulates another first-level idea. Accordingly, the sequence followed by the teacher is: (1) she contextualizes, (2) she signals the idea (IT), (3) she formulates the idea (I), (4) she supports it, (5) she

elaborates on it and (6) she recapitulates. We should add that an evaluation episode follows this discourse sequence. This is exemplified in the next section.

Discourse sequence 2: The New

Categories and comments	Teacher's discourse
Evocation (The teacher evokes knowledge)	Now we have a concept about the idea she is going to explain then perhaps as barbarians, as destroyers, but
Meaning (She now gives meaning to the idea she is going to explain with the evocation and the meaning aims at contextualizing the explanation of the new).	We should also know what they were like ... a little about their social structure.
Identification of topic (She identifies the new idea she is going to explain)	What was their social structure like? What kind of society did they live in? Well ...
IDEA 1 (The teacher announces the idea that she is going to work on)	The social structure of this people was essentially based on the family.
Support (Supports idea 1, saying the same thing with other words)	So the family was the core or nucleus, the key. Family unity was the key to their social structure.
Elaboration of IDEA 1: Idea 1 (1) (She elaborates on a first-level idea and hence we have a second-level idea)	This family, in turn, joined up in tribes;
Elaboration of Idea 1 (1): Idea 1 1 (1) (She now elaborates on the second-level idea and is therefore formulating a third-level idea)	but did not go beyond the tribe.
Support (The teacher is supporting the above third level idea, saying it with other words)	The joining up of tribes, so to speak, formed the highest political institution.
Recapitulation (The teacher recapitulates the first level idea, idea 3. As we see, she makes the recapitulation on the most important idea and before starting to explain another first level idea)	So, from the social point of view the family was the cornerstone, the fundamental key.
Identification of topic (The teacher identifies the topic of the first level idea she is going to explain)	From the economic point of view.
IDEA 2 (The teacher announces the second first level idea of her explanation, the sequence to be followed now will be very similar to the one shown in this example)	they were eminently livestock herders.

A3. Evaluation

The following fragment of discourse illustrates evaluation referring to the fragment of the new offered above. In this we can show which ideas the questions arising in this evaluation episode are referring to. The left column shows the ideas and their levels to which the questions refer and the right column shows the formulations of those questions by the teacher and the replies of the students.

As we see in this evaluation episode, the teacher asks her students three questions. Of these ques-

tions the first one addresses the first first-level idea presented in the discourse fragment used as an example of development of the new. The second question explores a second level idea and the last one a first-level idea. Additionally, we see that all the questions are formulated by the teacher from a broadening of the last student's reply, ensuring that the new information explained is being incorporated. However, it may be seen that all the questions asked are literal.

Discourse sequence 3: Evaluation

Categories and comments	Teacher's discourse
Beginning of evaluation episode	Let's see if you have really understood what I have been saying
First question directed to IDEA 1 (the teacher asks three questions, all of them to evaluate the first first-level idea of the example of the new)	Juan, the girl next to you, tell me, for example what their social structure was like, what the social structure of this people was like, what was it based on?
Student's answer	(On the family)
Second question directed to Idea 1 (1) (the teacher confirms and expands the student's reply and formulates the question to evaluate a second level idea)	In the family the main core was the family itself and, that family, how did it ... ?
Student's answer	(In tribes)
(Confirmation and expanding of the student's reply by the teacher).	It joined up, it grouped in tribes which is what we would call the main institution for them. O.K.
Third question directed to IDEA 2 (She evaluates the other first level idea formulated in the example of the new)	And from the economic point of view ... ?
Student's answer	(They were herders)
Teacher's confirmation	They were herders.

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