

REVISTA

DIÁLOGO EDUCACIONAL

periodicos.pucpr.br/dialogoeducacional



Metacognitive methodology in meta-formation with university students from Brazil and Portugal

Metodologia metacognitiva na metaformação com estudantes universitários do Brasil e de Portugal

Metodología metacognitiva en metaformación con estudiantes universitarios de Brasil y Portugal

Evelise Maria Labatut Portilho ^[a] 

Curitiba, PR, Brasil

Pontifícia Universidade Católica do Paraná (PUCPR)

Doris Beraldo ^[b] 

Curitiba, PR, Brasil

Pontifícia Universidade Católica do Paraná (PUCPR)

Giovani de Paula Batista ^[c] 

Curitiba, PR, Brasil

Pontifícia Universidade Católica do Paraná (PUCPR)

How to cite: PORTILHO, Evelise Maria Labatut; BERALDO, Doris; BATISTA, Giovani de Paula. Metacognitive methodology in meta-formation with university students from Brazil and Portugal. *Revista Diálogo Educacional*, Curitiba, PUCPRESS, v. 25, n. 87, p. 2347-2357, dez. 2025. <https://doi.org/10.7213/1981-416X.25.087.AO04EN>

^[a] PhD in Education (Universidade Complutense de Madrid), e-mail: eveliseportilho@gmail.com

^[b] PhD candidate in Education (PUC-PR), e-mail: dorisberaldo@gmail.com

^[c] PhD in Education (PUC-PR), e-mail: giovani.batista@escola.pr.gov.br

Abstract

This article presents the structure of the first phase of the Metaformation Program, developed in an online format for university students from Brazil and Portugal. The program aimed to promote the internationalization of metacognitive methodology within educational training contexts. Designed to foster metacognitive strategies, the Metaformation Program sought to enhance autonomy, social cooperation, and the understanding of human diversity. We describe the initial stage of the metaformation process, which consisted of seven weekly meetings held during the second semester of 2023, each lasting ninety minutes. The topics addressed were selected based on the lived realities of university students in both countries. The methodological approach encouraged students to engage in self-reflection, awareness, regulation, and transformation of their own learning processes. The results indicate that the metacognitive methodology offers opportunities for developing metacognitive strategies, guiding undergraduate students toward the process of learning how to learn.

Keywords: Metacognitive Methodology. Meta-formation. Internationalization. University Students.

Resumo

Este artigo apresenta a estrutura da primeira parte do programa de metaformação online desenvolvido para estudantes universitários do Brasil e de Portugal, cujo objetivo foi fomentar a internacionalização da metodologia metacognitiva em programas de formação. O programa foi elaborado para ajudar a desenvolver estratégias metacognitivas que promovam a ampliação da autonomia, a cooperação social e a compreensão da diversidade humana. Este estudo apresenta a primeira etapa do processo da metaformação, que abrangeu sete encontros semanais, durante o 2.º semestre de 2023, com duração de uma hora e meia cada, envolvendo temas escolhidos a partir da realidade dos estudantes universitários dos dois países. A escolha por esta metodologia visa provocar o olhar do estudante para si, na tomada de consciência, regulação e transformação do próprio processo de aprendizagem. Os resultados indicam que a metodologia metacognitiva oportuniza o desenvolvimento das estratégias metacognitivas, levando o estudante ao ato de aprender a aprender.

Palavras-chave: Metodología Metacognitiva. Metaformación. Internacionalización. Estudiantes Universitarios.

Resumen

Este artículo presenta la estructura de la primera fase del Programa de Metaformación, desarrollado en formato virtual para estudiantes universitarios de Brasil y Portugal. El programa tuvo como objetivo promover la internacionalización de la metodología metacognitiva en contextos de formación educativa. Diseñado para fomentar estrategias metacognitivas, el Programa de Metaformación buscó potenciar la autonomía, la cooperación social y la comprensión de la diversidad humana. Describimos la etapa inicial del proceso de metaformación, que consistió en siete reuniones semanales celebradas durante el segundo semestre de 2023, cada una con una duración de noventa minutos. Los temas abordados se seleccionaron con base en las realidades vividas por los estudiantes universitarios de ambos países. El enfoque metodológico animó a los estudiantes a participar en la autorreflexión, la conciencia, la regulación y la transformación de sus propios procesos de aprendizaje. Los resultados indican que la metodología metacognitiva ofrece oportunidades para el desarrollo de estrategias metacognitivas, guiando a los estudiantes de pregrado hacia el proceso de aprender a aprender..

Palabras clave: Metodología metacognitiva. Metaformación. Internacionalización. Estudiantes universitarios.

Introduction

This article discusses the structure of an online metaformation program developed for university students in Brazil and Portugal. The initiative began with a mobility agreement between a Brazilian and a Portuguese, which outlined the project titled *Intercultural Experience with University Students*. The program aimed to offer a training pathway for students enrolled in the Bachelor's Degree in Pedagogy (Brazil) and the Bachelor's Degree in Education (Portugal), focusing on the development of metacognitive strategies that strengthen autonomy, social cooperation, and an appreciation of human diversity.

In this text, we present the first stage of the metaformation process. This stage consisted of seven weekly meetings held during the second semester of 2023, each lasting ninety minutes. The themes explored across the gatherings were selected based on the everyday realities of university students in both countries.

The design of the sessions, as well as the techniques and instruments used, drew on the metacognitive research methodology developed by our research group *Grupo de Pesquisa Aprendizagem e Conhecimento da Prática Docente*. This methodology provides structured opportunities for participants to engage in awareness, self-regulation, and reflection, oriented toward transforming their own learning processes. Within continuing education programs, metacognitive methodology "promotes learning how to learn by encouraging awareness and regulation of cognitive activities, oriented toward the transformation of practice" (Portilho; Silva; Batista, 2023, p.4)

This process aligns with what we refer to as *metaformation*—a form of training that extends beyond the academic content traditionally addressed in undergraduate programs. It invites students to look inward, gaining insight into themselves through interaction with others (Portilho, 2025).

Over the course of the meetings, we encouraged the creation of an interactive network of students connected by a shared purpose of committed to joint tasks. The group met via Zoom, engaged in discussions through structured conversation networks, and completed weekly activities posted on Google Classroom.

The research guiding the program was informed by hermeneutic phenomenology and by the principles of metacognitive methodology. Its goal was to describe and interpret the data while considering the participants' intra- and intersubjective experiences as they strengthened their learning processes. In the field of Education, the metacognitive methodology proposed by research group (identification omitted) invites reflection on one's successes and limitations in planning, monitoring, and evaluating practices and interactions with peers.

From this perspective, our objective was to support the internationalization of the metacognitive research methodology within training programs.

Metacognitive methodology in the metaformation of university students

The Research Group (identification omitted) focuses on the study of human learning processes and the continuing education of teachers, students, and specialists in the field of Education. Throughout the development of training programs in different contexts, we observed the need to move away from the traditional model of professional development—a model that privileges the expert's monologic discourse through lectures or conventional courses, offering little or no space for participants to re-elaborate the information received and transform it into knowledge.

In this context, we turned deliberately to metacognition as the methodological foundation for a training approach aimed at fostering self-reflection through interaction with others. Metacognition serves as a key support for learning how to learn, strengthening an individual's ability to engage with their environment and to regulate and organize their cognitive processes (Portilho; Brojato, 2021). These abilities are essential for formulating strategies to navigate the complexities of contemporary educational settings.

The concept of metacognition adopted in this article is based on the model proposed by Mayor, Suengas, and Marques (1995). These authors conceive metacognitive activity as comprising two basic components that are common across epistemological models—awareness and self-regulation—and a third element they call autopoiesis. This perspective reinforces the importance of reflecting on the role of metacognition in school learning (Autor 1 [...], 2016;

Locatelli, 2014) and considering the possibility of teaching metacognitive strategies to students by integrating them into the school curriculum (Flavell; Miller; Miller, 1999; Duffy, 2005).

Flavell's (1976) definition of metacognition refers to an individual's knowledge of their own cognitive processes and products, as well as aspects related to them—for example, the properties of information that are relevant to learning. As he notes: "I engage in metacognition (metamemory, meta-learning, meta-attention, metalinguistic awareness, etc.) when I realize that I have more difficulty learning A than B; when I understand that I should check C a second time before accepting it as fact" (Flavell, 1976, p. 232).

In other words, metacognition is often present in our everyday attitudes. It supports awareness, regulation, and transformation of the learning process. How does this occur? When we pay attention to what we need to do, to the strategies we must use, and to the resources we possess, we evaluate and monitor the task itself and prepare to achieve better outcomes through our actions.

Unfortunately, academic training programs are still largely constrained by content-heavy curricula, rigid structures, and expository teaching methods that limit students' opportunities to reflect on what is being taught. Moving beyond this model is challenging. However, at a time when interest in pedagogical training is declining, it is essential to cultivate educators shaped by metacognitive experiences and to sustain public systems that invest in this approach to professional development.

The research process

In this study, we adopted hermeneutic phenomenology as our research method, understanding method as that which shapes the researcher's gaze toward the object of investigation. Within the field of Education, hermeneutic phenomenology offers a meaningful alternative for producing knowledge. It is an epistemological approach that examines contextual meanings, historicity, and the communicability of knowledge within Human Sciences. In educational research, it emerges as a way to apprehend the historical and linguistic dimensions necessary for understanding this area of knowledge (Souza, 2001; Roach, 2008; Alves; Rabelo; Souza, 2014).

The description of a revisited phenomenon—when an event is narrated or written—reveals basic principles and meanings that govern the intelligibility of lived experience. In hermeneutic interpretation, one acknowledges the historical conditions that shape all human understanding. For this reason, we consider phenomenological-hermeneutic thought to be closely aligned with the aims of this study.

This approach invites us to speak of the world not as fact, nor as the world "in itself," nor as something merely conceptualized, but rather as something lived (Almeida Junior, 1997). As Roach (2008, p. 203) affirms, "Human intentional consciousness and corporeality are the origin of the meanings of reality." Highlighting lived experience in the training processes we conduct continually prompts us to reflect on how to bring this method to life. It is from this reflection that we turn to metacognition and, through it, developed the methodology that guides our actions.

Once the methodological choice was established, we formulated the metacognitive methodology, which "[...] enables the construction of an attentive gaze—one that problematizes the visible reality and allows the depth necessary to understand and explain a given phenomenon, bearing in mind that it is in constant transformation" (Portilho; Silva; Batista, 2023, p.5). This methodological orientation informed every aspect of the research design, from the structure of the meetings and the selection of instruments to the research techniques employed. When individuals develop awareness and self-regulation, they gain the ability to examine the demands of what must be accomplished and relate them to the reality in which they are situated.

The context of this research was the first stage of the training program—metaformation—with university students enrolled in the Pedagogy program (Brazil) and the Bachelor's Degree in Education (Portugal). This phase comprised seven weekly meetings, each lasting 90 minutes, conducted through videoconferencing (Zoom). The tasks assigned between meetings were completed and submitted through Google Classroom.

Sixteen students participated in the study: nine from Brazil (Pedagogy) and seven from Portugal (Education), fifteen women and one man. All Brazilian participants were first-degree students, while the Portuguese students were already in the workforce, most of them in the field of Education.

The instruments used for this article included individual interviews conducted while the meetings were still in progress, and metacognitive evaluation questionnaires applied after each session. These instruments allowed us to describe and interpret the data in accordance with hermeneutic phenomenology.

For data interpretation, based on Minayo (2014), we developed analytical categories from the responses collected through the research instruments: awareness, self-regulation, and autopoiesis.

This research was approved by the Research Ethics Committee (CEP) for studies involving human participants at the Brazilian university (CAAE: 60949522.7.0000.0020).

The metaformation process

The development of the metaformation program was guided by metacognition as its central theoretical and methodological reference. This formative process took place over a year and a half and included biweekly meetings of the research group.

As a result of this collective work, we structured the program into four stages: (1) online meetings; (2) mentoring sessions; (3) feedback sessions; and (4) a scientific event featuring project presentations and the publication of a book. We also defined the number of meetings, the themes addressed in each one, the digital platforms to be used throughout the program, and the organization of the work teams formed by the researchers.

After designing the content and flow of each meeting, the researchers themselves participated in the entire training process. This allowed us to identify necessary adjustments in implementation and to refine the instruments and techniques to be used with the students.

Before beginning the first stage—the online meetings—students completed a questionnaire created in Google Forms with the aim of collecting demographic information and identifying the group's profile.

The first stage of the program (the focus of this article) consisted of seven weekly meetings conducted online using Zoom. All sessions were recorded and lasted ninety minutes. Following the metacognitive methodology previously developed by the research group (Portilho; Medina, 2021; Portilho; Silva; Batista, 2023), each meeting included:

- a prompt or activating technique designed to engage the group and introduce the day's theme;
- a theoretical presentation of the topic;
- a conversation network, during which participants reflected collectively on what had been experienced, heard, and discussed;
- the assignment of a task to be completed during the week; and
- completion of the metacognitive evaluation questionnaire (Portilho; Brojato, 2021; Portilho; Parolin; Babosa, 2021).

The metacognitive evaluation questionnaire consists of 15 learning situations to which students respond using a Likert-type scale. This scale, widely used in research, presents a sequence of statements accompanied by graded response options from which participants choose the one that best reflects their experience. In this project, the instrument used a four-point scale ranging from "never" to "always." For each situation, we analyzed the cognitive and metacognitive strategies indicated in the students' responses.

Near the conclusion of the training meetings, participants took part in an individual interview consisting of 12 questions previously developed by the research group. The interview allowed participants to reflect on their learning processes in relation to the objectives of the program.

A look at metaformation within the internationalization experience

To address the objective of this article—to promote the internationalization of the metacognitive methodology within training programs—we analyzed data extracted from five interview questions and from the metacognitive evaluation forms completed by the students. The analysis focused on three metacognitive categories: awareness, self-regulation, and autopoiesis.

The category awareness relates to the knowledge individuals have about themselves as learners, as well as their understanding of the task to be performed and the different ways in which they can approach problem-solving (Portilho, 2024).

In response to interview question 3 — “How did you feel during the training?” — students expressed forms of awareness in the way reflected on themselves and their positive connection with the program:

P3 — “Overall, I felt good, enthusiastic, motivated. I really enjoy this cultural exchange, this sharing of ideas and information, so it was very enriching for me.”

P5 — “I felt very good. It was something new, I didn’t know how it would happen, I had never done anything like it, but I felt very good in the meetings.”

P6 — “I felt very good during the training. Before signing up, I was curious because it involved people from another country. This interaction was really interesting.”

P9 — “I felt very good. I really liked this initiative. When we enter college, we imagine we will only study what’s right in front of us.”

These statements show that participants felt positively about the metaformation process. Such emotional engagement encourages students to commit to their own learning, becoming more inclined to think critically, investigate, and analyze the situations presented throughout the program.

The type of feeling experienced during a training program can influence how deeply a participant engages with proposed activities and themes, shaping both awareness and the regulation of their learning process. This aligns with Damásio (2022), who argues that feelings—whether positive or negative—act as motivational signals that shape subsequent actions. In this sense, the comfort expressed by the participants facilitated interaction, reflection, and engagement with issues related to pedagogical practice.

In response to interview question 4 — *“How would you describe your experience of interacting with the group during this training?”* — participants highlighted how the composition of the group and the structure of the metaformation program enabled meaningful interaction and exchange:

P7 — “I think it has been productive, in the sense that no one is repetitive; there is always a new point, something different to add to every theme. We keep discovering things and speaking in a much more practical way, not only through concepts.”

P9 — “It has been good. Last week we worked in groups, and everything went smoothly. It has been good, without any specific problems.”

P11 — “It has been good. I got along well, managed to talk, and we were able to coordinate things together.”

P12 — “It has been very good, really! I didn’t think it would be so incredible to see the other side of the world and understand how people in Portugal are. I found it amazing.”

These reports demonstrate that the metaformation experience supported interaction among people from different backgrounds, allowing participants to broaden their understanding of the challenges faced in their respective contexts. This was possible because the program’s structure placed learners at the center of the process, offering opportunities to reflect on *what, how, when, and where* they learn (Portilho; Medina, 2016, p. 236).

Question 5 — *“Are there any particular aspects of having a group composed of students from both Brazil and Portugal that you would highlight?”* — revealed students’ awareness of shared challenges between the two educational systems:

P9 — “Education here in Brazil is very different from there. It was interesting both for us and for them.”

P2 — “Brazil and Portugal have a historical connection, so customs and challenges end up being similar in many ways.”

P4 — “We saw that Brazil is very similar to us. We realized what is really important. We also have problems.”

P6 — “We tend to think Portugal is perfect, but then we see that things there are not that good either.”

The recognition of shared difficulties allowed students to construct new meanings collectively. By understanding that both countries face similar struggles, participants strengthened their ability to collaborate, exchange experiences, and visualize concrete actions that could improve teaching and learning processes (Portilho; Silva; Batista, 2023).

Interview question 9 — *“How would you describe your own learning process?”* — generated responses that clearly demonstrate metacognitive awareness:

P1 — “I always try to learn autonomously (...) I've always been ‘self-taught.’ I like reading and figuring things out on my own.”

P6 — “I think my learning process is quite smooth; I can learn things easily and quickly.”

P9 — “I learn much more through interaction with others. For example, I wouldn't take an online degree because I need that exchange in the classroom. I need to sit at a table and discuss things with other people.”

P11 — “I learn a lot by writing, listening, and interacting. When we talk, sometimes someone writes down something we didn't.”

P05 — “I learn a lot by writing, and I like listening and debating. I think that's how I learn best — writing, listening, and debating.”

P12 — “I need to write a lot. (...) I learn best through participation and dynamics.”

Awareness of one's own learning process is essential for determining *how* to approach tasks and *when* to apply specific strategies. As Corrêa, Passos and Arruda (2018) emphasize, students must evaluate the demands of the task, consider personal factors, and decide how to proceed — a decision deeply linked to the interaction between person and task variables.

Interview question 10 — *“At any point during this training, did you notice the need to review the strategies you use in your learning process? If so, when?”* — invited students to reflect on specific moments of awareness:

P3 — “If I did, it was very unconscious.”

P4 — “Yes (...) at the beginning of the session, when teachers or others explained and gathered the ideas from the weekly tasks, it made me think more deeply about the topic and want to learn more.”

P5 — “I think it happened during the conversation circle, when someone is speaking and you suddenly catch yourself reflecting.”

P12 — “No.”

P13 — “When answering the metacognitive evaluations, they made me think about the teaching–learning process and how the strategies we used helped me. (...) I reflected on my participation and how I could improve it.”

These reflections align with Brown (1987), who notes that awareness involves knowing *when* one knows, *what* one knows, *what* one needs to know, and the usefulness of the strategies employed. In the participants' statements, we observe this self-examination emerging in different ways — sometimes explicitly, sometimes intuitively.

The category of self-regulation encompasses awareness of one's own cognitive functioning and enables individuals to plan and organize themselves before beginning an activity, make necessary adjustments during the task, monitor each step taken, and evaluate themselves, the task, and the strategies employed when reviewing the different stages of learning (Portilho, 2024, p. 119).

This category emerged in responses to question three, in which participants described how they felt throughout the metaformation process:

P13 — “In the first meetings, I think I felt a bit... maybe apprehensive. (...) But as the sessions went on, I began to feel more comfortable. (...), more confident as well in participating in the discussions. I also thought the themes were very relevant, which made me reflect a lot on the process... on my own teaching–learning process, I think that's about it.”

P14 — “For me it was a bit challenging because I was quite afraid of speaking, and I noticed that with each meeting I feel more at ease to speak and express myself better. I feel that it hasn’t been only about learning new information, but something more personal—a kind of overcoming these issues.”

The capacity for self-regulation or learning monitoring allows individuals to adapt to new conditions, contexts, or unforeseen situations that arise in a new learning process. In this study, the metaformation program enabled learners P13 and P14 to engage in self-evaluation and adjust the ways they contributed to the group as the discussions unfolded.

When discussing the benefits of self-regulation in teaching and learning, Fabri et al. (2022, p. 3) emphasize that it “is not an innate characteristic of the individual but rather a skill developed over the course of life through experiences, guidance from others, and influences from the environment in which the person is inserted.”

Evidence of self-regulation during the metaformation process also appears when P13 describes their own learning process in response to question nine, as shown below:

P13 — “During our meetings, I came to understand that there are other ways of learning that can sometimes be more promising than simply listening and taking notes. For me, it became very clear that experimenting with new approaches matters. I know I learn in certain ways, but there are many other possibilities, and if I explore them, I can enhance my learning process even further.”

Recognizing and self-regulating the most effective strategies opens paths for learners to identify their strengths and the areas that require improvement when faced with a range of possibilities. In other words, it allows them to examine past and potential future actions in their own practice, recognizing characteristics, resources, procedures, and strategies that have led to more satisfactory outcomes.

When responding to the question about the need to revisit their own strategies during the metaformation process, participants also opened paths for self-regulating their learning, as illustrated in the statements of P1 and P6, who mentioned having the opportunity to reflect on how they learn.

P1 — “I thought it was very valuable to learn by expressing myself and sharing what I think about a topic. I believe this is an enriching way of learning. It is as if you become the teacher of that topic and help others think in the way you think.”

P6 — “The possibility of revisiting content—because sometimes we learn something and set it aside—and the habit of revisiting is something I found very interesting. I actually started using it afterwards, since it was something I reviewed and incorporated into my life.”

These responses reflect self-regulation, understood as “the act of observing one’s own monitoring process, enabling relevant changes in strategies when those previously applied are not effective for understanding the activity” (Fabri et al., 2022, p. 6).

Autopoiesis, in turn, recognizes one’s limitations and demonstrates an openness that contributes to the continuity of the metacognitive process toward transformation rather than mere maintenance of behaviors. This shift during the metaformation program was also evident in participants’ statements about their learning process:

P3 — “I think my learning process became evolutionary. If I consider who I was in workshop 1 and what I know now, there has been continuous progress. So, I believe it was a continuous process and that it will continue.”

P8 — “Realizing that I need to do things autonomously, without someone beside me telling me exactly what to do, is something that changed my learning process.”

The statements of P3 and P8 show that the metaformation program fostered not only awareness and self-regulation but also the development of autopoiesis. Through autopoiesis, individuals engaged in metacognitive activity become aware of and able to regulate themselves and, going beyond awareness and control, are capable of transforming their own learning processes. This movement is central to the metacognitive phenomenon, as evidenced by the openness, adaptation, and regulation promoted by the metaformative experience.

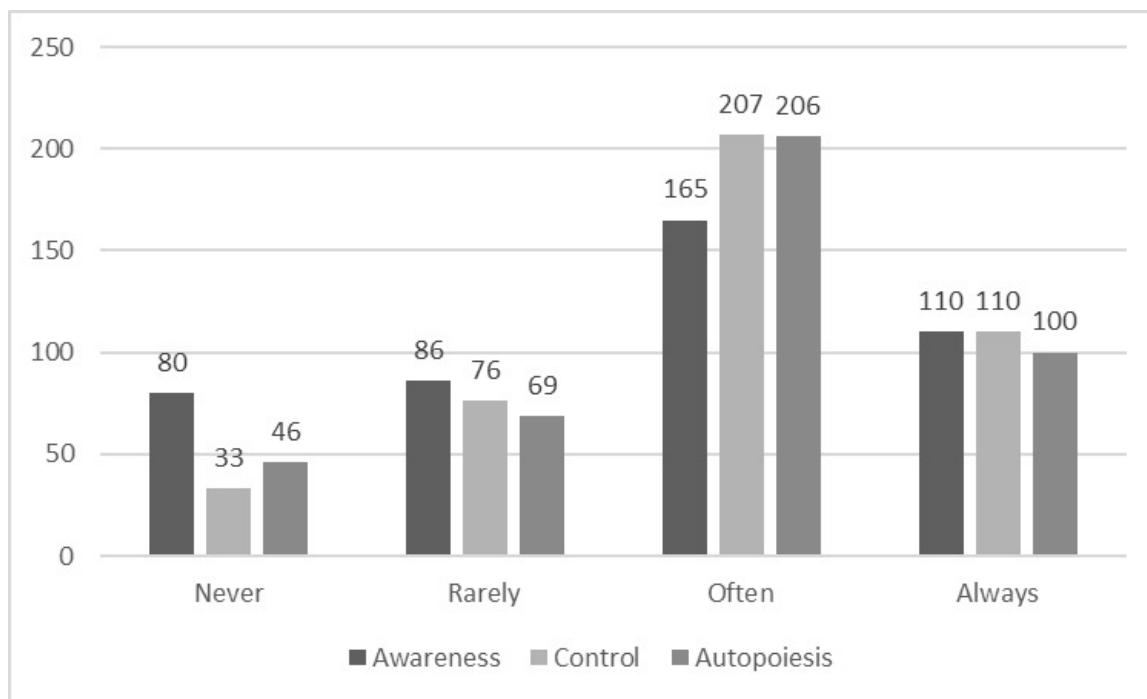
In interpreting the responses, we observed that the metacognitive methodology generated moments of awareness in 24 excerpts, self-regulation in three excerpts, and autopoiesis less frequently, appearing in two excerpts. This distribution is expected, as metacognition is a process in which each stage depends on the development of the previous one.

The second instrument analyzed—the metacognitive assessment questionnaire—enabled interpretations of how students perceived and evaluated their cognitive and metacognitive processes throughout the program.

Ao analisar as respostas, percebemos uma alteração na incidência das estratégias metacognitivas, quando comparamos aos resultados dos dados coletados na entrevista.

When analyzing the responses, we observed a shift in the incidence of metacognitive strategies compared with the interview data. These data were presented by Portilho *et al.* (2025, p. 36) and show the sum of students' responses across all administrations of the metacognitive assessment, based on their Likert-scale ratings and categorized by metacognitive strategy.

Figure 1 – Total student responses, categorized by metacognitive strategy



Fonte: Autor 1 *et al.* (2025).

We observed that the strategies of **autopoiesis** and **self-control** were predominant in the students' responses in the "often" and "always" options on the Likert scale. The control strategy received the highest number of responses (317), followed by autopoiesis (306) and awareness (275). It is noteworthy that awareness received the lowest number of responses, even though the development of this strategy is essential for the others. This result shows that, overall, the group tended to rate themselves more positively on statements related to self-control and autopoiesis than on those related to awareness.

This effect aligns with the findings of Brojato (2021), who analyzed responses to metacognitive assessments applied in a continuing education program for school pedagogues. In his analyses, awareness also had a lower index compared to the other strategies. Because this is a self-assessment instrument, these responses suggest that, when reflecting on their own learning processes, participants may hesitate to identify their limitations and possibilities—revealing how challenging it is to examine the ways we position ourselves in learning situations that demand different attitudes.

When comparing these data with those from the metacognitive evaluation questionnaire, we notice that students describe the process as transformative. Yet their statements indicate that they attribute this transformation to the moment they begin to perceive or become aware of the process. This feeling, though perceived by the student as transformative, often corresponds only to the first step. This reinforces the need to promote teaching and learning processes that foster self-regulation and transformation so that moments of awareness can truly take place—effectively contributing to students' development.

Final remarks

Analyzing the data in light of this article's objective—promoting the internationalization of the metacognitive methodology in training programs—we observed that by acknowledging the participants' diverse realities, experiences, educational backgrounds, contexts, and ages, the research enabled the implementation of the metaformation process grounded in the originality of the metacognitive methodology.

In addition, we found that this training model for university students fosters the development of metacognitive strategies, as its proposed dynamics allow participants to become aware of, regulate, and transform their own learning processes. Metacognition, like learning itself, is procedural; therefore, it depends on learning environments that facilitate experiences capable of promoting “learning to learn,” thinking about one's thinking, and knowing about one's knowing.

We also highlight the importance of teacher education, in which these concepts must be introduced, activated, and experienced through courses, classes, and assessments that genuinely stimulate learning. By fostering interaction among participants, encouraging self- and other-awareness, and enabling reflection on shared challenges, training programs can construct learning situations that mobilize attitudes conducive to transformation. As Nóvoa (1992) emphasizes, “Teacher education is not reduced to a set of knowledges; it involves a process of constructing personal and professional identity.”

Another point to consider is that, although online training enables encounters among participants from distinct realities, these encounters tend to remain at the level of representations rather than concrete knowledge. As a result, they may not fully meet participants' need to understand, in depth, the lived reality of the group and of each individual.

We propose that new metacognitive instruments be developed to expand data collection on the observed and interpreted phenomenon.

Overall, the results indicate that the metacognitive methodology can be experienced by different groups of students, professionals, and contexts, as it fosters a movement of self-recognition toward the other, expanding one's own knowledge through encounters with diverse scenarios.

References

ALMEIDA JUNIOR, J. B. *Imagem e conhecimento: análise das concepções representacionista e fenomenológica e suas implicações na educação*. Tese (Doutorado em Educação) — Universidade Estadual de Campinas, Campinas, 1997.

ALVES, P. C; RABELO, M. C.; SOUZA, I. M. Hermenêutica-fenomenológica e compreensão nas ciências sociais. *Sociedade e Estado*, v. 29, p. 181-198, 2014.

BROWN, A. L. Metacognition, Executive Control, Self-Regulation, and Other More Mysterious Mechanisms. In: WEINERT, F.; KLUWE, R. (eds.). *Metacognition, Motivation and Understanding*. Hillsdale: LEA, 1987.

BROJATO, H. C. *Metacognição e formação continuada de pedagogos escolares*. Tese de Doutorado. Dissertação (Mestrado em Educação) — Programa de Pós-Graduação em Educação, Pontifícia Universidade Católica do Paraná, Curitiba, 2021.

CORREA, N. N. G.; PASSOS, M. M.; ARRUDA, S. M. Metacognição e as relações com o saber. *Ciênc. Educ.*, Bauru, v. 24, n. 2, p. 517-534, 2018.

DAMÁSIO, A. *Sentir e saber: as origens da consciência*. São Paulo: Companhia das Letras, 2022.

DUFFY, G. G. Developing metacognitive teachers: visioning and the expert's changing role in teacher education and professional development. In: ISRAEL, S. E. et al. (eds.). *Metacognition in literacy learning: theory, assessment, instruction, and professional development*. Mahwah: Lawrence Erlbaum, 2005. p. 299-314.

FABRI, N. B.; et al. Autorregulação, estratégias de aprendizagem e compreensão de leitura no Ensino Fundamental I. *Revista Brasileira de Educação*, v. 27, p. e270068, 2022.

FLAVELL, J. H. Metacognitive aspects of problem solving. In: RESNICK, L. B. (Ed.). *The nature of intelligence*. Hillsdale, N.J.: Erlbaum, 1976. p. 231-235.

FLAVELL, J. H.; MILLER, H. P.; MILLER, S. A. *Desenvolvimento cognitivo*. Trad. Claudia Dornelles. Porto Alegre: Artmed, 1999.

GASQUE, K. C. G. D. Metacognição no processo de letramento informacional. *Revista Brasileira de Biblioteconomia e Documentação*, São Paulo, v. 13, n. especial, p.177-195, jan/jul, 2017.

LOCATELLI, S. W. *Tópicos de metacognição: para aprender e ensinar melhor*. Curitiba: Appris, 2014.

MAYOR, J.; SUENGAS, A.; MARQUES, J. G. *Estratégias metacognitivas: aprender a aprender y aprender a pensar*. Madrid: Síntesis, 1995.

MINAYO, M. C. S. *O desafio do conhecimento: pesquisa qualitativa em saúde*. São Paulo: Hucitex, 2014.

NÓVOA, A. *Os professores e a sua formação*. Lisboa: Publicações Dom Quixote, 1992.

PORTELHO, E. M. L.; MEDINA, G. B. K. Metacognition as Methodology for Continuing Education of Teachers. *Educação Criativa*, v. 7, n.1, p.1-12, 2016.

PORTELHO, E. M. L.; BROJATO, H. C. Metacognição e Ensino Superior: o estado do conhecimento de 2016 a 2020. *Linhas Críticas*, v. 27, p. 1-22, 2021.

PORTELHO, E. M. L.; PAROLIN, I. C. H.; BARBOSA, L. M. S. Formação continuada de pedagogos escolares: o significado de grupo e comunicação na prática pedagógica. *Roteiro*, Joaçaba, v. 46, p. 1-17, 2021.

PORTELHO, E. M. L.; SILVA, C. S. R. da; BATISTA, G. de P. A metacognição como metodologia de pesquisa na formação de estudantes e profissionais da educação. *Revista Espaço Pedagógico*, Passo Fundo, v. 30, p. 14912, 2023.

PORTELHO, E. *Como se aprende? Estratégias, estilo e metacognição*. 3 ed. Rio de Janeiro: Wak Ed, 2024.

PORTELHO, E. (org.). *Aprendizagens entre redes: A metaformação em pesquisa*. Curitiba: CRV, 2025.

ROACH, E. F. F. Abordagem fenomenológico-hermenêutica e pesquisa em educação: um estudo de vigilância epistemológica. *Educação Temática Digital*, Campinas, v.10, n. 1, p.198-226, 2008.

SOUZA, Osmar de. Abordagens fenomenológico-hermenêuticas em pesquisas educacionais. *Revista Contrapontos*, v. 1, n. 1, p. 31-38, 2001.

Editor Responsável: Alboni Marisa Dudeque Pianovski Vieira

Recebido/Received: 30.06.2025 / 06.30.2025

Aprovado/Approved: 10.11.2025 / 11.10.2025