

Chapter 276

Epistemology and diffusion of knowledge: Bases for the construction of knowledge in the application research in the education of young people and adults of SESI Bahia

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ABSTRACT

This work presents the epistemological bases, the first definitions, as well as possible referrals, surveys and analyses that will sustain the applied research that has been carried out within the scope of the Doctorate in Diffusion of Knowledge. The problem of the doctoral scientific work is: what is the contribution of teacher training in digital information and communication technologies to the pedagogical practice in the Education of Youth and Adults at a Distance of SESI Bahia? The *locus* of scientific research is the SESI School Rector Miguel Calmon, located in Retiro, in the city of Salvador – Bahia, located in the region of the Old Quilombo do Cabula. The epistemological conception adopted in this scientific research is socioconstructivist. The research approach used for the construction of this article was qualitative research instrumentalized by a bibliographic research. The results point to an epistemological research based on socioconstructivism and supported by the methodology of Application Research, which is an innovative research approach for bringing together the advantages of qualitative and quantitative methodologies.

Keywords: Epistemology, Socioconstructivism, Teacher Education, Application Search.

1 INTRODUCTION

The research that gave rise to this text is part of the set of activities carried out within the scope of the PhD program in Diffusion of Knowledge of the University of the State of Bahia (UNEB).

The problem of doctoral research emerges from two previous researches, the first in the Professional Master's program in Youth and Adult Education (MPEJA), of the State University of Bahia (UNEB) and the second in the *Máster Universitario en Comunicación y Educación en la Red program of the Universidad Nacional de Educación a Distancia* – (UNED), both carried out in 2017.

The researches carried out in the mentioned programs had as object of investigation the Education of Youth and Adults at a Distance of SESI Bahia, both researches, although with different research objectives, presented a convergent result pointing out the need for teacher training for the use of information and communication technologies.

The investigation of Freitas (2017a) entitled "Evaluation of distance high school in the education of young people and adults of SESI Bahia", carried out at MPEJA, of UNEB, points out the need for improvements to the online tutoring process, bringing to light the need for greater student-tutor, student-student interaction, as well as the expansion of educational resources and strategies of interactive activities that enable collaboration and online interaction among participants.

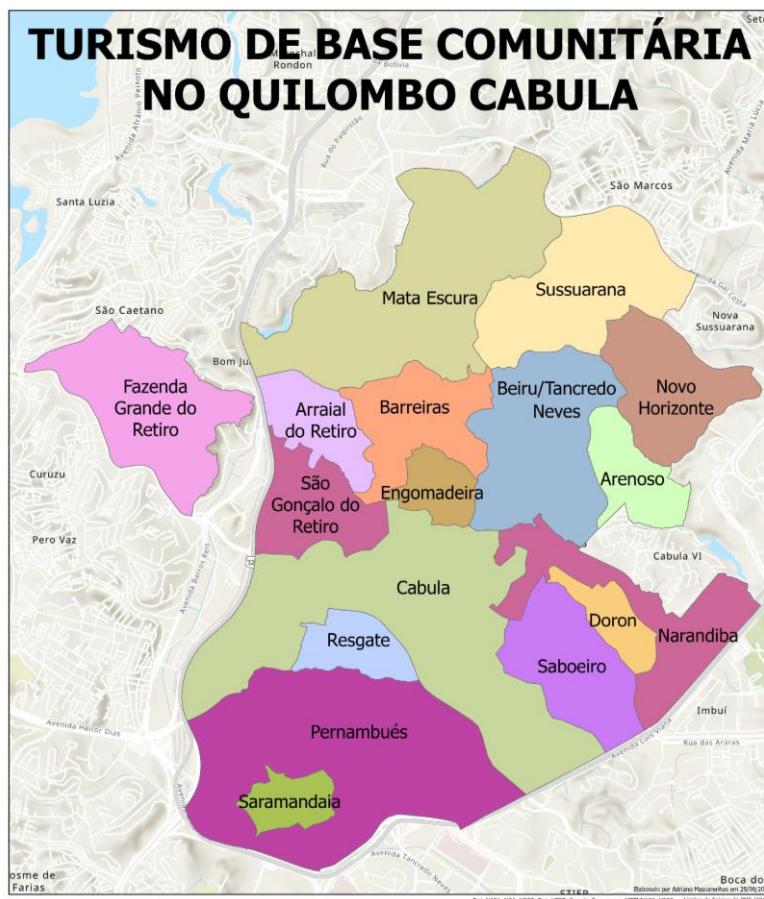
The work carried out at UNED, by Freitas (2017b) entitled "*Las contribuciones del curso de tutoría online para el desarrollo de la competencia digital docente de maestros de la educación de jóvenes y adultos*" (*The results of the digital teaching of conductors of the education of young people and adults*) resulted in the identification of the level of use and knowledge about digital technology.

This research evidences a low technological use and knowledge on the part of the teachers, so it is assumed that the degree of didactic transposition is also so. The results of the research reveal the following doubt: what kind of digital training is being provided to students, if the teachers themselves self-evaluated, in their majority, with the degree of knowledge low or intermediate.

The investigation points to the need for a needs analysis plan, from an appreciative perspective with an approach that promotes the analysis of the strengths that teachers have, to from their knowledge seek to achieve a better level of knowledge and use of digital technologies. Starting from the assumption that all educators do many things with technologies, what is needed is to know the possible ways to improve educational actions such as the use of digital technologies. In summary, the results of the research identify existing flaws in the training of teachers in digital technologies.

Given the results of these UNEB and UNED researches, the question analyzed in this research paper is: What is the contribution of teacher training in digital information and communication technologies to the pedagogical practice in the Education of Youth and Adults at a Distance of SESI Bahia?

The definition of the problem is a milestone in the research, because through it the objectives and



methodological paths to be followed are outlined.

The *locus* of the doctoral scientific research will be the SESI Rector Miguel Calmon School, located in Retiro, in the city of Salvador – Bahia, located in the region of the Old Quilombo do Cabula, as detailed in Figure 01.

Figure 01 – Map of Community-Based Tourism Neighborhoods in Kabula (TBC) and Surroundings.
Source: Mascarenhas, sent by WhatsApp on August 25, 2022

According to Martins (2017) there are historical and cultural studies that point out that the first enslaved African peoples in Bahia came primarily from the Congo and Angola. Soon, Kabula terminology suggests that the African peoples who occupied this region were of Bantu origin.

Martins (2017, p. 47) presents in his research that:

It is these Bantu blacks who began to discreetly occupy the area of Kabula and, in the course of the following centuries, others of Yoruba ethnicity arrived, who, by denoting resistance to the slave system, also sought refuge in areas distant from the urban core of the city. Finding shelter in the dense forests of the locality, these men built their camps, with constant moments of cults consecrated primarily to the deities of African origin, with their drums, dances, sacred objects and food that,

possibly, also counted on the contribution of elements of indigenous belief. This means that Kabula historically represented a territory of black resistance, but, above all, it expressed ethnic, religious, social, geographical diversity, among others, according to the contextual reality of Salvador.

The Social Service of Industry – Sesi, was born in a very troubled political and social context, marked by conflicts in several countries, post-World War II period. In this scenario, Brazil was experiencing political difficulties and needed to prepare workers for the changes introduced by recent industrialization. According to FREITAS *et al* (2018, p. 8-9), it is in this Brazilian and international context that the

President Eurico Gaspar Dutra signed, in 1946, Decree-Law No. 9,403 that assigned to the National Confederation of Industry (CNI) the task of creating, organizing and directing SESI (SESI, 2008). The initiative aimed to improve the qualification of Brazilian workers at the time and prepare them to deal with the innovations implemented by the industry that changed the world of work in Brazil. In that period, the illiteracy rate in the country was around 56.8% among people aged 10 years or older.

Youth and adult education (EJA) is one of SESI's strategic actions to meet the demand of the population and industry that have not completed their studies at the regular age. The performance of EJA in SESI Bahia began in the nineties, when the first classrooms were implemented in the metropolitan region of Salvador and the North Coast (FREITAS, 2018).

Over the twenty-three years, Sesi Bahia has already enrolled more than 130,000 in this type of education. Last year, in 2018, 8,675 enrollments were made, ranking 4th in relation to the number of enrollments in EJA within the SESI Education Network (SESI, 2018).

This is the context in which the subjects of the doctoral research to be carried out within the scope of the Knowledge Diffusion Program are inserted.

With the problematic presented and the *locus* of the research properly contextualized, this article is born that aims to present epistemological reflections that are the bases for the construction of the doctoral scientific research to be carried out within the scope of the Doctorate program in Diffusion of Knowledge.

Epistemology is intrinsically related to the philosophical assumptions of the theory of knowledge, it allows to articulate techniques, methods and theories in a given conception of science. The epistemological conception to be adopted in this scientific research is the socioconstructivist one.

Socioconstructivist epistemology has an interdependence between thought and language, this assumption is different from the constructivists or neuroconstructivists who consider thought as something different from language, this approach also does not consider language equal to thought as the post-structuralists. For the Socioconstructivist thought touches language, this is a mediating element of praxis, because it is not in the mind that knowledge is built.

Knowledge is built in praxis, to the extent that it is experienced by the collective. The truth for Socioconstructivist epistemologists is the encounter of the praxis of those involved, something shared, dynamic, contextualized and transient. It is not imposed, it is built to the extent that it is lived.

The epistemological basis is the foundation of scientific research, as it allows to discuss the implications and contributions of epistemologists to the construction of the philosophical foundation of applied research.

2 OBJECTIVE

The objective of this article, based on discussions and theoretical reviews, to present the epistemological bases, the first definitions, as well as possible referrals, surveys and analyses that will sustain the applied research to be carried out within the scope of the Doctorate in Diffusion of Knowledge.

3 THEORETICAL FRAMEWORK

The research in question, within the scope of the Ph.D. program, brings in itself some challenges of how to foster the training of teachers of youth and adult education of SESI Bahia in information and communication technologies.

Digital technology has entered every interstice of social life. In contemporary times, we experience digital coding and network articulation, which promotes new possibilities of doing, relating, producing and creating that were not imagined in an analog context (BONILLA; PRETTO, 2015).

The change from analog and electromechanical technology to digital technology is characterized as the Third Industrial Revolution (RIFKIN, 2011), it is not only an industrial revolution, but cultural and communicative, generating the network society (CASTELL, 2011), digital citizenship (RIBBLE; BAILEY; ROSS, 2014) the *prosumer* (producer-consumers in the network) (JENKINS, 2007; DE PABLOS, 2015) and, in general, the digital age (CASTELLS, 2012).

One of the necessary revolutions, which will not come by itself, is the educational revolution derived from these digital and communicative advances. It is true that the processes of incorporation of information and communication technologies in teaching practices in schools do not have the same speed as technological advances in society. Given this, collective actions are necessary for the training of teachers in office, thus contributing to the digital training of their students.

Bonilla (2004) states that it is necessary to think of "digital inclusion" as a broader concept, which reinforces that the one who is being included is able to participate, question, produce, decide, transform, is a social actor and protagonist of his history being an integral part of the social dynamics in all spheres.

The inclusion terminology does carry the concept that the subject is outside the system, from society for particular issues inherent to the individual and in the context of this work the condition of the subjects of EJA law can be categorized, as Castel (1998) postulates, of "disaffiliation". A condition that is characterized by the "absence of inscription of the subject in structures that carry meaning" (CASTEL, 1998, p. 536).

According to Castel (1998), the "disaffiliated" is not an outcast, because he belongs to society and lives in it; however, it is far from the center of cohesion of this (BRANDÃO, 2002). In this sense, the process of non-technological knowledge, the situation of the subjects of the EJA, is characterized as a disaffiliation.

Corroborating with the reflections, the research will be supported by the socioconstructivist theory having as guiding principle the studies of Vygotsky. For the author, the individual is the result of the

historical and social process where language plays an essential role, knowledge is a process of interaction between the subject and the social and cultural environment. For the author, cognitive activities such as memory, perceptions and thoughts are fundamental characteristics of the human being, the result of sociocultural learning.

Vygotsky (2007), proposes that the subject acts on reality to adapt to it transforming it and transforming himself by means of psychological instruments called mediators, using tools, which are material resources and signs, which is language. For the author, it is through the interaction between thought and language that radical changes in human cognition are produced.

Given the epistemological foundation presented, the PhD research is developed on the methodological support of Design-Based Research (DBR), also known as Application Research. The research methodology contributes to the training of EJA teachers to expand and/or incorporate the use of technologies in teaching practices, fostering the digital and technological training of EJA subjects.

The application research proposal will be built on the foundations of Vygotsky (2007) who considers human activity a set of culturally determined and contextualized actions, carried out together in cooperation with others.

About the term cooperation, the research methodology adopted, the DBR, is developed with this purpose, to promote teacher training, from a collaborative perspective of peer training on the use of technologies in teaching practices.

Teacher training will be supported by the tripod: subject, object of knowledge and the artifacts or digital sociocultural instruments widely influenced by the cultural context of the subjects involved. The cultural context, in this sense, plays an essential and determining role in the development of the subject who will not passively receive the training, but will act in the constant exchange and feedback having as a starting point the social context in which he is inserted.

For Vygotsky (2007), the subject, although the protagonist of his role, is not the only variable in learning. Their life history, their social condition, their social relations, the historical conjuncture, the available resources are variables that not only support learning but are an integral part of it.

Given this, the Ph.D. research seeks in teacher training to contribute to the promotion of pedagogical practices that foster the use of information and communication technologies in the daily lives of EJA subjects.

For Vygotsky (2004), the process of individual cognitive development is not independent or autonomous from sociocultural contexts, for the author it is not possible to put into practice any learning process without considering the historical-cultural context in which the subjects are immersed, which bring with them a series of historically determined and organized social instruments and practices.

4 METHODOLOGICAL PROCEDURES

With regard to the methodological procedures of this article, our study is an exploratory research of qualitative character (LÜDKE; ANDRÉ, 2012) and instrumentalized by a bibliographical research. The procedure adopted for data collection was the bibliographic research that is developed from material already elaborated, consisting mainly of books and scientific articles with the purpose of obtaining information for the understanding and analysis of the research objective: what is the contribution of teacher training in digital information and communication technologies to the pedagogical practice in the Education of Youth and Adults at a Distance of SESI Bahia?

The organization of the article includes the introduction that highlights the problematic, the context and the referenced theorists; The following are: the objectives of the article, the theoretical framework that supported the concepts of reference; the methodological procedures used in this research; the presentation and discussion of the results and finally the main conclusions and possible paths to be followed.

The text starts from reflections built from a qualitative approach. The choice for the approach resulted from the character of the object of study, given the considerations of Haguette (1992, p.63) when stating that: "[...] qualitative methods emphasize the specificities of a phenomenon in terms of its origins and your reason for being."

5 PRESENTATION AND DISCUSSION OF RESULTS

The Socioconstructivist epistemological basis proposed for scientific research dialogues with the proposed research methodology, in this case the DBR.

For Matta, Silva and Boaventura (2014) the DBR, also known as Application Research is an innovative research approach that brings together the advantages of qualitative and quantitative methodologies. As a highlight, it presents the intention of overcoming the dichotomy between qualitative and quantitative research, since it has the objective of developing research that seeks "practical and innovative solutions to the serious problems of education" (MATTA; SILVA; BOAVENTURA, 2014, p. 25).

It is a peculiar, innovative and applied methodological approach that enables an interaction, collaboration with the reality of the constituent subjects of the environment. For Santiago and Matta (2016, p.3) "[...] the DBR methodology focuses on the development of applications and practical solutions, in particular digital ones, in which Virtual Learning Environments are supported".

Thus, the methodological approach of this research will enable the tessitura of the meaning perceived and employed by the subjects, in the dynamics of sociocultural relations as educators and protagonists of their training process.

Socioconstructivist epistemology will enable a scientific construction based on the particularities of the research context, where subjects and sociocultural relations become the very origin of the source of knowledge, and situating themselves in this place allows them to reflect on the things they know and can

share, and reflect on what they need to improve, their interests and curiosities according to their social context of professional performance.

In this perspective, the research gains meaning from its applied nature, where it will be elaborated, in the collective, itineraries of formative itineraries in information and communication technologies. These scripts will be built through interactive cycles that are intended to be implemented with the research subjects, thus contributing to the understanding and construction of shared knowledge.

As a researcher, the role to be assumed is that of a social actor, with a qualitative look at the phenomenon to capture the dimensions that this research aims. Thus, the apprehensions, the senses, the meanings, the actions, the formative processes and the contributions of the research in the teacher education will be built in the collective together with the social actors that will compose the Ph.D. research.

6 CONCLUSION

Considering that the research in question is in the initial phase of the Doctorate, it is evident as a great challenge to put into practice an applied research, involving formative subjects who will be in the process of formation, which implies the possibility of a possible "failure" or non-achievement of the objectives of the project. However, it is expected that the epistemological and methodological support, in this case respectively the socioconstructivism as epistemological foundation and the DBR research methodology, can undertake an application research that does not seek the completeness of the investigation, but seeks to foster the continuity of training in the subjects, consequently new research objects.

For the signification of technological processes, teacher training cannot separate the resource from the subject, since the potential of the artifact is the conscious use of the subjects, the socially cultural beings. The formation of the educator needs to have a meaning, subjectivation and social support for the implementation of a digital culture in the daily school life that enables students to use digital technologies of communication and information in a critical, meaningful, reflective and ethical way to communicate, access and disseminate information, produce knowledge, solve problems, elaborate proposals, build arguments, among other practices where the subjects develop their knowledge.

It is in the face of these challenges that it is concluded that the socioconstructivist epistemology, supported by the DBR research methodology, will seek through collective and collaborative actions to sustain applied research.

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