Analytical device for the development of educational processes and products based on the dialogue between research and professional practice

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Abstract

In this paper, we propose an Analytical Device for Educational Products and Processes (ADEP) which emerges from the author's practice, with experience in Graduate Programs (GPs). The methodology involved the initial proposal of the ADEP, followed by the sending of the material to seven professors from different GPs in the Teaching Area, who evaluated the ADEP and provided critiques and suggestions that were incorporated into its redesign. The ADEP consists of two main maps – one for reflection and one organizational – developed to assist in the construction of EPs that are aligned with the identity of the GP and the demands of professional practice. The ADEP aims to help EPs become effective tools for interaction between theory and practice, engaging not only with academic literature but also with the target audience and the specific context for which its application was designed. It also serves as support for both advisors and students, promoting moments of reflection and active listening, encouraging sensitivity to the practice field and an understanding of the multiple layers of development that an EP requires.

Keywords: academic degrees; analytical method; educational materials; learning processes.

Dispositivo analítico para el desarrollo de procesos y productos educativos basados en el diálogo entre la investigación y la práctica profesional

Resumen

En este artículo, proponemos un Dispositivo Analítico de Productos y Procesos Educativos (DAPE), que surge de la práctica de los autores, con experiencia en Programas de Posgrado (PPGs). La metodología involucró la propuesta inicial del DAPE, seguida del envío del material a siete docentes permanentes de diferentes PPGs en el Área de Enseñanza, quienes evaluaron el DAPE y ofrecieron

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críticas y sugerencias incorporadas en su reelaboración. El DAPE está compuesto por dos mapas principales – uno de reflexión y otro organizacional – desarrollados para ayudar en la construcción de PEs que estén alineados con la identidad del PPG y las demandas de la práctica profesional. El DAPE tiene como objetivo contribuir a que los PEs se conviertan en instrumentos eficaces de interacción entre teoría y práctica, dialogando no solo con la literatura académica, sino también con el público objetivo y el contexto específico para el cual fue diseñada su aplicación. También funciona como soporte tanto para estudiantes como para asesores, promoviendo momentos de reflexión y de escucha activa, incentivando una sensibilidad hacia el campo de la práctica y una comprensión de las múltiples capas de desarrollo que un PE requiere.

Palabras clave: pos grado; métodos didáctico-pedagógico; proceso de enseñanza-aprendizaje.

Everything began like this…

> *"Begin at the beginning… and go on till you come to the end: then stop." – King of Hearts, Alice in Wonderland*

This epigraph, drawn from *Alice in Wonderland* by Lewis Carroll, references the trial of the Knave of Hearts, accused of stealing the Queen's tarts, and aptly illustrates the focus of this text. During the trial, the White Rabbit finds a letter supposedly written by the prisoner, though Knave denies authorship due to its lack of signature. At one point, the King orders the letter to be read, and the White Rabbit asks, "Where should I start, Your Majesty?" The King responds, "Begin at the beginning, go on until the end, and then stop." This clear and direct guidance serves as a framework for addressing the development of Educational Products (EPs) within the education research context.

The Area 46 – Teaching, one of the 50 evaluation areas of CAPES (Brazil's Coordination for the Improvement of Higher Education Personnel), focuses on teacher training for both basic and higher education. Cyrino, Rizzatti, and Rôças (2023) note that the area currently encompasses the teaching of specific subjects across various fields—sciences, mathematics, health, languages, etc.—at different educational levels (basic and higher) and in various teaching modalities (youth and adult education, vocational education, rural education, among others). Additionally, the area includes diverse approaches such as diversity, gender, inclusion, and ethnic-racial relations.

The interdisciplinary nature of research in this field often includes themes related to social inequalities, climate change, and public skepticism toward science. Such themes encourage theoretical and practical reflections on public policy, teaching methodologies and strategies, the development of educational materials, science communication, and more. As a result, much of the research produced by Graduate

Programs (GPs) in Teaching is bidirectional, integrating knowledge from both academic and professional realms.

In professional GPs, these characteristics shape the conceptualization and development of EPs. Such products should be articulated clearly and thoughtfully in dissertations or theses, grounded in the GP's focus and in line with the goals of Area 46 – Teaching. EPs serve as practical extensions of the research problem, engaging not only with academic literature but with the target audience and context of application.

This article aims to offer insights and analyses that help clarify the construction of EPs for students and teachers in graduate teaching programs, addressing common concerns related to EP requirements, concepts, evaluation parameters, structure, format, and more.

To address these concerns, it's necessary to understand guiding documents from Area 46 – Teaching, issued by CAPES, as well as specific program materials on EP development and assessment. Additionally, conducting a literature review of related educational product research—both theoretical and practical—is fundamental, highlighting other similar or distinct productions to position the new EP in context.

Therefore, a comprehensive approach to research in professional GPs requires systematic literature reviews[5] and an integration of theoretical, methodological, and practical aspects. The EP must be analyzed as a multi-layered product that serves as an interlocutive tool for educators in various contexts across Brazil (Rizzatti *et al.*, 2020).

Another important aspect: the quality of an Educational Product (EP) and its innovative character. Innovation is an essential element and is related to factors such as complexity, impact, applicability, and alignment (Brazil, 2019a). For the Teaching Area, innovation relates to the originality or novelty of the research, whether addressing less-explored themes or developing new Eps (Brasil, 2019a, b). Consequently, it is necessary to reflect on the degree of innovation in an EP and whether every EP can indeed be considered innovative. In this context, we introduce the concept of *remixing*, a process of combining, modifying, and/or reinterpreting EPs to create something new and original, by reappropriating and re-signifying elements

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[5] The systematic literature review can be configured as a bibliographic survey (master's degree) or the state of knowledge (doctorate).

from existing Eps (Rizzatti *et al.*, 2020). This creative and innovative process facilitates dialogue with previous technical works, akin to theoretical research that "remixes" existing bibliographic productions to generate new knowledge. This process does not imply mere copying or replication but rather reinterpreting, re-signifying, and expanding the material to achieve innovation and relevance in the remixing context. Unfortunately, this process is underutilized, partly due to the misconception that creating something "entirely new from scratch" defines an EP's originality and validity, which is not necessarily true.

Furthermore, the reach and replicability of the EP must be carefully analyzed, considering its social relevance and impact. An EP is developed within the context of research tailored to a specific education level and modality, with a defined audience. Therefore, applying an EP across different situations requires adaptation and recontextualization, factors that should also be considered when assessing its innovative nature.

It is common among researchers in the Teaching Area, particularly those in professional programs, to continuously seek a better understanding and improvement in the research and development of EPs. For this reason, in this article, we propose an Analytical Device for Educational Products and Processes (ADEP) for the monitoring and evaluation of EPs, based on reflections about the dialogue between research and professional practice. This device is also intended to support students and advisors throughout the EP development process, enhancing moments of reflection, active listening among those involved, sensitivity to the practice field, and understanding the multiple developmental layers an EP requires.

How Did We Arrive at an Analytical Device

EPs have gained relevance in Academia, especially with the establishment of Professional Master's Programs (Brazil, 1995, 2009) and the first courses following the creation of Area 46 in 2000, initially called Science and Mathematics Teaching and renamed Teaching in 2011. This growth accelerated with the introduction of Professional Doctorates (Brazil, 2017, 2019b), with the first courses approved in 2018 and offered starting in 2019 (ours being one of the first four approved at this time). The methodology applied was qualitative, which, as Flick (2009) emphasizes, ensures that

methods and theories align with the research context. This approach does not limit itself to exceptional phenomena or require extensive quantitative samples, allowing for the inclusion of participants' perspectives and, consequently, their diversity. It also emphasizes researcher reflexivity and a variety of approaches and methods.

The idea and necessity for developing the ADEP emerged from the author's experience as faculty members in a professional graduate program established in 2007, working within disciplines aimed at reflecting on the professional practice field. Three of the four authors come from professional master's and/or doctoral programs. Our program began with a rating of 3 and achieved a rating of 5 in the last two quadrennial evaluations conducted by CAPES. In this way, the experiences, reflections, and discussions with colleagues from our own and other graduate programs, as well as dialogues with students in the classroom and members of our research groups[6], led us to propose the ADEP to support the development and evaluation process of the EP, which comprises both a reflection map and an organizational map.

After the initial version of the ADEP, it was sent to seven permanent faculty members from different graduate programs in the Teaching Area for evaluation and feedback. Overall, everyone recognized the need for and importance of this initiative, suggesting new reflections, changes, and adjustments. After actively listening to and reviewing the critiques and reflections offered by the experts, we proceeded to revise the device, resulting in the following maps, which together constitute the ADEP.

Contributions to Educational Products or Processes

The production of Educational Products (EPs) in graduate programs within the Teaching Area has been a subject of debate and analysis by various authors who examine both the challenges and pedagogical and social possibilities that these products represent. Freitas (2021) stresses that EPs should not be treated as mere appendices to dissertations and theses but rather as central elements that bridge theory and practice, providing real solutions to issues identified within the researcher-student's specific educational context. CAPES, through Area 46 – Teaching, reinforces

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[6] CAFE - Science, Learning, Training and Teaching - dgp.cnpq.br/dgp/espelhogrupo/5560816264589777 / GPTEC - Research Group on Technology, Education & Culture - dgp.cnpq.br/dgp/espelhogrupo/7693343371947974

the importance of this integration, emphasizing that EPs should contribute significantly to teaching practice and the development of new pedagogical approaches (Brazil, 2019a).

According to Mendonça *et al.* (2022), an EP is more than an academic production—it is a process of continuous interaction between theoretical knowledge and teaching practices. In this sense, the EP must be constructed in a way that allows for adaptations and reinterpretations, aligning with what Rizzatti *et al.* (2020) refer to as productive dialogue, where the EP is a resource that transcends academia and contributes directly to teaching, accessible to teachers and students in diverse educational realities.

The Teaching Area Document (Brazil, 2019a) also highlights that graduate programs should encourage the development of EPs that address everyday teaching challenges. Araújo-Jorge, Sovierzoski, and Borba (2017) reinforce this point by arguing that teaching should go beyond traditional paradigms, incorporating approaches that foster innovation and critical reflection on educational practices. This "out-of-the-box" perspective emphasizes that EPs should address issues relevant to contemporary society, such as social inequalities and climate change, which directly impact education.

Freitas (2021) points out that the production of EPs within graduate teaching programs is not merely an extension of academic research; it is a reflective and practical exercise aligned with the program's demands and the needs of the educational context. For an EP to reach its potential, it must be developed in constant dialogue with the needs and challenges of the classroom (or other professional teaching spaces). This concept is further supported by Cyrino, Rizzatti, and Rôças (2023), who argue that Area 46 in Teaching is characterized by interdisciplinarity and a commitment to teacher training at various levels. They emphasize that EPs, by combining theoretical content with pedagogical practices, support teacher development and promote an education that addresses current social and educational challenges.

For Mendonça *et al.* (2022), one of the critical aspects of EP development is that it must be based on solid educational theories while remaining adaptable to diverse educational realities and contexts. This involves a careful analysis of the structure and alignment of the EP, considering both theoretical foundations and

practical methodologies that allow for application in different contexts. According to the authors, this approach enables the EP to function as a transformative instrument, especially when combined with innovative pedagogical practices and accessible, engaging communication for the target audience.

It is also important to highlight that the challenges in developing an EP go beyond its design and implementation, encompassing its validation and replication across different contexts. Rizzatti *et al.* (2020) observe that the validation process for EPs requires rigorous planning to ensure their effectiveness and relevance for educational practice. CAPES, in its technical production working group report (Brazil, 2019c), also emphasizes that EPs should be evaluated to assess their impact and applicability, ensuring that they fulfill their intended transformative and educational roles. Freitas (2021) considers this evaluation and validation process to be a vital point for the consolidation of EPs, as it guarantees they can meet not only academic expectations but also the real needs of pedagogical practice.

However, Mendonça *et al.* (2022) caution that one of the main challenges for researchers is the dual role that EPs assume, needing to be both academic and accessible. This requirement to combine scientific rigor with language comprehensible to non-specialist audiences makes the EP development process complex and sometimes exhausting. To overcome this challenge, the authors suggest that EPs be developed from a dialogic perspective, in constant interaction with potential users, including teachers, students, and other education professionals.

Although the social role of EPs is widely discussed in the literature and considered one of the main pillars of their design, Freitas (2021) states that they aim not only to improve teaching practice but also to promote a more inclusive education connected to students' daily lives. This view is supported by Araújo-Jorge, Sovierzoski, and Borba (2017), who see EPs as tools that can contribute to the democratization of knowledge by providing access to scientific and pedagogical content clearly and practically. The authors argue that by incorporating themes such as inclusion and diversity, EPs expand student engagement possibilities, promoting an education that reflects students' social and cultural realities.

In this context, Rôças *et al.* (2020) emphasize that EPs should be developed to respect the cultural, ethnic, and social diversity of individuals, promoting teaching that is sensitive to their needs and experiences. Cyrino, Rizzatti, and Rôças (2023) argue

that by addressing themes such as ethnic-racial relations and inclusion, EPs contribute to civic education, encouraging students to reflect on their role in society and develop a critical view of contemporary issues.

The analysis of studies on EPs within Area 46 reveals that their construction requires a careful balance between academic rigor, practical applicability, and social responsibility. Freitas (2021) and Rizzatti *et al.* (2020) highlight that when EPs are developed collaboratively and reflectively, they have the potential to foster more meaningful and transformative education. However, their implementation faces practical challenges, particularly regarding accessibility and adaptability to different contexts.

To deepen this discussion, we present Table 1, which summarizes the main contributions and critical aspects related to EPs from Mendonça *et al.* (2022) and, especially, Freitas (2021). This table serves as a reference tool for a deeper understanding of the various dimensions that permeate the construction of an EP, underscoring the importance of critical and reflective analysis in this process. The goal is to move beyond the mere formalities of an EP and connect the specifics of what is produced to its implicit intentions, fostering a discussion that engages with the contemporary challenges of education.

Table 1: Analysis of the dimension and axis for educational products and processes.

DIMENSION	AXIS	ANALYTICAL SYNTHESIS
Semantic	**Conceptual**	The semantic dimension focuses on the clarity and coherence of the messages conveyed, while the conceptual axis structures the content based on an analysis of the themes and the target audience profile. The integration of these two aspects contributes to the creation of an EP that is both informative and pedagogically efficient, fulfilling both communicational and educational objectives.
Syntactic	**Communicational**	The syntactic dimension emphasizes the visual and symbolic structure that facilitates message decoding, while the communicational axis involves selecting the most appropriate medium for delivering the message, considering the context and audience. When these elements are effectively combined, they promote a more comprehensible EP, ensuring that the communication aligns with the content, educational purpose, and target audience.
Pragmatic	**Didactic-Pedagogical**	The pragmatic dimension ensures that the material is functionally useful and relevant, while the didactic-

		pedagogical axis structures teaching and guides the learning process methodologically. Together, they foster an EP that not only fits the context but also has a solid pedagogical framework to support the teaching-learning process.
Aesthetic	**Functional**	The aesthetic dimension addresses the appeal and emotional connection with the audience, while the functional axis integrates these visual elements with the practical purpose of the material, enhancing its efficiency and accessibility. Combined, these two aspects ensure that the EP is not only visually engaging but also effective in communicating its content and educational purpose, maximizing audience engagement and impact.

Source: Prepared by the authors based on Freitas (2021) and Mendonça *et al.* (2022)

In summary, EPs are dynamic processes of learning and reflection that aim to meet the demands of professional practice and promote an education that is relevant and meaningful for everyone involved. With this framework in mind, we can deepen the critical analysis of discussions on EP production within the Teaching Area, considering contributions from various authors and the practical and social implications. In this context, it is essential to explore the dimensions of analysis and reflection in EP development, allowing for a better understanding of the tools aimed at critical and reflective analysis in EP creation, which is proposed in the following section.

Analysis of the Development of Educational Products or Processes

In this section, we present an analysis built on a device that integrates multiple theoretical perspectives, including the approaches outlined by Freitas (2021) and Mendonça *et al.* (2022). The potential of the Analytical Device for Educational Products and Processes (ADEP) lies in its focus on the critical and reflective analysis of EP development, aiming to enable an interpretation of the collected data that goes beyond description, by also examining it through theoretical and methodological lenses. Using this device highlights the particularities of interactions among individuals, learning environments, and teaching processes, emphasizing how cultural and social factors influence the construction of an EP.

Thus, we start from the centrality of the EP, listing five guiding categories that assist in the process of its creation: (i) objectives and purpose; (ii) characteristics and

alignment with the academic context; (iii) clarity and understanding; (iv) implementation and dissemination strategies; (v) evaluation. To organize these reflections, we formulated guiding questions for each category, marked with a color code representing the different stages of the EP's development and reflective process. In Table 2, these categories are presented along with guiding questions and accompanying summaries.

Table 2: Directive Categories, Guiding Questions, and Summaries for Developing an Educational Product or Process

| Directive Categories	Guiding Questions	Summary
Objectives and Purpose of the EP (DC1)	Is the research question connected with the graduate student's professional practice?	Ensures the research is linked to the researcher's professional experiences.
	What is the research objective?	Defines the focus of the investigation, guiding the development of the EP.
	What is the pedagogical objective of the EP?	Specifies educational goals for planning the EP structure.
	For whom is the EP being developed?	Reflects on the target audience for whom the EP is crafted and how it will be used.
Characteristics and Academic Alignment (DC2)	Does the EP align with the scope of the Teaching Area, concentration area, and research focus?	Verifies the EP's consistency with the Teaching Area and the program.
	Does the EP include artifacts? Which ones? Are they relevant?	Questions the production of supportive materials or resources that are essential for the EP's development or application.
	Does the EP align with the scope of the Teaching Area, concentration area, and research focus?	Verifies the EP's consistency with the Teaching Area and the program.
Clarity and Comprehension of the EP (DC3)	Who is involved in the research and EP development?	Highlights the importance of identifying individuals who contribute to the research and EP development process.
	Is it an educational product or process?	Reflects on the nature of the EP (product or process).
	What are the main characteristics of the EP?	Encourages clarity in explaining the EP comprehensively, covering all dimensions.
Implementation and Dissemination Strategies (DC4)	How will the EP be implemented?	Involves planning steps and resources necessary for putting the EP into practice.
	How will the EP be disseminated?	Covers communication strategies to share the EP with its initial target audience, especially when it is an educational process.
Evaluation of the EP (DC5)	What are the impacts of the EP on the graduate student?	Reflects on the expected personal and professional growth of the researcher.
	What are the impacts of the EP on the target audience?	Investigates how the EP will influence the intended audience.
	How will the EP be evaluated?	Proposes strategies, criteria, and tools to measure the EP's quality among the target audience.
	How will the EP be validated?	Defines instances that ensure the EP's validity in its specific context.

Source: Developed by the authors (2024).

It is important to emphasize that these categories are not isolated, as the questions are interrelated, reflecting the complex and integrated nature of the EP construction process. Therefore, they overlap, as the development of an EP is an interconnected and dynamic process. For instance, the clarity in defining the EP's objectives has a direct impact on how it will be implemented and evaluated. Similarly, its validation depends on the clarity with which it is explained and its alignment with the academic context. Thus, the non-separable nature of these categories reflects the complexity of the research and development process of an EP.

ADEP – Analytical Device for Educational Products or Processes

Based on the directive categories presented earlier, we operationalized the ADEP, which consists of two maps: a reflection map and an organizational map. The "reflection map" (Figure 1) illustrates the directive categories and aims to support the construction of the EP throughout the development of dissertations or theses in professional graduate programs (PPGs) within the Teaching Area. Through a set of strategic questions, the map seeks to guide careful reflection on various essential aspects for the creation, implementation, evaluation, and dissemination of the EP. These questions are crucial for both students and advisors, working in collaboration, to understand the different stages of the EP development process, from conception to impact analysis.

Figure 1: Reflection map containing the directive categories (CD) and guiding questions for the process of developing an educational process or product.
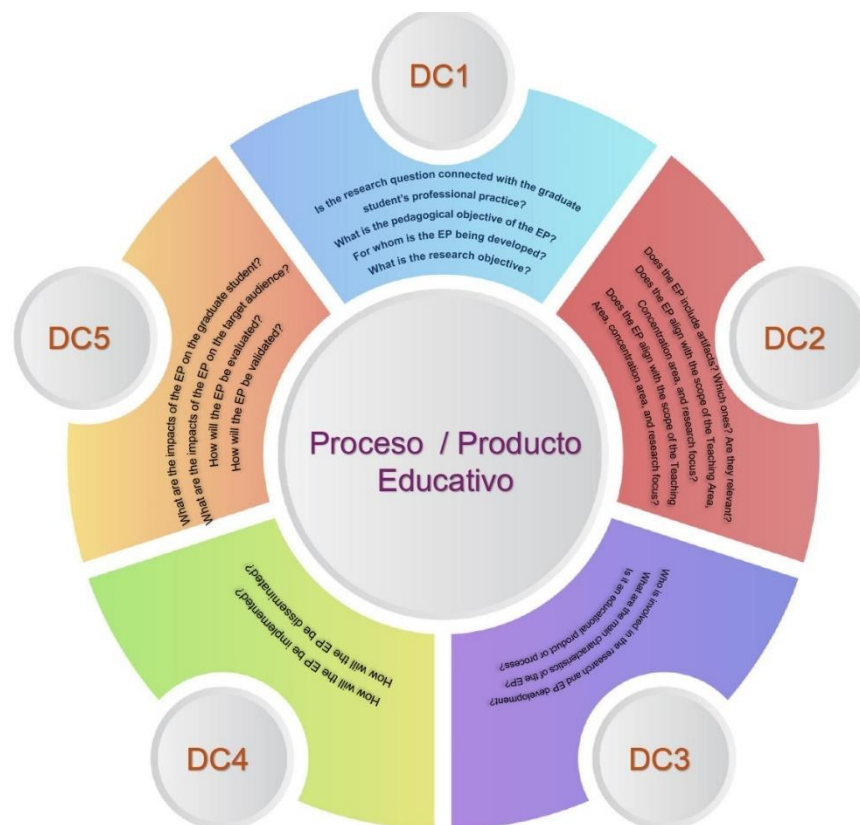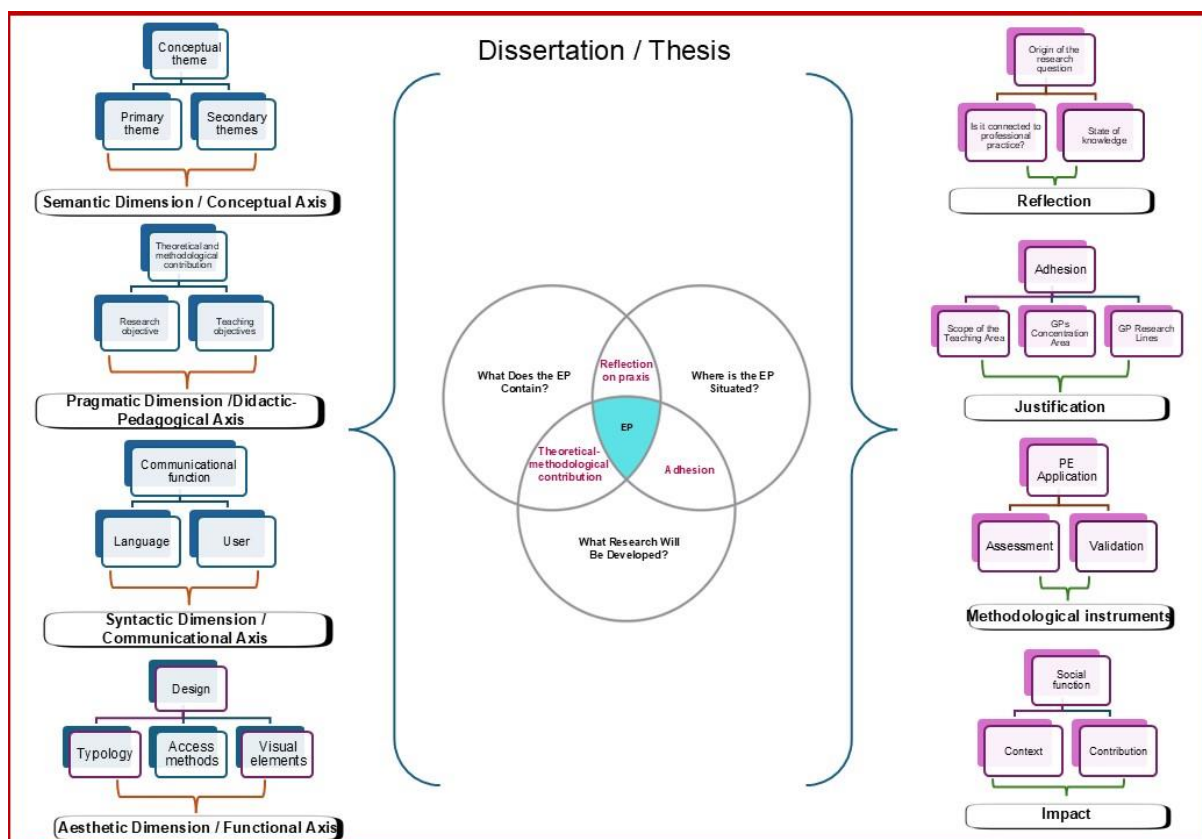

Source: Prepared by the authors (2024).

Figure 1 provides an overview of the central categories for constructing the EP, exploring the organizational structure through questions that help to reflect on the various dimensions of the EP. In this first stage, the reflection is centered on a set of interconnected categories designed to organize critical thinking around the educational intervention proposal, its development, and its dissemination and validation stages.

The second component of the ADEP is the organizational map (Figure 2), which deepens the theoretical-methodological analysis by proposing a detailed examination of the structural elements of the EP. This map not only incorporates its theoretical and methodological foundations but also examines its configuration, suitability within the academic context, and its social role in the student's professional practice. While the reflection map (Figure 1) provides an opportunity to (re)construct the conceptual basis of the EP, the organizational map (Figure 2) focuses on how these concepts are put into practice and aligned with the broader research and teaching context. The central

part of the organizational map highlights essential points in the construction process, addressing different theoretical-methodological layers (on the left side) and aspects related to alignment and development context (on the right side).

Figure 2: Organizational map to guide the development of an educational process or product, considering the three axes of NP design and their respective layers.

Source: Developed by the authors (2024)

Based on the reflections of Rizzatti *et al.* (2020), Rôças *et al.* (2020), Freitas (2021), and Mendonça *et al.* (2022)—indeed, we have "remixed" these sources—as well as the author's accumulated experiences, the organizational map was structured around three main axes that directly relate to the reflections provided by the reflection map: (1) What does the EP contain? (2) Where is the EP situated? (3) What research will be developed? These three central axes are interdependent and present intersections that highlight the importance of articulating theory, methodology, content, context, and professional practice. The EP emerges precisely at the intersection of these three axes, demonstrating how these elements connect and influence each

other, and it is in this intersection, with an integrated and holistic approach, that the EP is consolidated.

Axis 1 – What Does the EP Contain?

The first axis explores content, dividing it into specific categories that guide the construction of the various layers that make up an EP. The first layer, thematic-conceptual, correlates with the conceptual and thematic foundations that support the EP. Defining the primary and secondary themes is essential to maintain focus and coherence, aligning the EP with its relevant field of study. This layer aligns with the Semantic Dimension / Conceptual Axis by ensuring clarity and cohesion of the concepts used, as well as the theoretical frameworks applied.

The second layer relates to theoretical-methodological support, which is foundational to the development of an EP in a master's or doctoral research context. This layer bridges theory and practice, as it must consider which methodological approaches will address both the research and pedagogical (teaching) objectives of the EP—an essential aspect, as this was identified as a weakness in the early stages of professional education programs. At this moment there is a need to reflect on two distinct sets of objectives: the research objectives and their relationships with the methodological stages of data collection and analysis; and the objectives of the PE with a focus on teaching, more pedagogical. This layer aligns with the Pragmatic Dimension / Didactic-Pedagogical Axis by establishing a connection between the EP content and its applicability within the professional teaching practice.

The third layer covers aspects related to the EP's communicative function, focusing on format, language, and communication channel choices. The EP can be materialized in text, image, audio, video, or a combination thereof, and may assume different types by the guidelines of the Teaching Area. These choices must reflect the pedagogical intent and accessibility to the target audience, considering a more complex, modern communication model. Beyond the outdated sender-message-receiver model, an interactive, dynamic process is considered, where the roles of sender and receiver are more flexible and often alternate within a decentralized, participatory communication circuit, which is more fluid and less hierarchical. In this communication model, all parties can contribute to and influence messages, especially

the receiver (the imagined user of the EP). This layer aligns with the Syntactic Dimension / Communicational Axis, ensuring that the chosen language is consistent with both communication and teaching objectives. Here, we draw on Ellsworth's (2001) concept of "addressing" in education, asking: Who does the EP think its users are? Who does the EP want its users to be? Even though there are many possibilities for who these target users may be, they are never entirely or exclusively who the creators imagine, and similarly, the EP is not exactly what it thinks it is. Thus, addressing becomes significant in this layer, as it is a concept often overlooked due to an illusory belief in a supposed universality of the EP that does not consider the context and specifics of the interlocutors.

The fourth and final layer relates to the design and composition of the EP, including material type, access methods, and visual elements. This is the aesthetic and functional aspect of the EP, considering how it will be visually presented and how users will interact with it. This has become more common for EPs at the professional doctorate level due to extended time spent in the research field. In these cases, a dilemma arises regarding how this EP will be materialized and made available, for example, in the hosting institution's repository or even in EduCapes. Our approach has been to reflect on what we want to share from the EP: Which stages should be replicated? Which results should be disclosed? This reflection is necessary because the materiality of the EP does not always coincide with its dissemination. If the EP, for instance, is a book, audio, or video, dissemination may align with its material form; however, if the EP is an event or a science club, there may be a need to materialize something for dissemination. This need is generally overlooked in the first case, although it is possible to disseminate an alternative to the EP's material form, such as a video being disseminated via a book that documents the findings of its display, or a book being shared through a podcast episode that discusses its content. There are many possibilities, provided they relate to the master's or doctoral research and meet the guidelines of Area 46 – Teaching. Furthermore, dissemination should reach various segments of society, especially spaces where graduates are active, using different media formats and science communication methods.

Axis 2 – Where is the EP Situated?

The second axis covers aspects of the insertion of the NP in the academic and professional context, as well as the proposed objectives. Firstly, we have the Reflection layer, which refers to an analysis of the research and NP issues, which must be connected both to the professional practice of the postgraduate student to have academic and personal relevance in their development, and to the state of knowledge, essential to identify gaps in the topic and the EP already prepared.

The second layer is justification and adherence. Research and NP need to be contained within Area 46 – Teaching scope, avoiding overlap with themes of education, public health, sociology and other fields of knowledge. It is necessary to always reinforce and not lose sight of the fact that our research must be about the "Teaching of", and not take teaching as contextual only – the object of research must reside in teaching. For example: research on the development of a repository for textual educational materials that brings theoretical-methodological references from computing and librarianship explicitly does not have an object limited to the field of "Teaching"; differently from research in which one seeks to understand how students learn or how teachers teach using a repository of textual educational materials based on theoretical-methodological teaching references. Once this distinction is understood, we investigate the relationship between the EP and the PPG's area of concentration and research line to ensure its adherence to the program in which it was developed.

The third layer, methodological instruments, relates the application of the EP, which must occur in the real context of professional practice. In the case of the professional master's degree, this application is more simplified and aims at minimal analysis to identify whether the proposed EP has the potential to meet the initial demands. It must also provide for an evaluation of the research subjects and go through a validation instance, the final defense panel. For research that is the result of a professional doctorate, it is essential that this EP has prolonged exposure to the time and setting of the research. In this way, the EP can be applied and replicated, evaluated and validated in a real practice context. Here it is important to highlight that one instance of validation must be carried out within the scope of the research development and the other by the final defense panel of the Thesis.

The fourth and final layer refers and reinforces the connection EP's to its social role, which considers the context in which it is situated and its contribution to democratizing education and promoting social change. In other words, the EP should

go beyond its academic purpose, reflecting its practical impact and fostering concrete changes in terms of democratizing education and driving social transformation.

Axis 3 – What Research Will Be Developed?

The third axis centers on the research to be developed, continually underscoring that the EPs created within the graduate programs (PPGs) of Area 46 – Teaching are rooted in academic research responding to demands from the professional practice context of graduate students. These reflections ensure that the EP is not a theoretical exercise in isolation but rather grounded in concrete practical experiences that reflect the educational environment. This demonstrates that its development is part of a larger research project aimed at contributing to the academic formation of the professional researcher and advancing pedagogical practices.

The design of the ADEP, with two components—a reflection map (Figure 1) and an organizational map (Figure 2)—arose from the need to structure EP development by considering both theoretical and practical elements, anchoring it in reflections derived from the graduate student's professional role and distancing it from a merely technical perspective.

Different examples of application include, for instance, the development of an EP geared toward the ongoing training of mathematics teachers, where the identified issue involves challenges in integrating digital technologies in teaching. By defining the primary theme—digital technology integration—and secondary themes—assessment methods and collaborative practices—the researcher can determine the theoretical-methodological support and the best strategies for languages and communication channels (e.g., video lessons, interactive platforms). This approach ensures that the EP has a real impact and is accessible to the target audience. Thus, Figure 2 complements Figure 1, providing a holistic view of EP development, integrating theory, practice, and critical reflection. Together, these figures form the ADEP, intended as a tool for both planning and executing research, serving as a foundation for creating EPs that address contemporary demands in the teaching and learning field.

And Here We Are

Producing a dissertation or thesis is a significant academic and cognitive exercise: how does one develop something with scientific and social relevance that goes beyond its creator? Added to this, within the Teaching Area, is the requirement for an EP associated with the research, maintaining academic rigor and alignment with the graduate program's mission. The EP must adopt accessible language and format for those who, at least at that moment, may not be part of the academic world. This is a considerable challenge and one of the key differences between a dissertation or thesis and an EP: the intended audience of each.

In this sense, the EP should not be seen as a simple appendix to the monographic text represented by the master's dissertation or doctoral thesis, but as a concrete response to motivating questions that arise from reflection, self-critique, and the inquiries that the graduate student has encountered or previously encountered in their teaching practice, which then transform into their research problem.

The EP must serve as a clear, cohesive, and objective resource that supports not only the student's professional practice within the "Teaching of" field but also the practices of colleagues by offering distinct approaches that enhance the relevance of scientific content and establish connections with students' everyday lives. The EP seeks to add social meaning to the teaching experience, striving fundamentally to connect the human element to the educational process and restore teachers' centrality in this process. We must not lose sight of the fact that the goal of professional graduate programs is to reflect on day-to-day practice and solutions to the issues impacting it. Therefore, the EP should be the result of a study grounded in theoretical references that guide the didactic-pedagogical objectives shaping its design. In evaluating and analyzing it in light of teaching and research methodologies, and by consulting those who will use the material produced, essential aspects are respected, as the feedback should align with the expectations set by the research question that originated its construction.

Thus, in this article, our basic premise is not to prescribe a path to be followed to the letter, as we respect the diversity of the 92 professional PPGs with their 110 courses (91 master's and 19 doctoral programs) in Area 46 – Teaching. A variety of EPs may be proposed, even considering regional differences, but we hope this reading illuminates other possibilities for evaluating and analyzing EPs from different perspectives.

We emphasize that the dynamism and constant evolution of knowledge, akin to the loops of a roller coaster following a steep drop, prevent us from claiming that the ADEP proposal presented here is definitive and final. Quite the contrary; it is from this device that we expect perspectives on EPs to continually broaden and redefine paths and strategies. Knowledge is built and consolidated through change based on critical reflection and the exchange of views. Now, we hope to be remixed by other researchers in the Teaching Area who may present results from the application of the ADEP or even redesign Figures 1 and 2 in a new image remixing the ADEP's operationalization by those with greater design skills. Rewind us and remix us. We are at your disposal!

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