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COVER by Isabel Correa

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Pedagogy Scientists

Enhancing the practices conducted by classroom educators

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Abstract

The *Cientistas da Pedagogia* (“Pedagogy Scientists”) project addresses the lack of representation of classroom teachers with expertise in academic institutions and conferences in kindergarten and elementary school education by providing tailored mentoring activities for academic literacy and research paper development. The initiative seeks to create an enabling environment for Brazilian primary education teachers to engage in introspection, organize their experiences, and publish their findings at international conferences. By participating in mentoring activities, teachers are encouraged to develop research papers that enhance their teaching practices and serve as objects of reflection. The project acknowledges the challenges faced by educators, such as low social prestige and remuneration, and aims to provide opportunities for sharing knowledge, promoting recognition, and fostering international engagement. The findings highlight the project’s positive impact on teachers’ metacognitive competence and their perception of the value of their experiences. The paper concludes with recommendations for improving the project’s effectiveness and promoting equitable representation in the diverse Brazilian context.

Introduction

This paper describes and analyzes the implementation of the first edition of the *Cientistas da Pedagogia* (in English, “Pedagogy Scientists”) research front, a program for the professional development of Brazilian teachers promoted by graduate students at a research university based in the United States. This project aims to develop mentoring activities for academic literacy (Thesen & Pletzen, 2006) tailored explicitly to primary education teachers. By engaging in these activities, teachers are encouraged to develop a research paper that serves as an object to think with and enhances their teaching practices aligned with constructivism and constructionism (Papert, 1980; Ackermann, 2020). In this way, the project establishes an enabling environment for primary education teachers in Brazil to engage in introspection, organize their experiences, and publish their findings at international conferences. The choice for these learning theories comes from the goal of empowering these teachers to create a product that shares their experiences and perspectives while supporting reflections about their learning process.

The Brazilian National Education Plan (2014-2024) establishes the parameters and goals for valuing Brazilian public education, such as continuing education and the implementation of career plans for education professionals, which consider aspects such as length of service, degree and working hours as references for establishing salary improvements (Brasil, 2014). According to data released by the Statistical Synopsis of Basic Education, the percentage of basic education teachers who have postgraduate training is low, namely 4.31% with a master’s degree and 1.19% with a doctorate (Brasil, 2022).

Early childhood and elementary school educators feel overwhelmed and undervalued (Gomes & Palazzo, 2017) in the face of a career with low social prestige and remuneration. Those workers mainly belong to the disadvantaged social classes and have found professionalization for teachers, a form of insertion in the formal job market concerning opportunities previously accessed by their home groups (Gatti & Barreto, 2009; Yada, 2015). Brazilian government policies promote professional qualification at the graduate level as actions to combat the devaluation of the teaching career in primary education (Clímaco, Neves & De Lima, 2012). However, one of the requirements to access *stricto sensu* graduate courses in Brazil or abroad is published papers (Silva, Gonçalves-Silva & Moreira, 2014; Saviani, 2020).

As a result, educators need opportunities to share their knowledge and projects with a broader audience and be recognized for their efforts and capabilities. *Cientistas da Pedagogia* hypothesizes that the access of Brazilian educators with classroom experience to academic literacy projects may reflect on their presence in conferences in the area and teacher training institutions. Similarly, this participation holds the potential to enhance research and international scientific production by facilitating the engagement of teachers who are non-native English speakers and have long been marginalized in educational discourse. By providing academic mentorship for these teachers, the project seeks to enable the international science education community to address different perspectives and experiences, allowing for a more comprehensive and diverse understanding of educational practices (Castano Rodriguez, 2015).

Methods

To address this goal, the team, formed by graduate students, two psychologists, and one primary education teacher, developed 30 hours of mentoring activities for five educators in early childhood and elementary education to provide a supportive space for these educators to discuss their ongoing projects and to structure their publications. In this first edition, the educator's group was based on professionals that the team already knew since there were time constraints. The group consisted of four teachers from a private school in Sao Paulo and one from a public school in Mato Grosso. In São Paulo, the educators have post-graduate degrees and over a decade of teaching experience, while in Mato Grosso the teacher has been in early childhood for 5 years.

As a theoretical-methodological approach, the team's role in this project was to conduct the tutoring activities attentively to the participants' zone of proximal development (Vygotsky, 2001), facilitating qualitative leaps in their understanding of their pedagogical practices. Furthermore, through the mediation relationship, these educators were encouraged to learn to organize and redirect their teaching experiences based on the codes of the scientific method and qualitative analysis, thereby aligning this practice with the perspective of academic literacy (Thesen & Pletzen, 2006). The backward design theory (Wiggins & McTighe, 2019) and the prior-knowledge consideration (Piaget, 1984) also supported the activities, as the *Cientistas da Pedagogia* focused on understanding their target audience and creating a personalized plan for each mentoring session.

For this project version, the team selected three experiences in Brazil related to the "Constructionism Conference" theme and theory. The whole process happened in the educator's first language, Portuguese, and the mentor was responsible for translating the paper and assuring an intentional decision in the vocabulary. The reflection moments with the educators were intended to go beyond a summary of their classes and offer a safe environment for metacognition and reflection on educators' teaching experiences.

Implementation

The implementation of the project occurred in four phases. Firstly, the teachers shared their documentation, data, and

artifacts with the mentor, revisiting their research while presenting the development of each step of the experience – e.g., videos, audio recorded, Sway boards, and ThingLink created with the students. Secondly, the mentor facilitated the educators' study and review of constructionism literature theory, aiming to deepen their knowledge and identify the meeting points between their practice, reflection, and theory – e.g., how the documentation could be used as an object to think with and become a publicly shareable product. Group work was encouraged to create strategies to help organize the learning, such as using Miro, a collective online board, to register the relationship between the theory and their classroom experience.

The third phase focused on writing the papers, ensuring a comprehensive understanding of each text part, referencing, and adhering to the standards. Examples from previous conferences were analyzed and discussed to provide guidance. The writing process took place synchronously with the mentor. The educators were also encouraged to write small pieces asynchronously, allowing them to reflect on the moments discussed during the meetings. During each session, the mentor would review the writing and leave comments for the group to reflect.

Lastly, the mentor translated the paper, and the groups received feedback from senior academic researchers. The teachers engaged in discussions about the critiques and reviewed their papers accordingly. This feedback loop ensured the refinement of their work and contributed to their professional growth, as they could reflect on different feedback and perspectives.

Findings

According to the team's observations and the educator's speeches, reflecting and discussing their teaching process while learning academic writing suggests that the paper became an object to think with. Throughout the meetings, it was possible to observe that the educators assimilated their projects, re-examined their documentation, and introspected their methods as they discussed and exposed the reasons for their decisions while conducting the activities. As the educators told the team, the senior research feedback also improved the understanding of clarity of the paper's goal and word choice. These deliberations resulted in the emergence of novel research ideas, as some educators have already asked about continuing to be part of the project next semester. The mentoring activities afforded the educators insights into the potency of their work and engendered a newfound appreciation for the value of their experiences. Two educators also decided to write about a project they are conducting this year in Portuguese for a local magazine. Additionally, it underscored their metacognitive competence to reflect on their actions and practices, as articulated by one of the educators:

While writing a scientific article about the practice, we are led to become aware of the different processes involved in making decisions at each moment lived with the children. Justifying and connecting the ideas to theoretical concepts broadens our view of ourselves and our pedagogical practices, thus gaining intentionality, depth, and openness to new possibilities. (Educator 1, 2023)

From the initial gathering, all teachers recognized the project as a means for disseminating their research findings and showed interest in engaging in meaningful discourse with the academic community. They also saw it as an opportunity to study the constructionist theory and practice meaningfully, recognizing elements (e.g., project-based learning, student-centered learning, making meaningful products, documenting the process) already present in their teaching.

One of the educators, while inspired to explore technology use in education further, faced the challenge of time constraints. The educator asked for more time to deepen her understanding of the constructionist theory and how it could be applied to such young learners. The project team understood the potential challenges that educators might face and pursued strategies to offer support, such as facilitating the selection of conferences with more flexible deadlines and alleviating the possible overwhelm experienced by teachers.

Conclusion

In conclusion, data suggests that *Cientistas da Pedagogia* contributes to the existing literature on inclusive practices within the academic literacy framework, exploring a constructionist approach. The project has provided insights that can enhance the design of educational and professional development opportunities for educators. The team aims to implement improvements next semester, such as facilitating introductory meetings among educator groups to encourage information exchange and feedback on individual research. Furthermore, it emphasizes the significance of allocating dedicated time to studying theoretical concepts and applying them to classroom practices more systematically and precisely during educator meetings. These measures will help create a more effective professional development program for educators. For the next edition, it is expected to gather and train more interested mentors so that it will be possible to cover a more significant number of participants per semester to expand the potential of action and diversification of the project. There is also a commitment of the group to achieve a more diverse group of educators in other parts of Brazil. Given the complex task of enhancing access to academic discourses and their associated conventions (Thesen & van Pletzen, 2006) to foster increased involvement of primary educators in international conferences, this project necessitates refining teacher selection strategies to ensure equitable representation of the diverse Brazilian context.

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