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Abstract

An intercultural Mathematics Education seeks to integrate different cultural contexts in teaching and learning Mathematics. In this direction, this theoretical paper seeks to discuss intercultural Mathematics Education, anchored in the assumptions of Ethnomodelling. The objective is to present the concept of Ethnomodelling and ethnomodels, as well as their contributions to intercultural Mathematics Education. Ethnomodelling understood here as a theoretical-methodological construct is an emerging approach within the scope of Mathematics Education, presenting itself as a proposal that relates Ethnomathematics with Mathematical Modelling, based on the elaboration of ethnomodels, which seek to establish communication between different mathematical knowledge systems, allowing intercultural comparisons and translation between local and global approaches. Thus, this article emphasizes the importance of recognizing diversity and knowledge constructed from students' social and cultural experiences. In addition to overcoming the hegemonic view, it seeks to value and legitimize cultures that have been historically marginalized by the social and educational system, promoting a more inclusive, equitable and representative education.

Introduction

Interculturality refers to interaction and dialogue between different cultures, occurring on a level of equality and mutual respect. This concept is fundamental in a globalized society, where contact between different cultures is frequent and can lead to mutual enrichment and a deeper understanding of diverse human perspectives. It refers to a coexistence of cultures on an equal footing (Soriano, 2004).

According to Rosa and Orey (2017), transculturality can guarantee the translation of knowledge acquired by different cultural members to members of other cultural groups through Ethnomodelling. However, we seek to show that, in addition to transculturality, which is fundamental, because “we are the same species evolving over time and occupying different spaces” (D’Ambrosio, 2019, p. 153), and interculturality is also shown suitable for this process of translating Ethnomodelling.

The main difference between transcultural and intercultural lies in the way cultures interact and influence each

other. Transculturality refers to a process where there is a fusion or mixing of cultures, leading to the creation of new cultural forms that transcend individual cultures. As Nicolescu (2002, p. 68) stated, “transcultural refers to the openness of all cultures to that which crosses and transcends them”. It is a phenomenon that can be observed in societies where multiple cultures coexist and intertwine in such a way that cultural boundaries become less defined. Through translation between cultural and academic knowledge, members of local cultural groups can embody transculturality, “because when social and physical spaces facilitate the expansion of knowledge developed by these members, regionalisms and determinism of sociocultural heritage are broken, as they transcend cultural borders” (Rosa & Orey, 2017, p. 10).

Transculturality seeks to understand others along with their beliefs, history and ideology, without belittling their culture and recognizing them as part of a sociocultural context. Furthermore, it contributes to the individual “transforming himself and his own cultural formation, in order to understand his participation in society” (Zanchetta, 2015, p. 35).

On the other hand, interculturality implies interaction between different cultures maintaining their individual characteristics but promoting dialogue and mutual respect. Interculturality emphasizes the importance of preserving cultural identity and understanding between different cultural groups without necessarily mixing or combining cultural elements. Both concepts are fundamental to understanding cultural dynamics in a globalized world and are intrinsically linked to social practices, migrations and human psychology.

Coll (2002) stated: I don’t think the transition to be made is from intercultural to transcultural but from transcultural to intercultural. It is because certain transcultural dimensions exist that we can seek intercultural dialogue as a plausible reality, not to arrive at the establishment of a transculture or metaculture but so that different cultures can become more complete in all their dimensions to be more fully what they already are.

Interculturality aims at creating societies that recognize and incorporate cultural diversity as a fundamental pillar, and “that accept differences as constitutive of democracy and are capable of building new, truly egalitarian relationships between different sociocultural groups, which involves empowering those who have been historically made inferior” (Candau, 2012, p. 244). When considering interculturality, societies can develop in a more inclusive and harmonious way, valuing the contributions of all its members, regardless of their cultural backgrounds.

For Candau (2012), interaction between cultures enriches development of identities that are dynamic, inclusive and diverse. It challenges the notion of fixed and essential identities, while amplifying the capacity for empowerment, especially for those who are marginalized or subaltern, promoting self-confidence and encouraging the search for autonomy within a context of social liberation. This contributes to form societies that favor equitable relationships between different individuals and sociocultural groups (Candau, 2012).

This theoretical paper has as aim at presenting the concept of Ethnomodelling and ethnomodels, as well as their contributions to an intercultural Mathematics Education. Thereunto, based on a bibliographical investigation,

Ethnomodelling and its ethnomodels are presented from an intercultural perspective, focusing on pedagogical practice through the art of Ethnomodelling.

Ethnomodelling and its Origins

Ethnomodelling can be considered as the use of Ethnomathematics in conjunction with Mathematical Modelling. The focus here is not to discuss in depth the two trends that give rise to Ethnomodelling, especially because both have more than one conception and there is no common definition in the field of Mathematics Education. However, the authors' conceptions that underpin this research are presented here.

D'Ambrosio's (2019) concept of Ethnomathematics is defended in this text, which means that the author does not understand it as a methodology. Ethnomathematics, as defended by D'Ambrosio (2019), is a research program with clear pedagogical implications. It is the "spatial and temporally differentiated study of the various technés or tics (ways, techniques, skills) of mathematization (explaining, understanding, dealing with and living together) in different ethnos (natural, cultural, socio-economic contexts)" (D'Ambrosio, 2016, p. 134).

Conceptualization of Ethnomathematics proposed by D'Ambrosio (2016, 2019) is broader than talking about ethnic mathematics. It "aims to rescue cultural manifestations that have been subordinated and are gradually being lost" (D'Ambrosio, 2016, p. 91). Then, Ethnomathematics Program is a response to the recurring challenge, from the first academies of Antiquity to modern universities and academies, of how to integrate theory and practice from all areas of knowledge, such as Science, Technology, Engineering, Arts, Humanities, Philosophy, Religion, Culture in general and others. The approach to discussing integrated knowledge must be transdisciplinary. And it must, of course, contemplate the human species in all times and spaces, throughout the history and geographical occupation of the planet (D'Ambrosio, 2020).

Ethnomathematics proposes a holistic view of Mathematics. For D'Ambrosio (2019), it can be understood as a drive for survival and transcendence, which has its origin directly linked to answers to human existential questions. Since prehistoric times, human beings have sought ways to solve their problems, initially of subsistence; thereunto, they resorted to models - for instance, there is the creation of the first wheel or, as D'Ambrosio (2019) illustrates, one can think about the ability of choice of the Australopithecus that lived 2.5 million years ago, at the moment in which it decided to chip a piece of stone with the intention of using it as a tool to feed itself. This reveals a thought of a mathematical nature. For the author, this manifestation can be considered a first example of Ethnomathematics. This idea is complemented by suggesting that, at the same time, it was the first example of the construction of a model.

The creation of models dates to historical times and has always existed, since the beginning of humanity. According to Biembengut (2004, p. 15), "Human history shows that all societies have sought to develop a technology that would allow them to exploit the natural resources of their habitat, which provided the basis for other aspects of culture", i.e., models. Biembengut (2004, p. 16) states that the "notion of model is present in all areas. A model is a set of symbols that interact with each other to represent something. This representation can be

done through a drawing or image, project, scheme, graph, mathematical law, among other forms". Therefore, Mathematical Modelling is understood here in the view of Biembengut (2004, 2016), as a set of procedures required to develop a model, or even a research method applied to education, which consists of developing a model (Biembengut, 2016).

Relationship between Ethnomathematics and Mathematical Modelling is not new in Brazilian research. D'Ambrosio (1990), Biembengut (2000) and Bassanezi (2002) already mentioned these possible connections. Since then, there have been disagreements among researchers: opposites, like Scandiuzzi (2002) – Water and oil; and favorable ones, such as Rosa and Orey (2003) – Cheese and wine. Because of these discussions, research such as Rosa and Orey (2006, 2014), Caldeira (2007), Madruga (2012, 2014), Madruga and Biembengut (2016) carried out, among others, have shown the relationships between these two trends. From investigations in this direction, in the field of Mathematics Education, Ethnomodelling emerges.

Ethnomodelling appears for the first time in Brazilian publications when Bassanezi (2002) affirmed that by assuming the vision of Mathematics as something present in concrete reality, being a strategy of action or interpretation of this reality, we are adopting what we characterize as an ethno/modelling stance. Caldeira (2007) states that consider mathematics constructed and signified in the cultural practices of the community, as well as the influences of these meanings on pedagogical processes, and still using the assumptions of Mathematical Modeling to achieve the proposed objectives we call Ethnomodelling.

Then, Ethnomodelling can be considered a set of pedagogical actions developed with the support of Mathematical Modelling, considering the sociocultural and economic context of students. This context enables an approach to mathematical knowledge developed by different groups, valuing and respecting the culture and knowledge acquired through experience and living in society (Caldeira, 2007).

According to Rosa and Orey (2017), Ethnomodelling is an alternative methodological approach, which aims to record mathematical ideas, procedures and practices that are developed in different cultural contexts, considering a practical application of Ethnomathematics that adds a cultural perspective to the concepts of Mathematical Modelling. Based on these ideas, Madruga (2022, 2023a) agrees with the concept defended by Rosa and Orey (2017), when considering Ethnomodelling as a [theoretical] methodological proposal that uses the concepts of diversity and culture (ethno) in line with Mathematical Modeling (tics) with the objective of enhancing learning (mathema) at different levels of education, aiming to suggest a path for teaching and learning Mathematics (Madruga, 2022, 2023a).

Conceptualizing Ethnomodelling and Ethnomodels

Ethnomodelling, according to Rosa and Orey (2012), is the study of phenomena and/or mathematical practices developed by members of a given cultural group through Mathematical Modelling. "Ethnomodelling procedures involve mathematical practices developed and used in various problem situations faced in daily lives of members of these groups" (Rosa & Orey, 2012, p. 868). Then, Ethnomodelling aims at connecting cultural aspects of

mathematics [Ethnomathematics] with its academic aspects [Mathematical Modelling].

As Madruga (2023a, 2023b) states, Ethnomodelling is a theoretical-methodological approach, as it uses techniques or methods - specifically Mathematical Modelling -, it is possible to "seize the information necessary to articulate with the theoretical dimension, generating a pedagogical action or proposal, considered as a product of this relationship between method and theories" (Madruga, 2023a, p. 408). Furthermore, Ethnomodelling, as a theoretical-methodological approach, seeks to value and understand local mathematical knowledge, relating it to a global academic language and expanding the scope of this knowledge to people from other cultures or geographic spaces (glocal).

According to Rosa and Orey (2017), Ethnomodelling considers mathematical knowledge acquired from cultural practices used in the community. According to this viewpoint, there is a need to recognize that mathematical knowledge originates in cultural practices that are rooted in social relations. For Eglash et al. (2006), Cultural anthropology has always depended on acts of translation between emic and etic perspectives. Rosa and Orey (2017) use the neologisms emic and ethics as terms derived from phonemic and phonetic linguistics. Then, Ethnomathematics emphasizes knowledge acquired in communities (emic), while Ethnomodelling tends to connect this context with academic mathematics (etic) (Rosa & Orey, 2017).

Rosa and Orey (2017) states that understanding mathematical knowledge arising from social practices that are rooted in cultural relations is necessary. Then, Ethnomodelling studies mathematical knowledge through a "process of interaction that influences the local (emic) and global (etic) aspects of a given culture" (Rosa & Orey, 2017, p. 18). According to the authors: Etic Approach: is related to the viewpoint of researchers, investigators and educators regarding beliefs, customs and mathematical and scientific knowledge developed by the members of a certain cultural group Emic Approach: is related to the viewpoint of members of distinct cultural groups in relation to their own customs and beliefs, also to development of their own scientific and mathematical knowledge (Rosa & Orey, 2017). Then, for Rosa and Orey (2018), it is essential that there is a dialogue between the emic (local) and etic (global) approaches, called by the authors as a dialogic (glocal) approach, through which one can understand the cultural influences in elaboration of models, highlighting the interdependence and complementarity between 'emic' and 'etic' through cultural dynamism.

Bassanezi (2002) defines model as representation of an idea, concept, object or phenomenon. Madruga (2014) states that each model brings knowledge and skills from the creator, and therefore, each one is loaded with cultural values. For Biembengut (2000, p. 137). Knowing, understanding and explaining a model or even how certain people or social groups use or have used it can be significant, mainly because it offers us an opportunity to 'penetrate the thinking' of a culture and obtain a better understanding of its values, material and social basis.

These models mentioned by Biembengut (2000), Madruga (2014) and Rosa and Orey (2017) can be considered as ethnomodels, as they take the cultural factors into account. Ethnomodels, according to Rosa and Orey (2012), can be understood as "cultural artifacts that are pedagogical instruments used to facilitate the understanding and comprehension of systems taken from the reality of distinct cultural groups" (p. 870).

Ethnomodels are accurate and consistent external representations of scientific knowledge socially shared by members of specific cultural groups. According to this perspective, the primary objective for developing ethnomodels is translating procedures involved in mathematical practices present in systems taken from reality, which are symbolic systems organized by internal logic of members of these cultural groups (Rosa & Orey, 2012).

Ethnomodels are considered constructs that can be cultural, academic or intercultural, and represent an investigated phenomenon in different cultural contexts. They can be classified as cultural (physical) or representational (abstract – conceptual) artifacts. "Cultural artifacts are anything or object created by the culture of a particular group of people that helps define their culture [...]. There are different types of cultural artifacts, which reflect the identity of different groups of people" (Pradhan, 2021, p. 4).

Representations, on the other hand, "[…] can be internal or external. Internal representations are mental representations that a person knows or forms in mind, and external representations can be linguistic (through symbols) or pictorial (analogical)" (Madruga & Biembengut, 2016, p. 45). External representations are fundamental to human communication and understanding, acting as bridges between internal knowledge and the external world.

Linguistic or symbolic representations use verbal or written symbols to convey meaning, whereas pictorial representations offer a more direct and intuitive form of communication, often transcending language barriers. Images, drawings and graphs can convey information quickly and effectively, appealing to the observer's visual perception. Table 1 shows a systematization of types of ethnomodels.

Table 1. Types of Ethnomodels

	Representational (abstract – conceptual)	
	Internal ⇩	External ⇩
Cultural artifacts (physical)	Mental	Symbolics – linguistics
		Analogical – pictorial

The emic approach considers trat there are cultural ethnomodels; in etic, academic ones, and in the dialogic, intercultural ones. Furthermore, these relationships can be established with the Modelling in Education phases proposed by Biembengut (2016), and with the types of representations (Madruga & Biembengut, 2016) as shown in Table 2. Based on the establishment of these relationships, the definitions for each type of ethnomodel are presented.

Table 2. Ethnomodels and their Relationships

Ethnomodel	**Ethnomodelling Approach (Rosa & Orey, 2017)**	**Stages of Modelling in Education (Biembengut, 2016)**	**Ethnomodel representations**	
Cultural	Emic – Local	Perception and	Representational	Cultural

Ethnomodel	Ethnomodelling Approach (Rosa & Orey, 2017)	Stages of Modelling in Education (Biembengut, 2016)	Ethnomodel representations	
		Apprehension	(Abstract/conceptual)	Artifacts (Physical)
Academic	Etic – Global	Understanding and Explanation	Representational (Abstract/conceptual)	–
Intercultural	Dialogic – Glocal	Meaning and Expression	Representational (Abstract/conceptual)	Cultural Artifacts (Physical)

Cultural Ethnomodels

They are artifacts or representations originating from a specific group of people belonging to the same culture, produced by the members of that cultural group. They are constructs originating from mathematical practices developed internally by a culture which have local meaning (Madruga, 2023b). They can only be validated by people from that group, i.e., it is not up to the researcher or teacher, for example, to make a value judgment about a cultural ethnomodel, they can only seek to understand how it is produced and what mathematical knowledge is involved in its creation.

However, it is up to the researcher or teacher to recognize a cultural ethnomodel. For instance, an artifact or representation created by members of a given culture is only an ethnomodel when the researcher or teacher names it as such. Examples of cultural ethnomodels are: i) artifacts (physical), such as crafts – basket, bag, necklace, tapestry, clay vase, among others; ii) representational – chocolate production models used by factory workers (Santos & Madruga, 2021) and corn plantation model, in which the farmer uses the same procedures annually, including planting period (Jesus, 2023), among others.

Academic Ethnomodels

They are developed by researchers using formal academic mathematical knowledge, which is considered here as one of the multiple (Ethno)mathematical approaches, such as those for solving mathematical problems. These ethnomodels are created by researchers or teachers based on local cultural reality. It is a global vision of the cultural ethnomodel that involves mathematical procedures, sometimes not used by members of the culture.

There is no need to hierarchize ethnomodels, as each one can only be validated (Biembengut, 2016) by its peers. Cultural and academic ethnomodels are distinct, each produced by its own culture, and only members of the group that produced it can judge its effectiveness. Because academic ethnomodels are developed from the researcher's or teacher's interpretations of a cultural ethnomodel, they are representational and can be classified as: i) pictorial – analogical, for example when produced with help of some dynamic geometry software, such as Geogebra, or even a representative drawing; ii) symbolic, such as a mathematical equation, a project structured by the researcher

or teacher, a table, a graph, among others.

Intercultural Ethnomodels

They are glocal constructs (physical or representational artifact) that consider the knowledge and practices of two cultures (local and global). It is the result of dialogicity and connection between the investigated culture and the academic/school culture. Intercultural ethnomodels may be:

> i) cultural artifacts (physical) – for example, a prototype irrigation system created by students to grow corn outside the rainy season (Jesus, 2023). In this case, to construct these ethnomodels, the farmer's knowledge was considered, through his knowledge and skills, in connection with academic/school mathematical knowledge.
>
> ii) representational (symbolic) – As an example, we can mention the 1st degree functions developed by 9th grade elementary school students to represent the chocolate production of a certain factory (Santos, 2020). In this situation, students considered the knowledge, skills and actions by producers, relating them to mathematical knowledge studied in the classroom.
>
> iii) representational (pictorial – analogical) – for example, a drawing of a basket used for harvesting coffee represented by 2nd grade high school students (Dutra, 2020). In this context, students compared the basket used by coffee producers with a cone trunk and represented it through a drawing, considering both cultural artifact and academic/school knowledge.

Therefore, it is understood that intercultural ethnomodels promote interaction and dialogue between different cultures, seeking mutual respect and appreciation of differences. They are developed at school during the ethnomodelling process.

Ethnomodelling

Ethnomodelling, as a theoretical-methodological approach, seeks the connection between different cultures and academic/school mathematical knowledge, which have pedagogical purposes that seek a path for teaching and learning Mathematics. Figure 1 below shows that cultural ethnomodels are specific to the culture under investigation, which may (and should) be of interest to students; academic ethnomodels come from academic mathematics, which seeks to translate, anchoring itself in universal mathematical knowledge.

While intercultural ethnomodels are developed at school, they permeate school practice and are originated by connections and translations between two cultures. In this process, it is understood that students can learn various mathematical concepts through an understanding that goes from the local to the global, in a glocal process (Rosa & Orey, 2017). Figure 1 presents a diagram of ethnomodelling action and seeks to show the relationships between cultural, academic and intercultural ethnomodels with the school and the teacher's pedagogical practice.

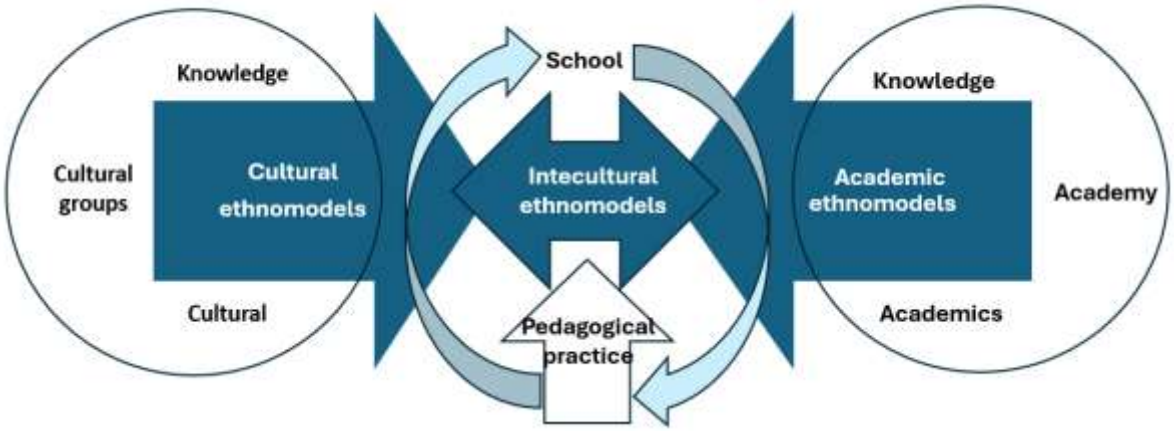

Figure 1. The Art of Ethnomodelling: Cultural, Academic and Intercultural Ethnomodels

The action of using Ethnomodelling in the classroom is considered as an ethnomodelling process, which uses ethnomodels (cultural, academic and intercultural) in pedagogical practice to teach/learn Mathematics. Ethnomodelling means developing intercultural ethnomodels through a pedagogical proposal developed with students in the school environment. In recent years, productions on Ethnomodelling have been growing on the national scene, as shown by the investigation by Madruga (2023a). Research by Dutra (2020), Santos (2020), and Jesus (2023) has applied Ethnomodelling in school practice, indicating that these authors have undergone the process of ethnomodelling.

Dutra (2020), for instance, brings coffee culture to Ethnomodelling in an intervention that took place with 2nd grade high school students. The author sought to explain how the application of Ethnomathematics, together with Modelling, can cooperate in development of a broader understanding of mathematical and geometric contents, through a pedagogical action based on Ethnomodelling and related to coffee culture. Findings pointed out that students developed mathematical tools that made it possible to influence their reality and improve the quality of life of their communities (Dutra, 2020).

Another example of research that went through the ethnomodelling process was performed by Santos (2020), which analyzed the development of a teaching proposal based on Ethnomodelling to construct ethnomodels of artisanal chocolate production, through the concept of functions, with 9th grade elementary school students. They modeled chocolate production using emic, ethics and dialogic ethnomodels of graphical or algebraic representation, contributing to involvement in the learning process and construction of autonomy. The proposal was developed in a school located in the Southern city of Bahia, within the cocoa region, and the students visited a settlement of landless rural workers to obtain information about chocolate production through interviews with producers.

Santos (2020) states the data analysis revealed that the field class contributed, through contact with settlers, to the students breaking with the derogatory stereotypes they had about this group of rural producers. Furthermore, the field class served to bring these students closer to the classroom discussions, as they experienced the stages of data production and construction. The author also states that, during the visit to the settlement, the students

observed how the settlers managed the factory's chocolate production, and through knowledge, created hypotheses and built ethnomodels. Thereunto, they used the emic or etic vision, enabling a critical approach to the situation they were modelling (Santos, 2020).

Ergo, the study allowed students to understand that in the rural producers' settlement visited, a history rich in sociocultural elements is constructed that mark the life trajectory and struggles of these people. "It was also possible to observe that, during familiarization with the theme, the areas of knowledge Modelling in Education, Ethnomathematics and Cultural Anthropology begin to 'mix' in perception and apprehension, giving rise to the Ethnomodelling field of study" (Santos & Madruga, 2021, p. 19). Then, the research by Santos (2020) and the clipping published by Santos and Madruga (2021) directed Ethnomodelling to the classroom, by encouraging students to develop intercultural ethnomodels, both graphical and algebraic representations, permeating ideas of ethnomodelling.

Ethnomodelling process also occurs in Jesus' research (2023), which sought to understand how ethnomodelling, through construction of ethnomodels, can contribute to the learning of 3rd grade high school students at a rural school, considering emic, etic and dialogical approaches based on their experiences in the rural communities in which they live. Jesus (2023) states that through ethnomodels constructed by students in a dialogical/intercultural language, it was possible to understand the peasant tradition of planting corn on Saint Joseph's Day (March 19), given the favorable climatological conditions for this cultivation during this period in the region (Jesus, 2020). In addition, rainfall indices were observed in the students' locations using alternative material. Jesus (2023) further states that, faced with the problem of cultivating corn and other crops in periods of scarce rainfall, the students presented ethnomodels [intercultural] of low-cost irrigation systems as a possibility for solving this problem. As a result, students were able to interpret and influence their own reality and improve the quality of life of the community in which they live (Jesus, 2023).

For Jesus (2023), dialogic (glocal), intercultural ethnomodels constructed by the students presented a process of interpretation from both cultural and academic/school perspective. Therefore, the author considered them as dialogic [intercultural] subjects, as they already bring with them this dialogicity. The students developed mathematical tools necessary to construct ethnomodels and resolution of the proposed activities, in which they intertwined academic knowledge of school Mathematics with cultural knowledge (Jesus, 2023).

These investigations, all originating from dissertations [master's degree final work], are examples of ethnomodelling usage in the classroom. Several theses [Doctor's degree research] on ethnomodelling have already been defended in Brazil, with more in progress, indicating the topic's growth and the need for publications. This approach offers an alternative for Mathematics teachers, particularly in Basic Education.

In addition to the mathematical knowledge that permeates the process, developing ethnomodelling in the classroom breaks with the Eurocentric, colonial paradigm imposed in schools to this day, revealing the knowledge and actions of people in different social and cultural spheres, showing various types of mathematical reasoning and the most diverse ways of mathematizing. The reasoning of different people works differently. People think

and access the world in different ways. It is important to highlight that people have different rationalities, different reasons in the world, and this is the first step to learn how to live with other people, understanding that they do not feel the same way, do not perceive the world as others, and do not understand life and the world in a unique way.

Conclusion

This paper had as aim at presenting the concept of Ethnomodelling and ethnomodels, as well as their contributions to intercultural Mathematics Education. Thereunto, we used the literature on different concepts of Ethnomodelling and ethnomodels adopted by Brazilian researchers. The harmonious use of two trends in Mathematics Education is advocated: Ethnomathematics and Mathematical Modelling, through Ethnomodelling, considered here as a theoretical-methodological construct that considers the knowledge and practices of people in the most different cultures, seeking to connect or translate them through academic mathematics in a dialogical perspective, which respects and values the different social and cultural groups.

We searched for a path for pedagogical practice through development of ethnomodels, whether they are cultural (originating from the culture under investigation), academic (originating from translation, through academic/ school mathematics) or intercultural (originating from dialogue and connection between cultures). They correspond to the sharing of certain human invariants present in all cultures as their structuring elements (Coll, 2000). Intercultural ethnomodels are developed at school during pedagogical practice through ethnomodelling process. It is considered that the use of this process in Mathematics classes, for example, can encourage students to learn with more meaning. This occurs by valuing their experiences and tacit knowledge, showing that Mathematics is not disconnected from everyday life and that local knowledge must be valued and used as a starting point for teaching and learning global mathematical content.

In that regard, ethnomodelling suggests a holistic and inclusive view of mathematics, as it challenges the traditional view that mathematical knowledge is universal and static, showing that it is, in fact, dynamic and influenced by specific sociocultural contexts. By integrating local and global knowledge, Ethnomodelling offers a dialogical approach that allows the translation and elaboration of mathematical problems in a way that respects and incorporates cultural diversity. This not only enriches the school curriculum but also empowers students by enabling them to understand the value of their own cultural traditions within a mathematical context. Furthermore, Ethnomodelling is a tool that enhances glocalization, as it facilitates dialogue between different systems of mathematical knowledge, promoting understanding and mutual respect between cultures through interculturality. In doing so, it helps build bridges between local and global mathematical knowledge, creating a space for meaningful and productive cultural exchange.

Ethnomodelling, therefore, is not only a teaching alternative (methodology) but also an educational philosophy (theory) that recognizes and celebrates cultural diversity as an essential part of human knowledge. Furthermore, it is more than necessary to look at diversity and at the knowledge arising from social and cultural experiences of students, breaking with Eurocentric and hegemonic thinking in search to recognize the cultures marginalized by

the social and school system.

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