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HISTORY OF EDUCATION

Contextualization and valuation in Wittgenstein: discussions on the relation between mathematics education and peasant education

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ABSTRACT. This article discusses contextualization and valuation when it comes to the relationship between mathematics education and peasant education in Brazil. From a bibliographical point of view, this article is the result of the initial phase of a research project that has been carried out since 2015 at the Universidade Federal do Sul e Sudeste do Pará (UNIFESSPA). The goal is to understand the relationships between mathematics education and peasant education by authors who discuss this in Brazilian research. The research shows that in the peasant education the contextualization and the valuation of local knowledge stand out. In this sense, I identify the presence of a new line of research that interweaves ethnomathematics with post-structuralist and Wittgensteinian studies that, in addition to seeking to bring the peasant context into the classroom, further evidence the ways of peasant life. From this, I present different theoretical perspectives that the philosophy of Wittgenstein can offer for the research and teaching of mathematics in peasant contexts and send propositions of analyzes and pedagogical practices destined to the area of mathematics in the courses of peasant education and for the basic education in this context.

Keywords: ethnomathematics; post-structuralism; teaching; language.

Contextualização e valorização em Wittgenstein: discussões na relação entre educação matemática e educação do campo

RESUMO. Este artigo discute a contextualização e valorização quando se trata da relação entre educação matemática e educação do campo. De cunho bibliográfico, o presente artigo é resultado da fase inicial de um projeto de pesquisa que está sendo realizado desde 2015 na Universidade Federal do Sul e Sudeste do Pará (UNIFESSPA). O objetivo é compreender as relações feitas entre educação matemática e educação do campo por autores que discutem sobre isso em pesquisas brasileiras. A pesquisa mostra que na educação do campo se destacam a contextualização e a valorização de saberes locais. Neste sentido, identifico a presença de uma nova linha de pesquisa que entrelaça a etnomatemática com estudos pós-estruturalistas e Wittgensteinianos que, além de buscar trazer o contexto do campo para a sala de aula, evidencia mais ainda as formas de vida do campo. A partir disto, apresento diferentes perspectivas teóricas que a filosofia de Wittgenstein pode oferecer para a pesquisa e o ensino de matemática em contextos do campo e encaminho proposições de análises e práticas pedagógicas destinadas à área da matemática nos cursos de educação do campo e para a educação básica neste contexto.

Palavras-chave: etnomatemática; pós-estruturalismo; ensino; linguagem.

Contextualización y valorización en Wittgenstein: discusiones en la relación entre educación matemática y educación del campo

RESUMEN. Este artículo discute la contextualización y valorización cuando se trata de la relación entre educación matemática y educación del campo. El presente artículo es el resultado de la fase inicial de un proyecto de investigación que viene siendo realizado desde 2015 en la Universidade federal do Sul e Sudeste do Pará (UNIFESSPA). El objetivo es comprender las relaciones hechas entre educación matemática y educación del campo por autores que discuten sobre ello en investigaciones brasileñas. La investigación muestra que en la educación del campo se destacan la contextualización y la valorización de saberes locales. En este sentido, identifica la presencia de una nueva línea de investigación que entrelaza la etnomatemática con estudios post-estructuralistas y Wittgensteinianos que, además de buscar traer el contexto del campo al aula, evidencia más aún las formas de vida del campo. A partir de esto, presento diferentes perspectivas teóricas que la filosofía de Wittgenstein puede ofrecer para la investigación y la enseñanza de matemáticas en contextos del campo y encamina proposiciones de análisis y prácticas pedagógicas destinadas al área de las matemáticas en los cursos de educación del campo y para la educación básica en este contexto.

Palabras-clave: etnomatemática; postestructuralismo; enseñanza; lenguaje.

Introduction

The research project 'The construction and transmission of mathematical knowledge in the contexts of field education' has been developed in the Universidade Federal do Sul e Sudeste do Pará (UNIFESSPA), campus of Marabá, Brazil, since 2015 with the intention of understanding how the authors discuss or analyze the question of the contextualization and valuation of mathematical education in the peasant education to, from this, forward propositions of analysis and pedagogical practices destined to the area of mathematics in the courses of peasant education and basic education in this context. Thus, I aim to present some perceptions of mathematical education in general, which have been highlighted when authors discuss about the peasant education, as well as perspectives and lines of research that are present in these studies. The research has already started the following interest: to find studies based on Wittgenstein that deal with this discussion. This is due to my appreciation for the writings of this philosopher whose works I have used in studies to substantiate my doctoral research and also in writing some articles that have already been published. However, my previous discussions took place within the scope of mathematics education, thus not discussing the peasant education. Here, I present different theoretical perspectives that Wittgenstein's philosophy can offer for the research and teaching of mathematics in peasant contexts that oppose the contextualist conception of mathematical education in general, to the value question of this new line of research and, the role of language in the construction and transmission of mathematical knowledge in different language games.

The analysis of the articles revealed an emphasis about contextualization. Something that is already noticeable in mathematics education and, it seems, is accentuated in research on peasant education. I have also shown an interest in valorizing peasant knowledges - something that has been potentialized as a result of the ethnomathematics perspective and a line of research within this perspective that has been highlighted in bringing Wittgenstein to the discussion along with other theorists like Foucault. In this sense, I first present contextualization and valuation in mathematical education in the rural spaces, and then focus on the new line of research that connects Wittgenstein to post-structuralist studies, and then based on Wittgenstein, argue about new ways of thinking contextualization and the valuation of the peasant reality in the mathematical education made in the peasant education.

The contextualization and valuation in the peasant mathematic education

In mathematics education contextualization has always appeared in some way as a possibility to give meaning to the abstract or formal contents of mathematics. Among contextualizing forms is the history of mathematics, the interdisciplinarity that allows to contextualize through disciplines, everyday and mathematics itself. Of the ways mentioned to contextualize, the relation with the everyday life has been privileged.

The brazilian government document *Parâmetros Curriculares Nacionais - PCN* (National Curricular Parameters) of mathematics defend the relation of contents to the realities in which they are taught, bringing ethnomathematics as theoretical support to defend such a conception: "[...] to understand the processes of thought, the ways of explaining , to understand and act in reality within the cultural context of the individual himself "(Brasil, 1997a, p. 21)[1].

Giardinetto (1997), in his thesis and many later articles, criticizes what he calls the *supervaluation* of everyday in mathematical education research - from a Marxist point of view. Silveira, Teixeira Jr. and Silva (2015), Silveira, Meira, Feio and Teixeira Jr. (2014) and Teixeira Jr. and Silveira (2013), based on Wittgenstein, present some limitations of contextualization. For example, Knijnik and Duarte (2010), in an analysis of the discourse of articles of annals of events of ethnomathematics and mathematics education, show that in these fields of study there is, in fact, the discourse that reality must be brought to school.

Until then, research has shown that there is a growing of studies on peasant education, which is probably due to the concern with this area of education, mainly due to the struggle of the peasant people themselves in favor of an approaching education of their longings and value their ways of life. The peasant education came to rescue a historical debt that our society has with the peasant subjects. Thus, those who work in these spaces must seek to understand the cultural, economic and social specificities of these subjects so that their schooling is guaranteed without the *devaluatin* of their roots, as Arroyo (2006, p. 103) reports:

> It is necessary that the curricular questions incorporate peasant knowledges, that prepares the man for the production and the work, for the emancipation, for the justice, for the full realization like human being. In this sense, it can not separate

[1] The direct quotations used here have been freely translated into English by the author.

> time of culture and time of knowledge. Therefore, it is necessary that the peasant schools creates its own identity, that when we look at the pedagogical proposal can see the peasant people identified in it, for that, it is important that the school is closer to the reality in which it is inserted and more prepared to participate effectively.

The brazilian government document *Lei de diretrizes e bases da educação - LDB* (Law of guidelines and bases of education) of 1996 (Brasil, 1996) argues in article 28 that in the peasant education the education systems must promote the adaptations necessary for their adaptation to the peculiarities of rural life and of each region. In the general introduction of PCNs, there is a defense that peasant subjects have the same right to education equally to any other student - regardless of their place and reality. Thus, the peasant uniqueness must be recognized (Brasil, 1997b). The SECAD / MEC notebooks on peasant education and *diretrizes operacionais da educação do campo* (operational guidelines for peasant education) are other brazilian government documents that make this question even more evident.

The contextualist approach of many aspects of mathematics education has found a fertile place of action in the peasant education proposals. I realize this in many researches that highlight the relationship between peasant education and mathematics education, such as Vasconcelos (2011), Alcântara (2012), Andreatta (2013), Cruz (2013), Lima (2014), Barbosa (2014), Gonçalves (2014) and J. P. Santos (2015). Some perspectives in mathematics education work directly with the students' reality, such as the mathematical modeling that already presents articles in the peasant education - Feyh (2013) and Pereira, Silva, Santos, Santos and Diniz (2010). But the perspective that has most approached of the peasant education is the ethnomathematic, as we see in Costa (2012), Formigosa and Silva (2012), Assunção and Guerra (2012), Faria (2013), Alves (2014) and Pergher and Moraes (2014).

In addition to these researches, my investigation has also revealed a new line of research that is vigorously intertwining ethnomathematics, post-structuralist and Wittgensteinian studies - where I highlight the authors Gelsa Knijnik (2006), Fernanda Wanderer (2007), Knijnik and Wanderer (2007; 2013), and Claudia Duarte (2011; 2012). In many of the articles of these authors the peasant education is the context analyzed. My bibliographic research revealed the existence of a certain theoretical and methodological standard that allows us to have a panoramic view of how the teachers have worked the mathematical education in the contexts of the peasant education so that we can glimpse perspectives of continuity of this research in progress and, also point to a new way of considering Wittgenstein's use in this context.

The peasant education, in all the articles analyzed, arises under a political bias. And the mathematical education is mainly related to the issues of interdisciplinarity and contextualization. In this sense, we usually see analyzes of specific communities and how to understand, treat, analyze and teach the mathematic to people who live in the rural spaces, as well as perceive mathematical activities in their practices.

I observe a theoretical direction quite common in these works analyzed. Both in the sense of the peasant education - such as Miguel Arroyo, Roseli Caldart, Gaudêncio Frigotto, Mônica Molina, Paulo Freire, as well as government documents – and also in mathematical education - with emphasis on Ubiratan D'ambrósio, Ole Skovsmose and Dario Fiorentini and authors related to ethnomathematics such as Gelsa Knijnik. In addition to the methodology of the works, which, in its majority, also follows the standard of the qualitative ethnography that sometimes is or is accompanied by analyzes of discourses and pedagogical proposals. Even studies dealing with mathematics education in peasant education generally have some relation to ethnomathematics - even if this is not evident in the titles used by the authors or in the forms of approach such as Vasconcelos (2011), Andreatta (2013), Lima (2014), Barbosa (2014) and Gonçalves (2014).

The articles consulted show that the theme of contextualization is strengthened when discussing mathematical education in peasant education. The authors add the concern with the need to value the peasant culture and, therefore, they defend that the understanding of the mathematical contents is more significant when they are developed in contextualized environments that favor the integration between the everyday and scholastic knowledges. Thus, they argue that we should bring the reality of the student into the classroom, creating semi-realities (Skovsmose, 2000) or bringing students to real situations in fact.

The question of the peasant context - the place of struggles for rights, of diverse social groups, farmers, settlers, indigenous and quilombolas - reinforces the need to value the realities of these groups who see education, often as a way of empowering their forms of life. In this sense, the discourse of contextualization of mathematical education and valuation of cultures of ethnomathematics finds a propitious field of action.

Throughout the analysis, I have verified two paths of research: on the one hand there is the

analysis of the teaching situation and, on the other, the proposal on the use of mathematical education perspectives applied in peasant contexts - as is the case with *modeling*. Most of the authors focus on the situation analysis and approach the question of contextualization without presenting possibilities to carry it out in pedagogical practice. They make a more descriptive analysis of how is determined situation analyzed, using qualitative approaches such as questionnaires, interviews, observations and analysis of activities and materials to verify and show if the relationship between school and everyday is realized in the schools surveyed. The common thing is not to happen, at least in the verified jobs.

The articles cited up to the present and which include in the title the ethnomathematics, follow a pattern of seeking an approach that emphasizes its theoretical premises, the question of the valuation of the peasant practices and how to relate the school mathematical teaching with such from a research qualitative. The productions of ethnomathematics also add the emphasis given to the question of the valuation of peasant knowledge in contextualization. If, as a rule, this was already evident, with ethnomathematics it becomes clearer and often becomes the object of research. These productions approach theoretical aspects of ethnomathematics and advocate it as a program and not as a methodology under a closed epistemology. This is because they analyze the mathematics of social groups observing their historical-cultural development and, therefore, it can not be closed. And at the same time this approach does not discriminate scientific mathematics. On the contrary, they put it as one of those mathematics. In this way, ethnomathematics seeks to valorize all kinds of mathematical doing. In some cases, it also appears in the form of a proposal of use as support in teacher training - as in Costa (2012), Formigosa and Silva (2012) and Alves (2014).

A new line of research: Wittgenstein and post-structuralist studies

A new line of research has been analyzing aspects of mathematical education in peasant contexts within the ethnomathematics, under an innovative theoretical prism, which makes use of post-structuralist studies of Foucault, Deleuze and studies of the philosophy of language of the late Wittgenstein. In this line of research stand out Gelsa Knijnik, Fernanda Wanderer and Claudia Duarte that follow a similar line of analysis, possibly due to the fact that Wanderer and Duarte were guided by Knijnik in the doctorate.

The works of these authors reveals a differentiated line of research that escapes the idea of only analysis and/or proposal related to the contextualization of school contents. The authors seek to constitute a study about the own forms of livein of the peasant subjects and how their mathematics presents as a particular historical construction that has undergone interference from the government as a result of didactic proposals - as is the case of the government program *Programa Escola Ativa* (Active School Program) (Knijnik and Wanderer, 2013). These works are usually not carried out in teaching practice or offer pedagogical possibilities, appearing more like researches anthropologic, political, phenomenological and/or analytical-discursive, which are characteristic of post-modern research. Santos (2015), in his dissertation, shows that ethnomathematics is philosophically aligned with the post-modern or post-structuralist lines.

Productions, in this new line of research, reveal a perspective in a more valuable and empowering sense of the local perspectives of knowledge that are understood by academia and society, generally as being lower than those of scientific institutions. This had always been approached in the ethnomathematics and critical mathematical education of Skovsmose. That is, the mathematics taught in schools, even those in the peasant contexts, is a Eurocentric mathematics. In the words of Knijnik and Wanderer (2013, p. 215) "[...] that which was linked to urban, heterosexual, western, white and masculine thought [...]" had always been considered superior.

Notions of ' power-knowledge and government' in Foucault (2003; 2008) and 'nomad science' in Deleuze and Guatarri (1997) have been used as theoretical bases to oppose the superior-inferior dichotomous idea in order to value the knowledge of the peasant everyday, making possible the problematization of discourses, be they academic, of the society in general or the peasants themselves. Knijnik and Wanderer (2013), when analyzing researches in ethnomathematics, indicate that they point in two directions: "[...] on the one hand, make it possible to identify, recognize and value the mathematics produced in different forms of life; on the other, they problematize the own mathematical language transmitted and taught in universities and schools" (Knijnik & Wanderer, p. 2013)

They also mention two works by Knijnik - one of which, Knijnik (2006), is in the first direction, which confirms our perception.

In the new line of research indicated, Wittgenstein has been used, too, due to his notion of language games. The author's language games concept would support the existence of several linguistic contexts such as, for example, the contexts of practices where the author no longer argues for

the existence of a single logic or mathematics, but of several dependents of the context in which it is inserted. However, the author does not deal with power relations, understanding that certain rules are accepted as a result of a community consensus, that is, due to an agreement of judgments between the subjects. And so, in this context, the authors, from this line of research, insert the discussions of Foucault and Deleuze.

The conception of Knijnik, Wanderer and Duarte, in the works in which they deal with this theme, is similar to that defended by Vilela (2007). This author does not deal with peasant education, but is a mathematical educator who is based on Wittgenstein in writing his works. The author - based on Wittgenstein, and more particularly on her concept of language games - asserts that there is no single universal mathematics but diverse ones, such as that of the everyday, academic, school, street, etc. And so there is also a peasant mathematics. This idea is corroborated by Knijnik, Wanderer and Duarte as these authors understand that in the peasant context there is a mathematics own that must be valued and understood as an effective knowledge for its users and in their forms of life - just as academic mathematics is for whom you need it.

In this way, this new line of research takes Wittgenstein's prerogative, also defended by Vilela (2007), that there is not only one language, but several languages. Or, as the author calls it, there are a variety of language games that are contexts of practice. As Wittgenstein does not enter into the question of equating these language games, the authors are based on authors such as Foucault and Deleuze insofar as they offer theoretical subsidies for analyzing discourses and power relations between forms of knowledge and, thus, to value other types of mathematics. In this sense, they show that rural communities can not surrender to the institutional pressures of a mathematics that was not conceived by them.

Silva and Silveira (2013) criticize this direction given to Wittgenstein's ideas. The authors do not discuss the issues related to Foucault or Deleuze, attentive only when it comes to Wittgenstein. They focus on the work of Vilela (2008), which is a consequent production of his thesis (Vilela, 2007) and whose focus highlights the issue of 'different mathematics'. According to Silva and Silveira (2013), Vilela (2008) starts from the same premise as them, differentiating only by taking different conclusions.

For a greater understanding of this discussion it is important to know that Wittgenstein is a philosopher who has two philosophies. In the foreword to the book *Philosophical Investigations* (written in the 1940s and published after Wittgenstein's death in 1953), the author reveals that his new thinking can only be understood in opposition to his old thought (Wittgenstein, 1999). The work referred to by the author is the *Tractatus Logico-philosophicus* (written in the 1910s, and published in 1921). In this sense, it is necessary to understand that in *Tractatus*, Wittgenstein (1993), following the objectives of his masters Gottlob Frege and Bertrand Russel, tries to show that the world and the language were interconnected given an existing logic and, in this sense, there would be a single language ideal that could describe such functioning. Consequently, the philosophical problems were only problems of a misunderstanding of the logic of our language.

In *Philosophical Investigations* Wittgenstein (1999) still understands that philosophical problems no longer exist, but now he believes that they are due to a misunderstanding of our common language, that is, the philosopher no longer believes in a single underlying logic, common basis of our structure of world and thought. He does not believe, too, that the world and thought are biunivocally interconnected in a logical way. The defense now is that they depend on human practices. However, in spite of dealing with language, Wittgenstein does not enter into the field of discursive analysis. The author reflects on the conventional and pragmatic character of language.

Wittgenstein (1999) comes to understand that there is no longer an essence that pervades all knowledge. The author himself gives an example stating that the word *game* can refer to several situations and we can not define a common characteristic [essence] to all of them and say 'game is ...'. But in use we show to understand what is game: game is football, poker, solitaire, the activity of a child alone throwing the ball into a wall, etc. In the same direction Silva and Silveira (2013) and Vilela (2008) agree.

The critic of Silva and Silveira (2013) to Vilela (2008) is due to the fact that she understands that the different uses of mathematics (school mathematics, mathematic of the quotidian, etc.) show that there is no such unit, indicating different mathematics. The authors argue that this would not be the most appropriate interpretation. According to the authors:

> Wittgenstein rejected the idea of different meanings even though related for the same concept. If, on the one hand, we find no characteristic that goes beyond all the activities we call 'game', [...] it can not be said that 'game' has only several independent meanings. [...] What we call 'games' are interrelated processes in many ways, with many different transitions between one and the other (Wittgenstein, 2003, § 35) (Silva & Silveira, 2013, p. 129).

We can check in the words of the authors that even if a concept can not be defined by a characteristic common to all its different uses, it does not mean that it does not have unity. For example, there is a unity of

what is 'game': we speak of the game as if it were just one thing, or rather, we say that something is game from a preset and, thus, the meaning of game is widening. Another example would be the word *number*. Initially, as a child, we understand and reduce the numbers to the natural ones and this concept is widening as we learn that there are negative, irrational, imaginary numbers, etc. Therefore, there are not several concepts of number, just as there are not many concepts of mathematics. What happens is an expansion of the concept and the use of mathematics that exists in everyday is something perceived by those who already understand what mathematics is and can fit it as one of the uses of this concept. Silva and Silveira (2013, p. 129) say that "Every employment situation of the concept reveals a portion, an aspect of meaning."

Wittgenstein, in *Investigations* (1999), opposes his old thought revealed in the *Tractatus* (Wittgenstein, 1993) and the thought of traditional philosophy - that no vagueness could be admitted and that the essence of the concept should be pursued. Wittgenstein goes on to argue that the own concept of the 'concept' is vague. A concept can acquire new uses, but it does not modify it but broadens it, as a family that adds or is added of new members. The question of vagueness can bring Wittgenstein closer to post-structuralist studies. However, we must understand that the Austrian philosopher argues that vagueness is a characteristic peculiar to any concept because the understanding of it depends on which context it is inserted, that is, it is an analysis on language comprehension and not on some essential relativism present in the world.

New perspectives in Wittgenstein about contextualization and valuation

The actual teaching process can be strengthened by situations that favor a greater meaning for the learner, since the main purpose of teaching is learning and thus we must think of methods to favor it. Giardinetto (2004) has shown that in some studies of mathematical education, the critique of the 'way of presenting mathematical content' has come to be a critic of 'mathematical content' itself. I evaluate that it is necessary to deepen the debate on the teaching of mathematics since it is essential to discuss about the teaching of mathematical contents in order to understand how to teach and how to learn this knowledge from the understanding of mathematical objects.

In this way, I have a different understanding of the question of the context of practices, that is, about the empiria in Wittgenstein and of what is generally held in mathematics education. We can not restrict ourselves to the empirical aspect of mathematics insofar as it is a language and as such is a public practice, a human institution that has rules and conventions available to its users.

Wittgenstein (2005) says that mathematics is normative, that is, its propositions are rules that are independent of what happens in reality. If so, the mathematics need not be applied to make sense. It is a language that in itself is explained. Gottschalk (2008), however, warns that this does not mean that mathematical propositions have no relation to experience, since they organize it. That is, by understanding mathematics we can look at facts of the world and explain them mathematically and not the inverse.

The understanding of mathematics comes from our use of it. Not in the sense of the work of concrete material as it occurs in constructivist practices. The use in Wittgenstein is linguistic, that is, it is the continuous use of mathematical concepts that lead us to understand them and 'widen' them. Users of mathematics appropriate mathematical propositions in their use of them and then the rules are put into practice.

In mathematical language studies, unlike what is seen in most mathematics education, the construction of mathematical knowledge stems from our ability to follow rules. And the teacher's job is to teach them "[...] so that the student begins, from a certain moment not predicted *a priori*, to 'bid' in the language game in which it is being introduced, including applying it to empirical situations" (Gottschalk, 2008, p. 93).

To think that only knowledges of quotidian (those that can be immediately applied to the life of the apprentice) must be taught at school can be a mistake, because not all mathematical concepts have immediate concrete application, since their concepts are human creations within a syntax that often did not have concrete as a fundamental concern - as seen in the development of algebra.

There is a difference between the everyday life and the classroom. Calculations in quotidian and calculations in the classroom may be different from the perspective of students. In general we do not have difficulties in calculating in everyday, as in the calculation of a change or in the total of a purchase, that often we do mentally. However, such calculations begin to have new meanings when written on paper or when treated in a formal way. This is because calculating mentally and making calculations on paper requires different skills. Suppose, for example, that the student solves a problem that asks for the calculation of the price of two slices of a pizza, divided into five slices, and that another problem asks to calculate 2/5 of 15. The transposition of the rule applied to ebvrydady life is automatic for a formalized situation in mathematical language? Our language, when it is objectified by

writing or by a formal expression, can present other aspects. This reveals the importance of language studies in education, and I therefore use Wittgenstein's philosophy of language: by understanding that it offers, through the concept of language games, possibilities for understanding everyday and/or school contexts so that we can best transmit mathematical concepts.

The positioning of the ethnomathematics researches that use of Wittgenstein regarding the contextualization of everyday life, is exemplified in Duarte (2011) - that is consequence of her thesis and was guided by Knijnik. Duarte (2011) analyzes the speech that says of the importance of bringing the reality of the student to the classes of mathematics. The author analyzes this discourse in the 50's in Rio Grande do Sul. She argues that this discourse was used more to keep the peasants in the rural spaces. At present, this is closer to the idea of empowerment of peasant culture. In fact, we see when the author refers to the actuality:

> In the contemporary discourse directed to the peasant education it is possible to glimpse a concern in evidencing and legitimizing the ways of life of the subjects linked to the peasant life [...]. In a Wittgensteinian language I would say that the education proposed in the contemporaneity for the peasants is assumed to be amalgamated with their forms of life [...]. Thus, working with the 'reality' of the peasant student means the possibility of empowering a culture, which is perceived as marginal to the urban (Duarte, 2011, p. 5).

In another article written together with Knijnik, Duarte (2010) reinforces the idea of contextualization in this line of research. I have already said that the authors argue that there is indeed in mathematics education the discourse that reality should be brought to school, however, they disagree with the idea of giving mathematical meaning through of the reality, because they believe that they are different forms of life and that between the peasant and school realities there would be only family resemblances. Even if Knijnik's works about this theme points to an analysis of discourses that generally reveal a power that stands out - whether urban, scientific or formal, Knijnik and Duarte (2010) do not seem to 'choose a more powerful side' and only show, using Wittgenstein, that the forms of life of reality and school can not have their meanings transferred (from reality to school) in such a simple way. This new line of research emphasized here does not follow the position of contextualization as mathematics education generally does, that is, only in the sense of using reality to give meaning. But it tends to defend the context of practices as something that should be empowered, considered on the same level as the scientific and not subjugated by urban knowledge.

I agree with Knijnik and Duarte (2010) when they defend that we can not contextualize to give meanings, because they are different forms of life. But I do not agree that the uses of mathematics made in the rural spaces, for example, are sufficient, since there is knowledges that must be acquired by the subjects of the rural spaces. In addition, peasant knowledges can serve to broaden certain concepts considered scientific.

Mathematics is a language that has been modified with the intention of instrumentalizing, in the best possible way, practical and mathematical situations in itself, and this has boosted the development of algorithms that facilitate operations, for example. Therefore, the determination of the practicality of contents and techniques was defined by history. This is not to deny cultural aspects, but to consider that humanity has a history that can and should be socialized among all subjects, be he from anywhere: rural or urban space. Cultures develop by interlacing their knowledges. The numbers we use, for example, are a synthesis of a cross-cultural process - from India to Arabs to Europeans. if in a community the arm is used as a numerical measure, one should not impose the meter as a standard measure - because there would not be a resolution technique, but a unit of measure. The key in this case is to teach the notion of measurement from an established standard and which calculations (perimeter, area and volume) are possible from any standard. But we believe that it is necessary to present to the students and subjects of the rural spaces other ways of measuring, among them the meter.

Works of the new line of research advocate an empowerment of mathematical practices such as the scaling of land practiced traditionally by peasants; the use of measures used in the rural spaces; the use of approximation calculations; estimates. We do not doubt the acculturation imposed to certain communities, however the mathematics is in a different logic, because in it what prevails is the instrumentalization. Using this or that unit of measurement is not problematic, but solving the calculation of this or that way may or may not bring benefits. If the calculation is performed in the wrong way, it can not be incorporated as a content that should be valued. On the contrary, we must show the limitations and present other forms of resolution. Approximations, rounding, or estimation are valid and often necessary knowledges, but can not be considered sufficient, even in specific contexts.

Faria (2013), based on theoretical premises of ethnomathematics and Foucault, argues that the scaling of land practiced by any peasant communities - as it is practiced in some rural spaces - should be considered as content on the same level of mathematical knowledge. Knijnik (2006) and Duarte (2011) also defend the appreciation of the practice of scaling of land. However, some scalings of land praticed in rural spaces are faulty in certain situations, resulting in

disadvantages for those who use it, such as peasants – it may happen that some farmers are even deceived as to the measure of the land because they do not know the correct way.

In this way, it is necessary to promote ways of learning of contents. I do not deny that contextualization can collaborate in this sense, nor that local contexts should be valued in the sense of understanding them, so that content teaching can be better realized. My opposition is to the idea of an 'super valuation' of local contents, since I understand that the mathematics of peasant everyday is not a specific mathematics but a use of mathematics. And this may extend the concept of mathematics of the peasants, who will know the school mathematics and the academic-scientific knowledge and may also know other aspects, uses or applications of this mathematics.

The language is the new paradigm to be considered in studies about the construction and transmission of knowledges. So much so that, from Wittgenstein, a way of thinking was established that considers that we have undergone a linguistic turn, with implications in the abandonment of the conscience or of the empirical like the base of the knowledge and beginning to center in the language - whether in its syntactic, semantic or pragmatic aspect - that is revealed in studies no longer based on objects or the subject, but on the intersubjectivities of communicative processes, social practices, etc. There are several branches of analysis within this new paradigm, and indeed the Wittgensteinian approach itself is already quite complex and for some types of research it may be considered limited because it does not fall into the discursive scope. In this sense, it is necessary to understand that Wittgenstein comes from a school of logic and passed through the analytic philosophy. So even if he abandoned these theoretical currents and inaugurated a new way of doing philosophy, he did not make any effort to qualify (or politicize) his philosoph.

Wittgenstein seeks, with his philosophy, to show that the world could be different than it is if our human practices were different. And so he wants to show that language, in its pragmatic form and in the action of the subjects who use it, determines the way of being and/or thinking. If we understand the conventions of our common language, we also understand and undo many of the philosophical, ontological, and epistemological confusions that arise because of the search for essences, fundaments, or metaphysical explanations that take place outside of language. Wittgenstein's philosophy is about language in its intersubjective aspects. But it does not bring about analyzes about discourses that overlap on other knowledges that due to degrees of social powers stand out. It seeks to reflect about the language and, in fact, he started in this direction which was followed by many theorists such as Foucault, according to Veiga-Neto (2004).

For Wittgenstein the understanding takes place in contexts of practices: the language games. However, he did not enter into the sphere of qualifying such contexts or even equating them. The philosopher wishes to show a system of organization of the world that takes place according to forms of life. Thus he abandons the logic as the underlying essence of the world and identifies the human practices as the basis of knowledge without falling into relativism. The author understands that meaning is determined by use, that is, we do not wander about as inexplicable as if anything were allowed. The use is an unstable foundation that changes as a result of certain practices. And some uses are already so consolidated by what it favors in certain contexts that it can no longer be despised. In this sense, it passes to be considered a knowledge produced by the human being in its history and that any subject can have access. The right that every human being has to have access to such knowledge is the political bias that I consider in this new approach that I start here.

Final considerations

The research revealed a common conception that exists in mathematical education: the need for contextualization. That is, the defense that we must bring the reality of the student to the classroom in order that the school contents have meaning. In the case of peasant education, this is even stronger due to the need imposed by official documents, referential authors and the social movements that strongly advocate the valuation of peasant life and that it should be brought into the school context. This is a fair struggle, but care must be taken with an *super valuation* that would ultimately disqualify the school and the scientific knowledge produced by all humanity in history. All men and women must have access to the best that humanity has produced.

The study and analysis undertaken in this research led me to a new line of research, present in ethnomathematics, that brings Wittgenstein to this discussion - which was already my interest. However, it uses Wittgenstein's ideas to a certain extent, that is, does not delve deeper into language studies as regards understanding, constructing and transmitting concepts, for example. I do not consider the interpretation a failure, but I recognize it to be limited or it could be said that it deals only with certain anthropological, political, ideological and discursive aspects, as well as others.

Wittgenstein, however, offers us the tools to think about education, the teaching and learning of certain contents, in reality different, from the understanding of the language games (the contexts of practice) in which we are inserted. Without this we fall into the superficial

and misguided idea of using reality to give meaning. Its use should have the objective of distinguishing forms of understanding that are sometimes paralyzed or mistaken due to the forms of life, and thus, from such understanding, act didatically more wisely on what must be done to enable certain subjects to broaden certain concepts.

With respect to the undergraduate students in peasant education, Wittgenstein's philosophy of language allows us to glimpse some perspectives: to discuss in a deeper way the problems of language in the relation with the everyday peasant that, as such, has developed in the course of history; to point out in time the community for a work that in fact brings the mathematical contents to the discussion, systematizing this work and not only leaving as a possibility for the student, that is, elaborating a script that already aims at the perception of the content and how this can and should be considered in the student's analysis; to understand some problems encountered by the students during the application of mathematical rules during the construction and transmission of mathematical knowledge in the peasant education course - due to the problems that the language generates, either by density, lack of mathematical vocabulary or confusion of words that are used in everyday life with meaning different from that used in mathematics.

Wittgenstein's philosophy of language helps to reflect on these issues and for being a conception that understands the language as a source of meaning production - which does not place language only as a support for an essential meaning outside of it and does not understand that knowledge has a common background - may reveal innovative aspects regarding the construction and transmission of mathematical knowledge.

School contents are products of humanity that must be incorporated by all. An 'super valuation' of quotidian practices or localized content may not allow a more 'extended' understanding by the individual. Thus, it is necessary to emphasize the distinction between the school environment and the everyday environment whose structure, reality and functions are distinguished. Therefore, wanting to bring reality into the classroom is both false and unnecessary, because the knowledge that the student can have in reality he already has. It is responsability the school to present other forms of knowledge. And the best way to value the subjects of the rural spaces is by offering them a complete and best education.

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