

# PRIMARY SCHOOL TEACHER TRAINING IN BRAZIL: A PROPOSAL WHICH CONTEMPLATES THE PARADIGM OF COMPLEXITY IN THE TRANSDISCIPLINARY VISION

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## Abstract

This article originates from part of a research, with a focus on the issue: How to offer a proper in-service continuous training programme which contemplates the Paradigm of Complexity, catering for a transdisciplinary vision, in the search of the (re)construction and consolidation of the pedagogical knowledge of teachers who work with early childhood education? This research, of a descriptive nature, is linked to the group called *PEFOP - Paradigmas Educacionais Formação de Professores*, allocated to the *stricto sensu* Graduate Programme in Education, at Pontifícia Universidade Católica do Paraná-Brazil. The research as a whole aims to investigate the point of view of teachers who work with early childhood education, proposing the curricular extension in regards to teacher training, emphasizing the importance of the complexity vision in the pedagogical practice. It proposes the investigation of different professional training possibilities of this level of education, taking into account the necessity of a pragmatic change to teaching practice. In this article which was consolidated while the researcher sought to understand the components that make up the change of early childhood education professionals. The investigation allowed us to realize that the professionals who work with this level of education can enhance their teaching practice, having as basis the transdisciplinary vision, focusing on the paradigmatic change of the Complexity. This, as a comprehensive theoretical-practical basis, allows a methodological unleashing able to build substrates to go beyond the content included in the curriculum, in search of learning which is really significant to the lives of the students.

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**Keywords:** Teacher Training, Early Childhood Education, Paradigm of Complexity, Transdisciplinary, Methodological Strategies

## Introduction

This article originates from part of a PhD research, which focuses on the following issue: How to offer in-service continuous training programme which contemplates the Paradigm of Complexity, in search of the (re)construction and consolidation of the pedagogical knowledge of teachers who work with early childhood education? For this work, the researcher sought to investigate the necessity to change the point of view of teachers who work with early childhood education, proposing a the curricular extension in regards to teacher training, emphasizing the importance of the complexity vision in the pedagogical practice, investigating the different professional training possibilities for this level of education. The qualitative study was consolidated while the researcher sought to understand and record the components that make up the change in pedagogical practice, from a

standpoint of the complexity and transdisciplinary vision, aiming at transforming the format of continuous training courses catered for early childhood education professionals.

Early childhood education is an extremely important level of education when it comes to the development of the individual, as it becomes one of the places responsible for the initial formation of the person as a historical being and constitution in society. With this in mind, this should be one of the stages of education in which professional have the greatest level of knowledge regarding human, cognitive, emotional and social development, among other knowledge which is important in this stage of life. However, this is not the reality in the current Brazilian education system.

In Brazil, many small primary schools can be found employing a group of teachers who carry a *Magistério de Ensino Médio – Secundário* (vocational-technical teaching certificate – High School) or are BEd (Bachelor of Education) interns (equivalent to Education Science). The current Education Guidelines and Basis Law, under the number 9394/96 (Brazil, 1996), advises that all teachers who work with education, in all levels, have to have as a minimum requirement, an undergraduate degree, and in the case of teachers who work with early childhood education, the professionals must be “licensed at a secondary or higher level” (Brazil, 1996). Unfortunately, this is not the reality found in primary schools.

Such formation is about looking at the importance of this process of individual development, which starts in this phase, going beyond the simple fact of caring. It is necessary that the teacher, committed to the effective learning of his student, interact each day more with his knowledge, enhancing pedagogical practice points of view and possibilities, through an innovative and responsive methodology. Thus, we must consider Early Childhood Education as a rich and fertile area for both the effective work of the teacher and the learning achieved by students. It is worth mentioning that children are at this level of education with a role that goes far beyond mere spectators, but as participants in their formation and interaction with reality, with society and with the world around them.

This aims to investigate different possibilities for extensive training of professionals who work in early childhood education, as it requires a paradigm shift in teaching that favours action and contributes to an expansion in training, theory and insertion to the academic and practical knowledge, meeting the demands of this stage of children's lives. This fact points to its relevance, as the reality of teacher training aimed at those who work at this level of education, and those who are currently leaving the institutions of higher education, has proved deficient and why not, shallow.

Its main objective is to develop different potentials in individuals, from a young age, so that in their academic path, they can establish connections between the learning which took place and their reality. This fact is, to some extent, unanimous in education and it is well known that the quality of early childhood education carries such responsibility. However, what can be observed in practice is different. It can be noticed, when in touch with this area of teaching, that there is a stigma, perhaps a lack of meaning in relation to the concept of early childhood education, which seems not to offer an effective pedagogical work. It can be observed that this level of education is much closer to an environment of recreation and playfulness, which carry noticeable importance and need to be present nonetheless but should be added to effective processes of learning.

### **Paradigm of complexity in Early childhood education: a necessary training**

For the perception of the relevance of a change in world views present in education, it is necessary to understand the importance of the paradigmatic transition which took place in the end of the twentieth century, when education started to be challenged to propose methodologies that had an emphasis on the production of the knowledge of the students, and not only the reproduction of content. This paradigmatic crisis went beyond education, and

was deemed very important for science, being emphasized in the beginning of the twenty-first century, especially due to factors of great importance to the current society. Such factors can be noticed for instance in the technological advances which took place quickly and needed greater understanding, the destruction and humanity's lack of care towards nature, without ignoring the consequences of the actions and the strong rampant competitiveness generated by the capitalist society who does not have any ethics or worry for others.

After the rupture of the Conservative Paradigm, there was the necessity to understand not only the complexity of the current crisis, but also the proposal of resolution to the set of problems, which science suppositions [here linked in a more emphatic way with respect to education and its connection to daily life and to the reality of students and teachers] did no longer find answers to its instigations, bringing about the necessity to create a new paradigm that could argue with and answer such predicaments and propositions.

The society's urgency for knowledge is present when there is the need for a change of focus, from reproduction to production of knowledge, driving students into a new society: the one who learns to learn, to know, to do, to live and to be. This perspective makes us face the paradigm of complexity, which demands the rupture from the point of view based only on reasoning, in search of the overcoming of the fragmentation product of a Cartesian and reductionist position. In order to better understand this issue, Morin (2001) can be cited, where he stresses that pertinent knowledge needs to face complexity. For the author, *Complexus* means what has been woven together, that is, a fabric. "Therefore, complexity is the union between unity and multiplicity" (2001, p. 38).

The paradigm of complexity, in another author's point of view, Yus (2002), can be denominated as Holistic or Systemic and has been trying to establish again the fragmentation of knowledge through connections between the linear and collective thinking, among other dualities (In Behrens, 2006). Teacher training, therefore, goes through the urgency to welcome the new paradigm of complexity, while the previous model cannot any longer meet the increasing demands and raise new answers to old questions.

At this moment in time, the urgency erupts in many ways, demanding the propagation of knowledge and a range of contents which need to be redefined, so that this new vision which substitutes the Cartesian one can come through and let go of the collective construction of knowledge, which serves to modify, assure and enhance the educational practice. It is the search for a fairer and more equalitarian society where learning takes place not only in classrooms, but also in informal places, as people live in a permanent educational reality. Education goes beyond school walls. It takes place in different places and ways. The *locus* changes and so does the vision of education, which starts to be amplified, reorganized and revisited.

After this whole new configuration given to education, it is necessary to amplify the focus when it comes to training this teacher who currently works in a school setting. Therefore, the continuous development of teachers to cater for this paradigm of complexity needs solidary processes which involve theoretical knowledge but which also go beyond the theory, covering critical discussions as well as other factors – project, production, argumentation, research, participation, analysis, elaboration, creating and group work – in which teachers and managers are enhancing and developing their professional skills. So, the Society of Knowledge is configured as such, having as premise the search for a more global vision of not only education, but also other factors which influence society, basing itself on factors with great confluence of ideas: citizenship and ethics; relativeness; totality; connection net and propagation of information; complex and interconnected systems (BEHRENS, 2006). At the same time, a strong construction of collectiveness is born, since under this perspective the actors of education no longer act within walls, away from society. This opening and expansion movement will boost a new vision which emanates from the urgency of thoughts

and attitudes, giving birth to what we call Paradigm of Complexity (MORIN, 2001; BEHRENS, 2006). It proposes the understanding of the conceptual structure that is part of the cognitive, biological, social and educational dimensions.

Under this perspective, there is the birth of a global vision, in which reflection and analysis lead to the perception that there is a huge difference between scientific knowledge and school knowledge (ZABALA, 2002). For this author, knowledge cannot be stuck within colleges or places that stop its dissemination. Under this standpoint, it is necessary to realize the goal and the relationship present in professional training courses, mainly those connected to the preparation of teachers.

Another relevant aspect which we should take into account is student motivation. It is well known that a lot of what is covered in the classroom is thrown away by the student. Actual information retention is restricted to a very small percentage, when compared to the amount of information transmitted to students. It is also noted that teachers need to be great articulators and mediators of this knowledge production and that it is also up to them to arouse the interest of the student in class and in the content which is being developed.

In this regard, it is observed that the teacher needs to update their practices and overcome the resistance to the critical use of available technological resources. The tools that teachers have handy are increasingly more diversified. It is up to them to make use of them to teach and to learn. Although we are here to talk about students, the starting point is still the teacher and their methodology, that will be underlying in this process of teaching and learning, which in turn can and should be deemed eternal for both sides: teacher and student.

The modernity and critical view of technology are in the heart of this matter, bringing about a subject which needs magnification and theoretical deepening: teacher training, their role in society against complex reasoning and transdisciplinarity. Break this paradigm in which knowledge can and should be wider and more democratic through the instrumentation of those who are the face of education – the teacher – who many times, due to the fact that their training took place in another historic moment, do not take ownership of the new possibilities or tools so that they can be used in their favour in the classroom. However, it is here that we should emphasize that technology is not only instruments used by teachers in the classroom, with technological resources. It goes beyond that. The means in which the necessary knowledge will be made available to grant effective learning is what we should put in evidence. Another way to expand knowledge, and not transmit mere information because the worldwide web is full of the latter. Teachers need to find a way to transform mere information into knowledge and can do it by bringing technology into the classroom as an instrument which will bring it closer to students' reality.

### **The Transdisciplinarity**

The transdisciplinarity (MORAES, 2012) is to a certain extent very present in the educational daily life. When it is made clear that this concept is not a science, religion or philosophy, it becomes a process which goes beyond ready and done knowledge. We start from the assumption that the subject is always extended and discussed in a way which promotes ownership. The transdisciplinarity is a proposal which aims at inciting curiosity, promoting connections with the knowledge acquired which leads to a superb construction of solid learning, with great amplitude.

In Nicolescu's opinion (1999), transdisciplinarity "[...] as the prefix trans indicates, transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all discipline" (p. 53). Under this perspective, when teachers apply a transdisciplinary methodology, they need to be mindful that the content covered, the subjects developed, and the approaches carried depend on a methodology which engage students to go beyond what is described, inviting them to extrapolate the content presented.

It is a way to demonstrate the applicability of the topic to students' life and arouse their curiosity to seek more subsidies about the subject. The subject does not end in the classroom. It becomes a place for triggering topics with the goal of mobilizing learning. Resignify. Give practical meaning. This is a way to demonstrate dialectically that the subject developed, promoted, worked on, is pertinent, not only because it develops the necessary learning in that moment in time for curriculum purposes, but also because it will be essential to have this knowledge in life.

In methodological terms, this learning proposition promotes the inclusion of pupils into their own learning process, for they are participants and agents of transformation. We hope that with this study teacher training becomes more and more about the instrumentation of professionals who work with education, whatever level of professional development they might have. There is an urgency and need of more awareness around the fact that this profession, as any other, needs constant theoretical development so that educational practice becomes really transforming. This matter is of great importance as many educators work responsibly with a reality of constant training. However, this does not represent the totality, mainly when we refer to professionals who work with early childhood education. Hence the insistence around the transdisciplinary vision, as it does not encompass only a few actors, but all of those who work with education as a whole. I challenge you to try transdisciplinarity.

For Nicolescu (1999, In Santos 2009), “ [...] transdisciplinarity means breaking the logic of non-contradiction, articulating what is contrary: subject and object, subjectivity and objectivity, matter and consciousness, simplicity and complexity, unity and diversity.” (p. 23) Therefore, it is clear here that the notion that knowledge is built collectively, consequently, there is no completely right or completely wrong. We experience the unity in diversity, where the points of view interpenetrate, turning the construction into a collectivized learning experience. Both teacher and student are teaching and learning. Utopia? We don't think so. Every day, this vision becomes more possible.

What can be observed for professionals of education is a lack of commitment to their own professional development, in which their capacitation becomes a degree to obtain more income, promotion and things like that. It is urgent and necessary that professionals of education be conscientious that a paradigmatic change is necessary for all, as the information is constantly being amplified and modified. However, it is up to the teacher to allow students to internalize this information in a significant way and that it gets transformed into significant knowledge, as well as it offers to pupils a new way to see the world.

We could not fail to cite D'Ambrosio (1997), when he says that “The essential in transdisciplinarity resides in the posture of recognition of the non-existence of privileged cultural space or time which allow us to judge and rank the several complexes of explanations and coexistence with reality as the most correct – or more correct or true.” (p. 79-80). Each one has their own lenses, according to the way they see the world; however, the teacher can and must help adjust these lenses so that students can read the world with their own eyes and perspectives. This is our transforming task. Teachers are agents of social transformation.

This is the role of the complex society, in which transdisciplinarity allows a broad and omnibus view of the world and so manages to demonstrate to pupils that the tessitura of their information is done and designed by themselves, throughout their lives, with the continuous mediation of teachers. And a mediator, the teacher shows the way, but who traces the trajectory is the learner. In this process, the educators are masters and pupils at the same time.

The challenge is also extended to early childhood education, which needs to reconstruct pedagogical processes focused on citizenship development, education for peace, to accommodate attitudes of tolerance, justice and brotherhood. Early childhood education is the birthplace of the education of students who can become better, more generous and happy people, or simply citizens of a better world.

## Conclusion

Childhood evolves with social, political and economic transformations throughout changes to society and mark historical times and places in which the worry needs to also be focused on the educational process, which goes beyond hygiene care very much covered in early childhood education. It is believed that the focus on the hygienist vision comes from the long history of deaths caused by banal diseases, by which 0-to-6-year-old children were highly affected.

This scenario is changing slowly, but this process of transformation is linked to the insertion of the Education in its formative and educational aspect and not merely assistencialist as configured throughout the historical evolution.

It is important to make clear that in this moment that the evolution took place in the insertion of this level into the educational environment, without demonstrating at least the Brazilian reality, the connection of the same evolution with the training of professionals who work in this segment. These professionals, in general, are the worst paid, but it is important to highlight that they are teachers with great responsibility.

Therefore, in this moment of pragmatic transition of Science and Education, it is necessary to promote the reflecting around the urgent and necessary training of these professionals who directly work with 0-to-5-year-old children. The urgency for change, according to Roldão (2010) is linked to the discrepancy between the practical reality and the academic aspect, in which those educators who are active get away from theories, believing that theories can hardly answer urgent matters experienced in the classroom. The complexity proposed the closure between practice and theory and this might be the way to the transformation of the pedagogical practice with an innovative standpoint.

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