

**Scenarios of teaching written production in pre-service
teacher education programs: challenges
for a public university in Southern Brazil**

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Abstract

This text aims to map, in a public institution in Southern Brazil, the scenario of teaching publication with regard to the choice of vehicles used to socialize research results, with an emphasis on professors of pre-service teacher education programs. It is characterized as a descriptive study of data extracted from the declared written production by 400 professors in a period of three years (2016-2018). The predominantly investigated levels of education were identified (mainly Primary and Higher School), the area of knowledge with the highest production (Natural Sciences) and guiding approaches (Teaching Methodologies and Teacher Education Programs). Also, it was found that most papers were published in Portuguese and the dominant quantitative standard per professor was 1 to 5 productions during the three-year period analyzed. As a prognosis, it is indicated for the need to think about mechanisms for the training of university professors not only in the scope of teaching, but also of research.

Keywords

University education. Training of researchers. Teacher education Programs. Scientific productivity.

**Cenários da produção docente nas licenciaturas:
desafios para uma universidade pública no Sul do Brasil**

Resumo

Este texto objetiva mapear, em uma instituição pública do Sul do Brasil, o cenário da produção docente no que tange à escolha dos veículos utilizados para socializar resultados de pesquisa, com ênfase nos professores dos cursos de licenciatura. Caracteriza-se como um estudo descritivo de dados extraídos da produção declarada por 400 docentes em um período de três anos (2016-2018). Identificaram-se os níveis de ensino predominantemente investigados (principalmente a Educação Básica), a área do conhecimento com maior produção (Ciências da Natureza) e os enfoques orientativos (Metodologias de Ensino e Formação de Professores – Inicial e Continuada). Também foi constatado que a maioria dos artigos foram publicados em língua portuguesa, bem como o padrão quantitativo dominante por docente foi de uma a cinco produções durante o período trienal analisado. Como prognóstico, indica-se a necessidade de serem pensados mecanismos para a formação continuada dos docentes universitários não apenas no âmbito do ensino, mas também no da pesquisa.

Palavras-chave

Ensino Superior. Formação de pesquisadores. Licenciatura. Produtividade científica.

**Escenarios de producción docente en carreras de profesorado:
desafíos para una universidad pública del Sur de Brasil**

Resumen

Este texto tiene como objetivo mapear, en una institución pública en el Sur de Brasil, el escenario de la producción docente con respecto a la elección de los vehículos utilizados para socializar los resultados de investigación, con énfasis en los docentes que actúan en carreras de formación docente. Se caracteriza como un estudio descriptivo de datos extraídos de la producción declarada por 400 profesores en un período de tres años (2016-2018). Se identificaron los niveles de educación predominantemente investigados (principalmente de la Educación Primaria y Secundaria), el área predominante de conocimiento (Ciencias Naturales) y los enfoques orientadores (Metodologías de enseñanza y formación del profesorado: inicial y continua). Además, se descubrió que la mayoría de los artículos se publicó en portugués y el estándar cuantitativo dominante por docentes fue de una a cinco producciones durante el período de los tres años analizados. Como pronóstico, se indica la necesidad de pensar en mecanismos para la educación continua de los profesores universitarios no solo en el campo de la enseñanza, sino también de la investigación.

Palabras clave

Enseñanza superior. Formación de investigadores. Profesorado. Productividad científica.

1 Introduction

Among the plural activities produced within universities in different parts of the world, one of the most prestigious consists of scientific productions shared in legitimate spaces/vehicles and endorsed by different fields of knowledge. This is, in fact, one of the premises established to determinate criteria of academic quality, to position the various institutions not only concerning their internal dynamics but especially in the discussions and dialogues that occur in broader levels, through construction and dissemination of standards based on global rankings between countries and institutions, reinforcing a logic of purely productivist science (CUÑO BONITO, 2016; LOPES DA SILVA; MAIA FILHO; RABELO, 2019; MARCOVITCH, 2018).

Such rankings use several metrics and indicators, which have resulted in increasing demands to the researchers, both in terms of quality and quantity of the productions written, evaluated using the number of articles published as a parameter; comparisons of the performance analyzed by areas of knowledge, impact of citations, national and international collaborations, among other aspects currently considered relevant by the world scientific community (LAZCANO-PEÑA; VIEDMA; ALCAINO, 2019;

SÁNCHEZ; URIBE; YEBRA, 2016; SANTOS, 2018). In the wake of these general discussions, it is up to each institution to seek to recognize its strengths and weaknesses concerning its practices of socialization of knowledge, especially because, among other implications, they impact the allocation of financial resources and visibility and collective recognition (internal and external) of institutional actions (BARBA; CASTILLO; MASSARANI, 2019).

Although connected to a specific academic context, that of the Federal University of Pampa (Unipampa), we understand that it is possible to establish a pertinent reflection to think about the production of knowledge in the context of teacher training, since the emphasis of the courses has been more and more the training of teacher-researchers concerning their pedagogical practice (GEVEHR; FETTER; KARPINSKI, 2019). The teacher training courses are, therefore, understood by us as a strategic field, but paradoxically they are often seen as an area devalued in several spaces (politicians, media, and even academics, by agents from scientific areas perceived as socially more prestigious). With this article, we aim to map, in this peripheral institutional context, the scenario of teaching production about the choice of vehicles used to socialize research results, with an emphasis on teacher training courses.

2 Methodological decisions and procedures

In the Brazilian context, the denomination and clumping together of areas of knowledge are made by two government agencies linked to two different ministries, the Coordenação de Aperfeiçoamento de Pessoal do Ensino Superior (Capes), linked to the Ministério da Educação, and the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), linked to the Ministério da Ciência, Tecnologia, Inovações e Comunicações (MCTI). At Capes, for instance, “Teaching” (subordinated to the Colégio de Ciências Exatas, Tecnológicas e Multidisciplinar) and “Education” (linked to the Colégio de Humanidades) coexist as independent areas. Pointing out the implications of this dismemberment is relevant for thinking about the limits and possible approaches that occur within an institution - and outside of it - to qualify the scientific production linked to educational processes and how the complexity of these relationships interferes with

decisions and the creation of new academic agendas and partnerships, facilitating or hindering the advent of new scenarios.

The fact that “Education” and “Teaching” have historically been constituted as divergent epistemic communities in the Brazilian context - although with recent movements for an approximation (DIAS; THERRIEN; FARIAS, 2017; RAMOS; SILVA, 2014) - tends to highlight some of the contemporary weaknesses derived from these contingencies. This separation has effects on research and the creation/expansion of *stricto sensu* courses within institutions, as well as on the identity of researchers and their theoretical-methodological (and political) alignments.

Although we recognize the epistemological and political implications of the distinction between Education and Teaching in the postgraduate evaluation structure in Brazil, for analysis purposes, we will address in this text the teaching productions encompassed by both areas indistinctly. We do this for two main reasons: 1) because we understand that the approximation of the areas that look at objects that sometimes overlap and sometimes come closer together can contribute to the creation of research groups and establish new niches and agendas, different from those found in the most important and traditional institutions (which can attract graduate students from different regions); 2) because, in the sample studied, a non-departmentalized multicampi institution located in a peripheral region of the country, geographically distant from the most prestigious research centers, it's imperative to develop more integrated and collaborative research projects, as a way of survival in an increasingly complex and competitive national and international scenario.

We dimension this study in the field of descriptive research (TONETTO; BRUST-RENCK; STEIN, 2014). To summarize the bibliographic production of professors working at Unipampa, more specifically on teacher training courses, the script Lattes (MENA-CHALCO; CESAR-JR, 2009) was first used, which is open source free software designed to extract data from the curriculum of researchers registered on the Lattes platform. The script can automatically compile the academic production data of one or several researchers at the same time, generating, as a result, a series of tables and graphs that show how they develop their research and who their collaborators are.

To carry out the data analysis with the script, it was necessary to survey the institutional management system and verify which of the Unipampa professors had worked on teacher training courses in the three years chosen for the analysis (between 2016-2018), to later download the information from the Lattes Curriculum of each of them, write and execute the algorithm and, after that, generate the broad academic production report.

In this work, it was decided to analyze, in a detailed way, exclusively the production of scientific articles. After this stage, possible duplications of work and other data inconsistencies were manually checked, since the same article produced in collaboration by different professors (from the same campus or intercampi) had an overlap in the automatically generated report. In possession of the report and after cleaning up all inconsistencies, works that addressed issues related to Education/Teaching were identified, discarding those that did not deal with this scope.

Following the manual analysis, themes and levels of education most contemplated in the research of teacher training courses were also extracted from the remaining works. At this stage, three descriptors were listed that emerged as significant for each article, from the manual survey of titles, abstracts, and keywords, as well as checking whether the published journals had identification of DOI code (Digital Object Identifier) and in which languages professors usually publish. Firstly, 276 different descriptors were identified, which were grouped into 21 macro descriptors, for better visualization and discussion of the data.

3 Results and discussion

The first decade of the 2000s was marked by the strong expansion of Brazilian public universities (ARRUDA, 2011), with Unipampa being one of the institutions created to meet the national policy of interiorization and democratization of Higher Education in Brazil, established then (GENTIL, 2017). In its early years, the focus was exclusively on the undergraduate level (in place since 2006, although the university was officially established only in 2008) and, from the year 2010, with the approval of the first graduate course - *stricto sensu* graduation (UNIPAMPA, 2019).

Situated in the southern half of Rio Grande do Sul, in municipalities near or bordering Uruguay and Argentina, the institution was designed to meet the social demands of several medium and small municipalities in the region. Altogether, there are 10 municipalities with a university campus for face-to-face teaching and more than 20 cities in which distance education centers were installed, external to any of the university's host cities.

The plea to the regionalization was present since the beginning of the creation speech of the university, given the diagnosis of the characteristics identified by the historical legacy, which contributed to a complex picture of structural stagnation (MARCHIORO et al., 2007), since it was identified “[...] as a predominantly agricultural region, based on plantations, extensive cattle production or in agricultural monocultures” (HOFF; MARTIN; SOPEÑA, 2011, p. 157-158).

Teacher training courses had a relevant and strategic role to power the institutional discourse around the mission of promoting regional development through education, especially if the scientific knowledge produced comes from local problems. This appeal is present, for example, in the scope of postgraduate studies, in the option for offering master's degrees in the professional modality destined to the continuing education of teachers of Basic Education (DORNELLES; IRALA, 2019; LINDEMANN; LUCCHESI, 2015).

The expansion of the teacher training courses themselves within Unipampa is also an indicator that proves this expectation. When it was created, in 2006, only three of the 10 municipalities had teacher training courses. On the other hand, today that number has expanded to eight municipalities with on-site courses. Regarding the number of courses, there were only eight teacher training courses at the creation of the university; that number currently reaches 21.

The survey on institutional data showed that Unipampa had 927 professors (data extracted in December 2018). Of this total, 827 with tenure / 40 hours a week (89.4%), in addition to 83 professors under temporary contracts with a 20-hour work schedule (9%) and 15 with a 40-hour work schedule (1.6%). Still on the academic profile of the professors, 700 had the title of Doctor (75.6%), while 176 had Masters (19%), 31 were Specialists (3.4%) and 19 had only Higher Education degree (2.0%). Of this total, 400 professors

taught some curricular component in Unipampa's teacher training courses between 2016 and 2018.

After identifying the professors who worked on Unipampa's teacher training courses in the established period, a report containing the academic production data was generated, with the help of scriptLattes, which is available and can be viewed in Bihain (2019). For the presentation of the results, it was necessary a detailed manual analysis of each article, to eliminate any type of inconsistency of the data. Table 1 presents an overview of the dimension of the general bibliographic production declared by the professors who worked on Unipampa's teacher training courses between the years 2016 and 2018 (it is worth mentioning that these data were gathered in 2019).

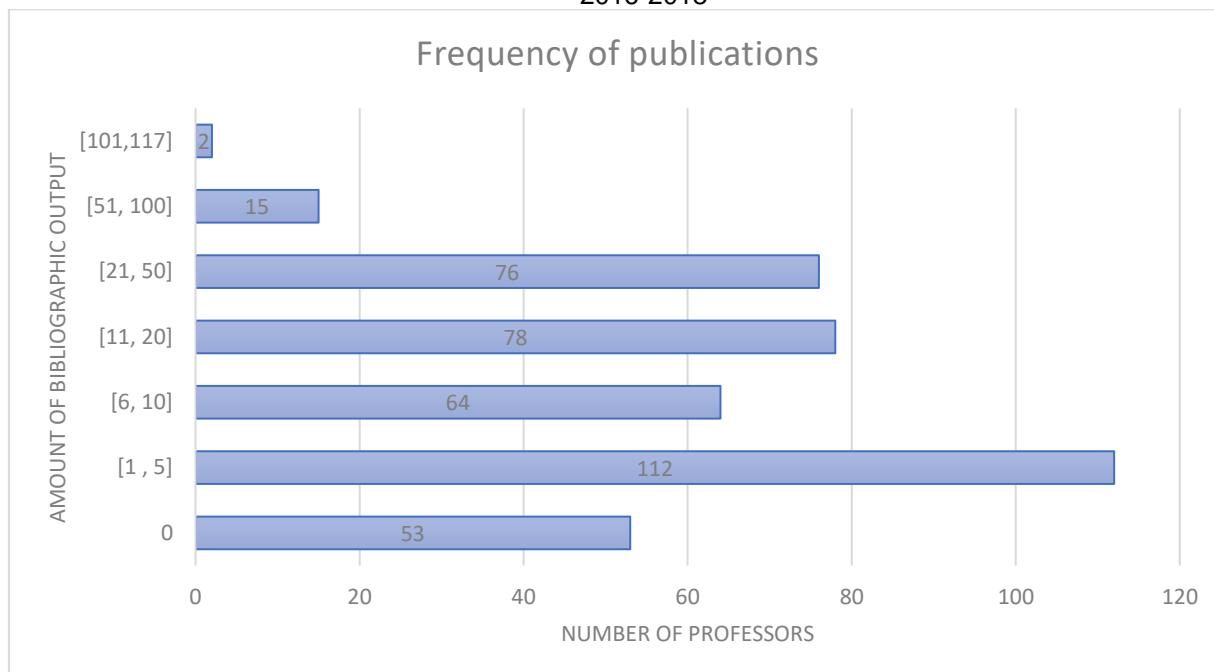
Table 1 – Bibliographic production of Unipampa's professors of teacher training courses (2016-2018)

Type of Bibliographic production	Frequency de PB	% de PB
Articles published in journals	835	22,03
Published book chapters	477	12,59
Published / organized books or editions	127	3,35
Expanded abstracts published in conference proceedings	845	22,3
Abstracts published in conference proceedings	855	22,56
Full papers published in conference proceedings	651	17,17
Grand total	3.994	100

Source: Author's own (2019).

Table 1 shows that the largest number of bibliographic productions were, although in a very close number, abstracts published in conference proceedings and scientific journals. The preference for publications in journals is probably because this type of academic production has a more prestigious evaluation process for communicating research results to the scientific community (MUELLER, 2000), as they can be seen as “[...] highly strategic argumentative texts” (MONTEMAYOR-BORSINGER, 2005, p. 215). Furthermore, in the selection process notices for the promotion of research projects, the articles refereed in scientific journals receive a better score and, in turn, are therefore more valued compared to other academic-scientific discourses, just as occurs in the evaluations of postgraduate programs. Figure 1 shows the frequency of bibliographic productions of Unipampa's professors of teacher training courses during the analyzed period.

Figure 1 – Frequency of bibliographic productions of Unipampa's professors of teacher training courses 2016-2018

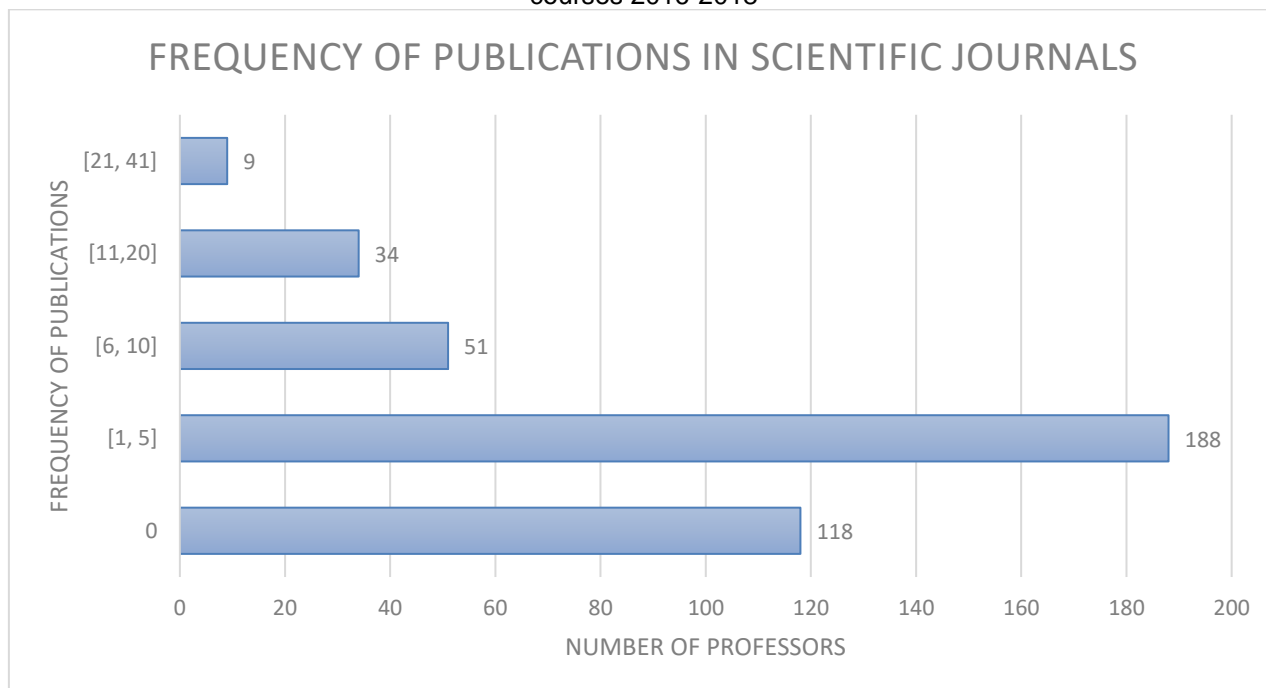


Source: Author's own (2019).

Figure 1 shows that among the 400 professors who had their Lattes Curriculum analyzed, 53 (13.25%) didn't have any kind of bibliographic production, while 347 (86.75%) professors amounted to 3,994 published items, which is, on average, 11.51 works per teacher (that is, an average of 3.83 per year). Figure 1 also reveals that there is an insignificant number of professors that have much higher production than most (two professors published between 101 and 117 works) and that the predominant pattern revolves around one to five productions in the period over three years.

When analyzing exclusively the production of articles published in scientific journals (figure 2), we observed that 118 professors (29.5%) hadn't published articles in scientific journals, while 282 (70.5%) researchers had been responsible for the publication of 835 articles in Qualis/Capes journals, which averages 2.96 articles per professor (0.98 articles per year).

Figure 2 – Frequency of publications in scientific journals of Unipampa's professors of teacher training courses 2016-2018



Source: Author's own (2019).

The data reveal that the dispersion among other types of bibliographic production or the absence of bibliographic productions is expressive among the professors who work in Unipampa, specifically in teacher training courses. In contrast to the data presented in figure 2 and the percentage of doctors in the institution's faculty, which exceeds 70%, it can be said that the higher degree didn't necessarily reflect an increase in the publications, indicating the need for an understanding of a more qualitative nature to realize the factors that interfere in this phenomenon: the responsibilities assumed by professors in various bureaucratic activities, the model of career progression adopted in the institution, among other more complex factors that need to be analyzed in the future, through the generation qualitative data with these professors.

Of the 282 professors who had published articles in scientific journals, 131 (32.58%) produced 464 articles with themes related to Education (table 2) and 511 related to Teaching, according to the areas of evaluation of the Qualis/Capes system, which represents an average of 2.85 articles per researcher within the analyzed period, that is, less than one per year. It's important to mention that there's an expressive number of journals that are classified in both areas; therefore, there's overlap in the data.

Table 2 –Articles published in journals in the areas of Education and/or Teaching with the Qualis system classification

Strata	Qualis Education	Qualis Teaching
A1	21	31
A2	34	50
B1	59	105
B2	70	102
B3	40	37
B4	51	47
B5	76	51
C	68	7
Not identified in either area in the Qualis system (Education or Teaching)	416	450

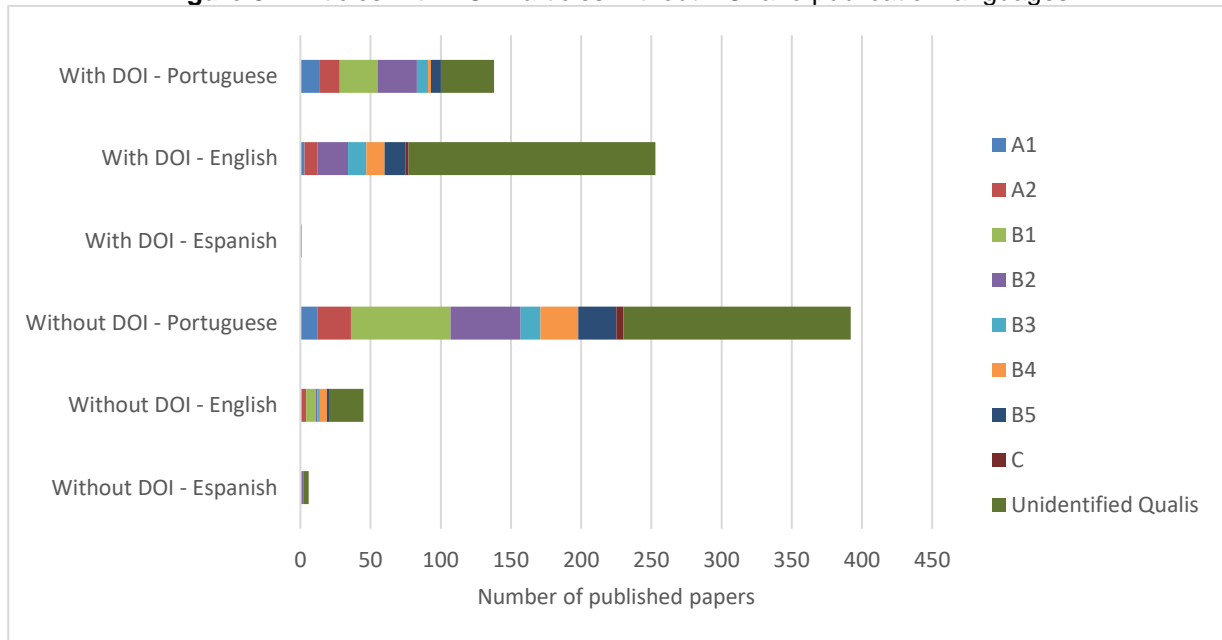
Source: Author's own (2019).

Table 2 indicates that 419 articles in the Qualis system were in the Education area and 431 were Qualis in the Teaching area (based on data from the official classification still prevailing in the data extraction period, which was in the 2013-2016 quadrennium, period in which the journal's classification new strata was announced, which began to be disseminated in 2019, informally, and wasn't recognized as official by Capes until the time of analysis). Besides, it's important to note that only 62 teachers reported in their Lattes Curriculum that their area at CNPq was Education. In other words, this data indicates that there is a greater number of researchers who carry out some type of research linked to the areas of Teaching / Education but are not trained and/or acting predominantly in these areas.

Table 2 also reveals that there is a very high number of surveys published by professors of teacher training courses that don't show any adherence to the areas of Education/Teaching, which can be surmised by the fact that the algorithm was restricted to selecting works cataloged only with Qualis in either of the two areas and, therefore, excluding the others as “Qualis not identified” for the analysis carried out. This data coincides with the fact that professors who have a higher number of productions don't publish in the areas of Teaching/Education. The data show a greater concentration of publications in strata B1 and B2, in the case of Teaching, and still B5 and C, in the case of Education. These data indicate that there is a tendency for a more positive assessment of the type of publication made by the institution's researchers in the area of Teaching than in the area of Education, also considering the nature of the research objects on the published works.

The data presented in figure 3 are concerned with the presence of DOI in the journals in which the articles were published and in which languages they were published.

Figure 3 – Articles with DOI x articles without DOI and publication languages



Source: Author's own (2019).

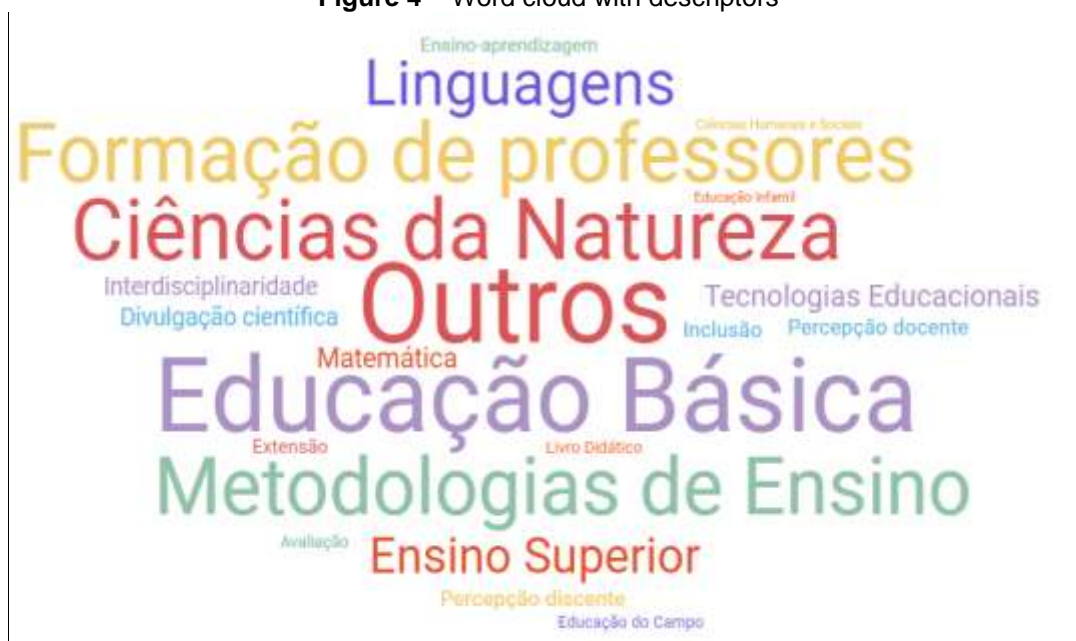
According to Ferreira et al. (2015), digital objects that have a DOI contribute to the management of information available on the Internet, enabling the standardization and crossing of metadata, to more easily identify when, for example, an academic text is accessed or quoted in another work anywhere in the world. CrossRef is the International Association of Nonprofit Editors, which has been primarily responsible for assigning DOIs to publications (not exclusively to scientific articles). Therefore, a legal entity (for example, a magazine) needs to become a member of the association and submit to the obligations stipulated for that purpose.

The data reveal that, in the period in which the data were extracted, many scientific journals, including those evaluated in the best strata, didn't have a DOI (many of which are in the process of adaptation to this demand). When observing publication languages of the articles and establishing the relationship with the presence or not of a DOI, it was found that articles published in Portuguese are those that have less DOI and articles in English that present the most, regardless related or not to Education/Teaching themes. The data also shows that the majority of professors who publish in the area of Education/Teaching

in Unipampa do so in Portuguese and in magazines that did not present DOI at the time of extraction. There is also an inexpressive minority that publishes in Spanish.

To identify the themes, the levels of education, and the preferred areas of knowledge in the publications of professors of teacher training courses that research in the educational field, three descriptors were first extracted, reaching a total of 276 different nomenclatures. For better visualization of the results, the initial descriptors were regrouped in another 21, 20 of which were the most frequent in the set of publications. One of them could be considered a key descriptor, as it served as an umbrella to all the others that didn't fit within the characteristics of the 20 most frequent descriptors. Figure 4 identifies the descriptors (in larger font are the most common).

Figure 4 – Word cloud with descriptors



Source: Author's own (2019).

The data reveal the fields of knowledge and themes that most strongly disseminate the results of research linked to the educational field through scientific articles, predominantly the Natural Sciences, which brings together researchers from Chemistry, Physics, and Biology (the latter, especially with a high amount of productions aimed at Environmental Education). Regarding the levels of education, Basic Education has been a priority as the locus of the developed researches. Higher Education appears as an emerging locus, especially when it comes to research focused on the educational field

produced by professors not originally from teacher training courses, such as experiences in Higher Education in the areas of Health, Computing, Geology, or Engineering.

The training of teachers (whether at the beginning of their careers or later on) has received the researcher's attention, as well as research focused on teaching methodologies (mainly active methodologies), associated or not with the use of educational technologies (in latent growth, even more now, in the post-Covid-19 pandemic scenario). We can state, therefore, that there is a strong tendency to research in the field of didactic intervention, with the main locus of data gathering being the classroom itself (in person and/or virtual), thus aligning itself more with the national discussions in the area of Teaching than in the area of Education.

It's important mentioning as emerging the researches focused on the educational field at Unipampa especially the themes of scientific dissemination, university extension activities, and inclusion, which have been interdisciplinary with various areas of knowledge. Finally, it is worth mentioning the dispersion of the researchers' interests, with the predominance of other descriptors that couldn't be grouped with the most frequent ones, in addition to the priority usage of qualitative research methodologies over quantitative ones.

5 Final considerations and prognosis

The initial questions that motivated this text are based on the contribution to the development of institutional policies aimed at strengthening research in the educational field, but it's clear that there are supra-institutional and supranational elements that have noted effects on the overview showed here, in addition to other associations and deeper reflections that the data have revealed and that need to be deepened in future research.

As proposed by Cuño Bonito (2016), the international parameters and models established as a rule for the most different institutional contexts around the world have as basis universities such as Harvard, Yale, or Stanford, which have an annual budget with higher figures than some nations in the Latin American and probably from other continents as well. As the author points out, it's these multi-million-dollar institutions that have guided the reconstruction of numerous parameters in the current practices of academic publications.

We can mention, in particular, the pressure to increase the number of international indexers for journals, the requirement of a DOI, the need for researchers to be linked to the Open Researcher and Contributor ID (Orcid), the use of the English language for the report of research results to achieve a greater circulation of the texts, aiming at a greater number of citations (this being the main quality parameter, which contradictingly excludes the importance of a set of researches with a focus on local issues or regionally specific, as they tend not to be of interest to international researchers, which consequently generates fewer citations, etc.).

All of these elements, some very recently incorporated by national scientific policies and still in the process of adaptation (considering that Qualis/Capes officially started in the 2017-2020 quadrennium with the policy decision during the 2013-2016 quadrennium, including the real possibility of the Qualis extinction in the short and medium-term), these policies are novelties for many professors, especially when they are not linked to post-graduate programs. Besides, it's important to mention that some areas of knowledge traditionally prioritized books (individual), collections with chapters by different authors, or even the publication in annals of academic events (areas such as, for example, History, Sociology, Music, among others) for sharing scientific productions. Recently, due to all the factors already mentioned, the pressure to abandon the production of books and even publication in annals to adhere almost exclusively to the production of articles seems imperative for these areas as well. This is shown in the loss of interest in participating in scientific events and in the systematic reduction of institutions and funding agencies that support these actions financially, which decades ago were fruitful channels for scientific dissemination and productive academic debates.

This emerging situation is a condition for a fundamental aspect for the development of research at all stages: financing. If the dispute over resources has become more fierce, the areas of knowledge that are traditionally aligned with the implemented models reveal themselves to be more attractive and supposedly more productive, in a widely disseminated logic of results policy (SOARES; COLARES, 2020), meaning that the number of publications and possibilities of attracting economic resources are linked to possible partnerships between universities and national or foreign institutions.

In the wake of all these aspects, educational research made possible in peripheral public institutions such as Unipampa and developed in Basic Education and Higher Education has a different meaning (even if not always published in the visibly more prestigious vehicles). They became the locus of resistance, reinvention, and building of possibilities, contributing to the solution and understanding of local/regional problems, in contexts of multiple vulnerabilities.

From a future perspective, we hope that more spaces will be created (face-to-face or virtual) in the institutional context analyzed aimed at collective planning for research actions in teacher training courses, to expand collaborations in research projects/groups (it's still identified the presence of many individual works in these areas or professor in collaboration with students, and not with other fellow researchers, as usually happens in other fields of knowledge).

Also, more national and international partnerships are needed, including with other Latin American countries, focusing on themes of mutual interest and with the same guiding principles, and, finally, the necessary creation of strategies for continuing education of researchers (including, in this aspect, in particular, elements to qualify academic writing, not only in Portuguese but especially in a multilingual perspective). Finally, we emphasize that, although there is a well-established policy for the continuing education of university professors concerning teaching, we haven't identified an equivalence of these training actions in the scope of the research, which we consider imperative, given the aspects punctuated by the literature and observed empirically.

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Responsible editor: Lia Machado Fiuza Fialho

Ad hoc experts: Daniela Pires e Gisela Steindel

How to cite this article (ABNT):

IRALA, Valesca Brasil; BIHAIN, Anderson Jeske. Cenários da produção docente nas licenciaturas: desafios para uma universidade pública no sul do Brasil. *Educ. Form.*, Fortaleza, v. 6, n. 2, e3982, 2021. Disponível em:

<https://revistas.uece.br/index.php/redufor/article/view/3982>



Received on October 12th, 2020.
Accepted on January 25th, 2021.
Published on February 25th, 2021.

