National Common Curriculum Base and infocommunication skills: a correlation analysis[1]

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Abstract
Among the ten general skills proposed in the National Common Curriculum Base (BNCC, 2018) for basic education in Brazil, at least four mention attention to the use of resources or digital experiences, two others deal more specifically with content and another competence focuses on dialogue and cooperation. The purpose of this paper is to observe if there is a correlation between the general competences foreseen in the BNCC and the academic conceptual, namely in the scope of the infocommunication skills. A bibliographical review was carried out on the concepts related to Mediatic and Information Literacy (Alfin), Infocommunication Skills and New Media Literacy along with a BNCC analysis in the light of theoretical discussions were carried out as a methodology. Among the results of the research, BNCC's appropriation of current theoretical references showed a greater correlation with information skills, which refer to the ability to locate, evaluate and apply information.
Keywords: Information and Media Literacy. Infocommunication skills. New Media Literacy. National Common Curriculum Base -Brazil. High school.

Introduction

The Brazilian education stage that presents one of the most concerning indexes is high school: about 1,5 million teenagers[2] from 15 to 17 are out of school (15% of this part of

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1   Previous version of the article was presented at Lusocom - Lusophone Federation of Communication Sciences, in November 2018, in Maputo, Mozambique.
2   Under the Youth Statute, young people are in the 15 to 29 age group. In this article, as the focus is on high school students, we adopt the age range of 15 to 19 years, the age predicted for this stage of school education.

population) and other 2 million are late (age-grade distortion)[3]. This is a complex phenomenon that involves social and economic pressure, student failure, among others.

Another aspect may be the connection between the content and teaching methods used and the contemporary reality and interests of students. "There are issues specific to the stage, such as problems in the curriculum and school practices that do not connect with the student's reality", points out Batista (2017)[4].

In response to those challenges, the National Education Plan (PNE), 2014, created the Common National Curriculum Base (BNCC), a normative document for education. Its version for high school was presented by the Ministry of Education, in April 2018, to the National Education Council (CNE)[5].

BNCC has been the subject of intense debate. On the one hand, the supporters of the base recognize progress in the proposal. On the other hand, reapproval of the elaboration, implementation, and content of the Base, as will be presented in a section on the BNCC, is pointed out. Once approved and ratified, states and municipalities will have to adapt the curricula of all schools to the Base by 2023.

Within this context, and considering that the BNCC proposes ten general competences for basic education, it seems appropriate to analyze whether there is a correlation between the general competences provided for in the BNCC and the academic concepts in the scope of infocommunicational competences. Infocommunicational competencies can be characterized as the convergence of knowledge, skills and attitudes that each one puts into action to locate and use the information they need for their daily activities, as well as interact and act with other people.

These competences are discussed in the context of digital culture, in which high school students, whose expected age range for this stage of education varies between 15 and 19 years, are native.

The theoretical framework will cover the discussions on Information Literacy (Alfin) and Media, Infocommunicational Skills and New *Media Literacy*. These concepts are understood as fundamental to the discussions around the learning of young people in high school, as they consider the influence of digital technologies on contemporary sociability.

The interest in the themes exposed follows the academic trajectory of the authors, who had the curiosity to investigate the general competences inside of BNCC and observed that at least four out of the ten highlight the attention to the use of digital resources or experiences. Other two deal with content care, and another competence emphasizes dialogue. The remaining three do not explicitly mention aspects that are relevant to this article. More precisely, the hypothesis that the BNCC proposal covers the competence to search, evaluate

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3 Data from Pnad (National Household Sample Survey, IBGE) 2017.

4 Interview granted to O Globo and published on September 12. 2017. Available at: https://oglobo.globo.com/sociedade/educacao/indice-de-alunos-que-abandonam-ensino-medio-no-brasil-o-dobro-de-outros-paises-21810388. Accessed on: Jun. 20, 2018.

5 The CNE is a normative body of the National Education System, responsible for producing opinions and draft resolutions that, once approved by the Minister of Education, will become a national standard. Available at http://cnebncc.mec.gov.br/. Accessed on: Jun. 20, 2018.

and use information (competence in information) and the competence to relate, negotiate and work collaboratively (competence in communication) will be analyzed.

In this article, it will be presented: the path of the BNCC elaboration, the general skills of the Base, the theoretical references that underlie the analysis, and the correlation with the infocommunicational skills. In the final remarks, a summary of the main findings and limitations of this article, which is not intended to end the discussion, but rather to provoke reflections, relevant to the current context of the BNCC.

Method

In this article, a qualitative approach, whose methods include bibliographic and documentary research, was chosen. From an initial analysis of the BNCC, it was possible to notice that the structure of the Base has three different levels of competences: 1) general competences of the BNCC; 2) specific competences in the areas of knowledge; and 3) specific competences of the curriculum components.

This analyze focus on level 1, although the overall study of the other levels is acknowledged as a possibility of future development. From this excerpt, there was a recurrence of words associated with the purpose of this article, identifying the following: "digital", "technology", "information", "communication", among others highlighted in the general competences reproduced. Another unit of analysis was the approach of each general competence, using information and communication skills as a parameter.

Besides the survey of the trajectory of elaboration of the BNCC, to understand the current context, a systematization of the theoretical framework was carried out based on the concepts of Information Literacy (Alfin), Media, Infocommunicational Skills and New Media Literacy, considered as essential for understanding the infocommunicational skills and, therefore, for the intended correlation with the general skills of the BNCC.

Then, the analysis of the BNCC and if these correlate correspondence with the infocommunicational competences. In the final considerations, some results and limitations of this study are pointed out. was made. The following section is a brief presentation of the context of high school education and the process of preparing the BNCC for this stage of education.

High School and the Common National Curriculum Base (BNCC)

The number of students who drop out of high school in Brazil is double that the observed in other countries analyzed by the *Education at a Glance* 2017[6]. Among those who continue to study, only half manage to complete on time (while in other countries, the average percentage is 68%). In addition, of the total enrolled (almost 8 million young people)

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6   O *Education at a Glance* is a study published annually by the Organization for Economic Cooperation and Development (OECD). Available at: http://portal.inep.gov.br/education-at-a-glance. Accessed on: Jun. 20, 2018.

in 2017, 41% left school without graduating[7]. High school indicators, therefore, leave no doubt that this stage of basic education requires attention.

However, educational reforms in Brazil are complex issues, mainly due to the link that is usually created with government policies instead of State ones. Brazil lives exactly one of those moments. The discussion on necessary changes in educational policies was systematized in the National Education Plan (PNE)[8] sanctioned in 2014, which, aligned with the 1988 Constitution and the Brazilian National Education Law and Guidelines, 1996, already perceived a Common National Curriculum Base (BNCC) for high school.

The BNCC process started in the Dilma Rousseff government, in 2015, with regional and *online[9]* debates. However, after the move to Michel Temer's government, the debate was reduced and, before a final proposal for BNCC for High School, the new government sanctioned the reform of high school by Provisional Measure, published at the beginning of 2017[10].

Later, in April 2018, the Ministry of Education submitted the BNCC High School proposal for the National Education Council (CNE) approval. The Council, then, started public hearings that continued until September 2018 and, on December 4 of the same year, it was approved. After the homologation, by the Minister of Education, BNCC became a mandatory reference in the preparation of curricula for public and private schools, throughout Brazil.

As the federative regime in Brazil provides for a decentralized education policy between the Union, States and Municipalities, these have approval as an implementation deadline. Soares (2018) summarizes the complexity of the impact of BNCC in Brazil:

> In fact, society's reactions to the new device were basically three-fold: enthusiastic support, on the one hand, radical protest, on the other, coexisting with little disguised indifference, due, among other reasons, to the crisis of confidence and the seriousness of the political and economic situation experienced by the country in the final years of the second decade of the 21st century (SOARES, 2018, p. 8).

One of the major changes in the BNCC document for high school, compared to the current model, is the proposal of mathematics and language as the only mandatory study fields. In addition, it indicates that each school network must define whether and how it will

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7   Data from *Education at a Glance* 2017.

8   The National Education Plan (PNE) determines guidelines, goals, and strategies for educational policy for 10 years (effective from 2014 to 2024). More information: http://pne.mec.gov.br/

9   The process of preparing the BNCC was started in 2015 by the then Minister of Education of the Dilma Rousseff government, Renato Janine Ribeiro.

10 Provisional Measure nº 746/2016 (BRASIL/2016a) published at Diário Oficial da União as Law nº 13.415, February 17, 2017 (BRASIL/2017a), amending the Brazilian National Education Law and Guidelines (LDBEN) – Law nº 9.394, December 20, 1996. Available at: https://www.congressonacional.leg.br/materias/medidas-provisorias/-/mpv/126992. Accessed on: Jun. 28, 2018.

include the fields of natural sciences, human and social applied, in an interdisciplinary way, in the curriculum.

Criticism soon arose. For the professor at the High School Observatory at the Federal University of Paraná (UFPR), Monica Ribeiro[11],

> The argument for the extreme emphasis on both subjects is to attend the International Student Assessment Program (Pisa)[12], an exam that influences the way Brazil is seen abroad and whose poor performance of students would attest to incompetence from the government [...] He (the student) may even know Portuguese and mathematics better, but he will not be able to critically analyze reality in all its manifestations: artistic, scientific and ethical.

Besides these challenges, BNCC presents itself as a normative document to direct priorities for each stage of teaching and in each area of knowledge, reflecting on the concepts of teaching and learning. In this article, it will be analyzed whether there is a correlation with the general competences highlighted by the BNCC and academic concepts, namely in the scope of infocommunicational competences, which will be presented in the theoretical framework. Hence, what are the general competences that guide the BNCC and that may become a reference for all curricula of teaching units in Brazil.

General Competences and digital technology at BNCC

Information and communication technologies are present in the daily lives of brazilian students, inside or outside formal education. The 21st century is marked by the intense use of mobile devices and young people are among those who most use connected devices such as cell phones (*smartphone*). These resources have become more than instruments or tools of communication: they are part of the construction of ways of being, living and relating, that is, they help to build a culture, the digital culture.

> Since the advent of mobile devices, our bodies and minds are plugged into databases, info roads, and informational and personal networks, the paths to education must be found in the new subjective formations of digital culture and not in the principles that guided the certainties of modern era in the process of disappearing (SANTAELLA, 2014, p. 125).

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11 Available at: https://www.institutonetclaroembratel.org.br/educacao/nossas-novidades/reportagens/bncc-do-ensino-medio-negligencia-pensamento-critico-do-aluno-apontam-educadores. Accessed on: Jun. 28, 2018.
12 The International Student Assessment Program - Pisa assesses the performance of 15-year-old students in reading, mathematics, and science every three years. Brazil is 63rd in the ranking of Sciences, 59th in Reading and 65th in Mathematics among the 72 participating countries and is among the worst places since 2000. Source: Organização para a Cooperação e Desenvolvimento Econômico (OCDE)/Pisa 2015.

This intense immersion in digital culture makes the youth[13] more demanding in relation to conventional forms of teaching and learning, since they are already experiencing, often autonomously or in pairs (with other young people), other ways of learning and teaching, with mobile technologies connected to networks.

Thus, this symbiosis between culture and digital technologies aims to rethink the curriculum and pedagogical practices, above all, at school, where most digital natives are enrolled. In the National Common Curricular Base (BNCC), this concern is present.

The document explicitly highlights the importance of the school incorporating digital technologies as part of the teaching and learning process, to favor the development of knowledge, competences, skills, and values necessary to act in this context of contemporary education.

Of the ten general competences proposed in the BNCC for basic education, at least four mention the attention to the use of digital resources or experiences (1, 2, 4 and 5, according to the numerical order used in the BNCC and which will be presented below), two refer to attention to content (6 and 7) and one to dialogue and cooperation (9). In other words, seven of the general competences agree with issues related to infocommunicational competences.

BNCC also highlights technologies in the areas of Language, Mathematics and Natural Sciences, in order to contemplate digital culture, multiliteracy (literacies in different languages, such as visual, sound, verbal and body) and new literacies (set of specific practices of digital media that operate from a new mentality, governed by a different ethics) (BNCC, 2017, p. 478).

But what are competences for BNCC? The Base defines competences as "mobilization of knowledge (concepts and procedures), skills (practical, cognitive and socio-emotional), attitudes and values to solve complex demands of everyday life, full exercise of citizenship and the world of work" (BNCC, 2017, p. 8).

According to the Base, the idea of competence is aligned with the Brazilian National Education Law and Guidelines (article 35), which indicates that the learning results need to be expressed and presented as the possibility of using knowledge in situations that require applying it to make pertinent decisions. It also mentions the PCN (National Curriculum Parameters), which would have been the first document to detail the skills to be acquired by students in all areas of knowledge.

BNCC adopts the ten general competences as the basis of the document, so that they exert influence over all pedagogical intentions. Therefore, if technology is present in one or more general competences, it is expected that this recommendation will influence practices in the areas of knowledge at all other levels of the BNCC pyramid.

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13 In Portuguese, "Juventudes", in the plural form, is adopted as a way of respecting the multiple ways of being young between 15 and 29 years old (Ministério da Educação e UNESCO, 2007).

Revisiting concepts: Information Literacy (Alfin), Media Literacy, Infocommunicational Skills and *New Media Literacy*

The uninterrupted use of *Internet* today generates different forms of sociability and learning. For Castells (1999), contemporary sociability is characterized by the construction of social networks and *online* communities that combine mass communication with personal communication through the *Internet*.

Thus, the individual who uses a networked electronic device, such as a cell phone or *tablet* for example, demands skills that are typical of digital culture, in addition to the reframing of skills that remain of "analog" life, which require adaptations and/or resizing.

This means that the learning processes need to be updated, considering what remains meaningful in the 21st century and adding new needs for certificating the full development of young people. Today's student needs as much dexterity with his pencil as he needs with his cell phone. Both devices (pencil and cell phone) coexist in the daily lives of young people with features that the school can help to build and/or reframe. It is from this conception of multiple possibilities that the "new" literacy, multi-literacy and "new" literacy are presented.

Here is a brief explanation of the basic two concepts of literacy, understood in this article in line with Soares (2003): the process of knowing how to read and write (*alfabetização*, in brazilian Portuguese), and skills in using reading and writing (*letramento*, in brazilian Portuguese). The author explains that, in Brazil, both concepts are often confused and even overlapped, something reinforced by demographic censuses, the media and academic production.

When transporting this debate to the context of digital technologies intertwined with the students' daily lives, this article four concepts considered essential to analyze the correlation between the general competences highlighted by BNCC and the infocommunicational competences. One of the concepts under discussion is the very concept of infocommunicational competence, another is that of Information Literacy (Alfin), followed by media literacy, and the fourth, *New Media Literacy*.

These four concepts are used to explain the complexity of competences conceptions associated with digital environments. The term Information Literacy (Alfin), for example, appears in the Spanish line of research to address information skills, initially related to the actions of knowing how to search, evaluate and manage information.

From the emergence of the so-called information and communication technologies (ICT), at the end of the last century, this concept is renewed to incorporate the new modes of research and information management in an *online* environment. Researchers also use the term digital literacy as a synonym of these new concerns.

Due to the influence on international education assessments and impact on educational policies of United Nations signatory countries, the concepts adopted by the United Nations Educational, Scientific and Cultural Organization (Unesco) also have an impact on Brazilian studies and policies. Thus, the expression *Alfabetização Midiática e Informacional* (Media

and Information Literacy - MIL)[14], used by Unesco, was disseminated, above all, after the availability, in 2010, of a comprehensive manual for teacher training[15].

The *media literacy,* in turn, emphasizes the critical sense of the consumer vis-à-vis the media products. With the acceleration and democratization of access to digital technologies, this consumer also becomes an information producer, the so-called prosumer, a debate presents in the concept of *new media literacy.* For one of the reference authors in this discussion, Jenkins (2009), there are other social skills, ways of interacting with the community and not just individualized skills for personal expression. And Borges (2018, p. 124) adds:

> [...] in addition to the necessary criticality about their own production, aspects of distribution emerge (who is the production's target audience?), of participation (with whom to engage?), of creation (with whom to produce?). All these aspects call for the ability to relate to each other and produce together, taking advantage of the possibilities of social networks *online.*

As part of this movement to understand and propose possibilities to identify and enhance relevant learning in the context of digital culture, Borges (2011) proposes the concept of infocommunicational skills, which refer to the ability to locate, evaluate and apply information (information skills), the need to establish relationships, negotiate, argue (communication skills), through digital tools, that is, they require the ability to manipulate computers and electronic artifacts (operational skills). The infocommunicational competences, therefore, are translated by the combination of these three: operational, informational, and communicational.

The borders are permeable among the three areas (operational, information and communication) and, in this work only two of them (informational and communicational) will be in focus. The information skills are related to the content and the communication skills deal with relationships, that is, they relate to the communicative act (BORGES; OLIVEIRA, 2011). A new literacy that promotes infocommunicational competences is strategic to prepare citizens capable of deciding which information they need, and who are active in choosing the sources and media they consume and protagonists of the interventions they want (BORGES, 2018).

It is from these conceptual references that this article observes the ten general competences of the BNCC and proposes to analyze whether there is a correlation with the informational and communicational competences, excerpt from this article.

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14 In November 2016, UNESCO's V Global Media and Information Literacy Week (Global MIL Week) was held in São Paulo, with the objective of broadening the debate on media and informational education.

15 Available at: www.unesco.org/new/pt/brasilia/communication-and-information/access-to-knowledge/media-and-information-literacy/. Accessed on: Jun. 26, 2018.

Correlation analysis between general and infocommunicational competences

The analysis of general skills and information and communication skills confirms the correlation between them. However, there is a greater intensity of correlation with those related to information, although communication is also contemplated (Table 1).

In general, the BNCC emphasizes the importance of "valuing and using knowledge" (general competence 1); "Investigate, reflect, analyze critically" (2); "Express... information" (4); "Access and disseminate information" (5), which are in line with informational competences: "access, understand, analyze, produce, critically evaluate etc" (BORGES, 2018, p. 127).

Table 1 - Correlation summary

Competence in Information (according to Borges, 2018) Access, understand, analyze, produce, critically evaluate etc.	General Competences (from BNCC, 2017, level 1 of competences)
Lifelong learning Shows the ability to connect teaching and research strategies with lifelong learning processes and personal, academic, and professional goals.	1. **Valuing and using knowledge** historically built on the physical, social, cultural, and **digital world** to understand and explain reality, continue to learn, and collaborate to build a society fair, democratic and inclusive.
Evaluation Questioning and critical evaluation of information and messages, leading to decision making. **Creation** Have the initiative to create content and / or add critical understanding of embedded socio-cultural values and ideological issues.	2. Exercise intellectual curiosity and resort to the sciences' own approach, including **investigation, reflection, critical analysis,** imagination and creativity, to investigate causes, elaborate and test hypotheses, formulate and solve problems and creating solutions (including technological ones) based on the knowledge of the different areas.
Comprehension Capture the meaning of information, including iconic language. **Distribution** Effective content distribution and dissemination	5. Understand, use and create **digital information and communication technologies in a critical, meaningful, reflective and ethical way** in the various social practices (including school ones) to communicate, **access and disseminate information,** produce knowledge, solve problems and exercise a protagonist role and authorship in personal and collective life.

Analyze Abilities to place content under analysis according to criteria. **Synthesis** Comparison and contrast of different information.	6. Valuing the diversity of knowledge and cultural experiences and **appropriating knowledge** and experiences that enable you to understand the relationships inherent in the world of work and make choices aligned with the exercise of citizenship and your life project, with freedom, autonomy, critical awareness and responsibility.
Production Integrate, link, describe or remix contents. **Develop social networks** Competence to develop healthy social relationships in digital environments, based on respect for diversity and affirmation of identity	7. Argue based on **facts, data and reliable information,** to **formulate,** negotiate and defend common ideas, points of view and decisions that respect and promote human rights, socio-environmental awareness and responsible consumption at local, regional and global levels, with an ethical position in relation to the care of oneself, others and the planet.
Communication Skills (according to Borges, 2018) Establish and maintain communication, participate, develop social networks, collaborate, etc.	**General Competences** (from BNCC, 2017, level 1 of competences)
Establish and maintain communication Competence to establish and maintain communication with other people, adapting the communication channel and language to the context of the receiver.	4. **Use different languages** - verbal (oral or visual-motor, such as Libras, and written), body, visual, sound and **digital** -, as well as knowledge of artistic languages, mathematics and science, to express and **share information, experiences, ideas and feelings in different contexts and produce meanings that lead to mutual understanding.**
Distribution Effective content distribution and dissemination.	5. **Understand, use and create digital information and communication technologies in a critical, meaningful, reflective and ethical manner** in the various social practices (including school ones) to **communicate,** access and disseminate information, produce knowledge, solve problems and exercise **leadership and authorship** in **personal and collective life.**

Participation Ability to participate interactively and critically in participatory media environments, considering the different ideas.	7. **Argue** based on **facts, data and reliable information,** to formulate, **negotiate and defend ideas,** points of view and common decisions that respect and promote human rights, socio-environmental awareness and responsible consumption at local, regional and global levels, with an ethical position in relation to the care of oneself, others and the planet.
Collaboration Competence to generate knowledge and work collaboratively.	9. Exercising empathy, **dialogue, conflict resolution and cooperation,** ensuring respect and promoting respect for others and human rights, with acceptance and appreciation the diversity of individuals and social groups, their knowledge, identities, cultures and potential, without prejudice of any kind.

Source: The authors, 2018.

The recommendation to use different languages to "share information, experiences, ideas and feelings in different contexts and produce meanings that lead to mutual understanding" is also highlighted in general skills (4); "Use and create ICT to communicate... and exercise central role and authorship in personal and collective life" (5), which are typical actions of communication skills: "establish and maintain communication, participate, develop social networks, collaborate" (BORGES, 2018, p. 127).

Both in the competences present in the Base document and in the studies related to infocommunicational competences, there is a concern to contextualize the proposals in an environment marked by the presence of digital technologies and their influences in the way of dealing with communications and relationships. It is not a question of technological determinism, but an understanding, according to Castells (1999), when he affirms that technologies do not determine the direction of society, but it is the subjects, cultural practitioners, who define the forms and appropriate these means.

The BNCC, however, lacks the theoretical references that support the concepts and approaches adopted. The few definitions presented are not accompanied by their origins, such as literacy and multiliteracy (BNCC, 2017, p. 478). This absence of reference is delicate because, as already explained above, the same term or expression can be conceptualized in different and even antagonistic ways. This inaccuracy also allows each school unit to interpret the recommendations in different ways, and the Base document aims to be a common reference for all schools in the country.

Final Remarks

This article investigated the proximity of what is discussed in the academic sphere with the BNCC, which has become a common and mandatory national reference for the preparation of curricula and pedagogical proposals for all teaching units in the country. The correlation found shows that there is a synergy between seven out of the ten general competences with the infocommunicational competences, and the intensity is a little higher with the information competences than with the communication competences. These evidences are presented as an initial study for the development of more in-depth research, both in relation to the other competencies present in the BNCC (specific to the areas of knowledge; and specific competences of the curricular components), and in relation to learning indicators, continuing training of educators and other possible points that were not developed in this article.

The limitations of this article are recognized and suggested as possible fields for academic developments, especially in the sense of better understanding the challenges of high school in the 21st century. After all, rethinking about education in Brazil involves understanding youth in the context of digital culture, in which forms of learning (especially non-formal ones) already occur in the interaction with digital technologies, based on logic that differ from the classic way in which many educators deal with them.

Thus, it is no longer necessary to disregard the information and communication technologies of the formal education guidelines, nor to treat them as tools and/or didactic resources only, but, rather, inseparable from the new ways of being, thinking, relating and acting. These transformations of digital culture in the middle of the school space are topics discussed by several authors, such as Lemos & Perl (2015), Bonilla (2005) and Kenski (2007).

From this perspective, infocommunicational competences need to be thought of as part of the teaching-learning relationship in basic education, as a means of enhancing the development of critical citizens and transforming their realities. The BNCC seems to give a I step in this direction by explaining the importance of considering digital resources and experiences. It is recommended, however, greater conceptual precision and continuous dialogue with school communities, especially with young people, who need to be valued as co-authors of the new curricular proposals and the teaching-learning relationship.

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