



DYNAMIC PROCESSES OF STUDENTS LEARNING ON INITIAL TEACHER TRAINING

***Fernanda Gouveia and Paulo Brazão**

CIE-UMa, University of Madeira 9000-082, Funchal Portugal

ARTICLE INFO

Article History:

Received 04th August 2017
Received in revised form
26th September, 2017
Accepted 11th October, 2017
Published online 29th November, 2017

Key Words:

Initial Teacher Training,
Learning by Participation,
Practice, Reflection.

**Corresponding author*

ABSTRACT

The debate about the importance of learning through participation in the initial teacher training is relevant in dynamic processes of students learning, that happens according to the action in the context, the culture and social interaction. We intend to emphasize how important is the experience in personal and professional training of students learning in Action-Research (A-R). Through a qualitative study it was possible to interpret the learning processes to develop an important trajectory regarding the initial teacher training. Learning in real contexts was a challenge in the initial formation of students and made it possible to reflect critically their practices.

Copyright ©2017, Fernanda Gouveia and Paulo Brazão. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Fernanda Gouveia and Paulo Brazão, 2017. "Dynamic processes of students learning on initial teacher training", *International Journal of Development Research*, 7, (11), 16665-16667.

INTRODUCTION

Three metaphors allow to reconcile learning: learning as participation (Lave and Wenger, 1991 and Wenger, 1998), learning as transformation (Engestrom, 2001) and learning as a dialogic action. Learning involves participation in practices guided by a common goal and undertaken together, through negotiation of meanings and accountability for the consequences of the actions taken. This participation is personal and has a social meaning in relations established with others, because meaning does not exist in us, nor in the world, but in the dynamic relation of living in the world (Wenger, 1998). It is a complex process that provokes transformations in the people, as learning takes place (Fernandes and Santos, 2013), shaping the actions and the interpretation of the people about the world, who these people are and the practices in which they participate. Involvement in social practices depends on the motivations (Alro and Skovsmasse, 2002) and their past experiences, as well as their expectations about this participation.

In this process of learning mediated by social practices, it is natural for conflicts and tensions to arise, resulting in transformations in people and organizations, in a dialectical and intentional process that is reflective, critical and responsible (Fernandes and Santos, 2013). In this learning process, the lived experience is taking shape, providing the creation of points of focus, from which the negotiation of meanings is promoted. Understanding allows building procedures or tools for action. Wenger (1998) refers to reification, which consists of shaping experience and producing objects that solidify that experience, as a fundamental process in any practice, including various actions, such as naming, coding, decoding, perceiving, interpreting, among others. Thus, reification shapes the experience, since the tools that allow us to carry out activities can change their nature. The real contexts of pedagogical practice (internships) reify the vision of pedagogical practice, and the experience of learning to teach, as well as the associated teaching identity. Our understanding of this reality requires a comprehensive look that contemplates all contexts, weaknesses and

challenges. More than providing access to the curriculum, it also consists of making decisions related to the identity of the people. The learning processes build in non-formal and authentic contexts in learning communities are relevant to understand the learning process occurring in formal contexts. According to situated learning theory advocated by Lave and Wenger (1991), cognitive development depends on the physical, social and cultural world in which people move, since the sociocultural dimension is relevant. It happens through social interaction, as well as through experience and is developed based on five principles to be considered: it is based on real situations of daily life; is developed by action and allows its application to similar situations; it results from social interaction and combines thought, perception and problem solving; interconnects theory with practice; it happens in complex social environments; it happens through mathematics when the apprentices can become conscious of the situation that they are involved in (Papert, 1980).

To ensure the active participation of pupils, it is important to provide authentic contexts that allow the realization of meaningful and real learning. These contexts are the real laboratories of the practices experienced. The transfer of knowledge happens simultaneously with the phenomenon of generalization and abstraction of knowledge. However, learning does not only involve the transfer of information, since it happens in a sociocultural process. It involves the participation of the pupils in the construction of knowledge and skills as well as a negotiation and renegotiation of meanings attributed to the lived experiences. The interpretation of meanings that lead to renewed actions depends of the process of negotiation and renegotiation and that's why teacher training, after initial training, must be sustained by action-research processes, enabling students to better reflect on their practice and to create solutions to the problems they face in contexts of pedagogical action. They are meaningful training practices (Leal and Fonseca, 2013) because they are authentic and relevant experiences for the integral development of students (Gouveia and Brazão, 2015). Through the action research (A-R) methodology it is possible to study a variety of problems with diverse approaches such as: case studies and ethnographic studies about students, teachers, groups or schools; measures of curricular structuring; micro-insurance and other experiences about supervised practices (Hatton and Smith, 1995).

In Sousa's (2005) opinion, an investigation usually results from the need to respond to problems or questions. A-R has the main goal of leading the researcher to reflection practices supported by scientific rigor and to help him/her to initiate processes that allow him/her to improve the conditions of practice. A-R is a reflexive study, which allows for quality improvements in pedagogical practice (Elliott, Lomax and Bartolomé, cited by Coutinho, 2011). According to Elliott (quoted by Máximo-Esteves, 2008), A-R is considered as the study of a social situation with the purpose of improving the quality of action. Coutinho (2011) reclaims that Action-Research is one of the research methodologies that makes changes and at the same time promotes the understanding as a cycle between action and critical reflection. It is developed along four phases: planning, action, observation and reflection (Coutinho et al., 2009). These steps follow each other until the goals are achieved. This research methodology is qualitative, since it is based on a personal interpretation of the reality observed in a practical context and values reflection as well as

understanding (Sousa, 2005), but does not intend to generalize, its goal is only to investigate the complexity and natural context (Bogdan and Biklen, 1994). A-R is a critical educational science (Carr and Kemmis, 1988), which favors the professional development of teachers, as it allows them to do research, while reflecting on their practices and developing them in school contexts. Teachers are responsible for their own personal and professional growth and their main objective is to improve practices. Although A-R is a systematic and self-reflective scientific research developed by practitioners (McKernan, 1998, quoted by Máximo Esteves, 2008), that does not fit into the positivist paradigm. According to Máximo-Esteves (2008), the A-R methodology requires formulating practice-related questions to identify objectives and selecting the most appropriate strategies for implementing and evaluating project results. Action-Research is a methodology based on interaction between research theory and practice. The teacher interferes in the field of research itself, analyzes the consequences of its action and produces direct effects on the practice (Alarcão, 1996). The teacher acts in a cyclical process, that is, the teacher thinks about what they are going to do, do it and then go back to think about the results obtained in order to do something that can involve changes in relation to the one that was thought at the beginning. With this process, the teacher better understands his/her own practice and has a more adequate awareness about it.

Then the methodology is defined and data is collected, both of which are subsequently organized and subject to interpretation. The collection of information can be done through observations, interviews, and records or published texts, allowing the discovery of new phenomena. In this sense, in the first phase of the research project it is important to make a participant observation, with the aim of better understanding the contexts where the pedagogical practice will be developed. Data analysis takes place from the beginning of the investigation to the final stage. At the end, the data is triangulated, that is, the phenomenon is observed from different perspectives and / or with several instruments (Sousa, 2005).

METHODOLOGY

Students in the 1st year of this Master Degree in the University of Madeira must exercise their skills in pedagogical practice and establish a relationship between theory and practice, between action and reflection about and for action. The master's degree course in *Preschool Education and Primary School Teaching* of the University of Madeira presents in its training plan, a curricular unit called Research-Action. At the end, an internship report is written, presented and defended in a public exam in the fourth semester of the course. The crucial problem in the initial teacher training is "What are the learning outcomes of the action-research projects reported by students in initial teacher education?". The goal is to understand the difficulties felt by students in the immersion of real and authentic contexts during the action-research project and how important is this experience in the personal and professional training. The most appropriate methodology to achieve this goal was qualitative research, according to Bogdan and Biklen (1994). We held a semi-directed, collective interview with a group of fifteen students from the 1st year class of the aforementioned Master's Degree who were developing projects of A-R in Preschool. Of the twenty students, we selected ten randomly. The interview was held at the end of the first

semester of the 2015/2016 school year. The content analysis and interpretation and discussion of the students' answers were the methodology for the processing of collected data. The anonymity of students and their collaborators was guaranteed.

RESULTS

The learning outcomes of the action-research projects reported by students in initial teacher education are:

The action-research project required changes in the organization of pedagogical work, which was not always easy because the cooperating teachers were not prepared to work according to this new paradigm of pedagogical action. The plans used by these teachers focused a lot on the curricular contents and on the themes and traditions usually worked throughout the school year and valued by the school institution, such as: Bread for God, Christmas, etc. The students have difficulty in articulating the curricular programs with the problems pointed out in the action-research projects, identified throughout the pedagogical practice. Most of the curricular time was used in function of the already established programs, instead of these problematics. The students reported that teachers did not get involved enough in the action-research project, because the main concern was the compliance with the curricular programs.

There were not concrete results from the implementation of the action-research project because the time allocated to this work was not enough, besides not mobilizing some educators to continue with this project. Articulation between theory and practice was verified in the design and implementation of the A-R project, because the students got support from the university teachers. The work in action-research methodology developed their critical and reflexive roles as well as their self-analysis of interventions. The reports on the trajectories of situated learning prove that the mathematics of the students in initial teacher training are closely related to authentic learning, by participation, contextualized in the educational environments of the schools where they developed the pedagogical practice. In fact, A-R enables students to understand pedagogical practice in another perspective. We note that the collaboration of teachers was crucial to manage the daily unforeseeable and complex issues of school.

Conclusion

It is important to note and understand how students can learn from dealing with the restraints of daily school routine and how they develop dynamic processes of learning through the participation in real and authentic situation, in the context of schools, where they develop pedagogical practice. During the tutorial, the students had many difficulties in the elaboration and implementation of the project but it was evident that significant learning had happened. It was necessary to better understand this learning process within the context of their training. The A-R is a strategic that potentiates the students' learning through different trajectories in the development of projects synchronized with the ecological and community contexts of schools. One of the greatest evidence presented in the initial formation of teachers was the mathetic demonstrated by students.

Acknowledgment

We are especially grateful to our students for their willingness to collaborate in this study.

REFERENCES

- Alarcão, I. 1996. *Formação Reflexiva de Professores*. Porto : Porto Editora.
- Bogdan, R. and S. Biklen, S. 1994. *Investigação Qualitativa em Educação*. Porto: Porto Editora.
- Carr W. and Kemmis, S. 1998. *Teoria crítica de la enseñanza: La investigación-acción en la formación del profesorado*. Barcelona: Martinez Roca.
- Coutinho, C. 2011. *Metodologia de Investigação em Ciências Sociais e Humanas: Teoria e Prática*. Coimbra: Edições Almedina.
- Coutinho, C., Sousa, A., Dias, A., Bessa, F., Ferreira, M. and Vieira, S. dezembro, 2009. "Investigação-Ação: Metodologia Preferencial nas Práticas Educativas". *Psicologia, Educação e Cultura*, Vol. XIII, nº2, pp. 355-379.
- Engestrom, Y. 2001. "Expansive learning at work: Toward na activity – theoretical conceptualization". *Journal of Education and Work*, 14,1, pp.133-156.
- Fernandes F. and M. Santos, M. 2013. "Aprendizagem como Transformação Expansiva". In E. Fernandes (Ed.). *Aprender Matemática e Informática com Robots*. pp. 24-46. Funchal: Universidade da Madeira.
- Gouveia, F. and P. Brazão, P. 2015. "Hands-on action research in construction of the teaching profession: A scientific contribution in the initial teacher training of the University of Madeira (UMa)". In M. Costa and J. Dorrio (Ed.). *Hands-on Science - Brightening our Future*. pp.156-161. HSCI Hands-on Science
- Hatton, N., and Smith. "Reflection in teacher education: Towards definition and implementation". *Teaching and Teacher Education*. Vol. 11, vol nº 1, pp. 33-49, 19.
- Lave J. and Wenger, E. 1991. *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Leal, A. and Fonseca, J. 2013. A Investigação-Ação como instrumento de desenvolvimento profissional. In F. Sousa; L. Alonso and M. Roldão, *Investigação para um currículo relevante*, pp. 163-177, Coimbra: Almedina. pp. 163-177.
- Máximo-Esteves. L. 2008. *Visão Panorâmica da Investigação-Ação*. Porto: Porto Editora.
- Papert, S. 1980. *Mindstorms – Children, Computers and Powerful Ideas*. New York: Basic Books, Inc..
- Sousa, A. 2005. *Investigação em Educação*. Lisboa: Livros Horizonte.
- Wenger, E. 1998. *Communities of Practice – Learning meaning and a identity*: Cambridge: Cambridge University Press.