THE SOCIAL REPRESENTATIONS OF PEDAGOGICAL INNOVATION IN TEACHER TRAINING: PRACTICES, KNOWLEDGE AND RESOURCES

AS REPRESENTAÇÕES SOCIAIS DE INOVAÇÃO PEDAGÓGICA NA FORMAÇÃO DE PROFESSORES: PRÁTICAS, SABERES E RECURSOS

LAS REPRESENTACIONES SOCIALES DE LA INNOVACIÓN PEDAGÓGICA EN LA FORMACIÓN DOCENTE: PRÁCTICAS, CONOCIMIENTOS Y RECURSOS

Silvio Duarte DOMINGOS[1]
e-mail: silvio.duartte@gmail.com

Edna Maria Querido de Oliveira CHAMON[2]
e-mail: edna.chamon@gmail.com

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[1] Estácio de Sá University (UNESA), Petrópolis – RJ – Brazil. Researcher and Full Professor 3. Post-Doctoral Student in Public Policy (UFRJ).
[2] Estácio de Sá University (UNESA), Petrópolis – RJ – Brazil. Permanent Professor. Post-Doctorate in Education (UNICAMP).

ABSTRACT: Research on teacher training and work says that teachers have not been prepared for the complex contemporary professional context that has been transforming schools. It is suggested that this is due to traditional teacher training. To meet these demands, pedagogical innovation is recommended. Thus, the objective was to explain the social representations that undergraduate professors in Pedagogy elaborate on pedagogical innovation. For this, qualitative research was implemented, with 23 trainers being interviewed. The collected material was treated with the support of the IRaMuTeQ program and subsequently subjected to thematic content analysis. The results indicate that there is a change in representations, on the one hand, when referring to the Basic School, they are intended for "use of resources", and on the other hand, when, referring to work in graduation, they are objectified in "technologies", "active methodologies" and "pedagogical improvement". It is concluded that these representations referring to Higher Education are anchored in the historical framework of Brazilian Education.

KEYWORDS: Theory of Social Representations. Teacher training. Pedagogical innovation.

RESUMO: *As pesquisas sobre formação e trabalho docentes dizem que os professores não têm sido preparados para o complexo contexto profissional contemporâneo que vem transformando a escola. Sugere-se que isso se deve a uma formação de professores tradicional. Para fazer frente a essas demandas, é indicada a inovação pedagógica. Assim, o objetivo foi explicar as representações sociais que professores da graduação em Pedagogia elaboram sobre inovação pedagógica. Para isso, implementou-se uma pesquisa qualitativa, tendo sido entrevistados 23 formadores. O material coletado foi tratado com o apoio do programa IRaMuTeQ e, posteriormente, submetido à análise temática de conteúdo. Os resultados indicam que há uma mudança nas representações: por um lado, quando referidas à Escola Básica, tencionam-se para "emprego de recursos"; por outro lado, quando referidas ao trabalho na graduação, objetivam-se em "tecnologias", "metodologias ativas" e "melhoria pedagógica". Conclui-se que essas representações referentes à Formação Superior se ancoram no quadro histórico da Educação Brasileira.*

PALAVRAS-CHAVE: *Teoria das Representações Sociais. Formação docente. Inovação pedagógica.*

RESUMEN *Las investigaciones sobre formación y trabajo docente afirman que los docentes no han sido preparados para el complejo contexto profesional contemporáneo que ha ido transformando las escuelas. Se sugiere que esto se debe a la formación docente tradicional. Para satisfacer estas demandas, se indica la innovación pedagógica. Así, el objetivo fue explicar las representaciones sociales que los profesores de licenciatura en Pedagogía elaboran sobre la innovación pedagógica. Para ello, se implementó una investigación cualitativa, siendo entrevistados 23 formadores. El material recolectado fue tratado con el apoyo del programa IRaMuTeQ y posteriormente sometido a análisis de contenido temático. Los resultados indican que hay un cambio en las representaciones, por un lado, al referirse a la Escuela Básica, se pretenden "aprovechamiento de recursos", y, por otro lado, cuando, al referirse al trabajo en la graduación, se objetivan en "tecnologías", "metodologías activas" y "mejora pedagógica". Se concluye que estas representaciones referentes a la Educación Superior están ancladas en el marco histórico de la Educación Brasileña.*

PALABRAS CLAVE: *Teoría de las Representaciones Sociales. Formación docente. Innovación pedagógica.*

Introduction

Researchers who have been problematizing the relationship between training and teaching work for decades keep up to date, in reference to new challenges (LÜDKE; IVENICKI, 2022; CANDAU, 2020; REIS; ANDRE; PASSOS, 2020; NÓVOA, 2019). Thus, they contribute to the understanding of the obstacles imposed by contemporaneity to teacher education.

According to these researches, the training of Brazilian teachers has not prepared them for the professional reality that awaits them (LÜDKE; IVENICKI, 2022); therefore, there is a need for it to enable them to "[...] the current challenges of/in everyday school life" (CANDAU, 2020, p. 29, our translation). To meet this need, some issues deserve special attention, such as the increasing advance of digital information and communication technologies (TDICS) and the diversity of subjects in schools (CANDAU, 2020).

Considering that in the coming years "[...] we will see a complex metamorphosis of the school" (NÓVOA, 2019, p. 2, our translation), we demand a teacher training that can face these changes. Thus, it is recommended that educators be formed who can deconstruct what is standardized and uniformizing in school.

This uniformity is partly attributed to a traditional teacher training, which has not considered school demands since the last century as "[...] educational practices using new methodologies and support materials to improve this learning" (REIS; ANDRE; PASSOS, 2020, p. 40, our translation). Therefore, the authors demand a teacher training that considers the school and its capacity for innovation.

Teacher training, therefore, does not prepare them for the challenges that the complex contemporary society imposes on the school and its work (LÜDKE; IVENICKI, 2022; CANDAU, 2020; REIS; ANDRE; PASSOS, 2020; NÓVOA, 2019).

This is said to mention that the literature recommends pedagogical innovation in teacher education, in order to face a school that demands updating and adaptation to a complex social context (ANDRE, 2018; CANDAU, 2020; REIS; ANDRE; PASSOS, 2020; NÓVOA, 2019). "It is observed, therefore, that studies on policies and practices related to pedagogical innovation in higher education are emerging and object of special interest" (WAGNER; CUNHA, 2019a, p. 19, our translation).

In this regard, Veiga (2003) points out two different strands on pedagogical innovation. The first of these, regulatory, is based on the foundations of modern, positivist science, which does not admit other ways of knowing that they do not commune with their precepts. The

second, emancipatory, with a more qualitative aspect, has the potential to transform the school. This is because its validity criteria are the centrality and active participation of subjects directly impacted by innovative proposals (VEIGA, 2003).

Centralizing teacher trainers would be relevant, since, in direct contact with their undergraduate students, these professors prepare the future teacher for the Basic School. Moreover, in the formative spaces, they are the only ones that can move the knowledge of teaching, indispensable to link theory to practice (TARDIF, 2012). Nevertheless, they are irreplaceable in the initial and continued education of those who will work in Brazilian schools, for Gatti *et al.* (2019) there are few investigations into them. From this perspective, Gatti *et al.* (2019, p. 271, our translation) indicate that the most "[...] obscured in the discussions and research in the field of teacher education is the trainer". This fact determined the centralization of this study in the teacher-trainer of teachers in the Pedagogy course.

In this perspective, focusing on research on pedagogical innovation, investigations are urgently required about the subjectivity of education professionals (CAMPOLINA, 2012). This is because the attitudes and practices of individuals are guided by the social representations constructed by the social group to which they belong (MOSCOVICI, 2012).

Social representations are constructions of reality, theories of common sense, always elaborated and shared collectively in daily life, through communications between individuals (MOSCOVICI, 2012). These formulations occur at the psychosocial plane, as they are consensuses that govern life in society.

According to Jodelet (2001), these theories, formed by beliefs, values, opinions and attitudes, are relevant precisely because they support people to act on the world. The study of these representations allows us to understand what gives meaning to the actions of individuals.

In research on the social representations that professors of the undergraduate degree in Pedagogy elaborate on their own professional practice, Domingos and Costa (2022) identified that they see themselves as a model for the students who form. Therefore, the trainers have great responsibility, because the "[...] nature of his practice, eminently formative, underlines the way he accomplishes it. Its presence in the room is so exemplary" (FREIRE, 2015, p. 64, our translation). Therefore, the work of pedagogy teachers exemplifies how teaching should be done.

Based on these considerations, the question is: What representations about pedagogical innovation support the work of the teacher trainer? What actions are associated with these representations? What would explain such a distance between the training and the future

professional practice of teachers, regarding the work of the trainer? Thus, this research aims to investigate the social representations that undergraduate professors in Pedagogy build on pedagogical innovation.

The need to shed light on teacher trainers, given the relevance of their role and the little that has been investigated about them, would already justify this work (GATTI *et al*., 2019). However, it is also observed that: i) teacher education has not prepared them for contemporary school (CANDAU, 2020; REIS; ANDRE; PASSOS, 2020; NÓVOA, 2019); ii) pedagogical innovation in teacher training is relevant for this context (VEIGA, 2003; WAGNER; CUNHA, 2019a) and; iii) trainers represent, in their own practices, a model for the professionals they are preparing (DOMINGOS; COSTA, 2022).

If social representations are collective constructions of reality, (MOSCOVICI, 2012), then knowing and explaining these social representations can have significant relevance. Those who study teacher education and work will be more closely approached to an important angle that is still little investigated: the trainers and the conceptions they collectively build about their work. Teachers' trainers can provide a glimpse into the RS that guide their actions, which constitutes a platform for them to reflect on such RS and modify aspects of their work. Moreover, this work provides a theoretical-methodological approach to a possibly interesting reality, that of the formulation of public policies for the training of teacher trainers.

The theoretical-methodological contribution of the theory of social representations

The RS are, according to Jodelet (2001, p. 22, our translation), "[...] a form of knowledge, socially elaborated and shared, with a practical objective, and which contributes to the construction of a reality common to a social set". In the same direction, Moscovici (2012) understands the RS as theories of common sense that prepare the social subject for concrete practice.

Thus, the RS are born from the daily communications of the subjects. The representation, as a social construction of reality, provides the groups with a framework of information that will support them in taking positions, in relation to the most varied objects with which they will come across in everyday life. Therefore, for Moscovici (2012), the RS guide the behavior.

In this sense, Abric (1987, p. 64, our translation) explains that the RS provide a "[...] functional vision of the world that allows the individual or group to give meaning to their

conducts and understand reality through their own reference system, then adapt and define their place in this reality". Individuals, in their social groups, exchange information about the phenomena and, in this process, build the RS.

Synthetically, according to Jodelet (2001, p. 38, our translation), they are "[...] constituents of representation (information, images, beliefs, values, opinions, cultural, ideological elements, etc.)". Therefore, the RS are composed of symbolic elements, expressed by social communications and negotiated dialectically and rhetorically, intragroups and intergroups.

The research presented here is affiliated to the procedural approach developed by Denise Jodelet, because this aspect prioritizes the meanings conducted in communications.

TRS' procedural approach

Studies linked to the procedural perspective seek the processes that generate the RS, called objectification and anchorage. Objectification is a process that seeks to "establish" new notions, forming them, making them understandable and communicable. For Moscovici (2012), it is what makes a concept real. Through objectification abstract elements become concrete.

According to Moscovici (2012), the objectification process enables the materialization of a group ideation. In it, the elements of a representation are materialized in figurative words, images or schemes. Thus, objectification materializes the social phenomenon, so that it can be shared by people, through languages.

Objectification occurs in three phases: selective construction elects the elements that will make up the final image of the representation, depending on the psychosocial system of the group; the structuring scheme hierarchizes and concretizes the elements previously retained, producing a figurative scheme of thought; and, the naturalization of the representation allows the categorization and communication of the object represented by the group, which begins to make up its symbolic universe (JODELET, 2001).

In the objectification process, one can add, suppress or even distort attributes inherent to the object. Such effects may occur due to distortions in the group's cognition in relation to the object, repression of social norms, or even prejudices.

The anchorage process deals with the accommodation of a social object in a set of categories previously existing in the symbolic universe of a given social group. There is the support of a new knowledge in an order of preexisting knowledge. According to Jodelet (2001),

in this process, a meaning is attributed by the group to the object. Therefore, it becomes an instrument for the construction of reality. Therefore, it undergoes changes to suit, while changing the pre-existing system.

The study of these two generating processes should be done on communications materials, seeking the materialization of the properties attributed by the subject to the object (JODELET, 2001). They should also be considered references in the particular culture and history of social groups. Therefore, methodological procedures must rescue, in the communicative game, elements that indicate the processes that generate social representations.

Methodological procedures

In view of the procedural approach of TRS, qualitative research was carried out (BAUER; GASKELL, 2015). Twenty-three trainers collaborated with the study who, for ethical reasons, were appointed P1, P2, P3 and so on. Eighteen women and five men, aged from twenty-nine to fifty-eight years and with teaching time from one to thirty years. All are graduates, three are graduates at *latu-sensu* level, ten have *a* master's degree, ten have doctorates and all have professional experience in schools. They are working in the face-to-face modality of the graduation in Pedagogy in private universities in the cities of Teresópolis, Petrópolis, Rio de Janeiro, Duque de Caxias and Nova Iguaçu, all of the State of Rio de Janeiro. We opted for the private sector, which has 697,497 enrollments in this undergraduate course, of the 816,427 appointed by the National Institute of Educational Studies and Research Anísio Teixeira (INEP, 2022).

Data collection was performed through semi-structured interviews between February and April 2019, after approval of the project by the Research Ethics Committee. It was established as a criterion for inclusion the fact of being a teacher in the pedagogy course on the selected university campuses. As an exclusion criterion, the refusal of the subject to participate. The snowball technique was used in the sample composition (VINUTO, 2011). The interviews took place until the saturation of the sample (BAUER; GASKELL, 2015).

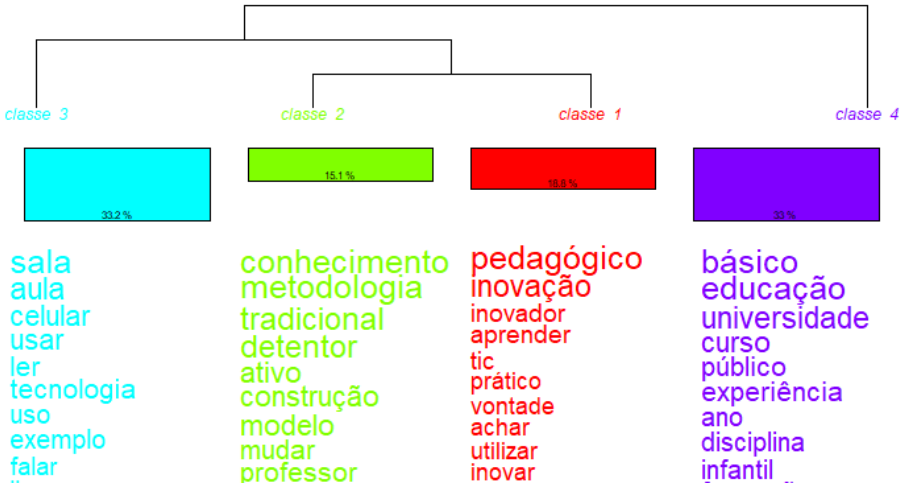
After the interviews were transcribed, the material composed *a corpus* of analysis that was inserted in the IRaMuTeQ (*Interface of R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*). Camargo and Justo (2013) suggest the use of this tool in analysis of the hierarchical classification type descending. After processing in the program, the data were analyzed according to the Content Analysis suggested by Bardin (2011).

According to Bardin (2011), this analysis is distributed in three stages: pre-analysis, exploration of the material and treatment with inference and interpretation from the results. After Content Analysis, the categories were created and entered under thematic titles that represented them significantly, as shown in the following item.

Findings

The *corpus* of analysis inserted in the IRaMuTeQ was separated into 1,752 text segments (TS), using 1,504 ST (85.84%). Four groupings of words were generated, according to the frequency of radicals obtained by a chi-square test. Four hierarchical classes were obtained, each containing a percentage of TS: class 1, with 18.8%; class 2, with 15.1%; class 3, with 33.2%; and class 4, with 33%.

Figure 1 – Dendogram of word classes[3]

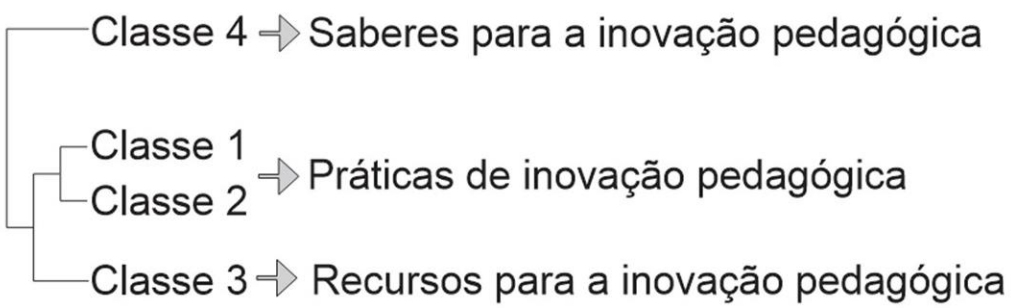


Source: IRaMuTeQ

The data were divided into classes, according to the similarity of their contents. Thus, first the program divided the material into two parts. Class 4 remained separate from the other. This happens when the set has relatively disjointed content from the contents of the other classes. Class 3 was subdivided, giving rise to classes 1 and 2. This was because, although there may be some difference, the contents of these classes keep approximations, as discussed below.

[3] **Class 3**: Class, Lesson, Smartphone, to read, Technology, to use, Example, to speak; **Class 2:** Knowledge, Methodology, Traditional, Active, Construction, Model, to change, Teacher; **Class 1:** Pedagogical, Innovation, Innovative, to learn, ICT, Practical, Desire, to find, to utilize, to innovate; **Class 4:** Basic, Education, University, Course, Public, Experience, School year, Subject, Childhood.

Figure 2 – Thematic categories on pedagogical innovation[4]



Source: Prepared by the authors

After being organized by the program, this content was analyzed by the researchers, considering the guidelines of the Content Analysis, the procedural perspective of the TRS and the literature review performed. Therefore, as shown in Figure 2, the four groupings of words generated by IRaMuTeQ were transformed into three thematic categories on pedagogical innovation. Class 4 brings representative elements of knowledge, class 3 indicates resources, and classes 1 and 2 together present elements that refer to practices.

Category 1: Knowledge for pedagogical innovation

This thematic category presents and contextualizes the knowledge that subjects mobilize for pedagogical innovation and offers indications of how they formulate and transform. The group believes that teaching in Basic Education is relevant for their work in undergraduate pedagogy, as it is a "prerequisite for teaching in undergraduate studies" (P2). This is because, according to the subjects, this experience "adds a great value to this professor of pedagogy" (P2).

The interlocutors attribute to this professional experience from the beginning of the career the knowledge necessary to teach to be a teacher. Therefore, the trainer talks about pedagogical innovation, supporting his discourse about his own experience and, from inter and intragroup communication, in Basic Education. In the context of the school, "pedagogical innovation depends on the public" (P4) and resources. P4 clarifies: "the experience I had with basic education was in public school, where I had no resources." This difference is reported, since there is innovation, "especially in elite private schools" (P8).

[4] Class 4: Knowledges for pedagogical innovation; Class 1 and 2: Pedagogical innovation practices; Class 3: Resources for pedagogical innovation.

The subjects communicate about innovation with their students and peers at the university, and with families, at school. As p11's line exemplifies: "I work in a school that we talk about like this, we are an innovative school. We wonder weekly, whether we are innovators." Thus, there is a negotiation of meanings of what it is to innovate. This is associated with the availability of resources, and this parameter allows subjects to evaluate whether or not there is innovation.

Thus, in the work carried out in primary school, experiences are experienced that support communications about the object pedagogical innovation. Therefore, it is inferable that this experience provides information for the construction of representations. In this sense, pedagogical innovation is necessarily related to resources, as indicated in the statements.

On the other hand, the university context also subsidizes knowledge that influences the professional practices of these teachers regarding the object pedagogical innovation. In the university environment, this knowledge seems to indicate something no longer linked to resources, but related to the "change of practice", through a willingness of the individual to innovate, as it appears in the following excerpt:

> The technique contributes to pedagogical innovation, but it is the teacher's posture and conception of learning that changes the class model. I say attitude in the sense of this teacher's way of work. It is more than 10 years in the university, in teacher training, at first it seems to me that my classes were more traditional, today they are much more innovative (P14).

By focusing on the graduation in Pedagogy, it is evident that pedagogical innovation seems to perform the same function in discourse as "changing the class model". For this "change", it is increasingly hierarchical according to the relevance to innovation, "technical", "posture" and "conception". It is also referred to as "attitude" as "way of working". In this sense, for innovation to exist, there is technique, posture and conception and attitude.

These fragments illustrate how the group conceives the theme focused here: a concrete change in the way of seeing one's own work and in the way of working, of a dispositional character, that is, inherent to the teacher. As they say, "my practice has changed, even today I can look at my student's training in a much broader and specific way at the same time, this is innovation" (P5).

What would explain this change in the conception of pedagogical innovation? In the context of the university, the representations that impact the practices of these subjects, generating changes, are constructed in the "spaces of dialogue, coordination, teachers, general coordinator, everyone discusses their practices" (P11). In addition, institutional orientations are

reported, but "not only because of the issue of the University's guidelines, but also in the collegiates of the course, all the questions that are posed as a need to understand this new student profile" (P5).

Another reason for this change in the conception of the object is "continuing education" (P14), which "has been a provocateur, and the university provokes us to rethink our methodology [...] this instigates pedagogical innovation and transforms the way of thinking about it" (P14). Thus, in addition to the teaching experience in Basic Education, the negotiations of meanings that occur in the daily life of the university environment are also considered fundamental for the education of the field of information on the object pedagogical innovation.

Therefore, the subjects explain that it is necessary to understand a new student profile, in order to meet the institutional demands imposed by the guidelines. They discuss the practices in order to meet these requirements, which are based on the training offered by the HEI. These trainings provoke the individual to "rethink his or her own practices". From the subjects' statements, and because it is a private institution, it is believed that these trainings aim to prepare the trainer to meet the demands of a new consumer profile. Meeting the "new profile", in turn, requires changes and adaptations of pedagogical practices. Guided by the market, institutional changes influence the practices of teachers, intending to construct the object pedagogical innovation.

What has been analyzed so far allows the statement that the RS of the group on pedagogical innovation are linked to the teaching experiences, both in primary school and in the university. The category allows to approximate the object to the notions of "change", "adaptation" and "adequacy", meaning "pedagogical improvement". However, in addition to conceptions of the object in the sense of improvement, the group explains how this is effective in their professional practices.

Category 2: Pedagogical innovation practices

In the previous category, the equivalence between pedagogical innovation and pedagogical improvement was identified. In this category, the practices that the participants consider to be necessary for this improvement are presented, as well as those considered non-innovative. When narrating their experiences, the participants refer to beliefs, values and attitudes that guide their actions, towards an innovative professional exercise, supported by social representations. Thus, "pedagogical innovation is a different way of doing the

educational action different from reproduction" (P3), is "the change of the practice of the teacher himself" (P2). However, "there is no point in me having the will and desire for change if I am not going to apply in my practice" (P13).

In this sense, innovation is conceived as a different doing with a view to changing concrete practice. "To innovate is to change that practice, in fact, to include new practices, not necessarily to completely change the practice" (P13). Thus, it is not a radical change, because pedagogical innovation is incremental to teaching work, with the addition of new practices. Thus, it is a sustaining innovation, because "radical changes take the ground off and people get lost, I think transformations are a movement" (P14). In this sense:

> If the practices of this teacher are traditional, his students will not learn, then pedagogical innovation is fundamental for learning to happen, but it needs to be contextualized, in fact I do not believe that there is pedagogical innovation without a connection with the context as a student (P19).

The subjects contrast two types of methods: the traditional ones, in which the teacher is the center of the teaching-learning process, and the innovators, in which the student is the center of this process. There seems to be a consensus that traditional practices are not innovative. When making this differentiation, the participants indicate that it is necessary that the Pedagogy teacher take a secondary position in the classroom, making room for students to take the leading role in this scenario.

In this sense, given the various pedagogical situations, a set of procedures is needed. The methodology employed enables innovation, which promotes an innovative teaching-learning process. This is because "the methodology that this teacher uses is the bridge for the construction of knowledge [...] it is a practice that in a way allows innovation" (P5). It is important, then, to "know them well and plan which strategy and methodology will best fit, or rather, which methodologies will work in specific situations" (P19).

There is a logical and hierarchical sequence of elements, which begins with "knowing well", followed by the word "plan". Then, "strategy" is differentiated from methodology, using the additive "and" to connect them. The changes in the profile of the student himself demand new methodologies, since the traditional ones are insufficient to overcome the challenge that presents itself. Thus, according to the trainer, "the outdated methodologies do not account for the reality of today at the university where I work" (P17). Thus, the teacher ceases to be the holder of knowledge, to have all the answers, and begins to question:

> Does the proof make sense in the education model in which multiple answers may be right, and not a single answer anymore? Does an exhibition class account of this immensity of content, knowledge, interests and needs what we have in this new century? (P14).

Thus, although they understand that it is a pedagogical practice that uses methodologies based on the dialogue between teacher and student, for the construction of knowledge, it is noted that, in specific cases, the practice is in disagreement with what is considered right to do. This is due to institutional impositions that direct the teaching methodology and practice. Thus, the teacher produces his pedagogical practice from the relationships he establishes with the institution, with the students and with their peers.

When asked what they would do to solve some barriers to pedagogical innovation, which they identified in practice and in the HEI, they said:

> With the passage of time and with the very continuing education presented by the university, I was including in my classes more dynamic methodologies, which provoke more active participation of students. If we do not change this attitude of the teacher, to say that it is he who leads the learning process, we do not change the model of education, we do not change the methodologies and, then, we maintain a model that in my reading no longer fits in the 21st century (PROFESSOR 14, 10 years of experience in this university; our translation).

> [...] The paradigm is the teacher up front giving the message and everyone here silent listening to the teacher, all that runs away from it for me is innovation, and active methodologies are strategies where students will participate (PROFESSOR 3, 14 years of experience in this university; our translation).

These statements indicate evidence that the pedagogy teacher sees the traditional methodology as a problem that, to be solved, demands an adequate methodology. Thus, the element that concretizes the meanings attributed to pedagogical innovation by the group is understood as "active methodologies".

Such methodologies make group objectives feasible, to the extent that the social subject of techniques for pedagogical innovation is found. Thus, the techniques of innovative pedagogical practice are presented. The teacher emerges in group ideation as a craftsman of knowledge, to the extent that he sees himself inserted in a process of construction of this knowledge. To elaborate this, the subject makes use of an instrumental named, here, generically, as resources.

Category 3: Resources for pedagogical innovation

Category 1 shows the concept of innovation as an improvement, and Category 2 indicates how this improvement is made possible by active methodologies. Category 3 indicates the role that resources have for pedagogical innovation, in the context of pedagogy training.

The teachers' statements indicate that resources do not mean a sufficient condition for innovation, that is, they are not innovation, but a support to implement it. Then, the trainer explains: "technology is a tool to help me innovate, now it is not innovation" (P9). "So, using the computer in the classroom is not necessarily innovation if I am reproducing traditional pedagogical practices" (P10).

Although they are not innovation, the resources provide evidence of it, because for the group, technology enhances innovation. In this sense, the predisposition to use it or does not allow the subjects to differentiate the innovative teacher from the non-innovative teacher. According to the subjects, some "teachers were annoyed because the student used his cell phone in the classroom" (P23). The group attributes the aversion to the use of technological resources to a traditional conception of teaching, because "the teacher of the traditional school has a greater control" (P23). This indicates the desirable conducts by the members of the group. Including

> [...] the students themselves today they can do so, a comparison between the extremely traditional teacher who uses the same tools, who does not change, who is not empowered, who is not updated with another who is always changing the way he acts (PROFESSOR 2, 14 years of experience in this university; our translation).

This category indicates the instrumentalization of pedagogical practices related to the social phenomenon of pedagogical innovation. It is related, therefore, to a link between the idea of innovation and the action of innovating. This is because the statements indicate the resources that boost and improve the exercise of innovation in the work that the group performs in the undergraduate program in Pedagogy. Thus, elements that suggest positive attitudes of the participants in relation to the object pedagogical innovation appear.

> So, it is to modernize not only on a visual issue, in an aesthetic issue, no, technology has to be tied to work other functions. For example, in geoprocessing for map location, in the preparation of videos, of content. Of course, students can also produce! What usually happens? by the value of the product, suddenly it is a camera the students do not have access, because someone is afraid to break, but give autonomy for these students to use these technologies, because whether they want to, they are inserted in this globalized world and artificial intelligence, so it is necessary to use in the

> classroom, so pedagogical innovation is to make room for these technologies, not demonizing the use of the cell phone, it is logical, a mediated and oriented use from the contents are proposed in the classroom, but not demonize the technology (Professor 15, 1 year of experience in this university; our translation).

In addition to technology, there are a variety of resources that the teacher can use to support pedagogical innovation: "some of the new resources have enabled me to have more dynamic classes, and different classes each week a different class" (P13). Thus, it is about creating or using varied resources and pedagogical strategies to enhance teaching-learning. This positive affective burden goes through the following elements: "work", "enable", "modernize", "dynamic" "renewal", "differentiation" and "novelty", meaning "improvement", related to the use of varied resources, including technological, as seen in this class.

The technology mobilized by the trainers in the pedagogical action improves the teaching-learning process. This use is linked to the pedagogical objective and centered on the choice and sieve of trainers. For the subjects, technology is an element that can be significant for the realization of innovations. Such resources make it possible, in a way, to reduce the difficulties related to pedagogical innovation. In this case, the subjects are intended to act and give indications of behavior prediction, according to the components of their attitude.

Discussion

RS are constructions of reality forged and shared by the subjects' communications (MOSCOVICI, 2012; JODELET, 2001). It is forged knowledge that supports social practices. For Tardif (2012), teaching is a social practice based, mainly on sociocultural bases and experience. Such knowledge is "[...] the knowledge, abilities and skills and attitudes of teachers, that is, what has often been called knowledge, know-how and know-being" (TARDIF, 2012, p. 60, our translation).

The knowledge for teaching is "[...] because they relate to the context and working conditions and enable the innovation of pedagogical practices" (ABDALLA, 2015, p. 215, our translation). Therefore, considering the evidence presented in category 1, the participants of this study build their RS on pedagogical innovation during the experiences they experience in Basic Education.

When the interlocutors talk about pedagogical innovation in the context of the Basic School, they share the public context from the private. Focusing on the school, pedagogical innovation means having and using various resources. Thus, the RS of these subjects seem

related to the "use of resources". According to Domingos e Castro (2018) and Campolina (2012), in the historical context of the theme in the educational field, both teachers of the Basic School, as a significant part of specialized literature, conceive pedagogical innovation as the use of technologies, disregarding the centrality of the subjects.

As RSs are dynamic structures, because they are linked to the changing sociocultural context of the groups that forge them, they are transformed as people interact with each other and with socially created objects (LAHLOU, 2019). Also, according to Campos (2003), social representations and practices are influenced and self-determined. Thus, the fragments of the speeches in category 1 suggest that the representations of the participating subjects are transformed in their performance in the pedagogy degree.

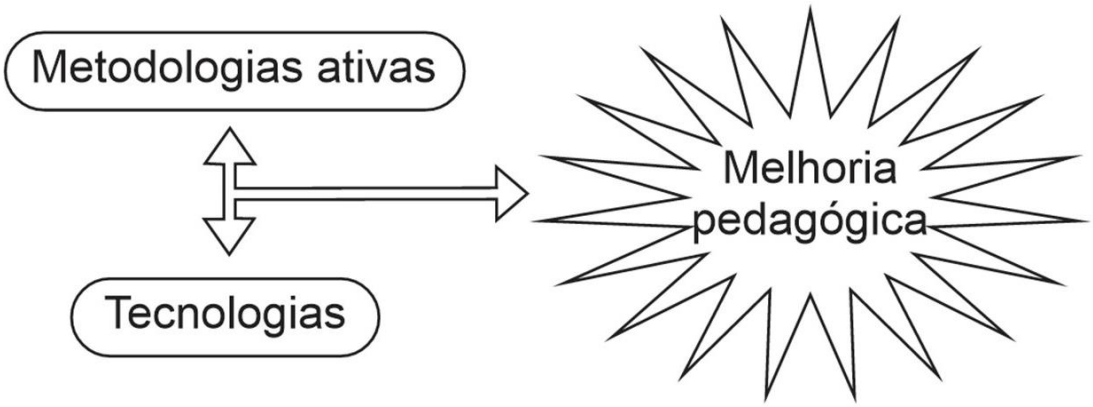
This is because, according to Social Psychology, it is another social group, since its goal is not to train the student at school, but to train the one who will be a teacher at school (MICHENER; DELAMATER; MYERS, 2005), and also because there is a new set of experiences, subjects and practices. Then, the RS of these subjects on pedagogical innovation, in the context of Pedagogy, indicate the meaning of "pedagogical improvement". This construction makes evident two representations of pedagogical innovation, strictly linked to two professional activities, one at school and one at the university. Therefore, these two constructions, "resource use" and "pedagogical improvement", show two distinct social objects represented by two different social subjects.

In case of this "pedagogical improvement" being possible, the subjects indicate that two more elements are relevant: technological resources, in the instrumentalization of pedagogical practices of innovation, as seen in category 3; and active methodologies, in the implementation of an innovative practice, as pointed out in category 2. Therefore, "technologies" and "active methodologies" become part of the components of this representation.

Considering the procedural approach of the TRS (JODELET, 2001), it observes that, in the process of objectifying these RS, selective construction is done with "pedagogical improvement", "technologies" and "active methodologies". In structuring schematization, "active methodologies", associated with "technologies", promote "pedagogical improvement". The objectification process is concluded by naturalizing the objectification in the following sentence, "active methodologies and technologies improve pedagogy" (P23). The figurative nucleus of this objectification is presented in Figure 3. These findings corroborate several publications, for example, those of Wagner and Cunha (2019b), Masetto (2018) and Quintanilha (2017). These authors exemplify a larger group, which relates the commitment to

"technologies" and the mobilization of so-called "active methodologies", so that the teaching-learning process can be improved in higher education.

Figure 3 – Figurative nucleus of representations of pedagogical innovation[5]



Source: Prepared by the authors

The anchoring of these representations occurs on the relationship of new pedagogy and traditional pedagogy. At various times, the interlocutors refer to the difference between what is or is not in relation to this dual, traditional versus *new* relationship. This anchorage accommodates the social object (pedagogical innovation) in the symbolic universe of the group of teachers. It is believed that the bond between this object and the preexisting symbolic repertoire in the collective memory and in the group's imaginary is established with the historical and cultural frameworks, but also formative of this social subject. Specifically, with regard to the Brazilian educational renewal movement of the early 20th century and its representatives, the Pioneers of the Escola Nova.

This Manifesto instituted "a true symbolic arsenal that acts in the social imaginary, building an educational memory that has in the Manifesto itself the framework of educational renewal in Brazil" (XAVIER, 2004, p. 5). The impact of this movement was size, which marked the group's culture and focuses on the initial and continued formations of teachers until contemporaneity.

[5] Active methodologies + Technologies = Pedagogical advance.

Final remarks

Research on teacher education and work says that teachers have not been prepared for the complex contemporary professional context that has transformed the school. It is suggested that this is because of a traditional teacher training. To respond to this demand, the literature suggests an emancipatory pedagogical innovation, which recognizes the centrality and relevance of the subjects involved.

In this perspective of innovation, one cannot ignore the role of social representations in the shared construction of reality, therefore, in life in society. However, few studies focus on the teacher trainer and their subjectivity, even if this subject is irreplaceable and central in the preparation of professionals who will work in schools.

In view of the above, in the research reported in this article, the objective was to explain the social representations that professors of the undergraduate degree in Pedagogy elaborate on pedagogical innovation. For this, qualitative research was implemented, and 23 trainers were interviewed. The collected material was treated with the support of the IRaMuTeQ program and subsequently submitted to thematic content analysis.

The results indicate that there is a change in representations, on the one hand, when referred to the Basic School, they are intended for "use of resources", and on the other hand, when, referred to work in undergraduate studies, they aim at "technologies", "active methodologies" and "pedagogical improvement". These representations related to Higher Education are anchored in the historical framework of Brazilian Education. They allude to the educational renewal movement of the early 20th century, driven by the Pioneers of Education, and its impact on teacher education. These are, therefore, the representations that amend the work of the teacher trainer.

This representation is so strong among teacher trainers that there seems to be a natural relationship between innovation and pedagogical improvement, however, there is no natural link between innovation and improvement. So, this seems to be supplemented in the objectification process. The perspective of emancipatory innovation predicts the centrality of the subjects. However, the question is: where is the subject himself, in these representations that have been identified?

It is evident that the group elaborates this representation, indispensable in this process, but its speech does not allow the centrality of the subject and his teacher creativity to be identified for pedagogical innovation. Only when they speak in motivation do they refer to their own role in the innovative process. Even the knowledge of experience is impacted by

institutional guidelines, the primacy of the active method and the contribution of external resources.

Thus, the trainers seem to attribute pedagogical innovation to mostly situational issues. They indicate that the subjects are based, both in the knowledge derived from the experience in school, and in the university itself, for their professional work. Therefore, this would explain such a discrepancy between the training and future professional practice of teachers (CANDAU, 2020; REIS; ANDRE; PASSOS, 2020; NÓVOA, 2019), in relation to the work of its trainers?

TRS explains that people support their practices in the representations they share with their group of belonging (MOSCOVICI, 2012; JODELET, 2001). The hypothesis raised here is: because they believe that their work is a model for the student who forms (since some of these trainers acted or still work in the school context), they act believing that the practice itself is, *per se*, a trainer. However, the practices of teacher training are not the same as those that should be exercised in school, because the educational objectives of these places are different. Thus, it seems that it will be interesting to conduct an investigation on the self-efficacy of formative practice.

The participants' own statements show that the professional group is also not the same, even though its components act in both spaces, since they are distinct psychosocial universes. This is also clear why the object pedagogical innovation, when perspective in the context of the school, suggests "use of resources", and because, in teacher education, it comes to mean "pedagogical improvement". Therefore, there seems to be a cognitive dissonance there (MICHENER; DELAMATER; MYERS, 2005) that tends to be a great challenge to the work of training innovative professionals for a school in metamorphosis. The trainers know that what they do and offer as an example will not be mobilized in the future practice of the trainees.

Based on the results of the research, caution is recommended to those who formulate policies for the training of teachers and their trainers, to the HEIs and, mainly, to the trainers themselves, regarding the approximation between teacher education and the context of the basic school. The Bachelor's Degrees need to centralize the school in the training of the professionals who will work in it, as indicated by Lüdke and Ivenicki (2022). It is recorded that the period destined to the internship is extremely important in this process.

With regard to the theme of pedagogical research and innovation, it seems insufficient to train by example, as suggested by the subjects themselves (DOMINGOS; COSTA, 2022), or by literature (FREIRE, 2015). This is due to, as social psychology explains, the procedural

approach of TRS and also, as identified in the research, even though individuals are the same acting in both contexts (school and university), these are different groups and social objects, therefore with different constructions of reality.

Care is recommended when planning teacher training, centralizing it in the school context, with the pretext of providing a glimpse of what future professional practice will be to students, at risk of establishing a "formative myopia". This occurs since there is no natural consequence between "approaching school and teacher training" and "improving training". Possible relationships need to be problematized, which could be done in future research. This fact is because, according to the literature itself, the school is changing (NÓVOA, 2019), and a school-centered training of the present may not attend the school of the future.

In this article, the paper confirms what Lüdke and Ivenicki (2022) affirms, in the sense that research seems to be, until then, the best way to approach school and university, because it allows a scientific look at approximations and differences. It is believed that this is valid, including to avoid pitfalls of "reactions with natural consequences", but potentially misleading, such as that between innovation and pedagogical improvement, which suggests the self-efficacy of active methods and technological resources to the detriment of the subject himself.

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