Imagination and Educational Curriculum: A Literature Review

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ABSTRACT – This article reports a literature review focused on the areas of psychology and education that aimed to identify if academic research has been addressing the topic imagination as a psychological process of human development; and also if research articulates imagination and educational processes through the educational curriculum. For this review, 39 research papers published in the last five years were selected. The analysis of the articles revealed articulations between imagination and some specific areas of knowledge. However, in most articles, imagination was only peripherally addressed. In conclusion, we emphasize the need to deepen the discussion on imagination and education, which should be given due importance in curricular documents.

KEYWORDS: imagination (psychology), curriculum, education.

Imaginação e Currículo Escolar: Uma Revisão de Literatura

RESUMO – Este artigo compreende uma revisão de literatura que objetivou identificar se as pesquisas acadêmicas das áreas de psicologia e educação vêm tratando a imaginação como um processo psicológico de desenvolvimento humano e se as articulam aos processos educativos por meio do currículo escolar. Para esta revisão, foram selecionados 39 artigos publicados nos últimos cinco anos. A análise dos artigos revelou articulações entre imaginação e algumas áreas específicas do conhecimento, porém, em grande parte dos textos, a imaginação teve papel periférico. Conclui-se pela latente necessidade de agudizar a discussão sobre imaginação e educação, a iniciar-se pela valorização da imaginação nos textos curriculares.

PALAVRAS-CHAVE: imaginação (psicologia), currículo, educação

Imagination is an essential psychological process for human development (Cruz, 2011; Nunes, Castro & Barbato, 2010; Pino, 2006; Silva, 2012; Vigotski, 2009; Vygotski 2014; Zittoun, 2015; Zittoun & Cerchia, 2013; Zittoun & Gillespie 2016, 2017), due to the fact that it expands one's experience beyond its immediate reality; it takes one back to the past, whilst envisioning the future, thus creating an alternative present. This movement of expansion of the human experience is made possible by cultural artifacts and, depending on the cultural context, can be fostered or repressed (Zittoun & Gilespie, 2016). Furthermore, by its detachment from immediate reality, imagination sets us apart from other animals, making it possible for us to fully participate in human life (Harris, 2002/3).

Given its relevance for human development and also for the educational process, we believe that imagination should not be absent from discussions about students'

learning, teaching practice, and curriculum documents, for imagination involves experimenting with new ideas without "real life" limitations, which fosters new learning (Hilppö, Rajala, Zittoun, Kumpulaine, & Lipponen, 2016). Thus, we undertook this systematic review of literature in order to understand the state of the art about imagination and its relation to educational curriculum by analyzing research papers which address both topics in a correlated way.

We believe, as do Zittoun and Gillespie (2016), that we humans do not establish a direct relationship with the world, but that we live in a world semiotically mediated by the tensions between what is and what could be, that is, between our primary reality and the world that we access through imagination. We understand that imagination expands the human experience, precisely by allowing the disengagement of the primary reality – the immediate situation - and a return to it as in a loop.

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We also notice that, although discussed in the philosophical field (Sartre, 2008, Warnock, 1981), imagination as a psychological process and, above all, as a process of human development, was eventually undervalued and often taken as something that deserved less attention for having a distinct nature from reason (Piaget, 1986, 1990).

Because we understand the relevance of imaginative processes in the development of human cognition, its relation to emotions, and therefore its importance for human development, we argue that the discussion and promotion of imaginative processes cannot be left out of the educational curriculum. In addition, imagination should not be ignored by teaching practices and should be valued and nurtured by teachers who, in turn, should act as mediators and supporters of symbolic resources for the imaginative processes.

Specifically in the case of curricular documents, it is possible to affirm that imagination and its development in childhood have not been deeply discussed. With regard to the segments of early childhood education and initial years of elementary school, the curricular documents are still incipient, especially regarding the discussion about the need for teacher training with the objective of fostering imaginative processes in childhood. Our concern is based on studies that warn that pedagogical practices do not contemplate imagination as a means to achieve knowledge, and consequently, to promote development (Costa, Silva, Cruz, & Pederiva, 2017; Cotonho, 2001; Egan, 2007; Girardello, 2011; Rocha, 2014; Santos, 2009; Silva, 2006, 2012).

Considering the curriculum as a practice that occurs through multiple processes and as a space in which we find several different practices, we must analyze the active agents during their developmental process. The teachers are the active agents in this context, because they are the ones that put the curriculum into action. In this regard, Sacristán (2000) emphasizes that there is a reciprocal influence between teacher and curriculum because, even though the teacher acts based on the curriculum, he/she also acts *in* and *for* the implementation of an educational curriculum.

METHOD

In order to observe the situation of the theoretical field regarding the articulation between imagination and curriculum, we undertook a systematic review of academic research to understand the state of the art and to find the gaps in the literature that need to be discussed. We selected articles published in English due to its international reach, being one of the most widely spoken and understood languages in the world, which allowed us to map what has been produced in different countries about imagination and curriculum.

Initially, the terms *imagination* and *curriculum* were looked up together on Capes Periódicos, a search engine, which reported 38,731 articles. For better refinement, we limited the search to articles published in the last 10 years and the amount decreased to 9,472. Then, narrowing the search criterion to studies published in the last five years in the area of psychology and education, the amount came to 5,151.

We noticed that the term imagination was often found in the reference section, but it was not discussed in a central way in the body of the text (most texts only cited the word imagination but did not present a concept of imagination). We decided to refine the search using the terms: *imagination, education, curriculum* and *psychology* including them in the advanced search by subject that comprehended the terms *imagination* and *curriculum*. Selecting articles that had been published in the past five years in English, we obtained 27 articles of which 26 had been peer reviewed.

After having read the material, we excluded three articles: two texts that referred to interviews, one article that did not address imagination and its relation to the curriculum properly and one that was not available as a full text. A chart with the abstracts of the 23 final articles was created for better visualization and organization according to the objective of the systematic review: identifying how research has been addressing the topic "imagination", which for us is a psychological process that impacts on human development; and also if research articulates imagination and educational processes through the educational curriculum, which encompasses educational practice and educational culture.

Parallel to the search on the Capes Periódicos gateway, we undertook a search on the ERIC database (Education Resources Information Center) and found 22 texts by using the term *imagination curriculum*, selecting only the peer-reviewed articles published in the past five years which were available as full text. After that, we excluded the texts that did not fit into the article category, which left us with 17. However, one article had already been reported in the previous search, hence the final total reported by the ERIC database was 16 articles.

Adding the amount of articles reported by both databases, we had as result 39 articles for analysis. For this systematic review we followed the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-analyses), which aims to help authors to improve the

reporting of systematic reviews and meta-analyses (Galvão, Pansani, & Harrad, 2015).

For better evaluation, we organized all the abstracts of the selected articles in a chart. In this chart, we also listed the authors, the year of publication and the journals in which each article was published. After that, we created a table listing the journals that have published on the topic (see Table 1).

After reading the full texts, we classified the articles by educational segment, which can be seen in Table 2:

After the organization of the charts and after the creation of tables containing the information on the journals and the levels of education / educational segments in which the topics Imagination and Curriculum have been published and researched, we analyzed the texts and organized them by theme. We read the texts systematically and identified the research goals, the method and the theme developed in each article. That being done, we organized the presentation of the articles in thematic groups according to what was identified in each of them.

Table 1. *Scientific Journals Organized by Database*

Database	Articles	Journals
CAPES	23	Asia Pacific Education Review Asia-Pacific Journal of Teacher Education Australian Educational Research Curriculum Inquiry Educational Sciences: Theory and Practice Educational Studies in Mathematics Gender and Education International Journal of Distance Education Technologies International Journal of Educational Development International Journal of Science and Mathematics Education Journal of Early Childhood Research Journal of Language and Literacy Education Journal of Social Work Education Journal of Studies in International Education Quality et Quantity Revista Electrónica Interuniversitaria de Formación del Profesorado Teaching Sociology Teaching in Higher Education
ERIC	16	Critical Questions in Education Early Childhood & Practice Educational Sciences: Theory and Practice Educational Research and Reviews English Language Teaching English Teaching: Practice and Critique Higher Learning Research Communication Informatics in Education International Education Studies International Journal of Education & the arts, and literacy education Journal of Language and Literacy Education Journal of Learning Through the Arts Journal of Social Science Education Multicultural Education

Table 2. *Articles Organized by Educational Segment*

Database	Articles focused on preschool and elementary school	Articles focused on middle school and high school	Articles focused on higher education	Other articles	TOTAL
CAPES	4	4	12	3	23
ERIC	6	5	1	4	16

RESULTS

In the following, we present the results organized by themes. We should consider that some texts could be identified as pertaining to more than one theme, such as the combination of art, imagination and creativity addressed in Pinhasi-Vittorio and Vernola's (2013) article. However, for better organization, we chose to group the articles in the most outstanding theme in the body of the text or in the title of the article.

The Role of the Arts

With respect to the role of the arts in imagination, we selected five articles (Baker 2013, Carter, 2013, Choudhary, 2016, Fels & Ricketts, 2015, Pinhasi-Vittorio & Vernola, 2013). Baker (2013) focuses on the importance of the inclusion of the teaching of arts in the school curriculum, based on the premise that the artistic language can help to develop other areas of knowledge and to support cognitive development of students. The author has conducted his research at a school in North Carolina, USA, which applies a curriculum that integrates arts and other school subjects. This school conducts a project that involves writing, acting and speaking in public, as well as creating, imagining, researching and memorizing. Although he does not address the issue of imagination in depth, Baker argues that the use of a school curriculum which encompasses the multiple forms of artistic expression expands the development of the students, fostering qualitative leaps in school performance in general. Art is presented as essential to how teachers teach and how students learn in reading, mathematics, language, science, and social studies.

In Carter's research (2013), the influence of poetic inheritances on the English curriculum of secondary schools in Australia was analyzed, specifically in the English Extension course. Carter (2013) points out that this course is based on the same precepts of romantic writing, namely: centrality of individual experience, self-expression through language, and creative imagination. For the author, romantic poetic writing stimulates creation and imagination because it places the student as the author of his work, offering him/her space to create and explore his/her imagination. Therefore, the English Extension course offers a rare opportunity within the formal curriculum for students to experience authentic, sustained immersion in the creative realm.

Whilst discussing the teaching of literature in multicultural classes, Choudhary (2016) stated that, contrary to the peripheral treatment given to literature, literary texts should be effectively used for language teaching, as they are representational texts and not just referential or informational texts. Unlike referential texts that connect and communicate only at the peripheral and basic level, representational texts involve the use of imagination. Nevertheless, the author did not develop a concept of imagination and did not specify why it would be important to foster it.

Regarding the article by Pinhasi-Vittorio and Vernola (2013), we highlight the use of art and aesthetic education in a graduate literacy course. The authors build on the premise that aesthetic education stimulates imagination and encourages multiple ways of interpreting and reading texts. With the use of artistic elements, the authors invited the students, future literacy teachers, to imagine, to create and to think differently from what they usually think. Pinhasi-Vittorio and Vernola understand that by dealing with the arts in the classroom students are offered the opportunity to explore their imagination, discover different ways of understanding a literary text, and at the same time become aware of social justice issues. In other words, if imagination enables people to see beyond what is put into immediate reality, social justice is made when one imagines beyond oneself, perceiving the other as a being of thoughts and feelings, as a unique being. The authors conclude that it is necessary to reinvent the curriculum and develop imagination as an elementary component for literacy and particularly for critical thinking.

Fels and Ricketts (2015) present a collaborative performative inquiry of a video recording situation that aims to investigate the relationship between the performing body, pedagogical and curricular encounters, and the lived experience of performing technology. When undertaking an empirical study about positioning when using a camera, one of the questions put by the authors is: Does our involvement with technology limit our field of vision or expand our pedagogical imagination? However, the authors do not present a definition of what they understand by pedagogical imagination.

Environmental Education

Two articles linked environmental education and imagination: Yang (2015) and Bertling (2015). Although it seems an inexpressive number of articles to constitute a theme, we chose to highlight them as a separate theme due to its differentiation in relation to the others. Yang's research is based on the aesthetic appreciation of nature and stresses how imagination is important for environmental education, considering that the latter is one of the seven key issues of the curricular reform undertaken in Taiwan. The author puts forward a school curriculum model that implements what he calls natural aesthetic education, and criticizes teaching practices that use nature only to understand the aesthetics of

literature, ignoring the appreciation of nature itself. Brady (cited by Yang, 2015) points out that imagination plays a central role in the appreciation of nature, because it is through imagination that we can explore, project, extend, and reveal nature itself. For example, when we see a tree and its shape resembles a dancing woman, then we imagine that the tree dances and that would reveal the beauty of the environment. Moreover, we must emphasize that Yang separates the aesthetic appreciation of nature into two models: the cognitive and the non-cognitive approaches. Imagination, for the author, would be present only in the latter.

Bertling (2015) presents a study that relates the teaching of arts to the preservation of the environment through the development of empathy. Based on Greene's (cited by Bertling) understanding that imagination has power in the social world, because it expands the consciousness of people, facilitates empathy, envisions alternative realities, and begins the process of working for a better world, the author of the study asserts that environmental education could be established through ecological imagination. As reported by Bertling, ecological imagination calls for a new form of education that embraces the arts as a means to conceive not only new ecological perspectives, but also other ways of being in relation to the planet. Therefore, the author proposes a critical place-based curriculum in which art education functions as a way to awaken the ecological imagination.

Imagination, Learning, and Cognition

The majority of the articles found in this literature review were included in this theme: (Ballantine et al., 2016; Bland & Sharma, 2012; Ciabatarri, 2013; Cowan, 2015; Dietiker, 2015; Fleer & Peers, 2012; Grauerholz, Eisele, & Stark, 2013; Hedges, 2014; Hochschild Jr, Farley & Chee, 2014; Kapucu, Cakmakci, & Aydogdu, 2015; Leee, Ling, & Kang, 2016; Mckinney & Day, 2012; Morawski, Hayden, Nutt, Pasic, Rogers & Zawada. 2014; Lee, 2014; Parker, 2013; Przybylla & Romeike, 2014).

Analyzing early childhood education curricula, Fleer and Peers (2012) criticize the current view that considers playing as the result of a natural behavior of the child and, therefore, as a useful activity for supporting young children's learning. Based on historical-cultural theory, the authors refute the idea of naturalization of play and agree with the Vygotskian perspective which understands that, when playing, the child creates imaginary situations by interacting with reality in a non-passive way, that is, giving meaning to what is perceived in the real world. Fleer and Peers criticize the "work" and play "binary", as well as the new binary of "imagination" and "cognition", and claim that cognition is intrinsically linked to imagination.

Observing children during play time, Fleer and Peers (2012) realized that imaginary situations are shared not only by children, but also by adults. According to the authors, this fact would be the key to understanding the dynamics between the psychological dimension of the child's development and the pedagogical approaches adopted for learning. When an adult joins the child as an interested observer, new meanings and actions must be explained, because the presence of an observer creates a new kind of consciousness about play activity.

Unlike the maturational perspective which defines adult involvement in children's play as interference, Fleer and Peers (2012) conclude that adults' questioning during play situations produce pedagogical results because this questioning motivates the child to give meaning to objects and actions during play activity. Besides, when the adult participates in playing activities, he/she can expand the discussion by increasing the exploration of elements that enhance the play, such as character traits. When inquiring and contributing to the dialogue, the adult fosters the collective imagination of those who are participating in the playing activity. Fleer and Peers argue that playing should be used as a pedagogical resource, but they believe that the role of the teacher should be more active in creating and maintaining imaginary situations. For the authors, learning takes place within a dynamic relationship between imagination, emotion and cognition.

Bland and Sharma-Brymer (2012) conducted a study focusing on the influence of imagination on children's choice of their learning environment, that is, the use of imagination by children when showing or describing how they would like the school to be. Using an exercise of free imagination, the authors explored drawings and written responses about the characteristics of an ideal school on the perspective of the children who have used imagination to explore possibilities. Drawing is defined as the main vehicle for the children to express their imaginative ideas (Bland & Sharma-Brymer, 2012) and the written texts are used in this research as a support for understanding what was drawn. The authors organized the results of their research classifying imagination into four types: fantasy, empathic imagination, creative imagination and critical imagination.

Hedges (2014) discusses the concept of working theories as a means for the child to connect, edit, extend and deal with new or discrepant pieces of knowledge in an attempt to build understanding. The author emphasizes that the concept of working theories has appeared as a pedagogical consideration in the national curriculum of New Zealand. When presenting the strategies and results of working with this perspective, the author focuses on elements of the imaginative process and argues that the use of working theories allows the children to explore their intuition,

creativity and even ideas considered illogical, promoting intellectual curiosity and thinking.

Cowan (2015), in turn, presents the project Our wheels conducted in a preschool class in which objects that had wheels were used in order to develop students' learning. According to Cowan, from the interest of the students in the theme of the wheels, research, creation, documentation, imagination and discussion were undertaken.

Kapucu et al. (2015) investigated the influence of documentary films on the conception of natural science among eighth graders. Dietiker (2015) proposes to interpret the mathematics curriculum as an art that stimulates the imagination and curiosity of students and teachers. Morawski et al. (2014) discuss the importance of using multimodalities for higher education students to express their learning. The authors argue that the implementation of multimodalities encourages students to make use of various elements of personal resources such as emotion and imagination, and that it should be something proposed in curricula to foster the use of multiple forms of expression. According to Parker (2013), we think, plan and communicate with images and so he addresses higher education curricula in a theoretical article.

Lee (2014), when investigating learners' experiences of English as a second language, realized that, among other things, students created imagined communities that allowed them to connect with native speakers and with the second language's culture, albeit imaginarily. Such imaginative resource acted as a motivator for learning. However, Lee's study pointed out that the reality encountered by students was very different from the imagined community.

Ciabattari (2013), when proposing a curriculum for sociology courses focusing on the culture of good writing, stresses the importance of writing skills for the development of students' research skills and also for the development of sociological imagination. The relevance of imagination is seen not as a form of access to good writing - as if it were an accessory - but as something that can be developed from good writing. Similarly, Mckinney and Day (2012), Grauerholz et al. (2013), Hochschild Jr. et al. (2014), and Ballantine et al. (2016) also reported sociological imagination as a result of learning.

Przybylla and Romeike (2014) believe that building computer systems with interactive objects gives students the opportunity to generalize knowledge to other areas, so they advocate a curriculum that uses computational science as an educational resource. The authors support their arguments on the theoretical contributions of constructivism and understand that creativity can be fostered when students participate in the construction of computer tools. In Leee et al.'s (2016) research on the relationship between innovative teaching approach and student satisfaction, technology is also used as an educational resource.

The Centrality of Creativity

As for the relationship between creativity and imagination / curriculum, five articles were found (Al-Abdali & Al-Balushi, 2016, Aminolroaya, Yarmohammadian & Keshtiaray, 2016, Ketsman, 2013, Tan, 2015 and Witkin, 2014). The paper by Al-Abdali and Al-Balushi (2016) addresses an empirical study in which the authors explored how science teachers teach for creativity. The result of the research was not positive though, since for the authors the teachers who participated in the study presented a poor performance. Al-Abdali and Al-Balushi concluded that there is a need for teacher training curricula to support teaching practice focused on the fostering of students creativity. Imagination is regarded in the text, without much emphasis, as a necessary feature in the development of creativity.

Aminolroaya et al. (2016) report a literature review focused on creativity in pre-school context and discuss methods to foster children's creativity in early childhood education. Imagination appears in the text in two specific moments: when the authors address the issue of children's play referring to it as one of the most important activities for the promotion of creativity and imagination; and when they state that childhood is full of imagination. Other than that, there is no significant discussion on the subject.

In her paper, Ketsman (2013) inquires why lingering, imagination, creativity, and play are treated as extras in standardized school subjects. By doing so, the educational system focuses more on the final product and not on the ongoing process of learning. To overcome this reality, the author proposes that the school curriculum be co-constructed, that is, that teachers and students build the school curriculum together. The idea of co-construction of the curriculum highlights its flexible nature, in other words, the curriculum as something that can be adjusted to the needs of the class. In the process of co-construction of the curriculum, the teacher plays the role of mediator between the students and the curriculum.

For a curriculum to encourage the desire to learn, it must stimulate curiosity, which can foster imaginative and creative activity (Ketsman, 2013). Ketsman (2013) states that imagination plays a key role in the creative process and therefore teachers should give students enough time and space for their imaginations to flourish. The author also draws attention to the importance of play and games, affirming that these activities should not be marginalized in school.

Tan (2015) places an emphasis on creativity, advocating that elements for people to become creative should be provided as early as in preschool. The author stresses the need for teachers to consider whether what they are teaching is preparing students for today's society, with a focus on the workplace. Following a market-oriented vision, Tan worries

about the changes in the world of work and the acceleration of information flow. For him, curriculum and teaching practice need to fit into the twenty-first century, the century that calls for creative people.

Witkin (2014), in stressing the need to transform social work education and discussing the current curricula, states that imagining is transcending barriers of what is given as true. The author advocates for a transformative orientation of social work education, in which transformative learning requires more than critical behavior and student assumptions. She defends an imaginative, creative, and transformative education that allows students to question the truth and the given reality. Witkin presents problematization and questioning as two interconnected strategies to foster imagination and creativity.

Multiculturalism and Citizenship

On this theme we can find the articles by Sloan (2013), Reid and Sriprakash (2012), Aprea and Sappa (2014), Kim and Wiehe-Beck (2016), Morgan (2014), Mcknight (2015), Choo (2014), Lou, Tsai, Tseng and Shih (2014), Wassermann (2017), Huang (2012); and Leask (2013). In addressing the issue of multiculturalism, Sloan (2013) proposes an interdisciplinary curriculum that supports a pedagogy focused on multicultural education. The author has a singular conception of imagination that can be understood when he states that learning is a science; however imagination can make this process seem like magic.

A little further on the claim that imagination would have a magical aspect, Sloan (2013) stresses that school can spread out of physical walls and that knowledge is not bound to that space. Moreover, Sloan argues that teachers should use their collective imaginations to creatively improve and transform classrooms. He further says that the wisdom resulting from what he calls place-based learning generates creative thinking and broadens imagination, leading to the facilitation of community renewal.

Specifically addressing the issue of fostering the engagement of imaginations, Sloan (2013) criticizes pedagogical practices that ignore the imaginative process. Based on a saying attributed to Albert Einstein, the author argues that imagination is more powerful than knowledge. Finally, he states that the transformation and empowerment of our intellect is not rooted in what we know, but in how we act and what we do with the knowledge we have. Furthermore, the engagement of students' imaginations only occurs when students are provided cultural experiences in which they touch, manipulate, construct, and dissect the concepts and standards they are learning about.

Reid and Sriprakash (2012) discuss teacher training on diversity education in Australia. The authors conclude that future models of multicultural education, new

curriculum models, can produce an imagination that resists instrumentalism and re-engages with humanity and its manifold differences beyond national boundaries. In this article imagination is taken as a goal to be achieved and, at the same time, as a means to implement multicultural education.

Aprea and Sappa (2014) argue that financial education must be present in the German school curriculum as part of citizenship education. The authors discuss the conceptions of financing and economic crisis in the high school curriculum. The text does not characterize imagination, but uses it as a resource in the conduction of the research when questioning secondary students in respect to what they know about the economic crisis.

Kim and Wiehe-Beck (2016) critically analyze the adoption of the Common Core State Standards – CCSS – in the United States, which intends to provide common standards for English language Arts/Literacy and Mathematics for all American states. The adoption of these common standards and the focus on external results lead to the conditioning of the student to automatic memorization of information and promotes uniformity of contents that do not consider the differences among students.

As an alternative to a common curriculum that does not stimulate meaningful learning and whose central core is the acquisition of information as an end in itself, Kim and Wiehe-Beck (2016) defend a curriculum focused on citizenship and turn to the concept of narrative imagination coined by Nussbaum (quoted by Kim & Wiehe-Beck, 2016). Narrative imagination is defined by Nussbaum as the capacity to imagine what it is like to be in other people's shoes, to be an attentive reader of other people's story and to understand their emotions, wishes and desires. This can be understood as an exercise of alterity that should be put into practice early in children education. The authors advocate the need for a curriculum that fosters narrative imagination in education helping students to become world citizens and to develop citizenship in the world.

Mcknight (2015) discusses gender issues and exposes the predominance of a male view in curricula. For the author, it is necessary that teachers study what is important to girls, and also that they imagine themselves feeling comfortable in this endeavor as teachers, as women and as feminists. Mcknight conducted an empirical study with female teachers who designed English curricula for a secondary school in Victoria, Australia. However, the author did not present a concept or characterization of imagination throughout the text. Lou et al. (2013) also address issues of gender and curriculum, but highlight an integrative project to foster learning and imagination among high school girls. The authors understand that imagination can be encouraged by educational environments that provide specific stimuli and help students to extract, disseminate and restructure mental

images. On the other hand, Leask (2013), when studying university curricula, asserts that imagination is an essential part of the internationalization process of curriculum in any discipline.

In other articles, imagination appeared combined with other terms, as in the case of Huang (2012), who, while discussing the influence of neoliberalism in Taiwan's curriculum, used the term agents' social imagination; Wassermann (2017) applies the term intellectual imagination when presenting a research in which the participants –

South African first-year history education students who are studying to become teachers - were asked to write down topics they imagined being part of the school history curriculum; Morgan (2014), in dealing with New Zealand's geography curriculum, points to geographical imagination as a means of developing a coherent geographic notion of the country; Choo (2014) uses the term hospitable imagination to expose the need to foster hospitable ways of imagining the other, which resembles Nussbaum's idea of narrative imagination.

DISCUSSION

After analyzing the material, we identified some terms and conceptions related to imagination that we considered relevant to highlight. The first refers to the idea of imagination as a magical process, in which reside remnants of an understanding of imagination as something not real, that is, as something that has no support in reality. Such understanding is contrary to the sociocultural theory that we adopt, since we understand that any imaginative action is deeply grounded in reality and can only happen as a psychological process because the real world provides elements for it (Vigotski, 2009).

In one of the articles (Yang, 2015), we point out the cleavage between cognition and imagination with its designation as a non-cognitive process. We refute the idea that imagination is not related to cognitive processes, because we understand that this construct is the basis of all psychological processes, which act as a system (Vigotski, 2009). We understand psychological processes as intrinsically linked, because we perceive that human development occurs in the constant flow of processes such as memory, perception and imagination, with the active participation of emotion in all of them.

With regard to cognition and emotion, we highlight that Fleer (2013), in a research carried out with pre-school children, emphasizes that affective imagination assists in the understanding of scientific knowledge. For the author, the child is on the border between the real world and the imaginary world. The author also believes that the flickering between real situations and those arising from imaginative processes can help children to think in situated and imaginary ways that together support children's capacity of imagining scientific explanations.

We consider the understanding of imagination as the basis for creativity to be highly relevant. Vygotsky (2004) warns that every imaginative activity always has a very extensive story and what is coined as "creation" or "creative act" is usually what he calls the "climatic moment of a birth that occurs as a result of a very long internal process of gestation and fetal development" (p. 25). Thus, we agree

that imagination is the "heart" of creativity (Zittoun & De Saint-Laurent, 2015).

Another understanding observed was the relation between imagination and freedom or free imagination. Trotman (2008), in a research conducted with adolescents, shows that, on the students perspective, imagination is only fostered in disciplines in which there is relative freedom to think. It is interesting to notice that the students emphasized the freedom of ideas or freedom to think differently from given reality, because the core of imagination is exactly this: it is the process that disengages us from here-and-now and leads us to distal experiences, (Zittoun & Cerchia, 2013, Zittoun & Gillespie, 2016, 2017).

The term ecological imagination, despite appearing in one of the texts of this review (Bertling, 2015), does not appear as a delimited concept. In fact, the author uses this combination of terms to emphasize how imagination can play a role in environmental education. Briefly, imagination, due to its nature of expanding people's consciousness would pave the way for empathy, and such a deed would lead to greater attention to ecological issues.

Another concept that appeared in the review was that of narrative imagination used by Kim and Wiehe-Beck (2016). This concept was, in fact, coined by Martha Nussbaum, a philosopher who works with issues related to citizenship and democracy. For Nussbaum (2008), narrative imagination consists of the ability to become an attentive reader of the other's story, imagining what it is like to be in other people's shoes and comprehending beyond one's perspective. This would include the ability to interpret meanings through the use of imagination (Von Wright, 2002).

Following the principles of narrative imagination, if we wish to understand the other, we should not only read about the other or live with the other, but we must use imagination to transcend our egocentric position, especially when we meet new people in the course of life, and that means becoming a democratic citizen (Nussbaum, 2008; Von Wright, 2002).

The term collective imagination also appeared in the literature review. It refers to imagination shared by a group and it can be observed when a group builds a story, a narrative, together. In order for the elements of the story to be coherent and comprehensible to all members of that community, it is necessary that meanings be collective.

Another prominent term, due to an expressive number of publications in the area of Sociology, is Sociological Imagination. This term was coined in 1959, by Charles Wright Mills, American sociologist. The term has become a neologism and comprehends the ability that sociologists must develop to understand the reality in which they live, in a broad connection between individual and society.

Concerning curricula, if we limit the understanding of curriculum as a written text, only a few studies have traced a direct relation between imagination and curriculum. However, if we understand the curriculum as a teaching practice, we realize that some articles emphasize the need for practices to provide means for developing students' imagination. In other articles, however, imagination received a secondary treatment being only mentioned in the body of the text.

CONCLUSION

The reason for undertaking this review of foreign scientific literature was based on the need to observe how academic productions have addressed the topic, as well as to verify the potentialities in studying this theme and its gaps. A literature review on imagination and curriculum seemed pertinent to open the field for discussion; however, the articles presented an incipient link between imagination and curriculum, showing that there is still a demand to discuss curricula that stimulate imagination in the educational context.

The relationship between imagination and curriculum is based on the understanding that the resources necessary for imagination can be provided in school, which, as a sphere of experience (Zittoun & Gillespie, 2016), should foster the development of students' imagination. In addition, we understand that the curriculum can be the vector of a new teaching practice that, when encompassing student learning, expands the human experience through imaginative processes.

After carrying out this literature review, we conclude that there are still gaps in the field, especially when imagination appears linked to fantasy, detached from reality and averse to cognition. However, we also perceive possibilities when research is revealed in which imagination is appreciated and treated in the way it deserves to be: as a place of expansion of human experience, as a space for development and as a "non-place" of unreality. Linking imagination and learning, supported by curricula that underline the importance of fostering imagination in schools and universities, seems to be a path yet to be followed, although some significant steps have already been taken.

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