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A model for analysis applied to a recent reform.*

**Isabel P. Neves**  
**Ana M. Morais**  
*Department of Education*  
*School of Science University of Lisbon*

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*Teacher's 'space of change' in educational reforms:  
A model for analysis applied to a recent reform in Portugal*

**Ana M. Morais & Isabel P. Neves**

*Department of Education*

*School of Science University of Lisbon*

## **Introduction**

This study forms part of a broader research project<sup>1</sup> which seeks to explore the sociological meaning of the changes introduced as a part of the present educational reform in Portugal. The overall study compares texts produced at the various levels of the Portuguese pedagogic apparatus, i.e. the Constitutions, the Basic Laws for Education, syllabuses, textbooks, in order to analyse their meaning and the degree of 'recontextualizing' which occurs across levels. The study compares the texts from the current reform (1991) with the texts from the previous reform (1975), focusing on the area of nature sciences/natural sciences for the 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> years of schooling (approximately 10-13 years of age).

The analysis of the syllabuses centres on the aspects which relate to the transmission-acquisition context. On one hand, the analysis centres on what the Ministry ('official recontextualizing field') legitimizes as 'official pedagogic discourse' (OPD) and explores the sociological message implicit in the teaching-learning model recommended by the Ministry. On the other hand, the analysis centres on the ways the Ministry tells the teacher how to follow that model in terms of the sociological message embedded in the Ministry-teacher relationship.

The study described here addresses the second aspect of this larger project. Its main objective is to analyse the teachers' 'space of intervention' entailed in the present (1991) reform through a comparison with the previous (1975) reform. The study is based on Bernstein's model of pedagogic discourse (Bernstein 1990, Domingos *et al.* 1986).

## **The context**

Portugal was under a dictatorship for more than 40 years but in 1974 became a democracy. In the late 1960s a reform of the educational system began under overt and covert international pressure and the influence of educational changes in, particularly, the USA. This reform started at the level of the 5<sup>th</sup>/6<sup>th</sup> years of schooling (age 10-12)-named the

‘Veiga Simão reform’ after the Minister of Education of the time<sup>2</sup>-and new syllabuses in science education were developed. The pedagogic principles underlying these syllabuses departed in many crucial aspects from the principles established in the 1933 constitution (which had governed the country during the whole period of the dictatorship) and in the educational basic law of the time.

The revolution which took place in 1974 found the educational system in a state of a considerable incoherence. The syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years (together with isolated educational experiences at the level of middle and high school) were based on new contents and quite open relations and there was a basic law following similar trends but developed *after* those syllabuses-but all this had gone in the opposite direction to the existing constitution and towards many of the principles established later on by the revolution. But before a new constitution and a new educational basic law were developed and approved, the previous reform moved to the 7<sup>th</sup> year of schooling. It was in the unstable post-revolutionary period that the syllabuses for the 7<sup>th</sup> year of schooling were developed.

The present reform (dating from 1991) followed trends similar to the reforms of countries such as the UK, Spain, etc. and was set in a well-established democratic system within a new constitution (1976) and a new educational basic law (1986).

This brief history shows how the analysis we proposed to make was rather difficult; we wanted to see the extent to which the new educational reform of the 1990s introduced changes to the previous reform of the late-1960s and early-1970s. However, whereas the second reform took place in a stabilized society where the constitution, educational basic law, and syllabuses followed each other in time and where contextualizing and recontextualizing can be coherently analysed, the earlier reform developed in a non-linear sequence with the educational basic law coming after the reformed 5<sup>th</sup>-/6<sup>th</sup>-year syllabuses, all under a dictatorial regime, and before the 7<sup>th</sup>-year syllabuses. These 7<sup>th</sup>-grade syllabuses were developed within a democratic system, but they were part of this same reform.

We start by discussing the concepts underlying the model on which the analysis is based. This is followed by a discussion of the methodological considerations which guided the analysis. We then present the analysis and finally the discussion and conclusions.

## Theoretical background

### *The model of pedagogic discourse*

Bernstein (1990; see also Domingos *et al.* 1986) has developed a model which seeks to highlight the influence of the dominant principles of society on the production and reproduction of pedagogic discourse. He also seeks to show by means of this model that, although an instrument of cultural reproduction, pedagogic discourse can also have a broad range of realizations as a result of its intrinsic characteristics. It is therefore extremely difficult, if not impossible, to control all potential realizations of *official pedagogic discourse* (OPD).

OPD-analysis involves an analysis of the principles which determine the production (generation and recontextualizing levels) of OPD and an analysis of the principles which regulate its *realization* in a given reproductive context (transmission level). Figure 1 shows the generation and recontextualizing levels.

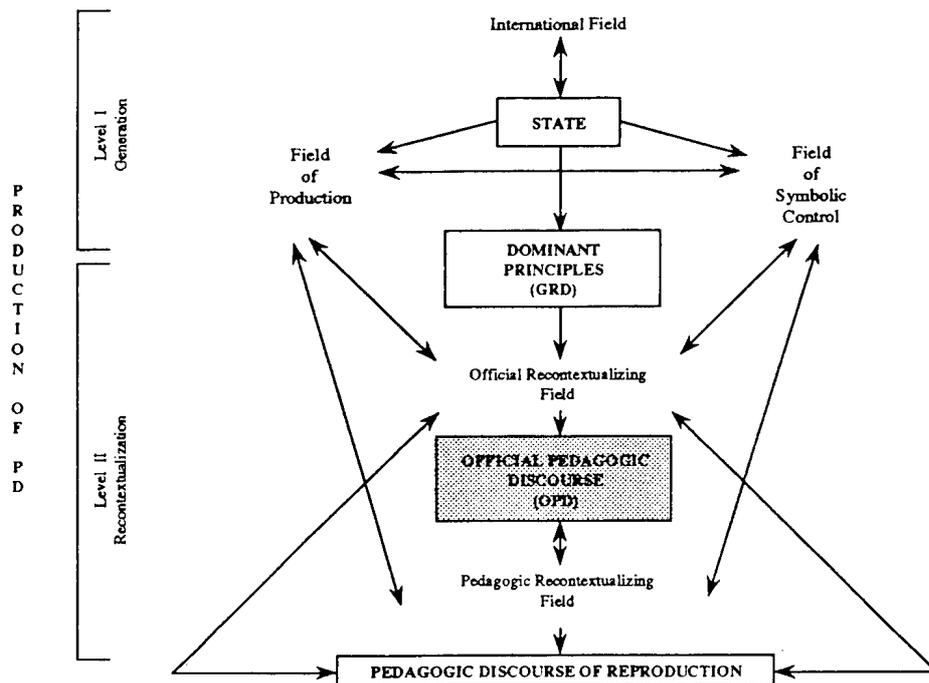


Figure 1. Production of pedagogic discourse: generation and recontextualizing levels.

The production of OPD is the result of relationships which are established at the generation and recontextualizing levels of the dominant principles of society. These principles, which constitute the *general regulative discourse* (GRD), are generated as a

result of the relationships and influences between the field of the State and the fields of *production* (i.e. physical resources) and *symbolic control* (i.e. discursive resources). They are also, to a lesser or greater extent, subjected to international influences. The State functions at this level (generation level) to legitimize the principles of distribution of social power and control which are incorporated in OPD. However, OPD is not the mechanical result of the dominant principles of society because these principles undergo a process of transformation in the recontextualizing fields. It is this process which is eventually responsible for the formation of pedagogic discourse.

In the recontextualizing process, two fields directly intervene—the *official recontextualizing field* (directly controlled by the State) and the *pedagogic recontextualizing field*. Both of these fields are influenced by the fields of production and symbolic control with their main activity being the definition of the *what* and the *how* of pedagogic discourse. The *what* refers to the content and relationships to be transmitted while the *how* refers to their form of transmission.

When the pedagogic discourse produced in the pedagogic recontextualizing field is inserted at *transmission level* (i.e. at the various educational levels), it can still be subjected to a recontextualizing process dependent on the specific context of each school (and especially the pedagogic practice of each teacher). In this way the discourse reproduced in the school or classroom is influenced by the relationships which characterize the specific transmission contexts. It can also be influenced by the relationships which exist between the school and the family/community context. Thus, the model suggests that production and reproduction of pedagogic discourse involve dynamic processes. On one hand, the dominant principles which are conveyed by OPD reflect positions of conflict rather than a stable set of relationships. On the other hand, there is always potential/real conflict, resistance and inertia among the political and administrative agents of the official recontextualizing field, among the various agents of the pedagogic recontextualizing field, and between the primary context of the acquirer and the recontextualizing principles and practices of the school. Furthermore, the transmitters may feel unable or reluctant to reproduce the educational transmission code underlying the OPD. It is this dynamism which enables change to take place.

*The syllabus as legitimate official pedagogic discourse text*

Taking the pedagogic discourse model as the theoretical basis for the analysis and interpretation of the sociological meaning of the relationships at the various levels of the educational system, the larger project of which this study forms part centres on generation and recontextualizing levels which lead to the production of official pedagogic discourse. Texts produced in the field of the State are analysed to understand the generation of official pedagogic discourse (OPD) from general regulative discourse (GRD). In addition, texts produced in official and pedagogic recontextualizing fields are analysed to understand the relationships contained in OPD, which will be reproduced in specific transmission contexts.

In the present paper, the focus of the analysis is on the OPD contained in syllabuses-and as such the analysis refers to texts produced in the official recontextualizing field. According to Bernstein, it is in this field that OPD is produced as text containing guidelines-about school organization and management, curricula and evaluation-which reflect the political and scientific background of the agents who constitute this field. However, we do not investigate the meaning of the syllabus content or the form in which the syllabus content is transmitted in the classroom context. The paper explores the Ministry-Teacher relationship, i.e., the form of transmission used by the Ministry (in this case the OPD *transmitter*) to guide teachers (in this case the OPD *acquirers*) to implement the text it legitimizes (OPD).

To summarize, this paper analyses the power and control relationships found in the syllabus texts between agencies/subjects represented by the Ministry and teachers. We use the classification and framing concepts of Bernstein's theory which express the nature of the power and control relationships between categories. *Classification* refers to the degree of boundary maintenance between categories (agencies, agents, discourses) and *framing* refers to the social relationships of communication between those categories. Both can assume different values according to the nature of the relationship. When the classification is *strong* there is a clear separation between categories, which leads to hierarchies in which each category has a specific status and voice and therefore a given power; when the classification is *weak* there is a blurring between categories. Framing is strong when the

upper categories have control in the relationship and it is weak when the lower categories have some form of control.

Since there are sharp hierarchical boundaries in the Ministry-Teacher relationship-between the official agents who represent the Ministry and the pedagogic agents who are the teachers (with higher status for the official agents)-the classification is always strong. Starting from this assumption, the paper centres on the control relationships between these agents and the framing concept is used to analyse these relationships. In this relationship, as in any relationship between transmitter-acquirer, it is also important to consider its meaning in terms of the nature of the *context* in which the relationship is expressed. Thus, it is possible to distinguish those relationships which characterize the *instructional* context and the *regulative* context: in the analysis of instructional context, framing refers to discursive rules and, in the analysis of regulative context, to hierarchical rules. The discursive rules regulate the control that transmitter and acquirer have over the discourse to be transmitted-acquired and the hierarchical rules refer to the form taken by the communication relationships between transmitter and acquirer at the level of the norms of social conduct. Framing with respect to discursive rules tends to be *strong* when control over discourse transmission-acquisition is centred on the transmitter and *weak* when that control is also exerted by the acquirer. In the case of hierarchical rules, strong framing leads to a relationship in which the hierarchy is explicit through communication of a positional nature and weak framing leads to a relationship in which the hierarchy is implicit through communication of an interpersonal nature.

Within this theoretical framework, the syllabus texts which are the focus of this paper are not explored for what they say about the recommendations of the Ministry for a given curriculum or syllabus. Rather, they are analysed in terms of the form taken by the Ministry's *power* in its relationship with the direct receivers of the syllabus, i.e. teachers and textbook authors.

When making reference to this relationship it is important to note that the message contained in a syllabus may not be read, or followed, by teachers. The implementation of the directions of a syllabus depends on multiple factors, i.e. the knowledge and ideology of teachers, the social context of school, etc. Thus, the paper does not explore the 'real' control that the Ministry might have over the implementation of syllabuses at the level of teachers' practices. Rather it explores the extent to which the text of a syllabus (as official

texts directed to teachers) can carry differentiated messages around the Ministry-Teacher relationship and discusses the meaning of these messages as potential indicators of change.

## Methodology

If we place the Ministry-Teacher relationship in a transmission-acquisition context, i.e. if we give this relationship the meaning attributable in any transmitter acquirer relationship (in this case, the Ministry is the transmitter of the syllabus and the teacher its acquirer), it is important to differentiate between two fundamental aspects:

- (a) the degree of control the Ministry gives the teacher over the OPD transmission-acquisition process, which (broadly-speaking) means that the analysis is focused on the Ministry-Teacher relationship at the level of *discursive rules*; and
- (b) the form of communication between Ministry and teachers, which means that the analysis of the Ministry-Teacher relationship is at the level of *hierarchical rules*.

As we examined the degree of control given teachers in the documents, the relationship was analysed in terms of the degree of explicitness of the *content*<sup>3</sup> contained in the syllabuses. We assumed, on the one hand, that the more extensive, detailed and ‘directive’ the directives in the syllabus content were about teachers’ actions (independent of the nature of the intended action<sup>4</sup>), the greater would be the Ministry’s control. On the other hand, the more limited, vague and ‘flexible’ the directives were, control would be the weaker and there would, therefore, be greater the space for intervention by teachers. At the level of the communication the relationship was analysed in terms of the presence or absence of principles or reasons relating to the construction of syllabus. In this case, we started from the premise that the presence of the principles on which the syllabus was based and/or the presence of reasons which justify certain options would lead to a communication based on a relationship of an *inter-personal* nature. On the other hand, the absence of principles or reasons would lead to a communication based on a relationship of a *positional* nature. In this way, the presence of principles or reasons was taken to mean a weak framing relationship; their absence was taken to mean a strong framing relationship. Figure 2 outlines the model on which the analysis is based.

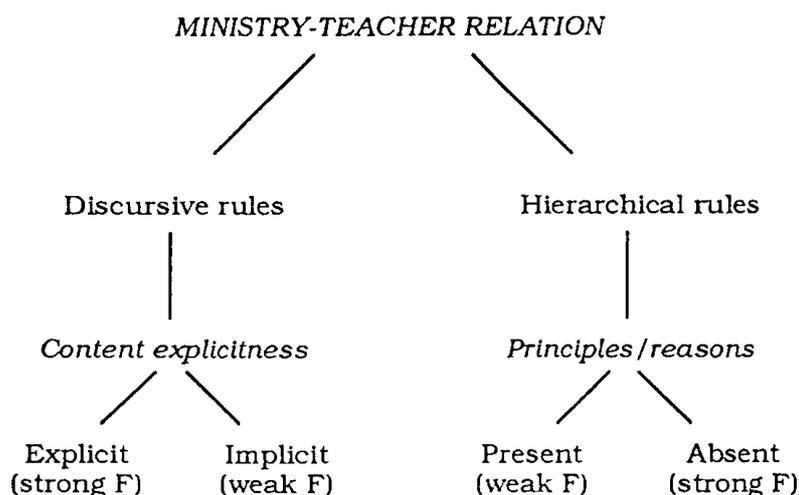


Figure 2. Model for analysis: categories and their meaning

The sentence was used as the unit of analysis. All sentences in the syllabuses relating to the transmission-acquisition context<sup>5</sup> were content analysed. We considered not only the aspects of the curriculum directly related to the science disciplines focused on in the study but also the aspects common to the whole curriculum, and which also apply to these disciplines.

The distinctive nature of the two areas for analysis led to the use of specific indicators in the content analysis of each sentence. Thus, to characterize the Ministry-Teacher relationship at the level of *discursive rules*, we gave each sentence in the various syllabus topics a framing value based on a relative scale of three degrees ( $F^{++}$ ,  $F^+$ ,  $F^-$ ) as follows:

$F^{++}$  The sentence expresses in a detailed and/or ‘directive’ way what the Ministry intends, making the syllabus content very explicit.

$F^+$  The sentence expresses in a relatively specific and/or slightly ‘directive’ way what the Ministry intends, making the syllabus content less explicit.

$F^-$  The sentence expresses in a vague and/or flexible way what the Ministry intends, making the syllabus content mostly implicit.

Definition of scale values was made according to indicators which took into account the specific nature of the text around each syllabus topic. Thus, the indicators used in the content analysis of sentences which were part of different syllabus topics are not totally

equivalent. For that reason the same framing value may have a different meaning according to the topic in which the sentence appears.

For topics of a more general nature (such as the Introduction, Structure and Aims of the curriculum/syllabus) we mainly used indicators which consider the degree of detail of the content contained in the sentences. For example, at the level of objectives when the sentence outlined a relatively specific objective, we rated it  $F^{++}$ ; when the sentence outlined a very vague, general objective we rated it  $F^-$ ; and when the objective is less vague we rated it  $F^+$ .

For less general syllabus topics such as Methodological guidelines/suggestions, we used indicators which take into account the directive/flexible nature of the instructions given by the Ministry. In such cases, sentences which contained expressions such as ‘. . . should be done’ or ‘it is intended that . . . ‘were classified as  $F^{++}$  because such expressions transmit a relatively directive idea or attitude on the part of the Ministry and do not leave the teacher any space for freedom in his or her action whatever direction that action might take. Sentences which contained expressions like ‘the teacher can . . . ‘, ‘we suggest that . . . ‘ were classified as  $F^+$  because, in these cases, the idea of a more permissive attitude on the part of the Ministry is transmitted, thus leaving the teacher some freedom in his or her action. Sentences which contained expressions like ‘the teacher has autonomy . . . ‘, ‘according to his or her experience’, ‘the teacher can change . . . ‘ were classified as  $F^-$  because a fairly open attitude on the part of the Ministry is conveyed, thus leaving the teacher with a greater degree of freedom in his or her action.

As an example, we present some sentences from different syllabus topics which illustrate the classifications  $F^{++}$ ,  $F^+$  and  $F^-$  <sup>6</sup>:

#### *Introduction/Structure*

$F^{++}$  ‘It is more important to give the child instruments for intellectual survival than to transmit knowledge which stays in a sealed compartment and is non-usable . . . since it is never integrated’. (Sentence 9, Table I B)

$F^+$  ‘Concept of the school more as an agent of transformation than a means of transmission of knowledge’ (Sentence 1, Table I B)

$F$  ‘Considering the difficulties that this integration might raise, the subjects proposed are a suggestion to be improved on by the teachers responsible for implementing the syllabus . . .’ (Sentence 37, Table II B).

*Aims/Objectives*

$F^{++}$  ‘To understand volcanic and seismic phenomena as evidence of the Earth’s activity’. (Sentence 17, Table V B)

$F^+$  ‘To recognize typical aspects of different landscapes’. (Sentence 21, Table V B)

$F$  ‘To broaden the diversity of interests’. (Sentence 40, Table IV B).

*Methodological guidelines/suggestions*

$F^{++}$  ‘In developing the learning process, organizing information around fundamental concepts . . . is intended.’ (Sentence 149, Table III B).

$F^+$  ‘Some suggestions follow by way of example which can be used by the teacher as a starting point for developing each of the different items’. (Sentence 50, Table II B)

$F$  ‘The study of different [human] bodily systems may be done in the sequence indicated or each teacher can alter the sequence according to his or her experience or at the request of the students.’ (Sentence 54, Table I B)

Beyond the rating of each sentence, we also considered the extensiveness of the syllabus text, i.e. number of sentences and respective areas for each syllabus category and for the whole syllabus. We assumed that the extensiveness of the syllabus text is a measure of the degree of explicitness of the content-the more syllabus text, the greater the explicitness.

To analyse the Ministry-Teacher relationship at the level of *hierarchical rules* we did not construct a formal scale of framing values. However, there was an implicit two-value scale- $F$  when the sentence contained principles/reasons and  $F^+$  when the sentence omitted any principles/reasons.

To exemplify this, we present some sentences which contain principles/reasons: <sup>7</sup>

- The revolutionary advance of Portuguese society towards socialism makes it possible at last to show decisive evidence in re-structuring teaching . . . (Sentence 1, Table II B)
- A reading of the curriculum outlines published in Decree-Law No. 286/89 . . . allow us to see how all these directions are shaped . . .(Sentence 80, Table III B)
- Recycling the same notion several times does not mean repetition as there are varying degrees of conceptualization according to different developmental levels. (Sentence 167, Table III B)
- To approach the subjects related to this topic [transmission of life] with care, taking into account ethical and affective aspects as sexuality is a global multifaceted reality . . . (Sentence 122, Table IV B)

### *Analysis*

In order to analyse the various syllabuses, we first constructed general tables containing all the sentences which related to the different topics with the exception of topics related to evaluation (which, as mentioned above, was not analysed in this study).<sup>8</sup> Each table was organized so as to contain one column with the syllabus sentences and two columns with the aspects selected for analysis-one referring to content divided into three columns corresponding to the three framing scale degrees ( $F^{++}$ ,  $F^+$ ,  $F^-$ ) and another corresponding to *principles/reasons*. Using this organization, we analysed each sentence, placing an v in the column which showed the framing value expressed in that sentence and an v in the column referring to underlying principles whenever they were evident in the sentence.

The analysis was initially carried out by a group of researchers after discussing the meaning underlying the indicators selected for the analysis. Later, the analysis was validated by two other researchers.<sup>9</sup>

After classifying the sentences, we proceeded to the next stage of the analysis. For this we constructed four tables, one for each syllabus, <sup>10</sup> organized in such a way that comparisons between the different syllabuses in terms of the various topics they contained was possible. From these topics five categories for analysis were developed: A: Aims of the curriculum;

*B*: Structure of the curriculum; *C*: Aims of the discipline; *D*: Content of the discipline; *E*: Methodological guidelines of the discipline. We coded each sentence using these categories. These tables are also organized in terms of the indicators selected for analysis (*content explicitness* and *principles/reasons*). Thus, in each syllabus table for each category of analysis and, within each category, for each topic of the syllabus, the following were included:

- (a) Number, percent, and ‘area’ (in percent) of sentences containing directives about syllabus content.
- (b) Number and percent of content-related sentences classified as  $F^{++}$ ,  $F^+$  and  $F^-$ .
- (c) Number, percent, and ‘area’ (in percent) of sentences containing principles and/or reasons.

These categories of analysis were also applied to the each syllabus overall to indicate the general message it contained. Finally we undertook a comparative analysis of the syllabuses comparing the 1975 and 1991 syllabuses for the 5<sup>th</sup>/6<sup>th</sup> and 7<sup>th</sup> years.

Along with this comparative global analysis, we examined some specific methodological guidelines for different science areas. Thus, within the 7<sup>th</sup> year, we paid special attention to methodological aspects in the 1975 reform for the chemistry and biology syllabuses and in the 1991 reform for the geology and biology syllabuses.<sup>11</sup>

## **Analysis and interpretation**

### *Nature sciences syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years*

When we consider the degree of explicitness of syllabus content in terms of the amount of the text, we found that whereas for the 1991 reform the whole syllabus is stated in 306 sentences (total area 2521.1 cm<sup>2</sup>) for the 1975 reform the whole syllabus is stated in only 60 sentences (total area 664.7 cm<sup>2</sup>).<sup>12</sup> If we take this as indicative of the degree of description in syllabus *content*, it suggests that there was greater concern in 1991 to give very explicit directives to the teacher: the syllabus from present reform points to a greater control on the part of the Ministry.

When we consider the amount of the syllabus text in terms of the various categories produces the data shown in figure 3.

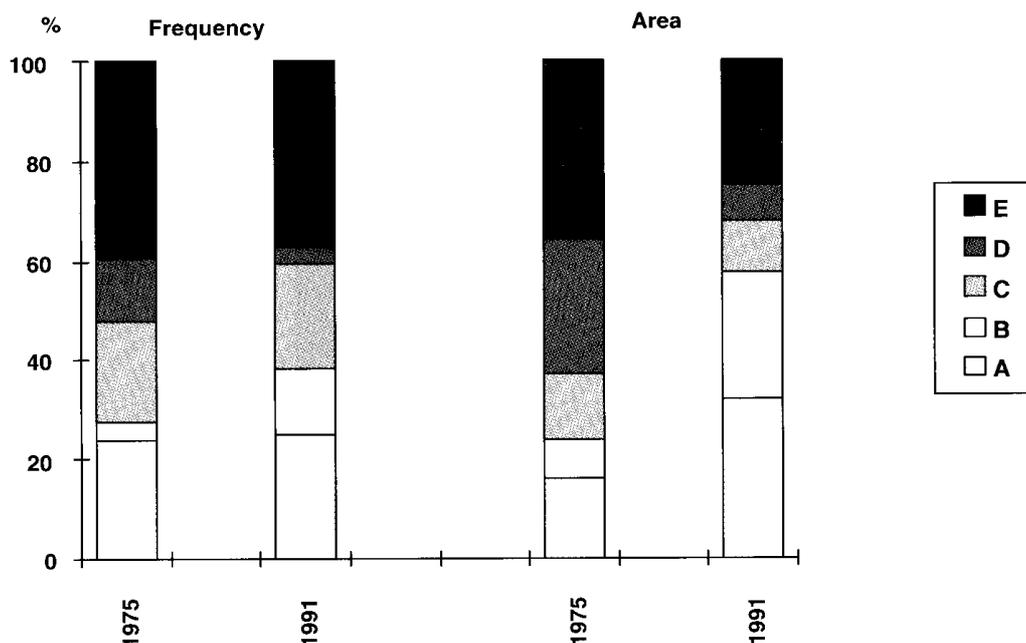


Figure 3. Comparison between nature sciences syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years (1991 and 1975) – text extension

When we take sentence frequency and the area covered simultaneously as indicators of the emphasis given in each syllabus to the various categories, the data shows that: (a) there is more syllabus text relating to categories A and B (aims and structure of the curriculum) in 1991 than in 1975; (b) there is more syllabus text relating to categories D and E (content and methodological guidelines of the discipline) in 1975 than in 1991; (c) the text relating to category C (aims of the discipline) is relatively similar in both syllabuses. In other words, for the presenter from the Ministry shows a tendency to be more explicit at the level of great educational principles (categories A and B) whereas in 1975 reform this explicitness was primarily focused on more specific aspects of the syllabus (categories D and E). And, as seen in figure 3, it is *Methodological guidance* (category E) which receives greater emphasis in both syllabuses: it is on this level that the syllabus carries a message of a greater control on the part of the Ministry.

Figure 4 presents to findings for the degree of explicitness of syllabus content in terms of the relative distribution of  $F^{++}$ ,  $F^+$  and  $F^-$  sentences.

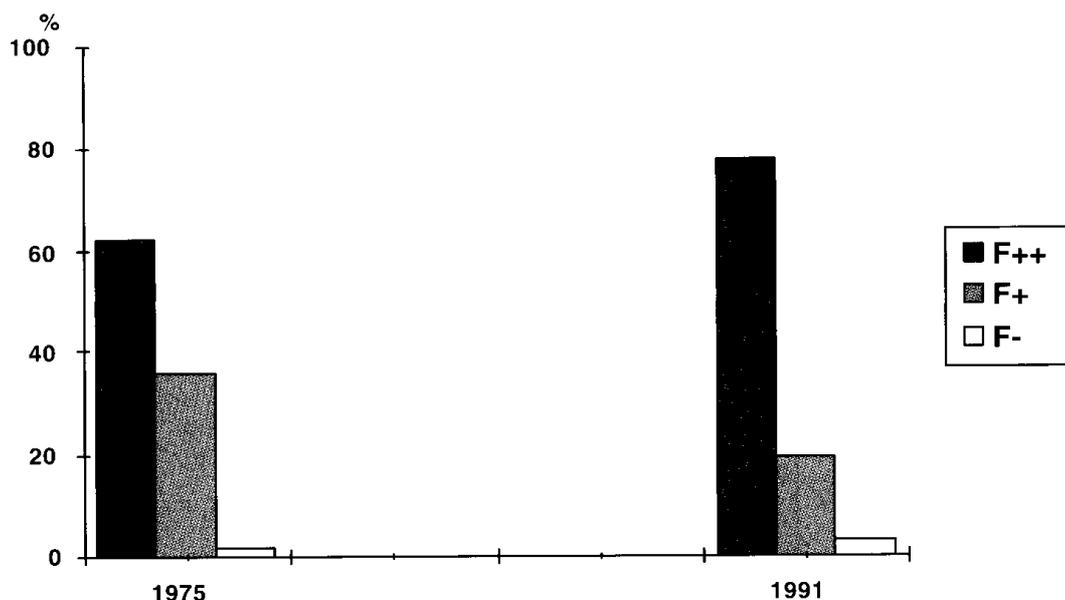


Figure 4. Comparison between nature science syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years (1991 and 1975) – relative distribution of sentences.

The data shows that on the whole there is a greater degree of explicitness of content in the syllabuses in 1991 than in 1975. In fact in the 1991 syllabus, 77.6% of sentences were coded F<sup>++</sup>, 19.4% F<sup>+</sup> and 2.7% are F<sup>-</sup> whereas in the 1975 syllabus, 62.1% of sentences were coded F<sup>++</sup>, 36.2% F<sup>+</sup> and 1.7% F<sup>-</sup>. Thus, although in both syllabuses the text focuses more on F<sup>++</sup> sentences, it is in the 1991 syllabus that such focus is greater. These findings reinforce the idea that the syllabus of the 1991 reform points to a higher degree of Ministry control over the teacher with respect to the transmission-acquisition process to be used in the classroom. According to the theoretical framework on which this analysis is based, the differences in sentence distribution and text-extension suggest that the Ministry-teacher relationship at the level of discursive rules is expressed by stronger framing in the present reform than in the previous reform.

A separate analysis found that the number of sentences classified as F<sup>++</sup> in the 1991 syllabus is higher in all categories than the number of sentences classified as F<sup>+</sup> and F<sup>-</sup>. This was also the case in the 1975 syllabus with the exception of category A (*Curriculum aims*) where the number of F<sup>++</sup> sentences equals the number of F<sup>+</sup> and F<sup>-</sup> sentences.

Figure 5 presents the sentence data in terms of the various categories. Here we only consider sentences classified as F<sup>++</sup> because they were most frequent in both reforms.

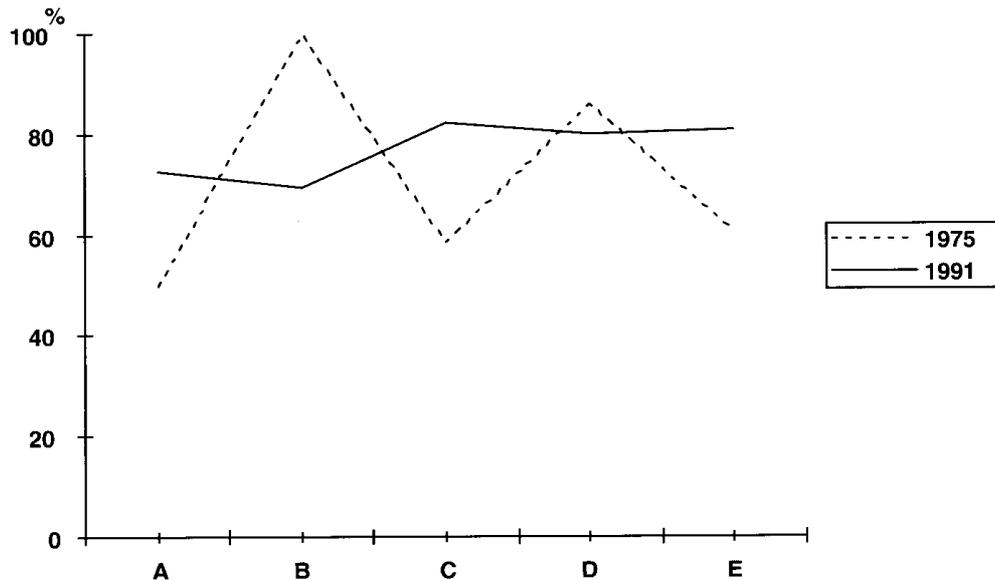


Figure 5. Comparison between nature sciences syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years (1991 and 1975) in terms of F<sup>++</sup> sentences. (A) curriculum aims; (B) curriculum structure; (C) discipline aims; (D) discipline contents; and (E) methodological guidelines for the discipline.

The findings presented in figure 5 show that it is only in *Curriculum structure* (category B) and *Discipline content* (category D) that there is a trend towards greater explicitness of content in 1975 than in 1991. However, the percentage of F<sup>++</sup> sentences in category B in the 1975 syllabus has little meaning (there were only two sentences) and the difference between the 1975 and 1991 syllabuses in category D is slight. These findings complement the previous findings in terms of the extensiveness of the text dedicated to each category. They show that the greater explicitness in 1991 relative to 1975 is generally in the more general categories (A, B and C) and that explicitness in category E, which receives greater emphasis in both syllabuses, is expressed in different ways (in longer text in 1975 and more explicit sentences in 1991). If we assume that it is at the level of methodological guidelines that teacher action in the transmission-acquisition process is most easily and clearly expressed, we can interpret these findings as suggesting messages which, in sociological terms, show the Ministry's concern with guaranteeing control over teacher action by way of greater specification at the sentence-text level in the present reform.

When we turned to the Ministry-teacher relationship at the level of the hierarchical rules, we took as the indicator of this relationship the presence or absence of stated *principles/reasons* for the Ministry's decisions in the syllabus construction. The findings show that in the overall 1991 syllabus 25.2% of the sentences have justifications given by the Ministry concerning syllabus content and/or information relating to the syllabus design process. Although this may

seem to indicate a weak emphasis in the 1991 syllabus at the level of principles/reasons, it should be noted that the area covered by sentences containing principles/reasons is relatively extensive (1201.9 cm<sup>2</sup>), corresponding to nearly half (47.7%) of the total area of syllabus sentences. In the 1975 syllabus 21.7% of sentences contain principles/reasons. This value is low if we also acknowledge that the area (136 cm<sup>2</sup>) in this case is small, 20.5% of the total syllabus area (Morais *et al.* 1995: 12).

The comparative analysis of the two reforms at the level of hierarchical rules shows that although there is a slight difference between the two syllabuses with respect to the percentage of sentences containing principles/reasons, the area taken up by those sentences is much greater in 1991 than in 1975. This suggests that the present reform syllabus expresses a more open attitude on the part of the Ministry to the way it transmits the principles it favours to the teacher. In terms of the theoretical meaning of the analysis, this means weaker framing relationships between the Ministry and the Teacher at the level of hierarchical rules.

A more detailed comparative analysis of the syllabuses gives us information about the syllabus categories in which the Ministry-Teacher relationship differs in the two reforms. Figure 6 presents the results of a comparative analysis of the two syllabuses in terms of principles/reasons relating to the various categories. For this analysis we used the percentage of sentences containing principles/reasons (p) and the area covered by those sentences (a) compared to the total area of sentences in the respective category.

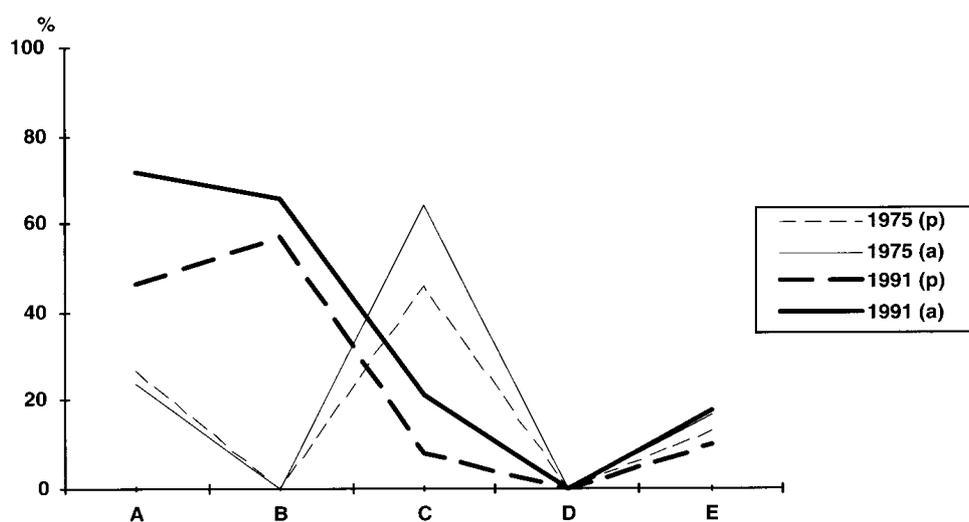


Figure 6. Comparison between nature sciences syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years (1991 and 1975) – sentences containing principles/reasons. (A) curriculum aims; (B) curriculum structure; (C) discipline aims; (D) discipline contents; and (E) methodological guidelines for the discipline.

The findings, based on the percentage of sentences (p), show that there are more principles/reasons in 1991 than in 1975 for categories A and B (*curriculum aims* and *curriculum structure* respectively). This difference is particularly evident in the case of curriculum structure. For categories C and E (*discipline aims* and *methodological guidance* respectively), sentences with principles/reasons are more frequent in the 1975 syllabus than in the 1991 syllabus, although the difference is significant only in the case of *discipline aims*. There are no sentences with principles/reasons in either syllabus in category D (*discipline contents*). The analysis of the area (a) occupied by the sentences reveals a similar general trend, reinforcing the idea that at the level of syllabus content and methodological guidance there is an overall similarity between the two syllabuses.

Based on the findings as a whole, we believe that the hierarchical rules which regulate the Ministry-Teacher relationship differ across categories, and that this difference is evident not only within each syllabus but also in the relationship between the two syllabuses. In fact, it is in those aspects which are more directly related to aims (categories A and C) and, to a certain extent, methodological guidance (category E) that the design and content of the syllabus is justified in both syllabuses. Justification relating to the other categories is either absent in both syllabuses, as in the case of *discipline contents* (category D), or is only present in the 1991 syllabus, as in the case of *curriculum structure* (category B).

If we consider the two aspects of the syllabuses' *analysis-content explicitness* and *principles/reasons*-the data seems to suggest that the present syllabus offers a message embedded in an assumption of a greater control by the Ministry over the transmission-acquisition process. However, to guide teachers towards that implementation, a more open attitude in the form of communication is used. In other words, and according to the theoretical framework, the changes in the 1991 reform are evident in the Ministry-teacher relationship which at the level of discursive rules is based on a stronger framing relationship while at the level of hierarchical rules it is based on a weaker framing relationship.

### Natural sciences syllabuses for the 7<sup>th</sup> year

When we consider the degree of explicitness of syllabus content in terms of extensiveness of text, we find that in 1991 the whole text contains 260 sentences (area 2425.9 cm<sup>2</sup>) and in 1975 145 sentences (area 1164.5 cm<sup>2</sup>) Morais *et al.* 1995: 12). As with for the 5<sup>th</sup>/6<sup>th</sup> year syllabuses, there is a tendency towards a greater concern in the present reform with giving explicit directives to the teacher, suggesting a message based on an increased control over the transmission-acquisition process.

The findings relating to the comparative analysis of the syllabuses for the two reforms in terms of the extensiveness of the text in the various categories are presented in figure 7.

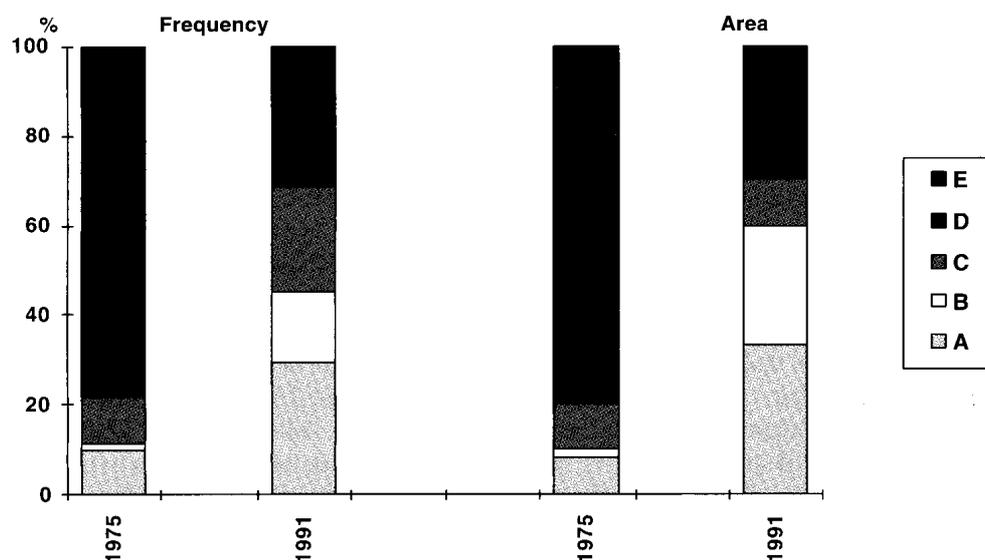


Figure 7. Comparison between natural sciences syllabuses for the 7<sup>th</sup> year (1991 and 1975) – text extension. (A) curriculum aims; (B) curriculum structure; (C) discipline aims; (D) discipline contents; and (E) methodological guidelines for the discipline.

When we consider together the number and the area of the sentences related to the various categories, the findings show that the syllabus text concerned with categories A, B and C is relatively larger in 1991 than in 1975 and the text concerned with categories D and E is relatively larger in 1975 than in 1991. This suggests an overall similar pattern to that of the 5<sup>th</sup>/6<sup>th</sup> years—there is greater explicitness in the present reform in the more general aspects of the syllabus and greater explicitness in the previous reform in the more specific aspects. The findings presented in figure 7 also show that the syllabus text

for the 1975 reform clearly focuses on *methodological guidance*, giving this aspect of the syllabus a significantly greater emphasis relative to the other categories. In the present reform the syllabus text is less focused. Emphasis is given to other categories. This may indicate a syllabus message which expresses an extending control by the Ministry over other levels of the syllabus.

It is also interesting to note that at the level of *methodological guidance* different emphases are given to the two scientific areas of the syllabus in the two reforms. In the 1991 the syllabus content is more explicit when it refers to geology than when it refers to biology-30 sentences with an area of 249.9 cm<sup>2</sup> refer to geology whereas 16 sentences with an area of 103.7 cm<sup>2</sup> refer to biology. In the 1975 syllabus there was greater explicitness for biology than at the level of chemistry-78 sentences with an area of 549.1 cm<sup>2</sup> in the case of biology and 18 sentences with an area of 153 cm<sup>2</sup> for chemistry. This indicates that in the syllabus from both the reforms the Ministry's degree of control at the level of methodology varies across the sciences.

The findings from the comparative analysis of the distribution of sentences in the syllabuses is presented in figure 8. The figure suggests that in the syllabuses as a whole F<sup>++</sup> sentences predominate in both reforms: In the 1991 syllabus 75.4% are F<sup>++</sup> sentences, 21% F<sup>+</sup> sentences, and 3.2% F<sup>-</sup> sentences. In the 1975, the degree of explicitness is also substantial with 81.1% of sentences expressing messages of type F<sup>++</sup>, 18.2% type F<sup>+</sup>, and only 0.7% of type F<sup>-</sup>. This would seem to point to greater explicitness in 1975 relative to 1991-not only because there is greater relative emphasis given to F<sup>++</sup> sentences in 1975 but also because there is greater relative emphasis given to F<sup>-</sup> sentences in 1991. However, if we consider that both the number of sentences and their area are smaller in 1975 than in 1991 we can say that, according to syllabuses' message, Ministry control over the over transmission acquisition process is no greater in 1975 than in 1991. We can therefore conclude that control, as seen in syllabus text, is high in both reforms, although expressed in a different way. Whereas in 1991 control is expressed through a longer text, by means of which the Ministry specifies the content it values, control is expressed through more explicit sentences concerning teacher action in 1975.

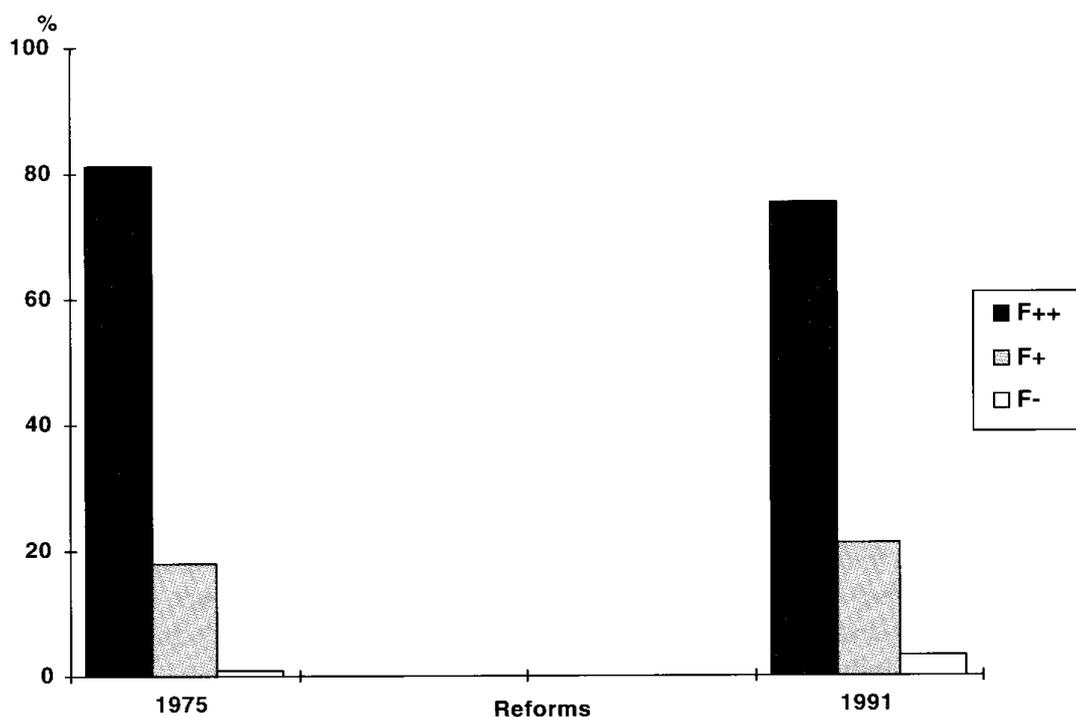


Figure 8. Comparison between natural sciences syllabuses for the 7<sup>th</sup> year (1991 and 1975) – relative distribution of sentences.

The analysis of the degree of explicitness in terms of each of the categories showed that the message of the 1991 syllabus suggests that the Ministry has more control over teacher action through the categories which are more directly related to the discipline. In fact, in *discipline aims* (category C) and *discipline contents* (category D) not only is the percentage of F<sup>++</sup> sentences greater but F<sup>-</sup> sentences are absent. According to the syllabus message the Ministry's degree of control tends to be less in categories B (*curriculum structure*) and E (*discipline methodological guidance*) because it is in these categories that we find a relatively higher percentage of F<sup>-</sup> sentences. It is also interesting to note that within *Methodological guidance*, the suggestions relating to geology are more explicit than the suggestions relating to biology (in geology more sentences are of type F<sup>++</sup> whereas in biology the number of F<sup>++</sup> sentences is equal to the number of F<sup>+</sup> and F<sup>-</sup> sentences). This greater explicitness in geology reinforces the message referred above of more control over strategies related to this area.

In the 1975 syllabus we found that the degree of explicitness is greater in *curriculum aims* (category A), *curriculum structure* (category B) and *discipline methodological guidance* (category E) because there are no F<sup>-</sup> sentences in those three categories but a high percentage of F<sup>++</sup> sentences. In category C (*discipline aims*) and particularly in category D

(*discipline contents*) the degree of explicitness is relatively lower according to the indicator we used. In the latter case, and in contrast to the other categories, there are even sentences of type F<sup>-</sup>. Considering sentences relative distribution for biology and chemistry, we found that explicitness tends to be similar. However, as we mentioned previously, the fact that there is more extensive text for biology than for chemistry suggests that 1975 syllabus carries a message of a greater degree of control by the Ministry on teacher action in biology than in chemistry.

The comparison of the percentage of F<sup>++</sup> sentences the two syllabuses is shown in figure 9. We can see that there is greater explicitness of content for categories C (*discipline aims*) and D (*discipline contents*) in the 1991 syllabus than in the 1975 syllabus. With respect to categories B (*Curriculum structure*) and E (*Discipline methodological guidance*) the opposite is found; there are more F<sup>++</sup> sentences in 1975 than in 1991. In category A (*Curriculum aims*) the emphasis across the syllabuses is similar-there is a similar percentage of F<sup>++</sup> sentences in both. If we take into account that category B contained only two sentences in 1975, the syllabus is more explicit in 1991 than it was in 1975, with the exception of methodological guidance. This suggests that in general Ministry control over the teacher may be greater in the present reform than in the previous one. The findings also generally reinforce the earlier findings on the extensiveness of the text dedicated to each of the various syllabus categories and that for discipline contents (category D) the explicitness is expressed differently in the two reforms.

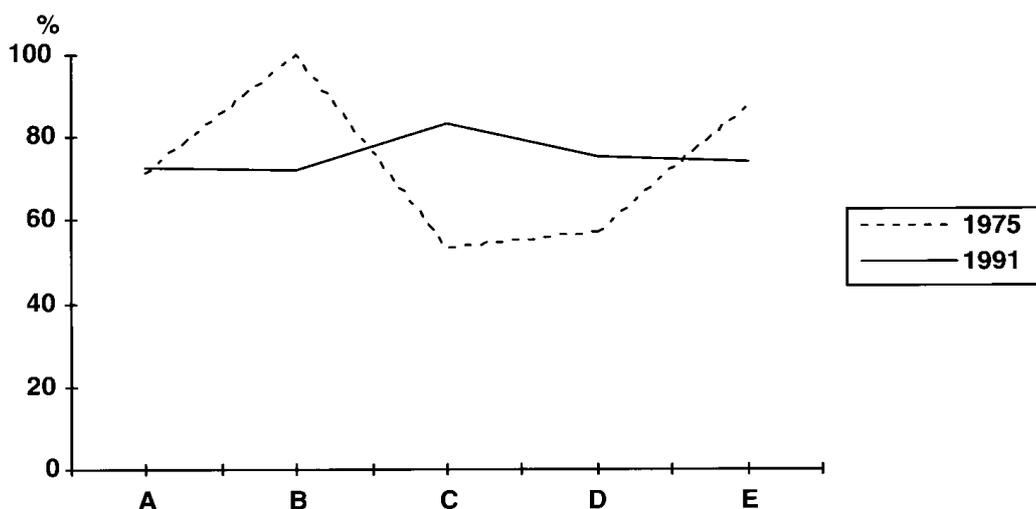


Figure 9. Comparison between natural sciences syllabuses for the 7<sup>th</sup> year (1991 and 1975) – in terms of F<sup>++</sup> sentences. (A) curriculum aims; (B) curriculum structure; (C) discipline aims; (D) discipline contents; and (E) methodological guidelines for the discipline.

The lesser control expressed in 1991 syllabus compared to 1975 syllabus with respect to category E (reinforced by the fact that this category has a less coverage in 1991 than in 1975) can, we believe, be explained by the fact that in 1975 a change in the teaching-learning methodology for nature sciences/natural sciences was already being sought; since the teaching methodology advocated in 1991 was similar to that sought in 1975, the Ministry invested less in explanation at this level. However, we also believe that in 1991 the Ministry was more flexible in its attitude to teaching methodologies; in this reform an appeal is made for methodologies which take into account the specific conditions of the school context and of the extra-school community.

The way in which category D is discussed in the two reforms may reflect a change towards greater explicitness in the conceptual meaning to be given to each content theme (more explicit sentences) compared to the more detailed description of themes (larger number of sentences). From the overall findings we can infer that in 1991 the Ministry was quite explicit in the directions it gave teacher about syllabus *content* and that this degree of explicitness was, in general, associated with the nature of the different parts of the syllabus. Thus, using the terms of the theoretical framework of this analysis, the Ministry-teacher relationship tends therefore to be characterized by strong framing in terms of discursive rules. The syllabus text expresses the idea of some control by the Ministry on the teacher's global action, with more or less emphasis depending on more specific or more general aspects of the syllabus.

In the 1975 reform it seems that syllabus also carried a message of a great degree of control by the Ministry on the teacher in terms of teaching-learning process. This message was, however, less evident at the level of discipline contents and more evident in terms of the methodological guidelines given for the discipline.

Let us now consider the syllabus analysis in terms of the presence or absence of *principles/reason*. In 1991 30% of the sentences contain directives relating to the syllabus design process, corresponding to 50% of the total syllabus area. In the 1975 reform only 9% of the sentences (corresponding to 9.9% of the syllabus area) contain principles or reasons for the syllabus content (Morais *et al.* 1995: 12). In other words, a comparative global analysis of the two syllabuses in terms of the Ministry-teacher relationship at the level of hierarchical rules shows that this relationship is expressed in syllabuses by much weaker framing in 1991 than in 1975.

Figure 10 presents the results of the comparative analysis of the two syllabuses in terms of the percentage of sentences (p) and respective area (a) containing principles/reasons, according to the syllabus analysis categories. With the exception of categories A (*curriculum aims*) and D (*discipline contents*) both the percentage of sentences and area are always higher in 1991 than in 1975. In category D there are no sentences with principles/reasons in 1991. In category A, the area of the sentences with principles/reasons is greater in 1991 than in 1975 although the percentage of such sentences is higher in 1975 than in 1991. Thus there is some inconsistency between the two indicators, which reflects the fact that there are fewer but longer sentences in 1991. This leads us to evaluate the messages in the two syllabuses as relatively similar with respect to this category.

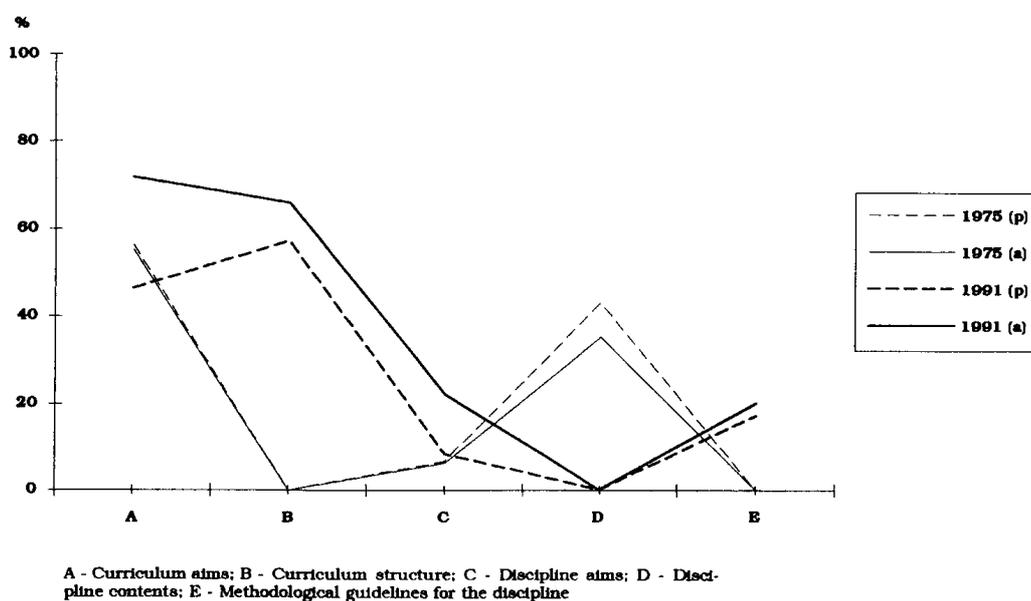


Figure 10. Comparison between natural sciences syllabuses for the 7<sup>th</sup> year (1991 and 1975) –sentences containing principles/reasons. (A) curriculum aims; (B) curriculum structure; (C) discipline aims; (D) discipline contents; and (E) methodological guidelines for the discipline.

In general, the findings from this comparative analysis reinforces our earlier interpretation that in 1991 Ministry-teacher communication entails, in general, a relationship of a more inter-personal nature than in 1975. In 1991 this relationship is most evident in *Curriculum structure* and *Methodological guidance* (in 1975 there are no sentences with underlying principles in these categories) and that, in contrast to 1991, the Ministry paid particular attention in 1975 to the reasons underlying *discipline contents*.

From a global analysis of the syllabuses, we can infer that the Ministry-teacher relationship, although characterized by relatively strong framing at the level of *discursive*

rules in both reforms, is characterized by weaker framing in the 1991 than in 1975 at the level of *hierarchical rules*. The comparison leads us to reflect that, seen from the point of view of the syllabus's messages, the change in Ministry-teacher relationship between 1975 and 1991 is essentially a change in the form of communication used by the Ministry-more inter-personal in 1991 and more positional in 1975.

## Discussion and conclusions

In this study we made a comparative analysis of official pedagogic discourse (OPD) of the 1991 (current) Portuguese reform and the previous 1975 reform. We focused on the syllabuses for nature sciences for the 5<sup>th</sup>/6<sup>th</sup> years and natural sciences for the 7<sup>th</sup> year. The objective was to explore the changes which have occurred in the present educational system reform with respect to the relationship between the Ministry (OPD transmitter) and teachers (OPD acquirers). We considered the messages transmitted in the syllabus text with respect to the control that the Ministry can have on both the implementation of syllabus content (discursive rules) and the form of communication (hierarchical rules). Figure 11 outlines the general shape of the study and the main conclusions.

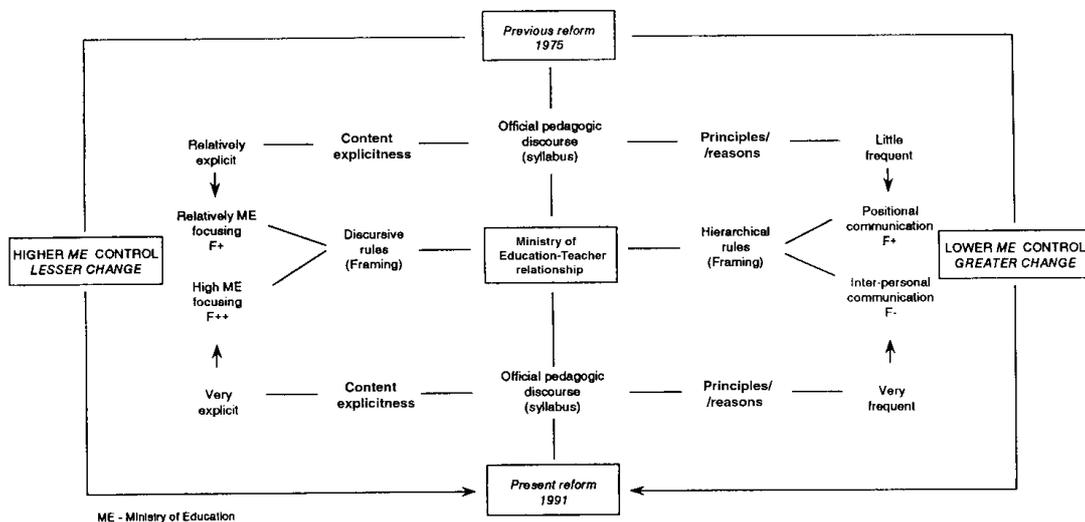


Figure 11. Changes in the Ministry of Education – teacher relation revealed through the analysis of syllabuses.

With respect to the first aspect of the analysis-Ministry-teacher relationship in terms of discursive rules-all the science syllabuses show greater explicitness in terms of syllabus

content in the 1991 reform when compared to the 1975 reform. This suggests a change at the level of the discursive rules which regulate the Ministry-teacher relationship-in the present reform there is a higher degree of Ministry control over the teacher with respect to the transmission-acquisition process to be used in the classroom.

With respect to the other aspect of the analysis-the Ministry-teacher relationship in terms of hierarchical rules-there are more principles/reasons underlying the syllabus content in the 1991 reform when compared to the 1975 reform. This suggests a change at the level of the hierarchical rules governing the Ministry-teacher form of communication: in the 1975 reform, Ministry-teacher communication is based on more positional relationships while in the 1991 reform communication is based on more inter-personal relationships.

Taking into account the results of the various analyses we conclude that the present reform has brought a change in the Ministry-teacher relationship and that this change represents, in general, a strengthening of framing at the level of discursive rules and a weakening of framing at the level of hierarchical rules. There is, in the present reform, a greater concern on the part of the Ministry to spell out very explicit directives for the teacher on the transmission-acquisition process which is emphasized by official pedagogic discourse. Furthermore, with the 1991 reform the Ministry is seeking a more efficient way to direct teachers through hierarchical relationships based on a trend towards inter-personal communication. Access to the principles on which the syllabuses are based and to the reasons which justify the syllabus options may help teachers to respond more efficiently to the directives established at a higher level. However, such access may, on the other hand, lead teachers to more easily question the principles underlying the ideology of the syllabus. This may give rise to spaces of intervention which are not in accord with the Ministry's intentions.

Although we should not ignore that teachers' practices may not correspond to the directions established in the official syllabus text, particularly where there is no direct and/or indirect evaluation of that practice, changes in the syllabus text at the level of the message which are related to Ministry control on teachers constitutes by itself a considerable change-a change in the way the power relations between subjects/agents who are differently positioned in the educational system is understood.

It is also possible to extract some interesting information about Ministry control when we discriminate between different parts of the syllabuses. With respect to control in terms of the *degree of explicitness* of syllabus content (i.e. the discursive rules), this control assumes different degrees according to whether it concerns the more general or more specific aspects of the different parts of the syllabuses: in terms of the more general aspects of the syllabus, there is generally greater explicitness in the 1991 reform compared to the 1975 reform; in terms of more specific aspects directly related to the disciplines, there is generally similar or even greater explicitness in the 1975 reform compared to the 1991 reform.

When we consider the Ministry-teacher relationship in terms of discursive rules, the difference between the two reforms is more evident in the 5<sup>th</sup>/6<sup>th</sup> years than in the 7<sup>th</sup> year. This suggests that there is a change in the 1991 reform towards a message of a greater control by the Ministry over teachers in terms of their implementing the OPD in the syllabuses for the 5<sup>th</sup>/6<sup>th</sup> years of schooling. In the 7<sup>th</sup> year, the change is mainly seen in the way in which Ministry control over teachers is expressed in terms of syllabus implementation. Perhaps the difference between the 5<sup>th</sup>/6<sup>th</sup> year syllabuses and the 7<sup>th</sup> year syllabus is a result of the fact that the 5<sup>th</sup>/6<sup>th</sup> year syllabuses of 1975 were not changed when compared to the 1969 syllabuses (the beginning of the Veiga Simão reform) whereas the 7<sup>th</sup> year syllabus underwent profound changes in 1975. This was a time when there was a desire to transmit more clearly the dominant principles arising out of the 1974 revolution; the changes in the 1991 reform for the 7<sup>th</sup> year did not appear so marked in respect of this aspect of the analysis.

It is also interesting to highlight the fact that in the 5<sup>th</sup>/6<sup>th</sup> year syllabuses in both reforms considerable emphasis is given to the category methodological suggestions. This relative emphasis is, however, more evident in the 1975 reform. This is also the case in the 7<sup>th</sup> year syllabus where the difference between the two reforms is even more marked. In this case, there seems to be a great concern in 1975 to make the methodological guidelines for the 7<sup>th</sup> year very explicit, which may reflect the importance the Ministry was already giving to changes on the part of teachers towards new teaching-learning methodologies. In 1991 there is much less marked difference in explicitness between the different parts of the 7<sup>th</sup> year syllabus. This may mean that in the present reform there is also interest on the part of the Ministry in extending its control to the level of the different syllabus parts.

We should also note the control expressed in the 7<sup>th</sup> year syllabuses over the methodological guidance for different scientific areas. In the present reform the syllabus includes biology and geology and we can see that in geology there is greater explicitness in methodological guidance. In the 1975 reform, which included biology and chemistry, it is in biology that the explicitness is greater. This suggests that the syllabuses point out to a greater concern for control by the Ministry-in terms of achieving the directives- for geology in the 1991 and biology in the 1975. This greater explicitness in geology when compared to biology in the present syllabus may be the result of the introduction of an area which was absent from the previous syllabus and which, for that very reason, requires a higher degree of explicitness if teachers are to effectively implement the syllabus in the new area. The fact that biology was given greater emphasis in the 1975 syllabus also reinforces the idea that the changes intended for biology had already been explained and, for that reason, greater attention should now be given to geology.

If we consider that in the 1975 syllabus there is a greater emphasis on biology compared to chemistry, we may see the emphasis attributed to different areas of knowledge as reflecting the differential status of the two areas. Thus, the findings suggest that in the 1975 reform chemistry had a lower status and, for that reason, there was a greater concern with achieving the syllabus in relation to biology. Following this line of thinking, geology would seem to have a higher status than biology in the present syllabus. This can be seen as reflecting the need to give geology a place within compulsory schooling once again after a period in which had been absent or of lesser importance.

The analysis of the Ministry-teacher relationship at the level of hierarchical rules also produced some interesting results which complement the above conclusions. It is at the level of the more general syllabus categories that we can generally find more principles/reasons in 1991 than in 1975 for any of the years of schooling. For categories more directly related to the discipline there is a similarity between the two reforms in the 5<sup>th</sup>/6<sup>th</sup> year syllabuses, i.e. principles/reasons are virtually absent. In the 7<sup>th</sup> year syllabus there are differences between the two reforms-in the 1975 reform there are no principles/reasons relating to syllabus content and in 1991 there are no principles/reasons relating to methodological guidelines.

This suggests that the more inter-personal type of relationship, which seems to characterize the 1991 reform when compared to the 1975 reform, is generally more evident

at the level of the main principles behind the curricular reform than at the level of specific aspects of the discipline. Such a trend may mean that, by giving teachers access to the principles/reasons underlying the main guiding directions of the syllabus, the Ministry seeks to create conditions for more effective implementation in terms of the transmission-acquisition process expressed in the more specific parts of that syllabus. There is, therefore, Ministry guidance which, in an indirect way and with an implicit hierarchical relationship, intends to lead the teachers to a more meaningful appropriation of the official pedagogic discourse legitimized by the reform. On the other hand, the greater importance which the present reform gives to the principles/reasons on which the curriculum is based seems to show the Ministry's concern with making teachers aware of the main principles which influenced the intended 'changes' at the general level of the curriculum and not only of the discipline.

At the same time the syllabus text at the level of Ministry-teacher relationship in the present reform becomes a message of an increasing control by the Ministry with respect to syllabus implementation, together with a form of communication based on relationships of a more inter-personal nature. This message entails a change which can be seen as a paradox. On one hand, to lead teachers to change their teaching-learning processes the Ministry must make its intentions very explicit. In this sense if the change is understood by teachers to be legitimate, the degree of explicitness in the syllabuses must increase. On the other hand, it is also certain that an increase in the degree of explicitness expresses a greater control by the Ministry over teachers and, therefore, gives them less space for change at the classroom level. The less legitimate the message contained in the Ministry's official pedagogic discourse is among teachers, the more serious this situation becomes: Increasing the degree of explicitness in the syllabus would seem to be of little value; and by using a more inter-personal form of communication, the syllabus reveals a message which tends to blur the hierarchy which characterizes the power relationship between the Ministry and teachers. However, this blurring in the hierarchy does not represent anything more than a change in the control mode used by the Ministry to make teachers fulfill its directives. However, through this control mode conditions are created which, by allowing a more open 'dialogue' between the various educational partners, may generate areas of conflict, contradiction and resistance on the part of the teachers. And the more aware

teachers are of the sociological message underlying the change taken by the Ministry-teacher communication, the more teachers can use that space.

It is important to note that the message carried by a syllabus becomes more meaningful when mechanisms exist in the educational system to check on syllabus implementation as, for example, in the case of national exams. In this particular case, the control exercised by the Ministry is real and leaves teachers little room for intervention to recontextualize the syllabus. In the absence of such mechanisms, Ministry control through syllabuses can condition teacher intervention but leaves space for potential change which can be used by teachers who do not identify with the pedagogic ideology underlying the syllabus.

It is interesting to speculate about the reasons for the general tightening of the official pedagogic discourse in the more recent reform. We know from other studies focused on the same syllabuses and analysing the content to be taught (Morais and Neves 1999, Neves *et al.* 1996, Neves and Morais 2001) that the changes were on the whole minimal. Perhaps the increasing control of the Ministry derives from the perceptions that its directives about content and teaching methods were not being followed. Furthermore, national and international ideas about the efficiency of children's learning may also have influenced the Ministry position of control over teachers. But, and paradoxically, that influence was not as present as we might expect in present syllabuses' contents. On the basis of the above, our findings give more support to the first explanation, i.e. the Ministry is telling teachers to do efficiently what they have always done.

As we reflect on the outcomes of this study, teacher training appears as a crucial element in the whole educational process. In fact, it is essential that in their pre-service and in-service training teachers acquire concepts which give them a deeper understanding of the sociological messages transmitted at the different levels of the educational system. Only by this understanding can teachers recognize the direction of the changes which take place with the introduction of new curricular reforms and become aware of the limits and potential of their pedagogic recontextualizing space.

Together with the contribution that this study can make at the level of teacher training, we believe that the study opens up new paths within educational research. The model of analysis used here not only contains indicators which by their nature are applicable to

different disciplines in the curriculum but also, given its comprehensiveness, allows relationships at the different levels of curricular analysis to be established.

### **Acknowledgement**

We acknowledge the Institute for Educational Innovation for the financial support which made this study possible.

### **NOTES**

1. See, for example, Fontes *et al.* (1996), Medeiros *et al.* (1996), Neves *et al.* (1996), and Morais *et al.* (1997).
2. The Veiga Simão reform started in 1969, during the dictatorship. It launched the start of comprehensive schools by merging the 5<sup>th</sup> and 6<sup>th</sup> years of schooling (age 10-12). These years had previously been taught in two different schools-the liceus (equivalent to grammar schools) and technical schools.
3. The content of the syllabus is understood here in a general sense and includes all the text the syllabus contains (introduction, objectives, curriculum themes, methodological suggestions, etc.).
4. This aspect is analysed in other studies (see, for example, Neves *et al.* 1996, Morais and Neves 1997).
5. Aspects relating to evaluation were subject to successive, new directives from the Ministry subsequent to the documents we analysed. For this reason we did not analyse this aspect of the syllabus in this study.
6. The different sentences in the syllabuses are presented in Morais *et al.* (1995: Tables 1-B to V-B).
7. Morais *et al.* (1995: 5).
8. These tables form part of the general syllabuses analysis (Morais *et al.* 1995) and were based on Ministry of Education publications (SEEBS 1975 a, b, DGEBS 1991 a, b, c, d).
9. The validation showed a discrepancy of 13.1% with regard to the initial classification.
10. These tables are part of the texts produced in the broader research where the present study is included (Morais *et al.* 1995).
11. The 7<sup>th</sup>-year natural sciences syllabuses contain two separate parts-chemistry and biology in 1975, and geology and biology in 1991.
12. The data is presented in Morais *et al.* (1995).

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**Teacher's 'space of change' in educational reforms:  
a model for analysis applied to a recent reform in Portugal**

*Abstract*

This study analyses teacher's 'space of change' in the current reform of education in Portugal, i.e. the degree of control which is given by the Ministry of Education to the teacher in implementing syllabuses in the classroom. The study is based on Bernstein's theory of pedagogic discourse. The findings show a change at the level of the teacher- Ministry of Education relationship in the present reform, which translates into an increasing control by the Ministry in respect of syllabus implementation, together with a form of communication based on relationships of a more inter-personal nature.