

OVERVIEW OF SCIENTIFIC PRODUCTION IN EDUCATION OF STRICTO SENSU GRADUATE PROGRAMS IN THE STATE OF PARÁ, AMAZON, BRAZIL

PANORAMA DA PRODUÇÃO CIENTÍFICA EM EDUCAÇÃO DOS PROGRAMAS DE PÓS-GRADUAÇÃO STRICTO SENSU NO ESTADO DO PARÁ, AMAZÔNIA, BRASIL

PANORAMA DE LA PRODUCCIÓN CIENTÍFICA EN EDUCACIÓN DE LOS PROGRAMAS DE POSGRADO STRICTO SENSU EN EL ESTADO DE PARÁ, AMAZONIA, BRASIL



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ABSTRACT: In the educational field, there has been a change in the context of scientific production in recent years, which drives the realization of research on the characteristics and trends, especially in the scope of graduate programs that develop numerous researches such as in the state of Pará, Northern Region. The objective was to analyze the scientific productions in Education of 3 stricto sensu graduate programs in a multi-dimensional bias between 2005-2021. We opted for the mixed approach and documentary research. As a result, in the scope of the methodological dimensions, there was a greater tendency towards the qualitative approach and content analysis, with a strong influence of documentary research. In the dimension about the research sites, it was the schools or school units, followed by courses, in greater frequency in the state capital - Belém and neighboring municipalities. Overall, the surveys showed a significant evolution compared to the beginning of the implementation of the programs, although gaps and challenges to be overcome are still identified.

KEYWORDS: Education research. Post-Graduation in Education. Research methodology.

RESUMO: No âmbito educacional, houve uma mudança no contexto da produção científica nos últimos anos, o que impulsiona a realização de pesquisas sobre as características e tendências, sobretudo, no âmbito das pós-graduações que desenvolvem inúmeras pesquisas como no estado do Pará, Região Norte. O objetivo foi analisar as produções científicas em Educação de 3 programas de pós-graduação stricto sensu em um viés de multidimensões entre 2005-2021. Optou-se pela abordagem mista e pesquisa documental. Como resultado, no âmbito das dimensões metodológicas houve uma tendência maior para a abordagem qualitativa e análise de conteúdo, com forte influência da pesquisa documental. Na dimensão sobre os locais de pesquisa, foram as escolas ou unidades escolares, seguido de cursos, em maior frequência na capital do estado - Belém e municípios vizinhos. No geral, as pesquisas apresentaram uma evolução significativa em comparação ao início de implantação dos programas, embora ainda se identifique lacunas e desafios a serem superados.

PALAVRAS-CHAVE: Pesquisa em educação. Pós-Graduação em Educação. Metodologia de pesquisa.

RESUMEN: En el campo educativo, ha producido un cambio en el contexto de la producción científica en los últimos años, que impulsa la realización de investigaciones sobre las características y tendencias, especialmente en el ámbito de los programas de posgrado que desarrollan numerosas investigaciones como en el estado de Pará, Región Norte. El objetivo fue analizar las producciones científicas en Educación de 3 programas de posgrado stricto sensu en un sesgo multidimensional entre 2005-2021. Optamos por el enfoque mixto y la investigación documental. Como resultado, en el ámbito de las dimensiones metodológicas hubo una mayor tendencia hacia el enfoque cualitativo y el análisis de contenido, con una fuerte influencia de la investigación documental. En la dimensión sobre los sitios de investigación, fueron las escuelas o unidades escolares, seguidas de cursos, con mayor frecuencia en la capital del estado - Belém y municipios vecinos. En general, las encuestas mostraron una evolución significativa en comparación con el inicio de la implementación de los programas, aunque aún se identifican brechas y desafíos a superar.

PALABRAS CLAVE: Investigación educativa. Postgrado em Educação. Metodología de la investigación.

Introduction

In the educational field, there has been a change in the context of scientific production in recent years in Brazil, starting with the period of expansion of higher education, with most studies concentrated in the scope of *stricto sensu* graduate studies, with emphasis on the 80s and 90s with the emergence of a greater diversification of research themes, approaches and methods, which received direct influences from the socio-political context, permeated by interests and ideologies, which brought questions of different orders to research in Education.

Among historical moments, one of the factors that marked research in education for a long period was the predominance of technical approaches and the attachment to the operationalization of variables - the target of much criticism - especially by social movements, as there was a certain discredit that the solutions techniques would not solve the basic problems of Brazilian education, thus bringing many revolutions to the field of research and new ways of doing research in education through a qualitative approach, enabling the understanding of the various processes that permeate the educational context, as well as the expansion of research in this area and the consequent change in the profile of Brazilian educational production, in addition to the emergence of multi/inter/transdisciplinary approaches (ANDRÉ, 2006; ANDRÉ; GATTI, 2008).

However, it is worth highlighting that these new modalities of investigation stimulate questions even today regarding the theoretical-methodological instruments of research and the conditions of knowledge production alongside the context in which they are developed, as many challenges still emerge, requiring the dialogue between experts from different areas of knowledge and degrees of experience, since the judgment of the quality of work goes beyond the field of education (ANDRÉ, 2001, 2006).

In addition, it is considered important to stimulate studies and evaluative research on scientific productions that allow the unveiling of characteristics and trends, in order to contribute to the defense of the quality of the works and the search for rigor, especially within the scope of *stricto sensu* graduate programs that are responsible for the development of numerous researches.

In the state of Pará (Northern Region), for example, there is a lack of work that focuses on systematizing what was produced in a multidimensional perspective in the area of Education, which is an essential aspect to be reflected on, especially in the Amazon, given its singularities as corroborated by Lima and Colares (2021).

Thus, this research sought to understand how educational research has been thought about and carried out in the state of Pará, since the implementation of postgraduate programs? The objective was to analyze scientific productions in Education from three (3) *stricto sensu* postgraduate programs with a multidimensional focus on methodological aspects at master's level in the period 2005-2021.

Methodological path

This research adopted a mixed approach whose main aspects are time (data collection in stages), weighting (between qualitative and quantitative), mixing (scenarios are integrated and incorporated throughout the investigation) and theorization (guidance for design study and data interpretation). Among the different types of mixed approaches, concurrent triangulation was used in which qualitative data and quantitative methods are brought together in one phase and simultaneously. Then, the databases are examined, giving a broader perspective to the researcher due to the use of different techniques (TAHERDOOST, 2022). Thus, within the scope of this research, the combination/association of techniques was carried out, from the survey to the systematization of the data collected with the support of tools, matrix of indicators, categories and analysis methods.

As a methodological procedure, documentary research was used (LIMA JÚNIOR *et al.*, 2021) with data collection that took place between the months of January and November 2022 on the official websites of the programs and on the Brazilian Digital Library of Theses and Dissertations, as it is a platform that aims to facilitate access to information on theses and dissertations in the country, in addition to providing statistical information about this type of intellectual production, of which 03 *stricto sensu* graduate programs in Education belonging to the federal and state public universities of Pará, Brazil, were studied. The inclusion criteria were: consolidated and available dissertations with *locus* of research in that state.

A total of eight hundred and twenty (820) scientific productions were collected, of which three hundred and ninety-three (393) dissertations from PPGED - Institute of Education Sciences – ICED, UFPA, Belém – started in 2003, three hundred and seventeen (317) from PPGED – Center for Social Sciences and Education – CCSE-UEPA, Belém – started in 2005 and one hundred and ten (110) from PPEB – Basic Education Center – NEB, UFPA, Belém – started in 2015.

Table 1 – Quantity of productions per year of both programs

| Years | PPGED-UFPA | PPGED-UEPA | PPEB-UFPA |
|--------------|------------|------------|------------|
| 2005 | 12 | * | * |
| 2006 | 16 | * | * |
| 2007 | 22 | 10 | * |
| 2008 | 20 | 18 | * |
| 2009 | 20 | 15 | * |
| 2010 | 17 | 11 | * |
| 2011 | 24 | 21 | * |
| 2012 | 32 | 26 | * |
| 2013 | 27 | 27 | * |
| 2014 | 20 | 22 | * |
| 2015 | 26 | 24 | * |
| 2016 | 34 | 25 | * |
| 2017 | 37 | 31 | 2 |
| 2018 | 31 | 28 | 18 |
| 2019 | 37 | 31 | 37 |
| 2020 | 15 | 19 | 33 |
| 2021 | 6 | 9 | 19 |
| Total | 393 | 317 | 109 |

Source: Research data

The collection and processing of data from the dissertations of the aforementioned programs took place with the aid of the *Microsoft Excel tool*, which made it possible to organize and group the data by year based on a total of nine (9) dimensions related to the methodological aspects of scientific productions containing the approach, regarding research objectives, procedures, data collection technique, bibliographic and documentary source, data analysis method, epistemological matrix, and ethical aspects, which were later migrated to a Matrix by dimensions ⁴adjusted throughout the data collection which was built as support for non-parametric descriptive analyzes and statistics based on frequency distribution (FERREIRA, 2020), in addition to an exclusive dimension related to the identification of research locations and municipalities in the state where the research was concentrated, in which it was used tables to represent the data, both analyzed based on thematic analysis which, according to Souza (2019, p. 56) corresponds to six (06) phases:

- 1) Familiarization with data: transcribe the data and review it; read and reread the bank; write down initial ideas during the process;
- 2) Generating initial codes: coding interesting aspects of the data systematically throughout the bank; gather extracts relevant to each code;
- 3) Searching for themes: gathering codes into potential themes; unite all data pertinent to each potential topic;
- 4) Reviewing the themes: check if the themes work in relation to the extracts and the database as a whole; generate thematic map of the analysis;
- 5) Defining and naming the themes: refining the details of each theme and the story that the analysis tells; generate clear definitions and names for each theme;
- 6) Producing the report: provide vivid examples; final analysis of the extracts

⁴Essential tool in organizing the logic of an assessment.

chosen in relation to the research question and literature; scientific report of the analysis (our translation).

In order to verify the existence or not of a linear correlation between the variables (dimensions) involved in the study and the intensity of the relationship between them, a correlation analysis was carried out using the Chi-square test – non-parametric statistics (MORENO; MORCILLO, 2020) through the Pearson Correlation coefficient (r), which provides a measure of the degree of linear correlation between the variables of a given sample, in which it is possible to verify whether the association between X and Y exists in the population with the test of significance of the coefficient re formulation of previously established hypotheses.

– Null hypothesis (H0): observed frequencies = expected frequencies. There is no association between the groups (chance). – Alternative hypothesis (H1): observed frequencies \neq expected frequencies. The groups are associated.

The value of X^2 is called critical or tabulated chi-square ($\chi^2 C$). If X^2 calculated $\geq X^2$ tabulated: H_0 is rejected. If X^2 calculated $< X^2$ tabulated: H_0 is accepted. In this article, the significance level (α) was set at 5% ($P=0.05$) and the frequencies were calculated according to Equation 1:

$$X^2 = \frac{\sum (O - E)^2}{E} \quad O = \text{freq. Observed (O)} \quad (1)$$

E = frequency. Expected (E)

With the data adjusted in the matrix by dimensions, the following hypotheses were developed:

- Hypothesis 1– High values of Bibliographic Research (BP) procedures tend to influence the Qualitative Approach (AQ) to increase.
- Hypothesis 2 – High values of Documentary Research (DP) procedures tend to influence AQ to increase.
- Hypothesis 3 – High values of Field or Empirical Research procedures (PC or PE) tend to influence AQ to increase.
- Hypothesis 4 – High Semi-Structured Interview (SE) values tend to influence AQ to increase.
- Hypothesis 5 – High AQ values tend to influence Content Analysis (CA) to increase.
- Hypothesis 6 – High values of ES tend to influence AC to increase.

- Hypothesis 7 – High PB values tend to influence AC to increase.
- Hypothesis 8 – High PD values tend to influence AC to increase.
- Hypothesis 9 – High values of PC or E tend to influence AC to increase.

Results and discussions

When analyzing the methodological profile of the dissertations by dimensions, the data collected regarding the total number of productions analyzed pointed out that within the scope of both *stricto sensu graduate programs*: PPGED – UFPA, PPGED – UEPA and PPEB – UFPA there was a greater trend for certain variables, with emphasis on AQ and Case Study throughout all the years of operation of the programs from implementation, as well as the source of legal documents (laws, decrees, ordinances, amendments, provisional measures). In the scope of the data collection technique, SS predominated, in the data analysis method it was CA with preference of the author Laurence Bardin in all years, in the epistemological matrix the Historical-Dialectic Materialism and in the ethical aspects the most used instrument was the Free and Informed Consent Form (ICF), however, it is considered important to submit papers to an Ethics Committee, as highlighted by Silva, Oliveira and Salge (2021), in addition to the relevance of the researcher's ethical training and appropriate standards for this research, according to Guerriero (2023).

Table 2 – Matrix by dimensions of methodological aspects in both programs at master’s level

| <i>Dimensions</i> | <i>PPGED-UFPA (2005 to 2021)</i> | <i>PPGED-UEPA (2007 to 2021)</i> | <i>PPEB-UFPA (2017 to 2021)</i> |
|---|--------------------------------------|--------------------------------------|-------------------------------------|
| Quantity of dissertations | | | |
| <i>Consolidated and available from Pará</i> | 393 | 317 | 109 |
| Research approach | | | |
| <i>Qualitative</i> | 332 | 289 | 100 |
| <i>Quantitative</i> | 3 | 2 | * |
| <i>Qualitative and quantitative</i> | 53 | 26 | 8 |
| <i>Interdisciplinary</i> | 2 | * | 1 |
| <i>Mixed</i> | 3 | * | * |
| As for the objectives | | | |
| <i>Case study</i> | 71 | 55 | 24 |
| <i>Descriptive</i> | 11 | 6 | * |
| Research procedures | | | |
| <i>Bibliographic</i> | 159 | 83 | 20 |
| <i>Documentary</i> | 283 | 108 | 68 |
| <i>Field or Empirical</i> | 226 | 235 | 56 |
| <i>Ethnographic</i> | 8 | 22 | 7 |
| <i>Cartographic</i> | * | * | 1 |
| <i>Historiographic</i> | 7 | * | * |
| <i>Historiographic – documentary</i> | * | * | 2 |
| <i>Historical – documentary</i> | 6 | 4 | 3 |

| | | | |
|--|-----|-----|----|
| <i>Oral History</i> | * | 9 | * |
| <i>Narrative</i> | * | * | 2 |
| <i>Experimental</i> | * | 1 | * |
| <i>Autobiographical</i> | 2 | 5 | 1 |
| <i>Bibliometric</i> | 1 | * | * |
| Documentary sources | | | |
| <i>Legal (laws, decrees, ordinances, amendments, provisional measures)</i> | 148 | 29 | 35 |
| <i>Pedagogical Political Project (PPP)</i> | 55 | 28 | 14 |
| <i>Guidelines (education bases; operational; curricular; complementary.)</i> | 37 | 15 | 3 |
| <i>Regiments</i> | 15 | 3 | 4 |
| <i>Statutes</i> | 20 | 3 | 4 |
| <i>Opinions</i> | 12 | 3 | 2 |
| <i>Statistics (yearbooks, census, media, website)</i> | 13 | 1 | 2 |
| <i>Minutes or records</i> | 24 | 17 | 10 |
| <i>Reports</i> | 62 | 26 | 14 |
| <i>Plans (positions, course, director and municipal)</i> | 53 | 13 | 15 |
| <i>Manuals/booklets or bulletins</i> | 16 | 9 | 5 |
| <i>Newspapers and websites</i> | 22 | 15 | 3 |
| <i>Notices</i> | 4 | 2 | 1 |
| <i>Iconographic (photographs, maps, drawings)</i> | 17 | 11 | 1 |
| <i>Does not describe the source</i> | 7 | 11 | 0 |
| Bibliographical sources | | | |
| <i>Monograph (TCC)</i> | 3 | 2 | 0 |
| <i>Dissertations</i> | 58 | 39 | 9 |
| <i>Theses</i> | 56 | 32 | 11 |
| <i>Books</i> | 59 | 27 | 5 |
| <i>Articles</i> | 60 | 11 | 5 |
| <i>Booklets</i> | 4 | 1 | * |
| <i>Entry (dictionary, etc.)</i> | 2 | * | * |
| <i>Does not describe the source</i> | 47 | 23 | 6 |
| Data collection technique | | | |
| <i>Semi structured interview</i> | 213 | 202 | 63 |
| <i>Structured Interview-Questionnaire</i> | 47 | 50 | 7 |
| <i>Non-directive interview</i> | 5 | 1 | * |
| <i>Focus or discussion group</i> | 11 | 12 | 3 |
| <i>Informal conversations/dialogues</i> | 9 | 9 | 1 |
| <i>Circles of conversation</i> | 2 | 7 | * |
| <i>Observation</i> | 57 | 109 | 11 |
| <i>Photographic records; mental maps</i> | 24 | 32 | 6 |
| Data analysis method | | | |
| <i>Content analysis</i> | 134 | 131 | 80 |
| <i>Speech analysis</i> | 42 | 36 | 4 |
| <i>Categories/thematic axes</i> | 49 | 35 | 1 |
| <i>Descriptive/statistical analysis</i> | 10 | 14 | 1 |
| <i>Triangulation</i> | 4 | 6 | * |
| <i>Enunciation</i> | 1 | * | * |
| <i>Units of meaning/analysis</i> | 4 | * | 1 |
| <i>Hermeneutic or dialectical circle</i> | 4 | 4 | * |
| <i>By dimensions/indicators</i> | 5 | * | * |
| <i>Didactic engineering</i> | * | 19 | * |
| <i>Documentary method</i> | * | 4 | * |
| <i>Comparative method</i> | * | * | 1 |
| <i>Others</i> | 36 | 32 | * |
| <i>Not identified (does not mention or describe the method)</i> | 106 | 36 | 20 |
| Epistemological matrix | | | |

| | | | |
|---|-----|-----|------------------------|
| <i>Historical – dialectical materialism</i> | 156 | 54 | 33 |
| <i>Hermeneutics</i> | 16 | 11 | 5 |
| <i>Phenomenology</i> | 8 | 35 | 1 |
| <i>Did not mention</i> | 214 | 217 | 66 |
| | | | Ethical aspects |
| <i>Ethics Committee</i> | 10 | 23 | 3 |
| <i>Free and Informed Consent Form (TCLE)</i> | 115 | 165 | 34 |
| <i>Consent Form</i> | 12 | 8 | 5 |
| <i>Institution authorization term</i> | 15 | 28 | 3 |
| <i>Assignment of rights to use and disseminate images</i> | 9 | 16 | * |
| <i>Assignment of rights to oral testimony</i> | 5 | 18 | * |
| <i>Term of assignment of property rights</i> | * | * | 1 |
| <i>Not applicable</i> | 129 | 28 | 37 |
| <i>Applies, but does not mention</i> | 122 | 89 | 29 |

Microsoft Excel spreadsheets

In the bibliographic source dimension, scientific articles predominated in the PPGED-UFPA program, especially between the years 2011, 2012, 2018 and 2019, with the PPGED-UEPA being the most frequent dissertations in the years 2017, 2018 and 2020. In PPEB-UFPA the highest quantity was in relation to theses, especially between the years 2019 to 2021. However, it was identified that many productions, although they claimed to use bibliographic research, do not describe the source, being the initial years of implementation of the most critical programs in relation to this factor. Others do not specify the type of source used, referring only to the following words: productions, literature, texts, works, authors, periodicals, magazines. Still others present an absence of descriptors and type of source or cite the source, but do not describe the criteria for selecting the works and the procedures adopted in the surveys, allowing us to conclude that there is a certain fragility in relation to this dimension analyzed, but that, at the same time, over the years the programs have shown some improvement.

In relation to the research procedures dimension, it was identified that there was a greater preference in the use of PD within the scope of the PPGED – UFPA and PPEB – UFPA programs, while PPGED – UEPA was PC or E. However, when analyzing the combinations/associations of two or more procedures used in the same research, PPGED – UFPA mostly presented PD and PC (97), PPGED – UEPA only PC (137) and PPEB – UFPA only PD (27). It is worth mentioning that throughout data collection, many mistakes were identified in the distinction between BP and PD. Regarding this aspect, Lima Júnior *et al.* (2021) relate the difficulty of many researchers to the lack of a fixed definition for “documents”, but among the countless definitions there is the understanding that documents are any and all sources without analytical treatment.

When measuring the degree of linear correlation existing between the dimensions that presented a higher sample in the research results, based on the Pearson coefficient (r), after the significance tests (p), it was found that high values of PD exerted greater influence on the increase of AQ and AC, while PC or E did not show a dependency relationship with AQ, being low with AC, the same occurring with the association of ES which had a low influence on the increase of AQ and AC within the scope of the analyzed productions of both programs.

Table 3 – Linear correlation between variables (dimensions)

| Variables | For a Degree of Freedom (GL): 2 | | Statistical significance |
|-----------------------------|---------------------------------|-------|--------------------------|
| | R | P | |
| AQ – PB | 17.92 | 5,991 | H0 is rejected |
| AQ – PD | 36.09 | 5,991 | H0 is rejected |
| AQ – PC or E | 4.6 | 5,991 | H0 is accepted |
| Tests 1 AQ – ES | 6.21 | 5,991 | H0 is rejected |
| AQ – AC | 14.29 | 5,991 | H0 is rejected |
| ES – AC | 14 | 5,991 | H0 is rejected |
| PB – AC | 38.24 | 5,991 | H0 is rejected |
| PC–AC | 41.06 | 5,991 | H0 is rejected |
| Tests 2 PC or E – AC | 23.91 | 5,991 | H0 is rejected |

Source: research data using the Chi-square test

It is important to highlight that the results of the hypothesis tests do not disregard the influence of other factors on the preference of the qualitative approach and content analysis by researchers within the programs, which may be influenced by historical moments, due to the difficulties of many educators in dealing with demographic data and measurements in general or rejection of any data translated into numbers for ideological reasons as stated by Leandro (2020).

Taşçioğlu *et al.* (2022) stated that although the pragmatic paradigm may not be dominant in education, therefore, more research using mixed methods and adopting a pragmatic approach should be done, and emphasized the importance of its use in order to contribute to raising the quality of research, as the result of their studies on the paradigm that most predominated in the 500 articles that has the highest citation in the last ten years in the field of education based on the data collected from the *Web of Science Core Collection, Social Science Citation Index-SSCI* and the one-way ANOVA test; it revealed that the mixed method and quantitative articles had higher usage statistics than qualitative articles, concluding the quality of research in combined studies, which are still developing every day.

Authors such as Lima and Colares (2021) understand that in the context of the Amazon, it is important to think about possibilities of carrying out combinations to have more complete and reliable data, as well as greater and better systematization of information for understanding problems, analysis and interaction with a view to qualitative change and thus implementing resistance actions.

Another important aspect that contributes to research is computer processing, as discussed by Massa; Oliveira and Borges (2021), however, it has been found that the stage of the qualitative research process in which the use of computers and their software was most evident in data analysis.

In the dissertations of the *stricto sensu programs*, the following tools used in data analysis were identified, being in the PPGED-UFPA productions (2005-2021): *N-VIVO Software*; *Statistical Software Package for the Social Sciences (SPSS)*; *Mendeley Software*; *Iramuteq Software (R pour Interface Les Analysis Multidimensionnelles de Textes et de Questionnaires)*; *NodeX Software*; *WordSmith Tools computer program*; *Microsoft Office Excell*. In the PPGED-UEPA program (2007-2021), the *Eudico Linguistic Notation software (ELAN)* was used; *EVOC 2000 Software*; *2003*; *Trideux program mots*; *statistical software SPSS – Statistical Package for the Social Sciences (version 12.0)*; *Microsoft Office Excel*. While in the PPEB-UFPA Program (2017-2021), no data analysis tools were found.

Regarding the *locus* of research dimension, it was found that the majority of research in both *stricto sensu programs* was in schools or school units, followed by courses, with a greater quantity in PPGED-UEPA, due to the greater tendency in research procedures for field or empirical.

Table 4 – Most frequent research locations for dissertations from both programs

| <i>Identified research locations</i> | <i>PPGED-UFPA (2005-2021)</i> | <i>PPGED-UEPA (2007-2021)</i> | <i>PPEB-UFPA (2017-2021)</i> |
|--|-------------------------------|-------------------------------|------------------------------|
| <i>Village</i> | * | 2 | * |
| <i>Settlements</i> | 3 | 3 | * |
| <i>Rural Family House (CFR)</i> | 2 | 1 | * |
| <i>Fishermen's Colony</i> | 2 | * | * |
| <i>Communities</i> | 7 | 22 | * |
| <i>Municipal Education Council (CME)</i> | 3 | * | * |
| <i>Courses</i> | 46 | 74 | 4 |
| <i>Schools or school units</i> | 91 | 147 | 51 |
| <i>Foundation</i> | 6 | 4 | 1 |
| <i>Cultural Groups</i> | * | 4 | * |
| <i>Hospitals</i> | * | 5 | * |
| <i>Islands</i> | 5 | 10 | * |
| <i>Institutes and centers</i> | 12 | 10 | 3 |
| <i>Graduate programs</i> | 5 | * | * |

| | | | |
|---|------------|------------|-----------|
| <i>Municipal networks and systems</i> | 26 | 9 | 5 |
| <i>Extractive reserve</i> | 2 | * | 1 |
| <i>Municipal Department of Education (SME)</i> | 11 | 3 | * |
| <i>Terreiros</i> | * | 2 | * |
| <i>Universities (UFPA); (UEPA); (UFRA); (UNAMA); (CESUPA); Estacio.</i> | 28 | 3 | * |
| <i>Villas</i> | 3 | 3 | 1 |
| <i>Others</i> | 44 | 55 | 9 |
| Total | 296 | 357 | 75 |

Source: Microsoft Excel spreadsheets

It was also identified that the majority of research was concentrated within the scope of the capital of the state of Pará – Belém in both *stricto sensu* postgraduate programs. In the PPGED-UFPA, the other municipalities with the highest frequency of research were: Castanhal, Abaetetuba, Cametá, Barcarena. Within the scope of PPGED-UEPA, they were: Ananindeua, Abaetetuba. In PPEB-UFPA, they were: Tucuruí and Abaetetuba.

Table 5 – Frequency of searches by municipality in the state for both programs

| <i>Research locus municipalities</i> | <i>PPGED-UFPA (2005-2021)</i> | <i>PPGED-UEPA (2007-2021)</i> | <i>PPEB-UFPA (2017-2021)</i> |
|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|
| <i>Abaetetuba</i> | 13 | 12 | 5 |
| <i>Acará</i> | * | 1 | * |
| <i>Almerim</i> | * | 1 | * |
| <i>Altamira</i> | 5 | 2 | 2 |
| <i>Anapú</i> | 1 | 1 | * |
| <i>Ananindeua</i> | * | 15 | 2 |
| <i>Augusto Corrêa</i> | 1 | * | * |
| <i>Bagre</i> | 1 | * | * |
| <i>Baião</i> | 1 | 1 | * |
| <i>Barcarena</i> | 10 | * | * |
| <i>Belém</i> | 313 | 97 | 33 |
| <i>Benevides</i> | 1 | 3 | * |
| <i>Bragança</i> | 2 | 4 | 1 |
| <i>Breves</i> | 7 | 7 | 3 |
| <i>Bom Jesus do Tocantins</i> | * | 1 | * |
| <i>Cachoeira do Arari</i> | 1 | * | * |
| <i>Cametá</i> | 12 | 6 | 3 |
| <i>Canaã dos Carajás</i> | 1 | * | * |
| <i>Capitão poço</i> | 2 | 1 | * |
| <i>Capanema</i> | 3 | 1 | * |
| <i>Castanhal</i> | 16 | 5 | 2 |
| <i>Colares</i> | * | 5 | * |
| <i>Concórdia</i> | * | 1 | * |
| <i>Curralinho</i> | 1 | 1 | * |
| <i>Curuçá</i> | * | 1 | * |
| <i>Gurupá, Marajó</i> | 2 | * | * |
| <i>Igarapé-Miri</i> | 6 | 4 | 1 |
| <i>Igarapé-açu</i> | * | 3 | 1 |
| <i>Inhangapi</i> | 2 | * | * |
| <i>Itaituba</i> | 1 | * | * |

| | | | |
|-----------------------------------|------------|------------|-----------|
| <i>Magalhães Barata</i> | 1 | * | * |
| <i>Maguari</i> | 1 | * | * |
| <i>Marabá</i> | 6 | 2 | 1 |
| <i>Maracanã</i> | 1 | 1 | * |
| <i>Marapanim</i> | 1 | 2 | * |
| <i>Marituba</i> | 1 | 2 | 1 |
| <i>Mãe do rio</i> | * | 1 | * |
| <i>Melgaço</i> | 1 | * | * |
| <i>Medicilândia</i> | 1 | * | * |
| <i>Mojú</i> | 2 | 4 | 2 |
| <i>Monte alegre</i> | * | 1 | * |
| <i>Mosqueiro</i> | * | 2 | * |
| <i>Muaná</i> | 1 | 1 | * |
| <i>Nordeste paraense</i> | 2 | * | * |
| <i>Nova timboteua</i> | 1 | * | * |
| <i>Nova Ipixuna</i> | * | 1 | * |
| <i>Óbitos</i> | 1 | 1 | * |
| <i>Oriximiná</i> | 2 | 5 | * |
| <i>Parauapebas</i> | 2 | * | * |
| <i>Paragominas</i> | 1 | 2 | * |
| <i>Pacajá</i> | 1 | * | * |
| <i>Ponta de Pedras</i> | 1 | * | * |
| <i>Portel</i> | 1 | * | 1 |
| <i>Rio Maria</i> | * | 1 | * |
| <i>Região norte</i> | 1 | * | * |
| <i>Salinópolis</i> | 1 | * | 1 |
| <i>Salvaterra</i> | 1 | 2 | * |
| <i>Santarém</i> | 3 | 5 | * |
| <i>Santa Bárbara</i> | 1 | * | * |
| <i>Santa Maria</i> | * | 1 | * |
| <i>São Domingos do Capim</i> | * | 1 | * |
| <i>São João da Ponta</i> | * | 1 | * |
| <i>São Miguel do Guamá</i> | 1 | * | * |
| <i>São Sebastião da Boa Vista</i> | 1 | * | * |
| <i>São João de Pirabas</i> | 1 | * | * |
| <i>Senador José Porfírio</i> | 1 | * | * |
| <i>Tailândia</i> | * | 1 | * |
| <i>Terra-Alta</i> | * | 1 | * |
| <i>Tomé-Açú</i> | * | * | 1 |
| <i>Tucuruí</i> | 2 | 3 | 6 |
| <i>Tracuateua</i> | 1 | 3 | 1 |
| <i>Viseu</i> | 1 | * | * |
| <i>Vigia</i> | * | 2 | * |
| <i>Vigia de Nazaré</i> | * | 2 | * |
| <i>Outros/Estado do Pará</i> | 37 | 42 | 7 |
| Total | 482 | 263 | 74 |

Microsoft Excel spreadsheets

It is worth mentioning that in a given program the number of municipalities *where* the research was carried out exceeded the value referring to the categorized place of identification, as many times in the same research several municipalities were involved at the same time and

the municipalities of documentary research carried out *in loco*. While in another program there is a reduction, due to many searches being repeated in the same location.

In general, data from both programs revealed that there is a tendency to carry out research in urban centers or locations and municipalities closer to the capital of the state of Pará, and it is important to highlight that when it comes to research in the context of the Amazon, which has an extensive and very heterogeneous spatial and/or territorial configuration, containing many branches, river islands where mobility occurs according to the rhythm of geographic nature, vegetation and tropical climate, which demand time, disposition, financial resources and logistics for travel, interfere in some way with research, and may be one of the factors that influence the choice of locations, among other aspects.

Soares, Colares and Colares (2020) emphasize the dilemmas regarding the unique singularities of the Amazon, as do Damasceno, Pantoja and Dourado (2023) when stating that in addition to its large territorial extension, the Amazon is inhabited by a diverse and complex population, distributed mostly in small municipalities, distant from each other, and with access that depends on river transport, with scientific production being a huge challenge for a historically peripheral region, given the lack of adequate infrastructure and efficient communication systems, which leaves many researchers isolated of the largest knowledge flows.

Considerations

In view of the above scenario, it is possible to affirm that, in relation to the methodological aspects, the research in Education of the *stricto sensu* graduate course (dissertation) in the state of Pará, Amazonia, presented a significant evolution compared to the beginning of the implementation of the programs, although gaps are still identified that need to be overcome, as it is understood that research in the field of education increasingly lacks adequate methodologies for its potential development, in order to answer more complex questions that arise in the current context.

The dimensions analyzed reveal that scientific productions are still marked by the subjective way of doing research for the most part and that the choice of certain methodological procedures has influenced relevant indicators in research, which is a factor that deserves careful attention in the design of dissertations, in addition the choice of theorists to avoid fads.

In a complex context such as the Amazon, collaboration between researchers is essential to reach and explore new research sites, in addition to the development of new methodologies that will add to the enrichment of this field, guaranteeing greater flexibility, requiring a change in the attitude of involved in the process.

It is expected that the production of statistical information in this research on the panorama of scientific productions can be viable for researchers, teachers, postgraduate coordinators, the Coordination of Higher Education Personnel (CAPES) who will be able to review trends, analyze results, and reflect on the potentialities and weaknesses of productions, which requires continuous debates, collaborative methodologies and studies on the evaluation process to guarantee the elevation of quality in order to boost research and produce effects in the academic-scientific and social environment.

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