

TEACHER TRAINING FOR AN INNOVATIVE PRACTICE UNDER THE OPTICS OF THE COMPLEX LESSONS OF EDGAR MORIN: THE TEACHING OF COMPREHENSION

A FORMAÇÃO DE PROFESSORES PARA UMA PRÁTICA INOVADORA SOB A ÓPTICA DO PENSAMENTO COMPLEXO DE EDGAR MORIN: O ENSINO DA COMPREENSÃO

LA FORMACIÓN DEL PROFESORADO PARA UNA PRÁCTICA INNOVADORA A LA LUZ DE LA ÓPTICA DEL PENSAMIENTO COMPLEJO DE EDGAR MORIN: LA ENSEÑANZA DE LA COMPRENSIÓN

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ABSTRACT: This article presents the result of an action research that analyzed the participation of 19 teachers in the online course Teacher Training for an Innovative Practice from the View of Edgar Morin's Complex Thought, composed of seven complex lessons referenced in the book *Seven Complex Lessons in Education of the Future* (MORIN, 2000), promoted by the research group Educational Paradigms and Teacher Training (Pefop). The main contributions pointed out by the participants of the course were identified qualitatively, focusing the sixth knowledge (teaching comprehension), in the three stages in which they were called to reflection and discussion. The teachers involved presented a good understanding, especially since they were in training and had previously studied five other modules of the course. Revealed relevant contributions to the construction of their knowledge, intentions and practices experienced for the transformation of education, based on complex thinking and teaching for understanding, demonstrating a possible path to pedagogical innovation.

KEYWORDS: Complex thinking. Teacher training. Pedagogical practice.

RESUMO: Este artigo apresenta o resultado de uma pesquisa-ação que analisou a participação de 19 professores no curso on-line “Formação de Professores Para Uma Prática Inovadora sob a Óptica do Pensamento Complexo de Edgar Morin”, composto por sete módulos referenciados no livro *Sete saberes necessários para a educação do futuro* (MORIN, 2000), promovido pelo grupo de pesquisa Paradigmas Educacionais e a Formação de Professores (Pefop). Identificaram-se qualitativamente as principais contribuições

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apontadas pelos participantes do curso, focando o sexto saber (ensinar a compreensão), nas três etapas em que foram chamados à reflexão e discussão. Os professores envolvidos apresentaram um bom aprofundamento, sobretudo por estarem em formação e terem cursado anteriormente outros cinco módulos do curso. Revelaram contribuições relevantes à construção de seu conhecimento, intenções e práticas vivenciadas para a transformação da educação, fundadas no pensamento complexo e no ensino para a compreensão, demonstrando um possível caminho à inovação pedagógica.

PALAVRAS-CHAVE: *Pensamento complexo. Formação docente. Prática pedagógica.*

RESUMEN: *Este artículo presenta el resultado de una investigación-acción que analizó la participación de 19 maestros en el curso on-line Formación de Maestros Para Una Práctica Innovadora a la luz de la Óptica del Pensamiento Complejo de Edgar Morin, compuesto por siete unidades indicadas em el libro Siete Saberes Necesarios para la Educación del Futuro (MORIN, 2000), bajo la promoción del grupo de investigación Paradigmas Educativos y la Formación de Maestros (Pefop). Se identificaron cualitativamente las principales contribuciones señaladas por los participantes del curso, subrayando el sexto saber (enseñar la comprensión), en los tres pasos en los cuales fueron llamados a la reflexión y discusión. Los maestros implicados presentaron una considerable profundización, en especial por se hallaren en formación y porqué anteriormente ya habían cursado las primeras cinco unidades del curso. Presentaron contribuciones muy relevantes para la construcción del conocimiento, de las intenciones y de las practicas vividas para la transformación de la educación. Todas basadas en el pensamiento complejo y en la enseñanza para la comprensión, demostrando un medio posible a la innovación pedagógica.*

PALABRAS CLAVE: *Pensamiento complejo. Formación docente. Prática pedagógica.*

Introduction

The continuing education of teachers today has a fundamental and urgent character in light of the constant changes in society and the world, which bring to education the need for new approaches that are closer to students born and completely immersed in and belonging to the information age.

The proposal of the Teacher Training Course for an Innovative Practice from the Perspective of Complex Thinking by Edgar Morin, promoted by the research group Educational Paradigms and Teacher Training (PEFOP), is based on the seven types of knowledge necessary for the education of the future (MORIN, 2000) and in various elements that direct teacher education towards this current reality of thought and towards a new pedagogical approach, also justifying its structure and conduct throughout the participation of the teachers involved.

On the design and proposals for teacher training, it was based on the propositions of Behrens (2007), which reinforces the need to be guided by new approaches in education, which bring a critical, reflective and transformative view, and build knowledge through practice, combined with theory and lived experiences, seeking to overcome linear logic, repetition, the accumulation of teaching based on content and the mere transmission of information. It also highlights the development of pedagogical competence to reflect on teaching itself, in the search for innovative methodological practices that meet the current demands of education.

Aware of the elements involved in teacher education, we sought to investigate new assumptions that overcome the conservative paradigm based on logic and reason, with a reductionist and fragmented view, towards a new approach, based on the view of complexity (MORIN, 2000). In this sense, Moraes and Navas (2010) present the urgent need to contemplate a view of complexity and transdisciplinarity and their ontological, epistemological and methodological aspects for professional teacher development. According to the authors, complex thinking brings greater clarity to the educational reality, which not only involves rationality, logic and fragmentation, but also a broader dimension of the human condition itself, through sensitivity, emotion, intuition and emotion.

The online pedagogical training course model proposed by the Pefop group fits into innovative teaching practices, as it allows, through web resources, collective and collaborative discussion and interaction between peers, for the exchange of experiences and the co-learning in the construction of knowledge. This on-line training enabled teachers to study autonomously and adapted to their time availability and included different methodological alternatives, which provided the most adequate choice of resources for understanding the content.

The aforementioned online course was based on Morin's (2000) book *The seven knowledge necessary for the education of the future*, with references to this knowledge: (i) **the blindness of knowledge: error and illusion**, understanding error as a possibility to other paths, not letting the illusion blind; (ii) **the principles of pertinent knowledge**, to overcome fragmentation and rearticulate disciplines, in order to reconnect knowledge; (iii) **teaching the human condition**, understanding human diversity and multidimensionality; (iv) **teaching earthly identity**, for planetary understanding and sustainability; (v) **facing uncertainties**, which brings the possibility of going further and advancing in knowledge; (vi) **teach understanding for tolerance**, generosity and common well-being; (vii) **the ethics of**

humankind, teaching democracy and citizenship, rescuing the individual, society and species relationship.

This research sought to qualitatively analyze, through the participants' reports, the contributions they declared throughout module 6 of the course, referring to the knowledge that it deals with “teaching understanding” (MORIN, 2000). The analysis aimed to investigate the narratives of the teachers, considering that they had already completed the previous modules and were introduced to the understanding of some fundamentals of complex thinking. Thus, an attempt was made to answer the following research problem: **what are the main contributions pointed out by the participants of the online course Teacher Training for an Innovative Practice regarding the sixth knowledge (teaching understanding) proposed by Edgar Morin?**

Teach comprehension

Morin's (2000) work *The seven knowledges necessary for the education of the future* has great relevance to its study and understanding by exposing fundamental problems, which are still far from the contents and practices of the classroom and, consequently, from reality experienced in the education of individuals. At the request of the United Nations Educational, Scientific and Cultural Organization (Unesco), in order to broaden and deepen the transdisciplinary vision of education, this author lists knowledge that education should address in any society or culture for the improvement of condition of the person and life on the planet.

Thus, Morin (2000) points out the knowledge necessary for human development, as a social, individual and interactive member of nature, namely: the blindness of knowledge – error and illusion –, the principles of pertinent knowledge, teaching the human condition, teach the earthly identity, face uncertainties, teach the understanding and ethics of humankind. On understanding, he brings the urgency of reforming thinking to change human relationships, which are barbaric and need to be treated from symptoms to their causes and consequences.

We live today in a digital age of multiple and necessary networks, a moment of explosion and galloping evolution of technologies, through which real-time information from around the world is accessed, with the fingertips, frequently updating events; technologies that study to bring together, to collaborate and not just participate, to make people understand and not just ignore the facts. With each message on social networks, it is possible to notice the

individuality and indifference between people. Given these hypotheses, Moraes (2012, p. 73, our translation) asks: “[...] despite the great scientific and technological development, why does Western civilization remain so insensitive to human underdevelopment?”.

It is noticed that the human being lives in a disoriented way, in a noisy and horror-filled history, exposed to the uncertainties of the future of humanity, not being noticed, despite being on a globalized planet, in which there has been no progress in terms of build a more solidary, fraternal and truly human society-world (MORIN, 2014). The crisis in the ethics of understanding arises from the general misunderstanding among strangers, people from the same society, acquaintances within a family or even friends, and it is necessary to face the difficulty of human understanding not only by explaining the facts or by objective means, but also seeking subjective paths and teachings that bring, together with education, philosophical, psychological, sociological and historical teachings, in order to initiate with human beings the lucidity for reality (MORIN, 2017).

With this view, it is believed that what prevents humanity from updating references in the universe to enable intra and interpersonal, subjective and intersubjective understanding, serving a trinary ecology between individuals, society and planet, that is, for Crema (2012), the obstacle of normosis, that is, the normality of behaviors in a society that cause pain, suffering and even death.

Recovering the historical directions and principles of science, Crema (2012) raises fundamental aspects of the analytical method, which inaugurated in the Modern Age, as a reaction to medieval dogmatism and obscurantism and which, due to its origin in scientific rationalism and positivism, mechanized and reduced and it fragmented science and man in search of absolute truths, not allowing multiple or subjective interpretations, influencing the worldview and human behavior, making it individualistic and egocentric. In the 19th century and into the 20th century, the author explains that, after the influence of the Enlightenment, the synthetic method began to be delineated from philosophies and epistemologies based on the recognition of the human by the human, on life experience and on understanding, bringing to science an intentional approach to the process of links and unification, opening up to a transpersonal awareness of understanding and cooperative communion.

Anthropological understanding, for Morin (2015), requires awareness of human complexity in its instability and duality, being inhuman the reduction when it involves the human being, as it is noticed and evidenced only one of its multiple sides and possibilities of action. Human complexity, for him, implies learning globally, in different context conditions and, above all, what the other lives. But he also emphasizes that, in order to understand the

other, it is necessary to understand oneself, recognizing one's own insufficiencies and deficiencies, replacing sufficient awareness with awareness of insufficiency; still, human understanding needs to be planted and cultivated in all parts, places and senses, hence the importance of teaching understanding at school, in the family, through dialogue, morals and kindness.

A transformative education, for Moraes and Almeida (2012, p. 248, our translation), must meet the need to develop people “[...] with more open minds, with more sensitive listening [...] committed to transforming oneself and of the world around you”, educated to understand the human condition, in ethics and planetary conscience, prepared for the daily challenges of a world in social, economic and environmental crisis, which threatens human life and the planet.

Teachers and students are involved in the construction of a society for understanding, and for this, according to Moraes and Almeida (2012), an educational action is needed at the foundations of teaching, involving organizations, schools and reaching the classroom, through programs, projects, methodologies and pedagogical experiences that prioritize reflection, dialogue and criticism, creating an open, democratic and understandable environment for differences and diversities. They also point out the importance of teacher education throughout professional life, under the same bias of human understanding and complexity, recognizing cultural plurality and multiple voices and visions, seeking support in transdisciplinarity as an epistemological basis and allowing space for the exchange of experiences, collaboration, participation, as well as self-reflection, self-criticism and self-organization.

Research Methodology

This research is characterized by a qualitative approach, with a descriptive objective, taking as a database the contributions of teachers who proposed to participate in the online pedagogical training course, offered on the research group platform, which allowed insertions and collaboration of the participants, analyzed by the procedures developed in action research. The online course started with 45 participants and had seven modules, which involved the seven types of knowledge proposed by Morin (2000), presenting, in this study, the contributions arising from the development of module 6, related to knowing “teaching compression”. This module involved 19 participants, including one of the researchers of this article, who were named with acronyms from P.1 to P.19, to safeguard anonymity.

Qualitative research, according to Yin (2016), can involve the representation of opinions and perspectives of the participants of a study, with the events and ideas arising from this type of research being the reflection of the meaning of data and facts from the real experience of people and not assumptions of responses raised by the researcher. The author also comments that the diversity of participants in qualitative research makes data analysis complex, and the triangulation of different sources is crucial to reach conclusions and answers to the research problem, with credibility and reliability.

Thus, initially adopted for this research, the review and analysis of the literature on the seven knowledges of Morin (2000), specifically the sixth (teaching understanding), with the aim of theoretically deepening the main topic of study, which it would help in the answer to the research problem, because, as Gil complements (2010, p. 30, our translation), it aims to “[...] provide a theoretical foundation for the work, as well as the identification of the current stage of knowledge regarding the topic” . As a triangulation of sources and data, in addition to the bibliographical survey, the narratives of the participants of the online course were analyzed in three different moments, one of them being before the study proposed in the module, seeking to reflect on a real situation and the rescue of their prior knowledge; in the last two moments, they were provoked into self-analysis of their practices, given the knowledge acquired through the study.

Action research was not only intended to analyze practical aspects, but also theoretical-conceptual mediation, which, according to Gil (2010), is present throughout the course of the research. The selection of the most relevant participations during the completion of module 6 of the online course was based on intentionality criteria; as this author states, certain characteristics are more relevant and suitable for obtaining research data, making it qualitatively richer and more consistent.

In choosing the action research, the proposition of Imbernón (2016) was accepted, which characterizes this type of investigation with a participative character and the purpose of knowledge construction, due to the critical role of the participants in front of science and the transformation function through formation and social change. Thus, its application is justified, because, for participation throughout all the stages of carrying out the modules of the online course, the teachers involved were provoked to reflect on their practice, based on a questioning that was always contextualized and problematized.

This research, carried out by researchers from the Pefop group, defends and seeks a pedagogical practice that involves the production of knowledge through the criticism, creativity and transformation of university professors, proposing studies on the constructs and

knowledge that involve complex thinking in a transformative education; to that end, online continuing education was offered, which enabled the teachers involved to rethink a teaching action embraced by a new concept.

The on-line course

As already mentioned, the online teacher training course was based on the seven knowledge necessary for the education of the future (MORIN, 2000) and consisted of seven modules, titled and sequenced in the same way as established by this author. The realization of each of these modules was independent of a sequencing, but with a deadline of 15 days to complete them, with the tutoring of researchers from the Pefop group. All of them included stages, also independent, with different strategies and didactic resources for the study and participation in the discussions, in order to build, individually and collectively, in a collaborative way, the knowledge of each one of Morin's (2000) knowledges. Thus, the course modules presented the following stages and proposals for training: (i) **welcome** to the teacher in formation, quickly commenting on the basic author and his work; (ii) **reading of a case study**, for the contextualization and reflection of each knowledge; (iii) **a starting point**, in order to exercise complex thinking from the teacher's previous knowledge; (iv) **the study**, providing various resources for learning and deepening each knowledge; (v) **practice in practice**, with a proposal to reflect on the contributions that the study of “knowledge” brought to the practice of each participant, seeking a pedagogical proposal based on complex thinking; (vi) the **bibliographic references** relating to the module.

Study analysis throughout the training course

The analysis focused on the study and collaboration of teachers participating in the online course in module 6 - teaching comprehension -, in the stages in which they had effective participation in the discussions: **starting point, practice in practice and complex thinking in pedagogical practice.**

Two of the three researchers participated, throughout the course, as tutors, analyzing the contributions of teachers in training and making the necessary mediations and theoretical connections to deepen the study of knowledge. The third researcher was involved in effectively carrying out the course modules, with the intention of studying and improving her

knowledge through collaboration and exchange of experiences, as well as for the critical analysis of the entire process proposed to the course by the research group.

Starting point

At this stage, the teacher was motivated to express his opinion, based on the reading of a case study and based on his life experience. The case study presented involved excerpts from a publication by the Ministry of Education (MEC), in partnership with Unesco, in which some views of Reimers (2017) about teaching work in the face of rapid changes in society were reported, pointing out the need for: (i) teachers' understanding of the learning process of current students; (ii) differentiation and personalization due to the differences and diversities that occur in society and classrooms; (iii) use of technological resources and versatile learning tools in order to bring more opportunities to students; (iv) to develop cognitive skills for inter and intrapersonal relationships and others for acting in different contexts, without neglecting sustainable and responsible citizenship.

For teacher participation, as a starting point for the study and recovery of their previous knowledge, the following question was proposed, based on the case study: the text of the cooperation agreement indicates that MEC and Unesco expect teachers and students reach a deep level of understanding of the content and that this occurs through pedagogical practices. In your opinion, does this happen? What is the quality of education that we teachers are offering in schools today?

In general, it was observed, in this preliminary stage of the effective study of knowledge, that the contributions of teachers in training already present a broader and deeper view on the topic proposed for the module, attributing to this the realization of five modules above, thus verifying the apprehension of knowledge that contributes to their reflections. This was evidenced by their insertions, which mostly addressed the quality of teaching, proposed for discussion, but going further, raising influencing factors and pointing to understanding, in its multiple dimensions, as an essential element to the quality and transformation of teaching.

Among the reflections described by the teachers, the following stand out: (i) the difficulty of reaching a deep level of understanding of the contents by students and that, for this, quality teaching is not only linked to the teacher's work and student involvement, but also to the joint action between school, family, social environment, educational bodies and policies; (ii) the need to teach and practice mutual understanding, diversity and differences, in order to propose pedagogical approaches for teaching, learning and assessment more suited to

the personal and social conditions of students; (iii) the relevance of the continuing education of teachers, so that they develop a new way of thinking in the face of the reality of the classroom and their role as mediators and no longer as content transmitters, thus proposing more innovative educational practices to their students.

On the difficulty of deep understanding of contents by students and the factors involved, some contributions are highlighted:

Despite the indisputability that we are all learning, all the time, I believe that fruitful learning, when we talk about our students, occurs in direct connection with their interests. This puts us in a complex situation, as it is impossible to reach the range of inclinations of all students in a room, which leads us to constantly make choices and decisions, both on the subjects covered and the pedagogical practices to be adopted (P.3, 2018).

Along the sixth knowledge, Morin defines the term 'understand how to learn together [...], embrace together (the text and its context, the parts and the whole, the multiple and the one)'. This definition emphasizes the importance of working together, in which teachers and students together embrace the teaching-learning process. This makes the classes more interactive, as it encourages participation, creativity and knowledge production (P.10, 2018).

I believe that this level of understanding that Unesco aims for is unfortunately not happening. The task of deepening a content to the point where the student has full understanding and/or interest in studying a subject in depth is a huge challenge for the teacher. (P.16, 2018).

When dealing with comprehension, Morin (2000) distinguishes it as intellectual or objective, which involves intelligibility and explanation, and intersubjective human comprehension, which goes further, and explanation is even insufficient. For him, understanding is a process that requires: (i) empathy, as the professors participating in the course put it when talking about decision-making in the classroom regarding the contents to be covered and deepened and the practices to involve the student participation in learning; (ii) identification, which is observed in two of the comments cited by the direct relationship of students' interests with the inclination to learn; (iii) projection, which is indirectly presented in the speeches by the idea of taking on the challenge of a transformative education, carried out together and attentive to current conditions.

About teaching and practicing comprehension, some excerpts can be highlighted as prior knowledge of teachers in relation to the study proposed in module 6, as well as an expanded view when addressing points relevant to quality teaching:

To avoid exclusion, respect for diversity is fundamental to achieving quality education (P.1, 2018).

As long as we do not know how to evaluate our actions, we are understanding, we learn to understand the difficulties of the other, we will not be effective in our teaching-learning methods, nor in our evaluations. (P.11, 2018).

The diversity is there, and it's good that today it is at least recognized. Although still far from the understanding of some, it is a start for us to rethink our actions and try to adapt the long-awaited guarantee of teaching and learning for all. (P.15, 2018).

As pointed out by the participants, continuous self-examination, as a mental practice, is for Morin (2000) fundamental to the understanding of one's own failures, weaknesses, difficulties and awareness of human complexity and diversity, so that paths to understanding and respect towards each other can be created.

Pointing to the continuing education of teachers for innovation, transformation and quality of teaching, the following contribution is relevant:

In my view, there is currently an intense focus on the development of students' skills and, at times, the teacher is forgotten when it comes to their professional development. [...] I believe that we urgently need to rethink initial and continuing teacher training so that they can develop the skills needed to educate for the 21st century (P.9, 2018).

Although Morin (2000) does not deal exactly with teacher education, the wealth of his contributions includes human development through transformative, complex and systemic education, whether teacher or student, because, for him, it is necessary to put oneself in the other's shoes to understand, it is necessary to have a vision of the whole to understand where and how the parts are within a context and to be ready for the uncertainties that life and, consequently, the classroom present every day.

Practice in practice

After deepening the knowledge, using the resources available in the Studies field, such as didactic text, video prepared by the Pefop group with the explanation of knowledge, videos with related themes, provocative images for reflection, chapter of the book by Morin (2000), among others, the participation of teachers was again motivated, but now mobilizing the knowledge learned throughout the study process, proposing reflection, sharing and discussion in the forum about the following questions:

a) a) One of the points covered in Chapter VI, about teaching understanding, indicates the need for sympathy, identification, empathy and projection in relation to the other, in this case, the student. Could you report actions that demonstrate the presence of this understanding in your school's pedagogical practices or indicate actions that are not contributing to this understanding of the other and the world around us?

b) b) Considering the understanding of the importance of the concept of understanding for Morin (2000), explain how you understand the importance of “education for the development of comprehension”.

Regarding the actions in the schools of the participating teachers that demonstrate the presence of sympathy, identification, empathy and projection in relation to the student and are presented as contributions to the reflection of an innovative pedagogical practice, the following reports stand out:

At our school, we truly insist on awakening to planetary humanization, to an understanding of the suffering of the other, as well as to the fallibility from which our students, nor ourselves, do not escape. (P.3, 2018).

In the school environment where I work, we develop different educational activities with students from child education to high school, in order to teach understanding of the other and, at the same time, make them aware of the daily cultivation of the virtues of sympathy and empathy. Students learn at school basic values to human existence, such as: dialogue, respect, discipline, solidarity, compassion, love, among others (P.10, 1028).

At the university where I work, we have a psycho-pedagogical follow-up program for students and, today, actions are closer to students, using the classroom space to carry out preventive work, guiding them to learn to better deal with their problems and anxieties (P.15, 2018).

At the school where I teach, [...] there are social actions in which students have the opportunity to leave their comfort zone and experience social problems that fortunately are not part of their daily lives. (P.16, 2018).

We took a group of students to complete a solidarity project at the Guadalupe bus terminal in Curitiba; In one of its stages, this project included the delivery of a snack and blankets, at 6 am, to homeless people. [...] The students were very impacted by the reality of these people [...] (P.18, 2018).

In such contributions, there is a movement emerging towards educating for the obstacles of understanding, which Morin (2000) exposes by looking at the other and their condition of being and living, as well as by the meaning of their ideas, words, culture, values and worldview. Again, empathy emerges, explored by him due to the need to place himself in

different positions than his own, imagining or experiencing the condition of others in order to bear grow the understanding for himself and for the other.

There were no comments on actions, in schools where the course participants teach, that are not contributing to the understanding of the other and the world, but most presented their understanding of the importance of the concept and development of understanding proposed by Morin (2000), again characterizing the contribution of the study of knowledge to the thought of transforming current teaching. Thus, some reports stand out:

The classroom is a place to teach, a place to learn and a place to socialize. In making this environment conducive to learning effective, dialogue and interpersonal relationships contribute to developing the ability to understand reality, oneself and the other (P.1, 2018).

I believe that actions aimed at valuing the diversity and inclusion this aspect in the teaching and learning process must be permeated by the contextualization of the content and pedagogical practices adopted by the teacher (P.4, 2018).

Educating for the development of understanding goes far beyond transmitting content. The interaction between teacher and student, when done mechanically, with the simple objective of transmitting concepts, is perhaps the biggest barrier to the construction of comprehension. Thinking, critical and capable of comprehension students beyond the proposed content are created through dedication, affection, love and, of course, after the teacher manages to have an adequate understanding of what he intends to teach himself. (P.12, 2018).

In the study of this knowledge, [...] some things caught my attention and made me reflect, such as: 'breaking with individualism'. [...] infect understanding from within ourselves. [...] we need to start 'living the life of a human being' to understand and respect diversity, whether in the classroom, at work, in nature, or in society (P.15, 2018).

Here, we observe the apprehension and contribution in the reflection of the practice of some teachers from different foundations that Morin (2000) points to the possible teaching of understanding, such as: overcoming egocentrism and the reducing spirit, which limit and make impossible the looking at the other, at the other parts and even at the whole and its context; globalization and ethics for understanding without ethnic and cultural barriers and for systemic and planetary understanding.

Complex thinking in pedagogical practice

As a conclusion of the module, the participation of the teacher was requested to prepare, at the end of module 6, a report on the possible contributions and influences that the

knowledge acquired throughout the study brought to their pedagogical practice based on complex thinking, regarding the organization of their teaching work (planning, methodology, evaluation) in their classes.

At this stage, there were 18 reports, as one of the teachers did not comment, but from the reports presented, the following reflections stand out, which led to a deep analysis of the knowledge added to the practice of the course participants:

This module brought up a reflective look at our pedagogical practice and made it clear that teaching to understand the other, as well as yourself, is the basis for developing values such as trust, friendship, understanding, solidarity, respect, among others (P.1, 2018).

Despite already working imbued with the will to understand and accept the other, I realized, through this module, that it is necessary to do this systematically, with planning and establishing control points, so that it does not acquire amateurish contours (P.3, 2018).

I believe that this module made me reflect on the assessment and the importance of it being consistent with practice, that is, if I intend to develop in my students critical capacity, reflection, solidarity and other skills, I should think in what way these skills are included in my assessment. (P.5, 2018).

This module made us reflect on the humility that we must have in teaching, welcoming, sharing ideas and actions and that we must always adapt and reinvent, to reach everyone equally. (P.8, 2018).

The “good thinking”, as proposed by Morin (2000), is experienced and shared here, evidencing the numerous contributions of the study to the practice of the teachers who participated in the module, bringing future possibilities of teaching based on complex thinking, which transcends the fragmentations and limitations of the still reductionist view of teaching, which prioritizes content and the protagonism of the teacher, going beyond and flourishing towards true human awareness and development.

Final considerations

The study proposed in module 6 of the online pedagogical course (teaching comprehension) made it possible for teachers participating in the training to get in touch with the contributions of Morin (2000), who deepened the ways of understanding, highlighting possible obstacles, such as egocentrism, ethnocentrism, sociocentrism and reductionist spirit; presents facilitators, such as good thinking and introspection; relates the ethics of understanding to the ethics of planetary culture; and deals with the awareness of human

complexity through sympathy with the other and the interiorization of tolerance. With a focus on these elements, we sought to investigate, from the participants' reports, evidence of the main contributions of the course to more innovative practices from the perspective of this knowledge.

In response to the problem of this research, the participation of teachers in training was analyzed throughout the completion of the module and it was observed that, in the three moments in which they were asked to reflect and discuss issues related to knowledge, they demonstrated relevant contributions to the construction of their knowledge, revealing, in addition to intentions for the transformation of the classroom and the school, some practices that have already been experienced and that lead to the thought of teaching for understanding and, mainly, for a path of pedagogical innovation. However, it is noteworthy that the study presented here evidenced the deepening in one of the seven modules offered and, being the sixth, demonstrated greater appropriation of knowledge in the reflection and debate of the participants, indicating the evolution and construction of teaching knowledge.

Also noteworthy is the process and dynamics of action research, which meant that its researchers were involved in each stage of investigation and even training, continually feeding back and deepening their knowledge by tutoring and exposing their reflections, promoting co-learning and collaboration for the growth of new teaching practices, as well as exercising the purpose of the knowledge under study, understanding. Thus, the message of Morin (2000, p. 104, our translation) remains, who says: “[...] the planet needs, in all senses, mutual understanding [...] the development of understanding needs planetary reform of mentalities; this must be the task of the education of the future”.

As relevance of this research, it is pointed out the need and importance of training the teacher under and from the perspective of complex thinking, which brings the realities of life and society to the discussion and action, opening the eyes to a more humane and global education of social, ethical, environmental and planetary transformation.

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