

The selection of knowledge in curriculum proposals: natural sciences and art*

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ABSTRACT

The aim of this article is to identify the relevant knowledge appointed to be developed on natural sciences and art in the elementary school. The research deals with the documental analysis of the National Curriculum Parameters of Natural Sciences and Art and of the two proposals elaborated by two Brazilian states. They were highlighting the information about the following aspects: the justification for the presence of the disciplines in the curriculum and the issues chosen to be taught. In the continuity, it was done the comparison between the ways of dealing with these aspects in these documents. It were used the concepts of recontextualization, and powerful knowledge, to analyze the data. The results suggest that the discussion about the curriculum uses to be more intense when we deal with a socially valorized knowledge – the science – than when we wonder about the formative potential of arts.

KEYWORDS

curriculum; recontextualization; school knowledge.

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A SELEÇÃO DO CONHECIMENTO EM DOCUMENTOS CURRICULARES: CIÊNCIAS NATURAIS E ARTE

RESUMO

O objetivo deste artigo é identificar o conhecimento considerado relevante para ser disponibilizado no ensino fundamental, em ciências naturais e arte. O procedimento adotado foi a análise documental, e as fontes foram os Parâmetros Curriculares Nacionais e propostas elaboradas por dois estados. Foram levantadas informações sobre: a justificativa para a inclusão das disciplinas no currículo e os temas a serem abordados. Foram comparadas as formas de tratamento desses aspectos, a fim de identificar os diferentes tons assumidos em relação às disciplinas. Para a análise, foram utilizados os conceitos de recontextualização e de conhecimento poderoso. Os resultados sugerem que a discussão sobre as definições curriculares tende a se acirrar quando se trata de disciplina socialmente reconhecida como relevante – as ciências –, mais do que quando se trata de pensar no potencial formativo das artes.

PALAVRAS-CHAVE

currículo; recontextualização; conhecimento escolar.

LA SELECTION DEL CONOCIMIENTO EN DOCUMENTOS CURRICULARES: CIENCIAS NATURALES Y ARTE

RESUMEN

El objetivo del artículo es identificar el conocimiento considerado relevante para ser ofrecido en la educación básica, en las ciencias naturales y arte. El procedimiento elegido fue el análisis documental y las fuentes fueron los Parámetros Curriculares Nacionales y las propuestas hechas por dos provincias brasileñas. Han sido recogidas informaciones acerca de las justificativas para la inclusión de las disciplinas y de los temas que debían ser trabajados. Fueron comparadas las formas de tratamiento de estos aspectos para identificar los matices asumidos respecto a las disciplinas. Para el análisis, fueron utilizados los conceptos de recontextualización y de conocimiento poderoso. Los resultados sugieren que la discusión acerca del currículo ha la tendencia a exarcervarse cuando la disciplina es socialmente reconocida como relevante –las ciencias– más que cuando se trata del potencial formativo del arte.

PALABRAS CLAVE

currículo; recontextualización; conocimiento escolar.

INTRODUCTION

The purpose of this article is to identify the knowledge that official curriculum guidelines considers relevant and that should be made available in fundamental education classes in the natural sciences and art. By recognizing the importance of the specialized knowledge provided in schools, an analysis is conducted of the specific knowledge that has been presented as important for educating students.

The discussion of this perspective addresses the question raised by Young (2007), who affirmed the importance of reflecting on the knowledge provided at schools. Young maintained that this must be “powerful knowledge”, that is, knowledge that allows students, particularly those from underprivileged social classes, to understand the world they live in, and be “able to walk, at least intellectually, beyond their local and personal circumstances” (*idem*, p. 1.297). Young affirms that the specific task of schools is to ensure access to specialized knowledge that is not made available to these children and teenagers in their daily lives. This knowledge can offer generalizations and a basis for making judgments, by providing parameters for understanding the world. From this viewpoint it is understood that certain types of knowledge and ways of thinking allow questioning social practices, qualifying the analysis of the multiple relations involved in the natural and social phenomena.

According to Young (2011), the fields of knowledge are the source of the specialized knowledge that should compose the curriculum, and constitute the school disciplines. These disciplines represent the closest we have come so far to explaining the natural and social world in a way that is suitable to being transmitted at schools – which does not mean they should be considered a fixed canon, since, in the production process of this knowledge, different interests expressing countless disputes are involved (*idem*, p. 617). This perspective highlights the need for a fairer distribution of “powerful” knowledge, access to which should be made possible to all.

Gimeno Sacristán (1999, p. 186) also refers to this type of fairness, highlighting the inadequacy of differentiating contents for specific groups:

For the curriculum to serve the ideal of fairness, one cannot depart from the idea of differentiating the contents of education. The interests of the most underprivileged demand what Connell (1997) calls “curricular fairness”, and to attain it, the differentiation of a substantial part of the contents, which should be generalized, should be avoided. Because of the existing social differences (caused by social stratification, gender, race, nationality, etc.), curricular relativism would imply transforming the types of contents for different social groups into “ghettos”, since it is quite unlikely that the differentiation would not be accompanied by an hierarchization of differences that lead to inequality.

When discussing what constitutes the curriculum contents, Sacristán emphasizes that, considering the multiplicity of expectations for the school, a broader concept of contents has been developed, to respond to these expectations. Thus, more than referring to a selection of specialized knowledge, the term acquired greater complexity, by referring to a series of experiences at school, at least in the discourse about

schools, although, in practice, the definition of a list of types of knowledge continues to a large extent to guide the work of teachers, as Sacristán (1998, p. 154) affirms:

the traditional concept of contents remains strong in the education system, since [...] it helps provide closer meanings, better regulate teaching practices, organize the work done over the period of schooling, specialize and select the teachers, when it finds a more concrete achievement that gives a clear idea if there is progress.

Thus, if, on one hand, by regarding the curriculum as an organization of content lists that provide parameters for the work of schools and teachers, it also reduces the scope of the very curriculum proposal, by opting to ignore the living and non-linear relationship that is built with the knowledge found in the actual curriculum. But on the other hand, the struggle to broaden the concept of curriculum content has at times also led to a refusal of its academic component, generating a movement that distanced schools from their cultural role:

The actual incidence of intentions to achieve a less academic education has been more decisive in the evolution of the pedagogic methods than in the teaching contents. At times, its influence has been reflected in pendular motions that underestimate the cultural assimilation in classrooms in favor of the development of the student's personality and of the learning processes; as if these purposes were at the margin of or above culture, and improved the human intellect and the overall personality of students within the cultural void. Obviously, without culture there is neither possible intellectual functioning nor personality development, since these pendular movements wind up falling into the void (*idem, ibidem*).

Moore (2012, p. 3) also mentions this distancing from the question of knowledge from the core of the curriculum concerns:

It becomes increasingly difficult to decide what to teach as opposed to what not to teach or, in relation to theory and research, as Bernstein observed in an early diagnosis of this condition, 'We are told and socialized into what to reject, but rarely told how to create'. The analysis of educational knowledge becomes a debunking exercise rather than a positive explanation of the grounds upon which one can claim that some types of knowledge are more powerful than others, that it is this knowledge that should be included in the curriculum, and to which all the pupils are entitled. The most fundamental inequality in education is that of the access to the best knowledge. But to make such claims is to run the risk of being accused of academic elitism, cultural imperialism and of ignoring the relationship between knowledge and power.

As a reaction to this movement, some authors – such as Young (2013), Moore (2012) and Beck (2012), among others – defend the view known as social realism, which asserts the cultural function of the school. However, for this perspective,

although specialized knowledge is that form valued for being transmitted at school, it is not regarded as having a greater cultural value than other types of knowledge, such as that which is mobilized in everyday life. What makes a certain kind of knowledge powerful in the composition of the curriculum is its possibility for fulfilling the role of the school as previously emphasized. In other words, it involves a difference in purpose. And, moreover, it is the possibility that it represents that the experience of everyday life be understood from new and broader categories linked to specialized types of knowledge. Therefore, it also certainly involves a difference in the structure of knowledge.

Beck (2012, p. 13), when discussing trends in curriculum reform in England, questions:

How should we educate tomorrow's citizens? [...] knowledge and understanding parameters drawn from academic disciplines should be central to this endeavor. But such knowledge needs to be drawn from a broad spectrum of disciplines, including those that help students understand contemporary social, political and economic issues and debates, as well as (or perhaps even more so) those of the past.

Beck (*idem*, p. 14) specifies, in the same sense understood by Young when referring to powerful knowledge, that “concepts and forms of relevant understanding extracted from a vast range of academic disciplines should be used to enable young people to become aware of themselves, of the society they belong to and of their own current situation”.

Thus, the central question of the research presented in this article is: what comprises the selection of knowledge in the disciplines of the natural sciences and art in documents that guide the curriculum to be applied at schools? And, as derivations of this question, it is worth asking: how do documents developed by Brazilian states and municipalities transform this initial selection? What different nuances are gradually included in the documents – resulting from distinct knowledge recontextualization processes – when they refer to what they present as relevant knowledge? What implications could result from those different approaches to the curriculum in effect?

The article has the following structure: first, the sample is characterized, and the methodological choices applied to the research are explained. The results are then presented and, the analysis of these results is discussed.

METHODOLOGY

To conduct this study we analyzed a group of curriculum documents produced at the federal level; the *Parâmetros Curriculares Nacionais* (PCN) [National Curriculum Parameters] for the natural sciences (Brazil, 1997a) and the arts (Brazil, 1997b). At the state level we analyzed two curriculum proposals prepared by two state offices of education, which are identified as proposals E and D.

The National Curriculum Parameters were chosen because of the central role they have clearly had for formulators of curriculum proposals, as expressed in

a research report about recent curriculum proposals in the country (Brazil, 2010). This report classifies the proposals as being for immediate application, of differentiated preparation, and as being distant from the central guidelines. Thus, proposals prepared by two Brazilian states will be used as sources for the research: one that establishes a differentiated preparation (proposal E), and another that is distant from those guidelines (proposal D). Because of the similarity with the definitions of the National Curriculum Parameters, we chose not to focus on a proposal for immediate application.

The idea was to survey three different cultural selections to identify the knowledge considered to be essential in fundamental education. However, it was recognized that these selections constitute only one dimension of the curriculum, and are not the direct expression of what is established at the actual curriculum level, which is developed in classrooms, in the interaction between teachers, students and knowledge, given school conditions and other factors. Furthermore, one cannot fail to recognize that these selections express the results of disputes between different positions and interests that are always present in the field of production of this knowledge, and in all its phases of transformation in the establishment of the actual curriculum.

For this article, we selected information found in the documents concerning the following aspects: the justification presented for the presence of the disciplines of the natural sciences and art in the curriculum, the themes selected as being relevant, and the complexity with which they should be approached at this level of education. We then compared how these aspects were treated, to identify the different positions assumed in the documents concerning the disciplines focused on.

The choice of the disciplines, as Young and Muller (2013) indicate, resulted from the association often made between the concept of powerful knowledge and the knowledge linked with the STEM disciplines. For this reason we decided to consider the selection of knowledge in a discipline directly linked to these types of knowledge – natural sciences – and that in another discipline of a quite distinct nature – in terms of the very process of production of new knowledge – the arts.

RESULTS

In this section, we present the information gathered from analyzing the curriculum documents in the sample. First, the data about the natural sciences is presented, followed by that concerning the arts.

NATURAL SCIENCES

Three different approaches can be identified in the justification for including the natural sciences in the fundamental education curriculum. According to the National Curriculum Parameters it is accepted that:

The appropriation of its concepts and procedures can contribute to questioning what one sees and hears, broadening explanations about the natural phenomena, comprehending and valuing forms of intervening in nature and of making use of its

resources, for understanding the technological resources that perform these mediations, and reflecting on ethical issues implicit in the relationships between science, society and technology. [...] More than in any other time in the past, whether for consumption or for work, the need for knowledge grows, to allow interpreting and evaluating information, even to be able to participate in and judge political decisions or scientific disclosures in the media. A lack of scientific and technological information can compromise citizenship itself, which is left at the mercy of the market and promotional activities (Brazil, 1997a, p. 21-22, Our emphasis added).

Proposal E, which, according to the aforementioned report (Brazil, 2010), takes a tone quite close to that of the National Curriculum Parameters, but is still different from the federal document, contains the following justification:

current society, faced with issues such as the search for productive modernization, care for the natural environment, the search for new energy sources, and the choice of telecommunication standards, must resort to the sciences as providers of languages, instruments and criteria. Thus, basic education [...] must promote the scientific and technological knowledge to be grasped and mastered by citizens as their very own resource, and not as that “of others”, whether they are scientists or engineers, and used as a resource for expression [and] tool for making judgments, taking a position or resolving problems in real contexts (Proposition E, p. 28, emphasis added).

The school should provide the students with consistent knowledge and tools, allowing them to develop criteria for personal decision making, for analyzing natural phenomena and technological processes in their everyday lives, and, in new situations, to make use of information and concepts that were actively constructed during the school learning process (idem, p. 32, emphasis added).

Meanwhile, Proposal D, whose approach is generally distant from that of the National Curriculum Parameters, justifies the inclusion of the discipline of the natural sciences in the fundamental education curriculum as follows:

The learning of the sciences is particularly important for developing one's citizenship, for this reason the poorer a child's social and family environments are materially or culturally, where the child is not given the opportunity to have contact with the most elementary of tools of contemporary technology, the greater the school's responsibility is in being a diversified scientific-technological environment, thus giving the student access and conditions for actively comprehending the main equipment of socially widespread use. This is certainly not about inducing consumption, which would even be superfluous how easy it is to handle many devices for general use, but about emancipating them for effective participation, which means, more than mastering techniques, understanding their principles (Proposal D, p. 117, emphasis added).

The teaching of the sciences constitutes a scientific and technological literacy process that will allow the student to increasingly establish connections with natural, so-

ciocultural phenomena, and, as a result, *to more elaborately read and interpret nature and society* (*idem*, p. 122, emphasis added).

Thus, concerning the justifications presented in the documents for the presence of that discipline in the curriculum of fundamental education students, greater similarity is identified between what is included in the National Curriculum Parameters and Proposal D, which, in a more general assessment, was classified as being distant from this federally produced document. The similarity falls on the relevance attributed to the discipline, to allow deepening an understanding of the natural phenomena, and go beyond the immediate application of that knowledge. However, Proposal D goes further and highlights the roles these cognitive resources and the thinking skills developed in the discipline play in what is called emancipation. In turn, Proposal E emphasizes the application of knowledge for assessing situations and solving problems within the context of the practice, and leans toward a more instrumental relationship with the discipline's specialized knowledge.

Concerning the themes selected for teaching the natural sciences, there is greater similarity between the National Curriculum Parameters and Proposal E, as seen in the excerpts below:

Four thematic blocks are proposed for fundamental education: the *environment; the human being and health; technological resources; and the earth and the universe*. The first three are presented over the entire period of fundamental education, and have different scopes in different grades. The earth and the universe block will only be presented in the third cycle [the final years] (Brazil, 1997a, p. 34, emphasis added).

The science curriculum is organized around four thematic foci: *life and the environment, science and technology, the human being and health, and the earth and the universe*, which are recurrent throughout the four years [fundamental education II] (Proposal E, p. 33, emphasis added).

Meanwhile, Proposal D indicates the decision to highlight themes that are more limited to the division of the scientific fields, and remains more in tune with traditional ways of organizing the curriculum around themes that include biology, chemistry and physics than with a possible approach by field, as is done in the National Curriculum Parameters. But it emphasizes the role of the teacher in choosing the methodology that will define how knowledge will be approached and contents chosen, based on the "relationships man has with the world":

The contents proposed, during fundamental education are based on the following guiding themes: *water, air, soil, living beings, the human body, chemistry and physics*. The materialization of these themes in schools is based on the relationships man has with the world, and the methodological approach stems from the philosophical and political concepts that guide the perspective of educators and, therefore, their practice (Proposal D, p. 128).

The National Curriculum Parameters also recognizes advances in the complexity of scientific-based knowledge and skills to be developed during fundamental education:

In the first cycles, by means of different activities, students are introduced to phenomena, processes, explanations and names, while discussing several issues and organizing various relations. It is a learning process, which is often ludic and *marked by direct interaction with phenomena, facts and things*. They will also be able to build scientific notions of lower complexity and scope, and broaden their first explanations as their own development allows. In the final cycles, depending on the previous acquisitions, students will be able to *work with and systematize more structured scientific ideas* (Brazil, 1997a, p. 29, emphasis added).

When it comes to specifying the level of complexity to be attained in approaching the concepts of the natural sciences, Proposition E specifies that:

In the 5th grade/year 6, the *emphasis should be on the students' immediate reality*, on their personal experiences and perceptions. In the 7th grade/year 8 and 8th grade/year 9, the emphasis shifts to *more comprehensive themes and their interpretations* (Proposal E, p. 27).

And it points to what it sees as being possible for students when they reach the end of fundamental education:

Toward the end of fundamental education, it is already possible to *identify and qualify countless technologies* that are present in industrial and energy production, agricultural and mining, in communications, information processing, health services, in the consumption of goods, environmental monitoring, etc., *virtually all the areas of life in society, giving the same focus on global issues*, such as fossil and renewable fuels, protection of biodiversity or the compromising of water sources (*idem, ibidem*, emphasis added).

Once more it becomes clear that Proposal E makes a link between acquired knowledge and practical issues more related to the concrete aspects of life in society today.

Meanwhile, in relation to the complexity to be reached in the contents of the natural sciences, Proposal D points out that, in moving on from the first to the second cycle of fundamental education [from elementary school to middle school]:

The grades that follow [fundamental education I – elementary school] are *the continuity of a process of appropriation and interpretation of the knowledge taught*, and not an initial moment of school education that is detached from the student's previous education background (Proposal D, p. 128, emphasis added).

In other words, Proposal D states that knowledge should follow a more linear progressive deepening, which builds on what was begun in the first cycle of basic

education. Therefore, it refuses to strictly define a starting point for the second stage of fundamental education [middle school], given the recognition that this point should be defined according to the process previously developed, and according to the specific conditions of the school and the group of students and teachers.

ART

When justifying the inclusion of art in the fundamental education curriculum, the National Curriculum Parameters take the following approach:

Human beings, who do not know art, have a limited learning experience; *the dimension of dream, the communicative force of the objects that surround them, the instigating sound of poetry, of musical creations, of colors, shapes, gestures and lights that search for the meaning of life* escape them (Brazil, 1997b, p. 19, emphasis added).

They also point out that:

Art in school has an important function to accomplish. It *situates the student's art production as a humanizing, cultural and historical fact* in which the characteristics of art can be perceived in the points of interaction between the students' artistic production and the production of artists throughout time, who always inaugurated *ways to make the non-existent present* (*idem*, p. 35, emphasis added).

In turn, Proposal E highlights the emerging of the senses stimulated by contact with the language of art:

the study of the language of art makes us aesthetic partners when we interpret and create meaning for a work that we look at and that looks at us, *triggering reactions, opening spaces in our perception, touching our sensibility by means of its artistic signs* (Proposal E, p. 193, emphasis added).

Meanwhile, Proposal D, in addition to the emphasis placed on the individual dimension of the aesthetic experience, highlights the relevance of the access to cultural assets with the appropriation of their meanings:

the artistic object is the bearer of evidence that favors an *active encounter between the spectator and the work (visual, scenic and musical)*; so that along with an aesthetic experience, the person enjoying the artistic object, also experiences a creative process; that this moment of aesthetic experience is absolutely individual even when experienced collectively, since the mode of fruition is particular. There is a *non-transferable experience* that allows *accessing the cultural assets produced by different cultures, and grasping their meanings* (Proposition D, p. 194, emphasis added).

Concerning the themes to be approached in fundamental education, the National Curriculum Parameters indicate that:

Over the course of fundamental education, it is expected that the students progressively acquire *competencies of sensitivity and cognition in visual arts, dance, music and theater*, through their artistic production and in contact with the artistic heritage (Brazil, 1997b, p. 47).

Proposal E highlights what is called “art and culture territories”, and indicates points that can help map those territories, and emphasizes the necessary “passage among different types of knowledge”:

curriculum thinking in art can move through different territories of art and culture that are mapped as: *art languages, creation process, materiality, form and content, cultural mediation, cultural heritage and aesthetic and cultural knowledge*. The composition of these territories offers different directions for study, such as the tracing of a cartography, a map of possibilities, with passage between the types of knowledge, and articulating different fields (Proposal E, p. 191, emphasis added).

Proposal D, in turn, identifies three areas of knowledge that should be accessed to understand the artistic object: “significant art education understands the artistic object based on three fields of knowledge: *production, fruition and contextualization (of the visual, musical and scenic languages)*” (Proposal D, p. 194, emphasis added).

In regards to the complexity to be attained in approaching the contents of art for fundamental education, the National Curriculum Parameters indicate:

In the first and second cycles [of fundamental education] students *can become aware of the existence of a concrete social production and observe that this production has a history*. Now, [in the second stage of fundamental education], students establish *clearer connections between school work and culture beyond the school, which involve the object of study*, both within their community and in the national and international production to which they have access (Brazil, 1997b, p. 61, emphasis added).

Accordingly, Proposal E points to the following approach to the “territories of art and culture “ during fundamental education:

Among the territories covered, artistic languages, form and content, and materiality stand out more emphatically. Creative processes appear in the final grades of cycle II, as well as the territories of cultural heritage and cultural mediation. Aesthetic and cultural knowledge support the systematization of what was studied (Proposal E, p. 186).

In turn, Proposal D, indicates that:

In this school phase it is essential, *to search for and learn how to organize information about the arts [...], by recognizing and understanding the variety of artistic products and aesthetic concepts present in the history of different cultures and ethnici-*

ties. Thus, it is important to broaden the aesthetic readings in different languages, so that students are able to better understand their own time, their own history and their culture (Proposal D, p. 205, emphasis added).

Considering what was proposed above, it can be identified that, in relation to the discipline of art, no major differences stand out concerning both the justification for its inclusion in the fundamental education curriculum and the themes indicated as being relevant. Thus, the proposals emphasize the potential that production, enjoyment and comprehension of the meanings of art works can present for educating new generations as humanizing elements, although the option to not present educational guidelines is also recognized in these documents.

Once more, Proposal D seems to be more in tune with what the National Curriculum Parameters establishes by emphasizing that the development of the possibilities for aesthetic readings in different languages represents a potential for comprehending the society in which they live today, their history and culture, more clearly pointing to the power of understanding the world that art can have in the schooling process. Meanwhile, Proposal E has a more generic discourse, by emphasizing art's impact on individuals, without emphasizing what this may represent for broadening how children and teens read the world.

FINAL CONSIDERATIONS

This article accepts some assumptions that should be highlighted at this point, to present the considerations about the analysis conducted. To begin, we affirm the position this article took concerning the function of schools: to allow all students to develop resources – cognitive, conceptual and procedural – so that they understand the world from a viewpoint that is different from the one their out-of-school experience allows them. It is a viewpoint different from that understanding made feasible by the resources developed in the relationship they have with their immediate everyday experience. Hence the importance attributed to curriculum documents as references – not as a determination – to guide the curriculum development process.

This first statement leads to the equally important second one: that there is a type of knowledge that can be regarded as being better for focusing on in schools. In other words, schools should go beyond everyday knowledge if they wish to broaden how students comprehend the world. This implies establishing the distinction between everyday knowledge and school knowledge.

Also to present the assumptions made in this article, we understand that the source and starting point for this better knowledge to be taught at schools is the content of academic disciplines, due to how they are produced – at the heart of communities that work with specific rules for producing, legitimating and distributing it within the society. It represents the knowledge these communities recognize as that which constitutes the best resources for understanding the phenomena and the responses we give them, and to consider other ways of understanding and dealing with them.

Still, this recognition does not mean that this content should be taken as something fixed, final, indisputable – it is a selection of legitimated types of knowledge consistently subjected to reviews, since the production and legitimization of knowledge is continuous and complex and involves disputes among multiple interests, which are understandable in light of the conditions of the socio-historical context in which this process develops.

Since we are dealing with the concept of powerful knowledge, as defined previously, the idea in this article was to explore the notion that both the natural sciences and the arts represent different types of power that are linked to the access to different discourses and knowledge structures – according to the distinction between vertical and horizontal discourses¹ developed by Bernstein. Accordingly, Young (2013) argues that different types of specialized knowledge are linked in different ways to the material context, and are built at the heart of communities that have distinct judgments about the objectivity of the knowledge their members produce. Thus, although it may be easier to understand how the sciences meet these characteristics of specialized knowledge – because of their specific structure –, Young (*idem*) also affirms the power related to the arts, literature, music, the social sciences, history, etc. in the school curriculum.

It is also important to highlight that the official curriculum documents cannot be regarded as the only expression of the curriculum. They represent the curriculum proposed, an element of the process that starts within the government context and is developed in the classrooms, while undergoing a series of transformations according to the different goals and interests of those involved in its distinct dimensions. In other words, the curriculum documents can be regarded as the result of the transformations of specialized knowledge into a new text that is designed to organize the work of schools and teachers. Thus, these documents constitute a reference for the development of the actual knowledge – for which reason this article recognized their importance.

In these documents, a specific list is prepared including selected contents and other demands related to school education for children and youth. Although this article does not ignore the clash resulting from the different interests found underlying all the processes constituting the curriculum – from those of an epistemological nature, stemming from disputes in the disciplinary fields, up to those expressed in the realm of core decisions and decisions made at the school and classroom levels – it focuses on the relationship established in the curriculum documents with the specialized knowledge that underlies the school disciplines.

Certainly the idea affirmed here – the defense of the access to powerful knowledge, as a way to allow students to go beyond the limits of immediate experi-

1 The Horizontal Discourse is developed in specific contexts where it finds its meaning in a direct relation. The Vertical Discourse is a type of discourse whose structure is coherent, explicit; it is systematically organized and indirectly linked to the material base. This discourse can present two types of structures: hierarchic, as in the natural sciences, or horizontal, as in the social sciences, for instance. See the presentation of the concept in Bernstein (2000).

ence when understanding the phenomena – does not depend solely on statements present in official curriculum documents. But what is affirmed here is that this first stage of the transformation of the knowledge to be transmitted in schools may – or may not – give potential to the development of a curriculum based on the living process of knowledge, by the selection, sequence and measurement proposed for the school curriculum.² Thus, when speaking of the “living process of knowledge”, we intend to make clear that we are not undervaluing the fact that access to powerful knowledge depends on the relationships established within the school scope, between the knowledge students already have and the systematized knowledge coming from academic disciplines.

The curriculum proposed should focus on what needs to be taught to and learned by students according to a national plan, which is always understandable in light of the socio-historic context in which it was developed. Accordingly, thinking about a core definition for curriculum, it is interesting to point out that, according to Young (2013, 110), that definition should be expressed in broad guidelines that respect the specificity of each school in developing their curriculums:

A National Curriculum should be limited to the key concepts of the core disciplines to be designated in cooperation with the academic field experts. That limit to the National Curriculum ensures that each school individually and discipline expert teachers have autonomy, and it takes into account schools with different resources of cultural and other natures, different stories and within different contexts (for instance, schools in cities and rural areas). Concomitantly, that ensures a common knowledge base for all the students, when some of them transfer from one school to another.

In other words, although it affirms what should be taught, a national curriculum should not be exhaustively detailed, since the school curriculum also has broader goals – it is not related solely to specialized knowledge. Thus, the curriculum defined in official documents should focus only on the key concepts of each discipline, following a sequence and measuring discussed with the support of experts in the disciplinary fields. This is different from the definition concerning how teachers should teach when carrying out their work – which often takes on great centrality in curriculum propositions. This should be a concern for what Young (*idem*) calls pedagogy – an idea that, in Portuguese, would be best translated by the term didactic, since it includes the transformations and arrangements for organizing education – the situations in which students learn and the accompanying of the students. According to Young, this:

refers to what teachers do and develop with the students; however, to teach is not just a practical activity. [...] To teach depends on the knowledge educators

2 For further information about selection, sequence and compassing – pedagogical characteristics defined by Basil Bernstein when dealing with the concept of pedagogical discourse – see Bernstein (1996).

have about the material they teach, the knowledge they have about their students, and about how to teach them – and the knowledge that informs them about what they require from students. In turn, although the curriculum refers to what students are entitled to learn, it does not include the experiences students bring. Those experiences are learning resources that are crucial for students and teachers alike; however, they vary vastly, and, in addition to that, students do not go to school so that they learn what they already know (*idem*, p. 111).

However, it is interesting to point out that Young does not see this distinction as something that applies to the teachers' work in the classroom. In this context, curriculum and didactics are fully imbricated. It is a distinction to be considered within the design plan of curriculum proposals, to ensure the depth needed when discussing what should be taught at schools.

One of the criticisms of the defense of a knowledge-based curriculum is the difficulty that it would represent for students, particularly for those from underprivileged families. In response, it is often affirmed that programs focusing on students' most immediate interests should be developed, or that show greater ability to facilitate the students' trajectories. About those programs, Young (*idem*, p. 112) states:

while the programmes more focused on the immediate interests of students can make them feel happier at school, they also deny the access to the knowledge they need to progress with their studies or to have reasonable opportunities for employment. [...] What these programmes do is to mask the school failure issue and to limit the chances for these issues to be addressed at their roots, which are essentially located not in schools but within the broadest social inequalities. [...] this leads us beyond the curriculum and toward political issues.

This is an interesting position to take as a hypothesis and focused on curriculum research. Accepting the defense of programs especially created for socially underprivileged students may restrict these students' access to powerful knowledge, while simultaneously contributing to disguising the social inequalities at the root of their difficulties, and losing sight of what is defended here as being the specific function of schools. When thinking about the production of curriculum proposals, it seems very appropriate to deepen the debate about issues related to knowledge that should shape the curriculum should one intend to foster access to powerful knowledge for all students.

This article focused on two disciplines of a different nature, to identify what is defined as knowledge that is important to present in fundamental education. Having introduced what is defined in three distinct documents, and returning to the definition of powerful knowledge previously presented, it should be emphasized that the differentiation between what defines these selections of knowledge is more easily perceived in relation to the natural sciences than to art.

Young and Muller (2013) face the discussion about powerful knowledge by proposing to introduce what they call its different powers. In this perspective, different

fields of knowledge would grant differentiated powers to students. When it comes to the STEM disciplines and social sciences, for instance, the authors state that:

[The contents of the STEM disciplines] are “powerful” because they offer prognosis and explanations that go beyond what is possible for those who have access only to everyday thinking. The social sciences bring some of those aspects: they provide generalizations that, although sometimes just barely, are linked with specific contexts; they create facts grounded on the relatively objective methods of their communities of peers. Their findings become a source for debates about alternative policies, and, in some cases, they add to how a society reflects on itself (*idem*, p. 245).

Meanwhile, when trying to indicate the power related to access to artistic knowledge, they emphasize the existence of:

another “power” dimension; for instance, the power to imagine moral and aesthetic alternatives that do not represent generalizations in the sense we have been discussing, but that can be universal in the sense that they connect people to a broader humanity. There is every reason for accessing those powers that are expressed literally, visually, musically or kinesthetically, and everyone should actually be entitled to them. They are specialized and separated from the everyday experiences; they are located within communities of experts that define their concepts, rules and practices, and the borders that distinguish them, define their goals and provide restrictions that can be a source of innovation and creativity (*idem, ibidem*).

When specifically dealing with the distinction between disciplines linked with the sciences and the arts, they conclude that the distinction occurs because:

whereas the sciences speak from the particular to the general, the arts speak from the universal to the particular, and can enable people to feel as being part of humanity. It is this freedom Bernstein (2000) refers to when arguing that the disciplines are sources for “thinking the unthinkable” and the “not yet thought of” (*idem*, p. 246).

It is relatively easy to identify the connection of the sciences with the material base and the more immediate context in which social practice takes place. Perhaps, this is the source of the most heated debate about choosing the discipline’s content, and the justification for its inclusion in the curriculum.

The selection of the content of the disciplines – of the natural sciences and art, or any other – chosen to compose the curriculum can be more directly linked to an instrumental view that reinforces the immediate applicability of knowledge, and restricts the comprehension of world. It can also aim to understand what is given, and glimpse the possibilities for thinking of a different social order. Different recontextualization processes, stemming from core definitions, at different levels

and by means of the action of multiple agents, will result in real curriculums that favor more or less the access to powerful knowledge in its different facets.

The analysis conducted here seems to highlight that, in Brazil, the dispute over these definitions appears to be more intense when it involves a discipline that deals with types of knowledge that tend to be socially recognized as being relevant, such as scientific knowledge, than when it concerns the formative potential of the arts. This is because, through many mechanisms, the power conferred by the knowledge of the arts in the education of new generations winds up being neutralized in the actual curriculum. Examples of these mechanisms include the limited course load for art education in schools; insufficient and or unsuitable materials and physical spaces; devaluation of this field of knowledge in other social instances and in the school itself; and the fragile training teachers receive for dealing with this field of knowledge at schools.

It should be noted that this situation can be identified at the origins of art as a discipline – the curriculum element named art education, in the Lei de Diretrizes e Bases nº 5692/71 [*National Education Guidelines and Framework Law*]–, as can be seen in Parecer nº 540 from 1977 [*Opinion n. 540*] which focuses on the treatment to be given to the curriculum components established by Article 7º of that law. The law made the inclusion of art education mandatory – as well as that of moral and civic education, health programs, and religious education, [while the latter must be offered, students have the option to take it or not] – in elementary and high school curriculums. Thus, in the Opinion n. 540, the concern for the lack of clarity about the educational importance of these elements and for the real conditions for teaching art at schools is expressed as follows:

By listing them in Art. 7th, [Law 5692/71] it does not treat them as “subjects” in the new meaning of the word, or as “disciplines” in the traditional language, but as a “general concern of the educational process, intrinsic to the very purpose of the schools, because they are constitutive and non-transferable parts of the education of the common man.” However, this has not been the understanding of most schools, according to what can be inferred from the near generality of the curriculum plans. Concerned about formal compliance with the legal provisions, our schools have been consigning the presence of these elements in their plans, elements to which, as a general rule, they attribute weekly course loads that make it clear how much they do not understand the role these components play in the curriculum context, and reveal to the more astute the unfeasibility of reaching the goals sought by these means (Brazil, 1977, p. 24. Our translation).

Turning the attention back to the current documents, there does not seem to be much dispute about the interests to be expressed in the definition of the prescriptive dimension of the art curriculum, perhaps because its potential for granting the power to comprehend the world and social practices is kept at much lower levels than those one might have desired, by means of the many previously mentioned mechanisms. Accordingly, this analysis ends with Young and Muller (2013, p. 246), who, by quoting Charles Rosen, conclude that:

What distinguishes art from any other type of “powerful knowledge” is that, although it has its own rules, it is also explicitly free to break them, “for the purpose of entertaining, surprising, shocking, being unique.” This, he says, is its inherent subversiveness, and the reason why political regimes, particularly the dictatorial ones, periodically tried to repress it.

It is possible that even with assistance from researchers, university teachers and other professionals – which is a reality in the creation of curriculum proposals by states and cities (Brazil, 2010) – by the very way that knowledge of the arts in society as a whole, and, particularly, at school has been dealt with, we have yet to recognize the potential it has to expand the possibility for understanding the world we live in, as well as the history that brought us to its current configuration, and, even less, for daring to think of it in other forms.

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