ORIGINAL ARTICLE

CONTRIBUTION OF EDUCATIONAL TECHNOLOGY PRACTICE INEDUCATIONAL THEATER TRAINING FOR TEACHERS

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Abstract:

This paper deals with research on educational technology, educational theater and teacher training. The goal was to identify the contribution of educational theater's educational technology practice for the acquisition and production of scientific knowledge in teacher education. The research methodology was based on thenon-experimental model, descriptive, longitudinal in nature, and with a mixed approach. The results showed that there were connections to the occurrence of relevant learning, digital socialization and enhancement of teacher education. Therefore, we conclude that there was a contribution from the practice of Educational Technology of Educational Theater for the acquisition and production of scientific knowledge in teacher education.

KEY WORDS:

Educational Technology, Teacher Formation, Scientific Knowledge, EducationalTheater.

1.INTRODUCTION

This investigation focuses on Educational Technology and constitutes an essential element in teacher training, presents the use of an educational Technology that combines digital technology and educational theater. The educational praxis with the use of technologies has been increasingly requested in formative spaces, it occurs parallel to segments in contemporary society and requires teachers and students to expand their knowledge and consequently broaden their own human formation.

The combination of Theater and Technology constitutes a privileged arena for considerations and contextualized critiques on didactic-pedagogic Technology and Educational Theater regarding the formation of citizens.

This reality permits the use of new proposals in technologies for education in many different manifestations of educational information and performance. In addition, one notices the emergence of a language that differs from the one presented by traditional academic education, suggesting differentiated forms of didactic interaction, and methodological reformulations for a broader comprehension of this phenomenon.

In this sense, there is need for teacher training directed towards professional preparation for the use of many technologies inside the classroom andfor mastering the processes of knowledge construction.

Thus, the arrival of these new teaching proposals involve new technological forms of work, raising questions in the educational field by clashing with thepedagogical practicethat for centuries has followed the traditional model of education. In this way, the process of knowledge construction is one of the aspects necessary to achieve the purposes of the Pedagogy Course, and may face difficulties in its realization when attempting to meet the training needs of different human types demanded by initial teacher education.

This way, an investigation is proposed, focusing on the behavior manifested by Pedagogy students after the development of Educational Theater projects that have been taking place in many disciplines of the Pedagogy Course in the city of Parnaíba, at the Ministro Reis Velloso Campus, of the Federal University of

Piauí (Piauí/Brazil), since 2005.

The path to the realization of this investigation took place upon the return to the faculty, and by working on the theme, Technology, in specific subjects on the pedagogic and technological fundamentals of the Course. During this teaching period, there was confirmation of the student's expectations and desire to acquire knowledge related to educational technology, via didactic teaching experience and educational practice inside the classroom. The courses that were given served as a stage upon which observations were made, and offered support for action planning dedicated to changes.

This investigation is justified by being an important study onPedagogy students' behavior while developing research projects and didactic teaching in their training before the contemporary or knowledge society, locus of science and technology to the detriment of the human being.This is a privileged space to encourage the improvement of the educational process by stimulating the acquisition of knowledge production and human development through art and technology.

Based on these concerns, the following research problem was formulated: what is the contribution of the practice of Educational Technology in Educational Theater to the acquisition and production of scientific knowledge in teacher training?

To solve this problem, the following research questions were formulated: How do students perceive Educational Theater? How do they relate to technology, and what does this teaching practice represent in teacher education? What are the challenges faced by academics (CP/CMRV/UFPI) when working with Educational Theater? From the student's perspective, what are the contributions arising from the junction of Educational Technology in Educational Theater to individual and collective education?

For the completion of the investigation, the main objective of this research was carefully elaborated, which is: identify the contribution of Educational Technology in Educational Theaterto the acquisition and production of scientific knowledge in teacher training.

And for assisting in the analysis, the following hypothesis were elaborated: 1) Educational Theater practice on the initial education of teachers contributes to the production of scientific pedagogic knowledge and strengthens the development of groups in academic formation, promoting the autonomy, discipline, self-esteem, self-reliance, and professional self-worth, collaborating tothe full development of the teachers' potentials, and also to expand their intellectual capital; and 2) the scientific research, when combined with the instruments of Educational Technology in Educational Theater, carried out with the aid of theatrical skits during the Pedagogy course, contributes to teacher training, articulating educational technology as a process in the production of scientific and pedagogical knowledge during initial teacher training.

The methodology used to achieve the proposed objectives was based on a non-experimental model, descriptive, longitudinal in nature, and with a mixed approach (qualitative and quantitative). The research took place in a natural state, without the manipulation of variables, but to present the studied phenomenon as it happens. The studied variables were: 1) Educational Technology; 2)Educational Theater;3) Scientific Knowledge; and 4) Teacher Training.

The data was collected in various moments (longitudinal) with voluntary students in interviews, interactive encounters, observations and a questionnaire. Photos were also used, and commentaries were registered, made by students of the History of Education class, in the Pedagogy Course of the Federal University of Piauí, more specifically related to Educational Technology in Educational Theater (ETET). The sample was made of students in the 2008 graduating class, and the investigation was about the scientific and technological teacher training of Pedagogy students.

The research may orient educational, research, and extension programs in Pedagogy courses, for implementing a praxis that favors teacher training and academic development using Educational Technology and Educational Theater (ETET) as a motivational tool for reflective practices and investigations inside the course and other undergraduate courses, or extension groups and teaching that arededicated to effective adult learning.

This way, the approach was based on a theoretical-experimental mark, used in the Pedagogy Course in a dialogical manner. The base study for the production of scientific and pedagogic knowledge is centered on the future teacher's capacity to learn, on educational technology, on educational theater and on information and communication technologies. Following an epistemological format that is grounded on the ideas and contributions of the Hegelian and Freirian systems and in Dramaturgical theories.

In this context, there is a necessity of developing a process of formation that prepares teachers, with knowledge, abilities and attitudes; focused on training professionals who have been instructed on the use of Technology inside the classroom. This reality becomes increasingly necessary, when taken under consideration that while teachers arebeing demanded a posture of acquisition, criticalness, and doubt before new and dated information, these professionals must simultaneously assume arole of orientation and cooperation with their students (Kenski, 2003).

Nevertheless, the use of this new teaching practice that employs available technologies is not yet configured as a simple process. This way, the school can not ignore what is happening in the world, for new technologies have transformed not only the forms of communicating, but also the ways of working, deciding, thinking, as well as introducing a new framework to the educational system (Pretto, 2002).

Therefore, it is believed that the capacity to think technologically sprouts during the process of initial teacher training; in the universities,the necessary theoretical and practical tools for its effective and conscious use in the classroom are developed. For this, it is proposed that the focus given to the reference mark be the critical and dialogical point directed to the study of adult learning in teacher training to the clarification of the role of digital technology and Educational Theater.

2. Educational Technology and Teacher Training

In the Knowledge Society, the education technology is allied to effective education – that is, linked to educational practice and the idea of education being strictly connected to the school; an illusion of assurance in the potential forthe labor market is expanded. Such identity dates back to a few centuries, evolves and consolidates the society of knowledge (Enguita, 1993, p.17).

Education is part of the change process, and the exposed technological revolution requires new forms of presentation to monitor the human training involved. This is a requirement that demands new methods and methodology, and also new teaching contents.

According to Mayo (2001), the society of knowledge presents some implications on traditional education, among them space and time: knowledge occupies increasingly less space; new technologies speed up the information. The characteristics of this society present themselves strikingly, like the excess of information, the acceleration of knowledge, appreciation of competences and capacity. Its consequences are: the right to property; and the right to accessibility, which leads to a series of new demands and questions. In this perspective, it is necessary to think of the organization of a new educational space. This is an organization that comprehends the culture, the leadership, the objectives, the people and thecontext.

This way, Mayo (2001) points a few questions about: what should be taught in the information society? How to teach in the information society? How to organize teachingin the society of information and knowledge? This author highlights in his inquiry that one should think of an education towards humanization and not centered on technique. In relation to the methods of teaching in the information society, Mayo indicates reflections on a new methodological praxis that is compromised with change.

The organization of teaching permeates all the characteristics of the information and knowledge society. Great accuracy is required for the actual monitoring of the evolution of society, such as: transference and transmission of knowledge; exchange of knowledge between teacher and student; improvement of both parties when sharing knowledge; teaching the rendering of the information that was received;avoiding the standardization of thought and information; respecting values, beliefs and minority cultures; training of teachers based on values; integration of the educational project to life in the center (education institution/community); learning with new codes and languages; selective and quick learning; handling with the security of information networks.

In relation to education, there is an initiative made by e-europa, regarding the development of policies and strategies towards youth learning and development and to the training of teachers in the digital era. This is an investment focused on breaking down Internet standards, a process of digital inclusion and technological innovations in long-term plans, with estimates that go up to the year 2010.

2.1The Brazilian Educational Scenario and the ICT

Education is permeated by the vision and coverage of information and communication technologies (ICT) during the teaching-learning process. Education is considered an emancipatory social practice, taking place in a given historical moment, with specific characteristics, aiming at the integral formation of man. The conception of technologies of information and communication in education ispresented, the Brazilian experience, theories of base education for the reflection regarding information and communication technologies, the emergence of the Internet in the training and practice of teachers and in the teaching-learning process, and the Internet inside the classroom. The objective is to comprehend the conception and practice of education with technological orientation, using computers and the Internet in education. New educational perspectives are rehearsed, with active learning using the WebQuest methodology (Dodge, the WebQuest Page: Matrix, 2001).

The work with information and communication technologies in the teaching-learning process presents itself in different areas of the social context, particularly reaching the formal and informal educational field. It causes changes in the teaching practice and in the learning process, requiring a new comprehension of the world. The work is done in a dynamic space, where changes, trying to settle, shift and

create necessity for transformation, identifying its coverage in the educational environment, especially in the school. An optimistic mood created around the idea of ICT hangs among educators; where myths emerge making one believe that thesetechnologies arethe solutions for all the problems in Education and in the school. This is a new reality,called the society of information and knowledge.

Research by Blázquez (2001b) and Cabero (2001,2002,2003,2008) indicate that, in contemporary society, the school was elected as the privileged locus of the diffusion of information, awareness and knowledge. The established knowledge becomes a force that features science, covering itself in social power (technology, science and ideology). Today, knowledge is conveyed in the school territory, which receives the misguided notion of concentrating all the demands of society with regard to the information that it needs, expanding the educational process to all spaces. Education occurs everywhere and in many different ways, not only at school specifically. In the information society, according to Schaff (1990), the utopia is that all information is available to everyone, at every moment, everywhere.

The investigations of Cabero (2002,2003) and Morueta (1998) amplify the discussion for the use of new technologies, specifically educational technology. They present definitions of ICT, its significant characteristics and applications that may occur in teacher training; display the technologies used in teaching-learning; show the use of informaticsin a educational way; point out to collaborative work; feature practice about different technologies.

The new educational technologies have entered the everyday lifeof Brazilian universities since the 1950s, via computer science, thenexpanding to other areas later on. One can find in the studies of Vargas (1994), Oliveira (1997) and Motoyama (1995), regarding the History of Informatics in Brazil, negotiations during the 1940s made between the Brazilian government andbig,foreign computer industries. In this arena, the experience of the Brazilian military research center ITA wasreserved. Among the academics, PUC in Rio de Janeiro and the University of São Carlos in São Paulo are held as pioneers.

According to Moreira (1997), pedagogical technicalization, one of the main aspects of military pedagogy in Brazil, has anchored itself in instrumental planning, in the elaboration of operational objectives, in the fragmentation of content, individual teaching techniques, group dynamics and in a mediating and selective evaluation.

The educational scenario is in constant state of change. Schools witness the arrival of various computers, software and program packages in large scale, whileprofessionals involved directly with innovation are depending on formative agencies, which are slow to define their formation policies for this new schooling reality. The adoption of new technologies in telematics by schools provokes change in the teaching-learning process, like the consequential questioning of traditional didactic methods and the redefinition of the teacher's role and his interaction with students. Thisprocess of informatization of education evolved from formal distance learning.

To identify which proposal is more adequate to the curriculum that will be used, it is necessary to specify the stage of development achieved by each country. Three phases are presented: automation, information and communication. The curriculum is directed to countries that have reached the phase of information.

The main objective of the Informatics curriculum is placed in the form of computational "alphabetization" or initiation. It states that the student must use the computer intelligently and competently in the second stage of elementary school. The computer is used as a teaching and learning tool to assist in common problems in interest areas of basic education.

However, the teachers must also participate in the formation process and in the digital inclusion for the organization of their educational works and teaching practices.

2.2 Hegel's System

Education, according to Hegel, is seen in a broad sense, in all of the actions of the being, in search of an autonomy, an attempt to understand the essence of the formation of a pedagogy and its social relations, in a dialectical way, constitutive while interweaving values and historical phenomena. Nevertheless, it is necessary that this pedagogy have the power of involving all the actions that constitute this totality in a society. Thus, critical perception presents itself in Hegelian system and theory.

The denial of the idea of families having particular values when sharing consensual ideas, in fact highlights and legitimizes the true form that brings them together in societies, and makes them increasingly fortified in their self-preservation mechanisms, proving to be a great argument and the basis for the union of beings who crave for development and the common good of the bourgeois society, in which Hegel lived.

The rupture of formal thought, in the work of Hegel (1974, 1991, 1992, 1994, 2003), with the way of thinking of his time, which was a formal logic that denied abstracting the essence of things and valued the appearance of the superficiality of the experience. In the attempt of capturing reality, the ideal, the reason of

being of the spirit, and the causes of its manifestations, he studied the movement of thought for the formation of concept, systematized the answers to his questions, constituting a legacy of philosophy, systematically, to the dialectics of thought.

The education referenced in the ideas of Hegel occupies the space of moving relations, of the dialectical process that favors the passage of a consciousness that is sensible to the freedom of reality – in other words, pedagogy plays a critical role in the face of the given educational reality, verifying all the situations that occur in points far from reality; as scientific analysis of facts, it indicates the rational planning of practice to the educator, respecting the movement of history, where knowledge has emancipatory interest. The task of school education is located in reality, and prepares the youth for the real world.

The Hegelian study seeks to universally apprehend the dynamics of life and of the world, through a tripartite system, where all the segments analyzed using it follow logic, the dialectical logic (Politzer, 1970, p.238).

One way of achieving this legacy is the preservation of the species by objective and subjective morals, and that is present in marriage, a Lutheran experience comprehended as an ideal model, understood as an externalization of conservative fraternal sensibility of individual values in the family core, maximum expression of the State, without losing the normative character which ensures external achievements(idem). The Hegelian theory and system inserted in education developed the concept of objective morality as liberty and attributed the education of children to the family.

In its school education, pedagogy must offer all the external, physical, intellectual and ethical resources that may assist in the moral attainment of life, as well as clear all the obstacles that may obstruct it. Education and instruction must act in common accord towards the shared objective of turning a child into a complete personality willing to attend to all its duties. By representing the interests of the child spirit, the educator contributes in a general way to the domination of the student's manifestations of egoism. The educator's role is to try to elevate his personality by harmonizing his example, leading the child to religion and to peace in the absolute spirit (Larroyo, 1982).

The education professional in its multiple representations apprehends the content of his practice, in civil society and the State, during the course of history. The points that feed back in school education won't lose sight of the ideas found in Hegel's encyclopedia; noticing that there is absence of conflict during childhood, during adolescence there is the struggle between the self and the world and the clash of ideas, that leads to one's maturity:one's appreciation in the community, through the consciousness of ethical order as a super-individual spirit, driving order of self-consciousness. Material perspectives are scarce for old age.

To Hegel (1992), the idea found in the origin of everything has its counterpart in nature, and spirit awareness is originated from the struggle between the two. The consciousness has its negation in the awareness of the individuals that live opposing each other inside the groups. But education is, given its limits, a factor; therefore, it has a task in the capitalist society. One must fight for education immediately. A revolutionary class education must be initiated throughthis form, which will take under consideration a technical manual character, excepting all kinds of utopias. Together, Labor and education would trace a social profile of a technical-multilateral education for future generations.

2.2Paulo Freire's System

In Freire's pedagogy (2011a), education is reflected as a power structure, analyzing the difficulty faced by a dialogical educator, in acting coherently in a social structure where dialogue is denied, with knowledge restricted to few, and used as a perpetuating element of power.

The focus of Freire's methodology (2011b) is the theme or psychosocial method of adult alphabetization that constitutes itself as the practice of the knowledge-praxis-knowledge unity, in a concrete activity leading to an objective: alphabetization and raising consciousness in order to achieve the desired objective.

In relation to the liberating educational action, theeducational model by Freire (2011b) proposes the horizontal exchange between teacher and student, demanding an attitude of transformation of the known reality in this trade-off. The liberating education is an education of "conscientization", to the extent that seeks to transform reality in addition to getting to know it.In other words, both the teacher and student deepen their knowledge of the same cognoscible object in order to be able to act on it.

Conscientization is the most critical approach to reality as possible, unveiling it to get to know it, to learn about the myths that engage and help keep the reality of the dominant structure. Education for domestication is characterized for being an act of knowledge transference that the educator passes on to the students, who receive it positively (Freire, 2011c). In this education, conscientization is unfeasible.

Education for liberation is an act of learning, where educators and students are subjects of the process, mediated by the known object.

The proposition is the active method, a contribution to human formation. Making man emerge as a critic by the defying force of debate and problematic situations. Specifically, to use anactive dialogical method as a critical and scientific spirit; establish a code of the educational program; practice techniques such as thematic reduction and oral and written coding.

The comprehension of the meaning of "man" in Freiriananthropology is perceived with the aid of Hegelian dialectics. A definition devised on the relation of consciousness (social being) and History (historical being), in the sum of self-awareness; alterity, interpersonal relation, awareness of others, labor force.

This way, through the educational process one can ensure that a student finds answers to his inquires: how to learn, how to produce and how society uses knowledge. The awareness of everyday knowledge of the social groups gives support and meaning to education.

Teacher training is present in the last work written by Freire (1989), the Pedagogy of Autonomy. In it, one can find orientation to teacher training and emphasison the "Necessary Knowledge to Educational Practice", about the democratic educator's formation process. The proposed objective is the conquest of teacher and student independence. Teaching is perceived as the presence of affection and joy. The orientation is that the relation between teachers and students should be based on constructive dialogue and in the respect of the student's knowledge, an indispensable element in the construction of knowledge.

2.3 Educational Theater and Teacher Training

Theater is an ancient practice. Ineducation or in educational technology, it presents itself as a basic tool for the acquisition of knowledge in academic formation.

Educational Theater (ET) uses ideas and techniques of a more democratic theater, experienced in appropriate spaces for the teaching and learning process to occur. It uses theatrical techniques and pure improvisation in order to facilitate the course of knowledge. It is an instrument that involves science, art and affection.

The term used in this text, Educational Theater, is inspired by sources and works that use Hegelian dialectics in a direct or indirect way. Guiding sources were collected in writings about theater that give orientation for pedagogical reflections and practices. The works of Brecht (1970), Boal (2009b), Koudela (2007), Spolin (2005,2007, 2008), among others, indicate theater in an educational form and as an anchor point for teaching and learning projects that are committed to the formation of the human being (teacher training, in this case).

According to Boal (2009b), Brecht's epic Theater "refers to everything that is broad, exterior, objective, and long-term". Dialectics is used with the intention of combating the images that reinforce the sensation that certain injustices are eternal, ineluctable or invincible.

To Brecht (2005), the didactic play is where the participation of those involved occurs in a participatory manner, giving opportunity to equality among the pairs in the Game of Learning to enrich the pedagogic and political debate. Through dramatic art, the contextualizationisessential in order to reach, in a new time and space, the result desired by that theatrical form: that would be, putting it roughly, to awaken the critical consciousness of the spectators.

Once again, according to Boal (2009), "The theoretic confrontation between Brecht and Hegel occurs in the concept of freedom of concept". To Hegel, the character is completely free; to Brecht, the character is the object of social forces.

Brecht (2005) believed that the spectator should see the theatrical play as a working material. It is as if something was missing in the structure, and the public should fill in these gaps. For this author, the art of theater can only advance if it generates intellectual activity for the spectator, a productive attitude that ultimately corresponds to the development of a new art, the art of the spectator.

This is the art of the spectator, which should be developed in conjunction with the art of the actor, being in such way a political reconstruction of point of view and a learning about differences (Costa, 2010).

Michalski (1987) affirms that, while working with Brecht, he learned to realize the advantages of reflection and critical attitude, to not accept any truth without questioning its foundations or without dismantling the mechanisms that caused it to surface. On immutability, he affirms that, it is up to us to transform those truths and paradigms that must be transformed. The author mentions other important teachings, such asto seek, behind each situation, the veiled interests of the social and economic structure that conditioned it. The beauty contained in the rigor of the intellectual process, which is not incompatible with emotion, as it is commonly considered (Michalski in Barder, 1987, p.229).

As for Boal (2009b, p.18), "theater or theatricality is that human capacity or property that permits

one to observe one's self. The human being can see himself through the act of seeing, of acting, of feeling, of thinking. One can feel one's self by feeling,and think of one's self by thinking". The proposals of the educator, Paulo Freire, inspired the playwright, Boal (2009b), to write articles about a humanized and educational theater. The theoretical approximation of these two authors can be observed in Table 1.

Table 1: FORCE-IDEAS.

SOME FORCE-IDEAS	
THEATER OF THE OPPRESED–AUGUSTO BOAL	PEDAGOGY OF THE OPRESSED–PAULO FREIRE
Pedagogy–a concrete learning, the praxis, and not the speech, it is through the small struggles that, today, everything can start over, a transforming action.	Pedagogy–an observation and reflective process towards a transforming action.
Objectives – Transform the spectator, from a passive being and receiver, into the protagonist of dramatic action; – Never settle in thinking about the past, instead preparing for the future. – Dialogue is created in the T.O., it allows one's self, transitivity is sought, the spectator is interrogated and a sincere response is expected from him.	Objectives – Transform the world with the process of alphabetization. – That the oppressed may have the conditions to discover and conquer reflexively, as the subject of his own historical destiny.
Content – Transforms the spectator into the protagonist of action, the object into the subject, the victim into the agent, the dead into the living, the consumer into the producer. "And through this transformation, helping the spectator to prepare real actions that lead to his own liberation, for the liberation of the oppressed will be the work of the oppressed themselves, never granted by the oppressor".	Content – From the education to the reality of the individual, in the context in which it is developed. Thought marked by the concern over the relation of domination between people and liberty.
Methods – Of social and political intervention through theater, drawing inspiration directly from the Pedagogy of the Oppressed and in Freire's belief that "everyone can teach to anyone". – Methodology composed of exercises, games and theatrical techniques in the scope of social interventions. – Allows the participants to modify reality, with active participation through the theatrical language.	Methods – Dialogical, open, frank, with possibilities for social intervention. – Problematizing-methodology, always questioning "why?" – It is necessary to develop a pedagogy of the question, of questioning. – It is a method, a conception that proposes rupture models, of social change and transformation.
Means – The community chooses the themes of collective interest, identifies what oppresses it, and from there tackles the discussion and the elaboration of scenes from daily life that will be material for different interventions by the "spectators", for concrete solutions seeking social and political change.	Means – According to the reference mark that fundamentally uses the application of oral resources, in a participative and experiential manner.
Evaluation – Each individual, remaining in its own person, plays its own role, organizes and reorganizes his or her own life. – The Joker plays an educational role.	Evaluation –Is in the same measure of transformation of the medium in which the individual develops. The keywords are: Create and Recreate the depositary elements.

The Theater of the Oppressedproposesthe change of life and reality of the people involved. It's a theatrical method divided into various techniques, always aimed at social inclusion of the less favored masses of society in the social-cultural-educational context, showing that everyone has the learning and development capacity of the being, proving that the theater is a tool for social integration, bringing together and equaling individuals. It presents a new technique for the preparation of the actor, making theater more natural and free (Boal, 2009b).

The orientation of working with theater in school Education aims at developing research in the conception of the Pedagogy of the Oppressed to restore the aesthetic capacities of the human being while

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producing theater.

Another contribution to Educational theater is made by Koudela (2007), taken from her research with theatrical games, where the didactical process is systemized, hence allowing a fruitful field for educators to implement forms of teaching-learning for groups and individuals.

Spolin (2005) brings her contribution with theatrical games to the classroom, where, added to human energy, they compose the driving force for learning. She uses exercises articulated with the individual and subjective developments. Thus, presenting a mobilizing and humanitarian force in its pedagogical function.

The Theater emphasizes technical exercises that presentthemselvesin the school environment, inside the common classroom, transforming it. According to Ryngaert (1987), "The qualities of labor consist in the learning of liberty. Libertyof theme, liberty in the organization of the game, liberty in the debate". This refers to activities that lead to the knowledge of the body, of space, of voice, of gestures, of concentration, breathing, knowing how to see and listen – in short, the world of imagination.

Tomaz (2007) presents the theater-education with the possibility of the apprehension of students' imaginations, using the methodological orientations and the opportunity of reading and acting in the universe mediated between text, fantasy and everyday experiences, as well as its reflection, imagination and capacity to create.

The teaching practice of technology in educational theater does not seek to form professional actors and actresses nor theater amateurs, even if a product in the form of a theatrical play or skit is presented after the process. The important goal is to promote methodological change and face the traditional form that permeates teacher training, taking the transformation to students, and unveiling thenuances of the dramatic field in a flexible arena for debates and questioning of diverse fields of human knowledge.

Therefore, the use of educational technology in educational theater can be seen as an instrument generated from a liberating teaching practice that forms conscious subjects and critics of the reality in which they live, or, according to Freire (2011), a liberating education is an education that "conscientizes" (raises awareness)while not only getting to know the reality, but also seeking to transform it. That is, students and teachers further their knowledge regarding the same cognoscible object in order to intervene in it. The investigative thinking proposed here is founded upon this reflection.

3. Methodology

The problem of this investigation was: what is the contribution of Educational Technology and Educational Theater to the acquisition and production of scientific knowledge in teacher training? The main objective of the research was to identify the contribution of the practice of Educational Technology in Educational Theater to the acquisition and production of scientific knowledge in teacher training. The specific objectives were: 1) identify the contributions of the methodological proposal of the use of educational technology in educational theater developed in the Pedagogy course of the Federal University of Piauí (UFPI/CMRV); 2) identify the digital technologies in use; 3) characterize the stages of the technology of educational theater in the formation of the educator, through the didactic and media records collected by the group involved; 4) verify how educational theater was used in teacher training from the expressions of meaning and the importance given by the subjects involved in Educational Theater Projects. The variables in the study are: 1) Educational Technology in Educational Theater; 2) Scientific Knowledge; and 3) Teacher training.

With these objectives, confirmation was sought for the following hypotheses: 1) the practice of education theater in the initial formation of teachers contributes to the production of pedagogic scientific knowledge, promoting the development of autonomy, discipline, self-esteem, self-reliance and professional self-worth, collaborating to the integral development of the teacher's capabilities and to expand his intellectual capital; 2) the scientific research in junction with the resources of educational technology in educational theater, developed with the support of theatrical skits in the Pedagogy course, contributes to teacher training, articulating educational technology as a process in the production of scientific and pedagogical knowledge during the initial formation of teachers.

As for the design or model, this research was based in the non-experimental model, descriptive, longitudinal in nature and with a mixed approach (qualitative and quantitative). The research took place in a natural state, without the manipulation of variables. The non-experimental investigations, according to Sampieriet al. (2000) are: "Studies that are realized without the deliberate manipulation of variables and in only observing phenomena in its natural environment after analyzing them".

The purpose of the descriptive study, in its turn, consists of presenting the phenomenon as it occurs in reality. And according to the author, the descriptive types "question the incidence of the modalities,

categories or levels of one or more variables in a population; they are purely descriptive studies".

This way, many research methodology authors, like Sampieri et al. (2006), Triviños, (2008), Minayo (2007) and Lüdke & Meda (1986), classify the kinds of research as exploratory, descriptive and explanatory studies. Sampieri et al. (2006) adopted Danhke's (1989) classification, whichdivides these studies in: exploratory, descriptive, correlational and explanatory.

Facing this, and with the objective of developing the study seeking to respond to the questions and research hypotheses, a few methodological procedures of investigation that could be adequate to the data collection and the analyses process were selected. The research was classified as a descriptive study, which is intend to specify the properties, characteristics and the important profiles of people, groups, communities or any other type of phenomena that submits itself to analysis (Sampieri et al., 2006).

For the analysis of the study, a mixed methodology was used. A quantitative approach was used as a form of statistical expression;an approachqualitative in its nature was usedfor analyzing the values, opinions, concepts and meanings emitted by the researched.

The first, because the results are expressed in numbers, being a way of providing greater precision, treated with objectivity and with a certain degree of neutrality, which may be able to avoid distortionstothe analysis and interpretation.

The second is qualitative, more preoccupied with the field of subjectivity and symbolism, thus being able to realize a fundamental approximation between subject and object, since they are all of the same nature and the primordial material is the word that expresses everyday speech, whether in personal and technical relations, or in the intellectual, bureaucratic and political discourses (Minayo, 1993).

Sampieri et al. (2010) affirms that the qualitative focus seeks mainly "dispersion or expansion" of data or information, while the quantitative focus intends to intentionally "delimit" information. The quantitative focus, in its turn, uses the collection and analysis of data to answer research questions and test the previously established hypotheses. Ittrustsin the numeric measuring, in the counting and frequently in the use of statistics to accurately establish the behavioralpatterns of a population.

The variables of this study are: 1) Educational Technology in Educational Theater; 2) Scientific Knowledge; and 3) Teacher training. For the operationalization of the variables, the indicators that represent them were identified and then grouped in constructs to facilitate analysis and evaluation, in a scale of attitudes (Likert) made up of five points.

The variable Educational Technology in Educational Theater (ETET) represents the application of many technological resources to the educational development and to facilitate the access to information. It corresponds to an instrument that doesnot aim to the formation of actors, but to promote a methodological change and face the traditional form that permeates teacher training, then taking this transformation to the students and unveiling nuances in the dramatic fields, in a space flexible to debate and questioning regarding many fields of human knowledge. One of its foundations is the law n. 9394/96 of the Basic Guidelines of National Education, articles 35, 39 and 43.

The constructs of this variable are presented in Table 2, which also contains the description of what they represent. This description directed the selection of questions and questionnaire items used in the analysis of data and the discussion of the results.

Table 2: Educational Technology in Educational Theater (ETET) Constructs.

Construct	Description
1. Use of Digital and Theatrical Technology	Use of theatrical technology and digital technology.
2. Scientific Development	Knowledge acquisition and production, interest in research.
3. Personal Development	Citizen formation, group integration, public shyness, public relation, use of digital technology, increase of self-confidence.
4. Group Work	Group integration, self-evaluation, and development of groups.
5. Systematization and Dissemination of Knowledge	To make projects, researches, build maps, systematize and disseminate knowledge, technical and scientific production, writing reports.
6. Academic and Professional Formation	Professional self-worth, potentialitiesdevelopment, importance of non-traditional education.
7. Digital Inclusion	Use of digital technologies, formation of the citizen, acquisition of knowledge and production of knowledge.
8. Theatrical Technology	Theatrical critique, audience formation, theatrical directing, scenery and script creation, dance performance, body expression and voice re-education.

The population of the research was composed of47 students of the History of Education, class of 2008, in the Full Degree in Pedagogy course, of the Federal University of Piauí/Ministro Reis Velloso Campus, and that participated in the ETET project. The research sample was comprised of 18 voluntary students, and the application of a questionnaire took place in 2012, during the IV Pedagogy International Forum (FIPED), hosted in the city of Parnaíba-PI, since some students were participating in this event at that moment, in addition to being members of the congress'organization. All the questionnaires in the sample were considered valid.

The investigation took place in Brazil's Northeastern region, in the state of Piauí, in the city of Parnaíba, at the Federal University of Piauí, Ministro Reis Velloso Campus, in the Full Pedagogy course. Piauí is the third largest state in the Northeastern region, with a territorial extension of 251,576.644 km2 (2,95% of the Brazilian territory), with 223 municipalities, and its population corresponds to 1,64% of the Brazilian population.

As for Parnaíba, it has a population of 146,058 inhabitants and an area of 436km2.It is the second most populated city in the state, and is located in the extreme north of the state.

In the present investigation, techniques and data collectioninstruments that have been used varied according to the stages of the research. In the characterization stage of ETET, it was necessary to rescue the construction process of Educational Technology in Educational Theater, which was done by observation, documental and bibliographic research, and interviews. In the observation stage of ETET practice, the main techniques were the observation of ETET and photographs of the presentations, interviews and records of occurrences and testimonials. In the stage of recapitulating the ETET experience, after 4 years of maturing knowledge, a questionnaire was used as a data collection instrument.

This questionnaire was structured in 11 questions, subdivided into 48 items that inquired on the use of educational technology combined with educational theater developed in the History of Education discipline, in the Full Pedagogy Degree, in the Federal University of Piauí, at the Ministro Reis Velloso Campus, in the city of Parnaíba.

The questionnaire is a collecting technique that can be issued during personal interaction or self-applied. Formed generally by a group of questions that measure the opinion, the interests and the aspects of the personality of the informant. Its structure may be composed based on open or closed questions, dichotomies, multiple choice, or even ona combination of these three (Sampieri et al., 2009).

The questionnaire's formulation is mixed and consists of 10 closed questions and an open one, grouped according to objective. Specifically, questions 1,2,3 and 4 were distributed for the identification of the respondents and addressed the subjects' profiles and details regarding the concluding year of the course and the University as it may be observed.

The objective of the four questions was to make a survey of the academic data of the subjects, for it was possible to observe throughout the questionnaire whether the subjects that had already concluded the Pedagogy course were utilizing the principles of formation developed and discussed by Educational Technology combined with Educational Theater intheir professional and teaching practices. Also, indications could be made as to what was effectively learned and had meaning to these subjects, participants of the research, in a concrete manner.

The objective of question 5 was to confirm whether the voluntary subjects in the research truly took part in the ETET during the first two years of the Pedagogy course. In question 6, the objective was to identify which moments and activities developed during the History of Education discipline with the help of ETET were considered most important by the students, and why. This stage of the questionnaire was essential, for it provided elements to be confronted and analyzed with other items relative to learning, formation, autonomy, etc., discussed in these questions.

Question7,using a scale ranging from total learning to zero learning, was intended for the students to identify their own level of learning and acquired knowledge with the ETET project experience. In addition to this, the answers given tot his question are important because they indicate not only what the subjects really learned, but also allowed to confront data from other items in the questionnaire as to what type of knowledge was more meaningful during the two-year-experience with ETET.

Question 8 is subdivided into 17 items where the subjects classify, according to the Likert five points scale (that ranges from "disagree completely" to "agree completely"), their level of acquired knowledge in the use of digital technology and also their personal feelings in the moments experiencing the ETET project. This stage of the questionnaire is important, for it seeks to approach many questions related to text composition, to research realization (field, media and technique), to academic space and formation, to the use of information and communication technologies, and especially related to the individual development of the subjects during the entire process. That is why the items are presented in a separate way,

or grouped according to the desired objectives.

In items A, B,E and L, it was intended to identify, based on the scale analysis that was constructed, in which level did the subjects classify their own participation in ETET referring to the autonomy, the acquisition and production of scientific knowledge, thus generating the awakening towards the development and realization of the research. These questions were meantto observe and investigate the level of importance that the voluntary subjects of the research attributed to educational technology in educational theater as an instrument that generates scientific spirit, and also their relation with teacher training.

Items C, D, F, L, M and N of question 8emphasizedhow subjects considered andclassified the contribution of their experience with ETET to their personal development, not only to relate in public, but primarily in the elevation of self-esteem and confidence to deal with situations wherethey must present themselves publicly. These items indicate the contribution ofETET on a personal leveland in the forming of more autonomous citizens, capable of making decisions and displaying discernment in different academic and life situations.

Items E, J and K, in their turn, were meant to investigate how the ETET practice contributed to the development of the importance of knowing how to workas a group. In other words, how the relations among individuals are important and demanded in the workspace and to the citizen's own lives. In this sense, questions were elaborated about the contributions of Educational Technology combined with Educational Theater in the development and practice of work in groups and with groups. This is one of the essentialtopics in our study and in the proposal of working with ETET for teacher and human formation of the subjects participating in the project.

Still regarding question 8, in items H and I, we tried to identify how much ETET helped voluntary subjects of the research to systemize and spread the knowledge acquired during the project. This is relevant, for we are able to identify the level of importance of ETET to their professional formation, in addition to enriching the analyses and relations with other data described in the questionnaire.

In items L, O, P and Qelaborated questions to emphasize the analysis of the development and evolution of the subjects, voluntaries in the research, referring to their academic and professional formation. The aim was to identify what comprehension the participant subjects of the ETET project would give to these questions according to the rating scale. From these answers, one could trace a profile of the comprehension, understanding and contribution which the ETET project aided in the development and learning of the students to their formation as citizens.

Item G sought to identify the level of digital technology that the voluntary subjects in the research used forthe development and realization of the ETET project.

Question 9 intended to identify which digital technologies the voluntary subjects used to elaborate activities practiced in the project with the ETET.The interest towards this question and its items lead to working with digital inclusion, for many subjects had no contact with these media in their homes andhad never heard of resources like WebQuest, for example. Thus, interest emerged in establishing a connection between the ETET and digital technologies, for they were also essential in the development and dissemination of surveys and works produced by the ETET –hence contributing to the integration and digital socialization of the subjects involved in the project, as well as their social and professional formation.

Question 10 and its items were meant to investigate the importance attributed by the subjects to theatrical technologies. The aim was to develop communication abilities, leadership, and creation for the academic formation of their pedagogical praxis, thus contributing to the development of critical subjects who comprehend their role in society.

In question 11, the aim was to investigate what was the contribution experienced by the subjects in the practice of Educational Technology combined with Educational Theater, grounded in their free testimonials. This is important, for we will be able to confront the subjects' opinions with all the questions addressed in the questionnaire, in addition to observing new statements and suggestions that had not been thought of.

3.1 Characterization of the Educational Technology in Educational Theater (ETET)

For the realization of this research and development of the data collecting procedures, it was necessary to recover and describe some events that began in 2005 and finished in 2008, during the execution of the History of Education discipline.

Specifically in 2005, during the first semester, an extension course was elaborated in which the methodology of educational technology combined with educational theater was used. In that project, the main objective was to form study groups, debates and theatrical dramatization in History of Education,

using triangular and qualitative methodologies to reach educational praxis. The guiding principles of this proposal were interdisciplinarity and the contextualization of historical knowledge expressed through scenic images. This extension course was the basis for the realization of observation and the systematization of educational technology combined with educational theater (ETET) as a working method. After the conclusion of the extension course, the ETET began to be used as a planning phase for the work methodology conducted in the History of Education discipline in the Pedagogy Course of the UFPI/CMRV (Federal University of Piauí/Ministro Reis Velloso Campus).

This stage of organizing the project and the object of study for the doctoral thesis was systemized during 2006–2007. Objectively, this timespan was helpful to the structuring of the ETET and to determine the boundary of the questions and objects of research.

In order for this to effectively occur, the following observations in the classroom were used as materials for analysis: the students' work in the use of ETET as a research tool, the monitoring and orientation of the work developed in the class room, the testimonials that were written in the beginning and in the end of the History of Education discipline, that served to identify how learning educational technology and the students' scientific formation were carried out. This data will be presented with the objective of enriching and deepening discussion in methodology.

Another issue that motivated the realization of this work with the ETET was that this is a new technique, still under systematization, and that emerged from the perception of the difficulties demonstrated by the students in engaging with the discipline of History of Education.

It is believed that the registration of the collecting process will allow other researchers to repeat the procedures that were executed, paving the way for critique, improvement and applicability of this study (Triviños, 1987; Danna&Matos, 2006).

After the observations of ETET in the classroom, in the year of 2008, it was possible to reformulate the educational technology combined with Educational Theater, transforming it into an instrument of Technology for Teacher Training and an object of study. As Educational Technology, it seeks to develop in the students the importance of scientific research, of the elaboration of texts for their professional formation and for the development of their teaching practice.

The recovery of this process of construction of Educational Technology in Educational Theater allowed for the elaboration of the conceptual map of ETET presented in Figure1, which represents the systematization of the process described here. This technology was one of the aspects followed in order to reach the objectives in the Pedagogy course, and to try to meet the formation needs of human types demanded by the initial formation of teachers.

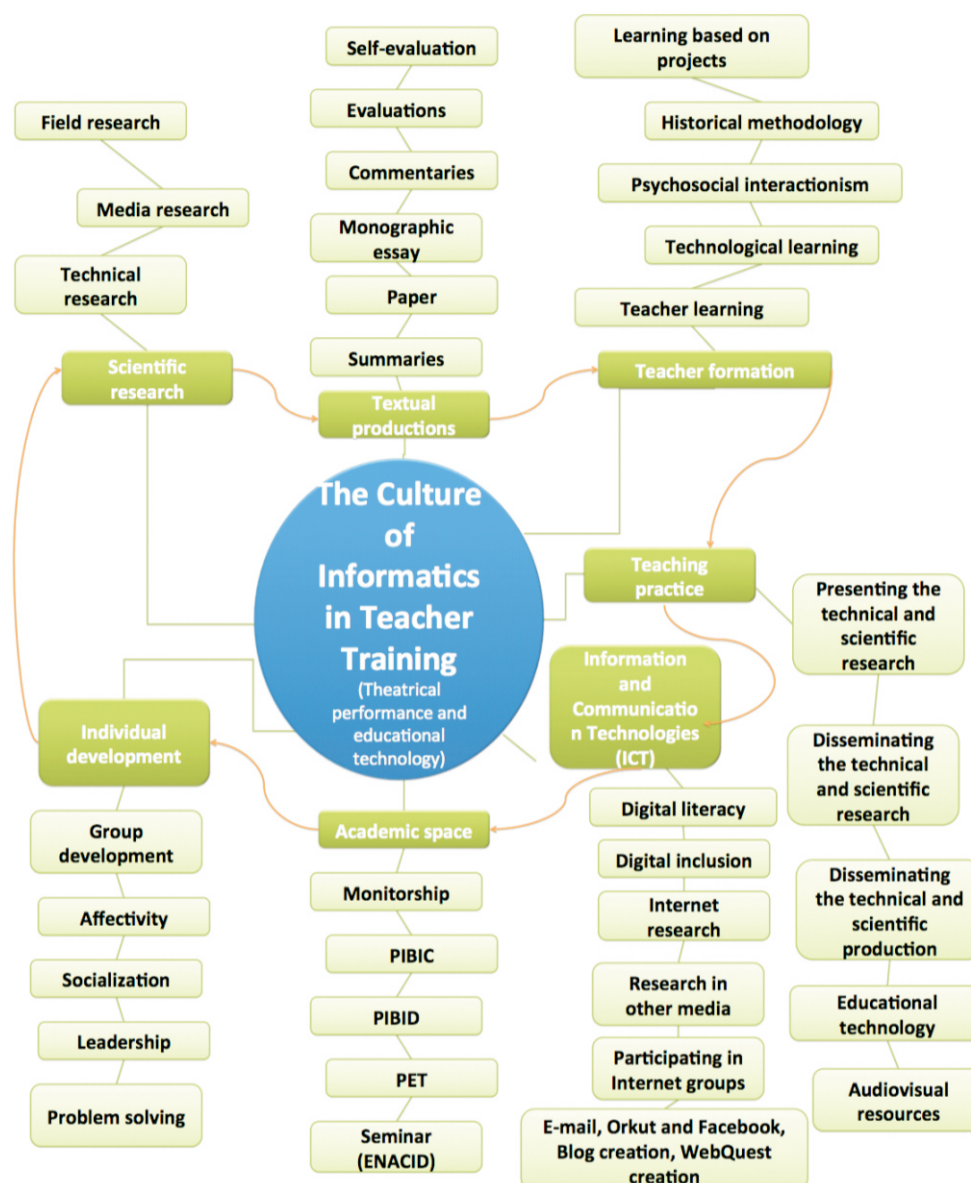The Educational Technology in Educational Theater (ETET)

Figure 1: Conceptual map of ETET. Source: Magna Galas

Based on the recovery accomplished and in the construction of this conceptual map, one can observe that in Educational Theater a system is developed according to a logical sequence, for reaching the multidisciplinary process designed in its pedagogical project.

Amid the areas that interact for this didactic organization, one finds history, psychologyand sociology, computer science and technology, among others that present a transversal method in courseand aggregate knowledge in a path of educational and cultural technologies. The creation of ETET took under consideration the expectations of the group and its learning needs, and was systemized in 4 stages:

I – Group expectation: historical movement in discipline; class room behavior; contact with the scientific method; comprehension of what is education; type of desired education; participation in the disciplines of the first semester; contact with new technologies; contact with media; changes; path choices; expectations for the future.

II – The practice of technology combined to Theater: awareness of the role of the teacher; a proposal of education with liberty and responsibility; group formation; working change; decision making and pedagogic problem solving; construction of concepts necessary to the comprehension of the formative process; creativity during the teacher training process; comprehending interdisciplinarity for utilization in educational practice; the transposing of the available content in the course; comprehending the didactic practice while avoiding the educational "banking"approach; transforming the classroom into a ludic laboratory; dynamics and games mainly available in educational theater; bibliographical and scientific research; field research; use of digital technology; contact with psychosocial and interactive methodology; contact with historical critical dialectic methodology; use of theater as way to research and exhibit its learning in a reflexive way; use of dance for the valorization of corporeity (the movements); use of music for voice reeducation; respect to individuality and diversity; respect of choice and to free expression; liberty to create; qualitative evaluation; self evaluation.

III – The related theories: The Pedagogy of the Oppressed, Historic-dialectic Methodology, Cultural Theater, Theater in Education, Educational Technology, Teaching-learning Technology, Organizational Technology, Information and Communication Technology (audiovisual resources) and Digital Technology.

IV – Learning Spaces: The Institutional Program For Scientific Initiation Scholarships (PIBIC, in Brazil), The Institutional Program for Teaching Initiation (PIBID, in Brazil), the Tutorial Education Program (PET, in Brazil); The Upper Faculty, the Formation of teachers; Cultural and Scientific Academic Encounter Seminary (ENACID, in Brazil), and neighboring communities.

The systematization of ETET in a conceptual map and the logical sequence of its phases correspond to the first stage of this research.

3.2 Observation of ETET Practice at the Federal University of Piauí

During 2008, the initial structuring of the protocols and procedures to begin data collection of the Investigation for the Doctorate occurred– in other words, observations were made directed to the objective of the Research Project, with the intention of noticing manifestations of subjectivity, the social-historic interaction and the students' perception about the methodological form used during the History of Education discipline.

The work with this class was essential, taken under consideration that Educational Technology combined with Pedagogical Theater was already structured by then. During the period between 2004 and 2007, and also in 2008, it was decided to develop the ETET project in a systemized way, for the interest was observing and collecting data from this class that was chosen as an initial sample. However, it should be highlighted that the students of the 2008 class, of the History of Education discipline, had begun the Pedagogy course in different years, thus leading to different periods for concluding the Pedagogy course.

The data was collected in 2008, from the observation of the development of ETET in the classroom, pictures taken during theatrical presentations, from the use of ETET as a research tool by the students, and, specially, from the written testimony in the beginning and in the end of the discipline. After the execution and conclusion of this second research stage, a four-year-intermission was given with the objective that the students undertook a process of knowledge maturation while passing through all the stages of formation in the Pedagogy course.

During 2012, there was a return to the Federal University of Piauí with the objective of finding students that were enrolled in the History of Education discipline during 2008.To this moment, the majority of alumni enrolled in History of Education arestudents graduating in the Pedagogy course. This return was meant to recover the ETET experience after four years of maturation of the proposed knowledge. For this, a meeting was made with all the students in the class, in order to explain this research objective and to invite the students to respond to a questionnaire about the use of ETET in the classes of the History of Education discipline.

The collected data was submitted to the analysis of the SPSS program, a statisticalinstrument auxiliary to thisresearch. Issued in 1968, its first version was developed by Norman H. Nie, C Hadlai (Tex) Hull and Dale H. Bent, named SPSS (Statistical Package for Social Science). Originally, the application was developed only for powerful computers. Only in 1984 the first version for personal computers appeared (Bruni, 2009).

Currently called the IBM SPSS, SPSS is a part that does not posses meaning anymore. This program consists of one of the most used softwares for statistical analysis. Presenting a friendly interface, with recent versions for the Windows environment and with translations to various languages –e.g., Spanish, Portuguese and English – this program became a referential resource for data analysis in

social sciences. The user is allowed to load data archives from other extensions and to input data into the SPSS (ibid.).

  The program's data are presented in an electronic spreadsheet similar to Microsoft Excel's, yetits functioning is very different. To exemplify this difference, one can mention the way of executing mathematical operations, of inserting functions in cells, among others. The software generates graphics and tables, in which innumerous tools are offered so that the customization of the report can be made (ibid.).

  The software possesses various types of analysis that serve as support for decision making: analytical application, Data Mining, Text Mining, and descriptive statistics that transform the data into important information, which allows reducing costs and increasing profitability–a few examples of analysis in this resource. The data analysis procedure was executed based on the answers in the students' questionnaires, the statistical analysis made by the SPSS helped in the construction of tables and in the discussion of results.

  Thus, to answer this research problem, which is what is the contribution of the practice of Educational Technology in Educational Theater in the acquisition and contribution of scientific knowledge in teacher training, the investigation process was followed with technical precision – asdemonstratedby the observations of the ETET development in the classroom; by the collection of photographs taken in theatrical presentation; by the written testimonies in the beginning and end of the discipline; by the methodological elements that compose the final report of this investigation.

4. Results and Discussions

  The variables in this investigation are Scientific Knowledge, Teacher Training and Educational Technology in Educational Theater. Theyare variables of wide coverage and theirs indicators are not statistical, that is why they shift position according to the creation of new indicator groups, in other words, they are part of more than one construct.

  As shown in the methodology, eight constructs were created that compose the three variables, they are: 1) Use of Digital and Theatrical Technology; 2) Scientific Development; 3) Personal Development; 4) Group Work; 5) Systematization and Disseminationof Knowledge; 6) Academic and Professional Formation; 7) Digital Inclusion; and 8) Theatrical Technologies.

  These constructs, in their turn, contain the indicators (questions/items that make the questionnaire) that were analyzed in the research, through the Likert scale, to measure the level of contribution of ETET practice for the indicator. This way, if the respondent informed that agrees completely or partially with an item, this means that the ETET practice contributed in a positive way to that studied item. In this manner, the sum of the percentage of students that answered"agree totally" or "agree partially"with the itemswas usedfor the analysis of the constructs.

  The percentage associated to the non-contribution of ETET to the items corresponds to the sum of the answers of the following points in the Likert scale: "disagree completely", "disagree partially" and "don't agree or disagree". For example, if the percentages obtained with a question are6%,8%,16%,40% and 30%, this means the ETET contributed to 70% (40%+30%) of the interviewed, and didn't contribute to 30% (6%+8%+16%) of them. Grounded in this methodology, what follows is the analysis of variables and research constructs.

  In relation to the Scientific Knowledge variable, which is formed by the scientific development, systematization and dissemination of knowledge and professional and academic formation, Figure 1 demonstrates the contribution percentage of the ETET practice for the acquisition and production of scientific knowledge, for theincrease in the interest for research, for autonomy development, forthe development of the necessary knowledge for the elaboration of reports, for self-worth, for the integral development of potentialities, and for the student to be aware of the importance of education in a non-traditional concept.
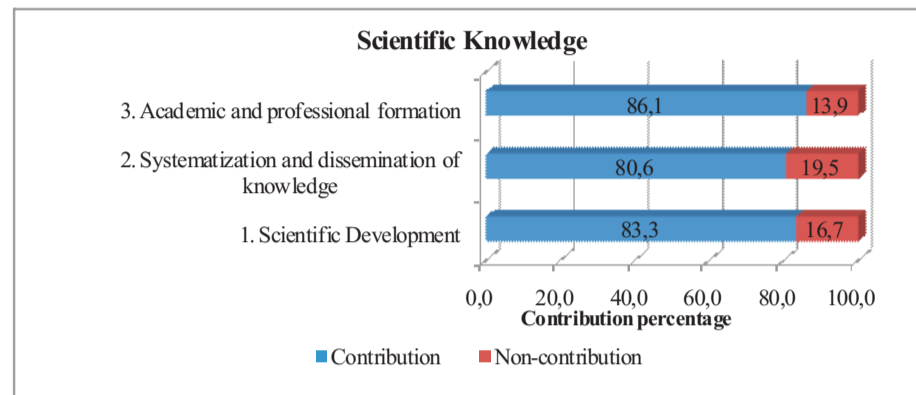
Figure 2: Scientific Knowledge and its constructs variable.

With the achievement of an average of 83,3% of contribution against 16,7%, according to Figure 2, one can affirm that ETET contributed positively to this variable.

Figure 1 contains the results achieved in relation to the contribution of ETET to Teacher Training. It should be observed that, in addition to the contributions already mentioned in the scientific knowledge variable and that also compose the Teacher Training variable, the ETET practice also contributed to self-evaluation, to the development of groups in academic formation, to the student's formation as an engaged, participant, critical, collaborative and cooperative citizen, and to promoting digital inclusion.
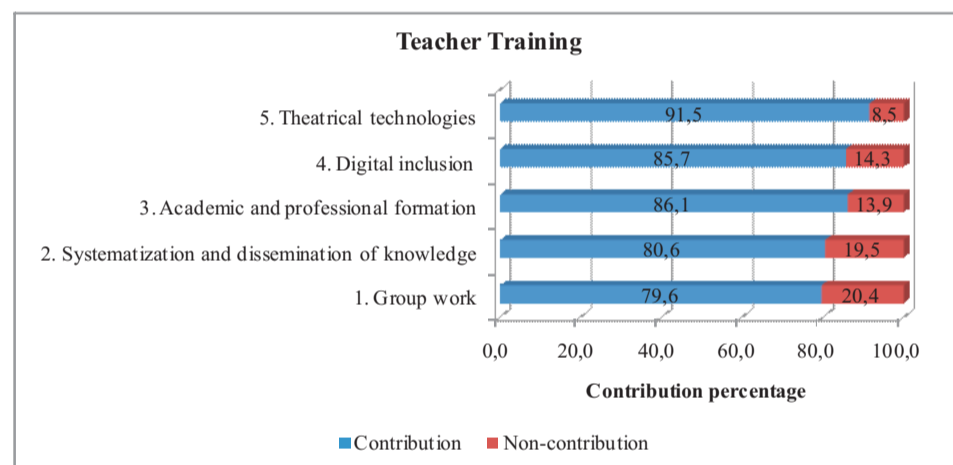

Figure 3: Teacher Training and its constructs variable.

With the achievement of an average of 84.7% of contribution against 15.3%, as shown on Figure 3, one can affirm that ETET contributed positively to this variable.

The Educational Technology in Education Theater variable is formed by the eight constructs mentioned. Thus, the constructs of the variables presented earlier also compose this variable, which means that part of the contributions of the practice of the studied technology for this variable was already presented.

The constructs that don't belong to the already mentioned variables (Scientific Knowledge and Teacher Training), and that have not been presented yet, are: Use of Theatrical and Digital Technology, Scientific Development and Personal Development.

An analysis of the results achieved in the evaluation of the Educational Technology in Educational Theater variable (Figure 4) allows to identify that the ETET practice also contributed to promoting the use of theatrical and digital technology for scientific and personal development. More specifically, it contributed to promoting group integration, to overcoming public shyness, and to increasing the self-esteem and confidence of the students.

With the achievement of an average percentage of 84,9% of contribution against 15,1% of non-contribution, as shown on Figure 4, one can affirm that ETET contributed positively to this variable.
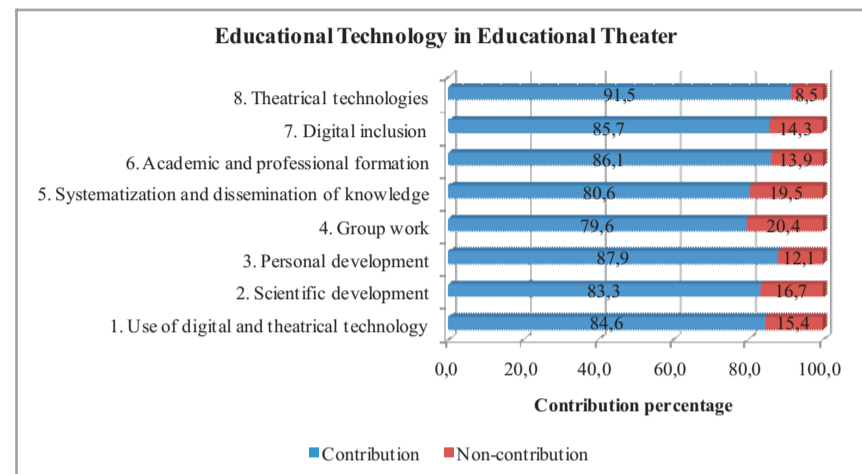

Figure 4: Educational Technology and Educational Theater (ETET) and its constructs variable.

Thus, ETET practice contributed positively to the production of pedagogic scientific knowledge, to reinforce the development of groups in academic formation, promoting the development of autonomy, of discipline, of self-esteem, of self-reliance and of professional self-worth. In other words, ETET contributed to the initial formation of the teacher.

5. Final Considerations

The majority of the researched students confirmed having participated in the ETET project during the first two years of the Pedagogy course, confirmed the importance of the project, and that they employ the knowledge acquired with the ETET in their professional and teaching practice.

Therefore, after a four-year period between the discipline and the application of the questionnaire, the research indicates that the feedback was positive and that the experience with the ETET was meaningful. The subjects relate their level of acquired knowledge in the use of digital Technologies and social relations associated to their personal development and the sentiments developed in the academic experience they lived.

The digital technologies that were used in ETET were: many media, Internet search mechanisms, e-mail, photography, video, Orkut, blogs, QP pedagogy and WebQuest. The first five were the most used. This list represents the reach of the second specific objective of this study.

The relevance of what was reached in practical terms is related to the contributions provided by Educational Technology in Educational Theater to the teacher training process and to the students that participated in the ETET practice. In teacher training, the process occurred in a critical, conscious and autonomous way, breaking the cycle of traditional learning, through practices that motivated group work and encouraged students to better comprehend the value of science and technology with theatrical art. For the students, digital inclusion was provided, development of the scientific spirit, personal development as well as the relation with the public, improvement in the ability to work in groups, and to organizing and disseminating knowledge, which are necessary abilities for future teachers.

The systematization of the stages of the educational theater technology produced a conceptual map that represents the constructive structure of the educational technological process, in other words, ETET itself. It allows the understanding of ETET, its processes, products and possibilities of acting in the academic environment of teaching, extension and research. The third objective was reached with this map. This scientific discovery is relevant because it is another teaching technology and because it contributes to orienting teachers and teaching institutions that wish to adopt an Educational Technology in Educational Theater during the teaching-learning process.

The ETET was used in the Pedagogy Course as an instrument of inclusive education in the scientific and technological scope, and in the formation of teachers in non-traditional teaching. The forms used contemplated research construction, the use of educational technology, digital and theatrical, and the critical creation and presentation of educational theater. This way, the fourth objective of investigation was

reached. One can highlight that this data contributes to science in terms of preparing the student to act with reassurance in the society of knowledge, giving a more adequate preparation for the labor market, which is permeated with technological apparatuses.

The practice of ETET is an instrument that contributes to the acquisition and production of scientific knowledge. Theoperational process follows a scientific track, that demands dedication of the student to study, by systemized teaching or not, by the rigor of constant scientific research, by the instigating form of creation and creativity to the technical-scientific production. This is a form of teaching-learning in which the student is an author and actor in his work.

ETET contributes to the development of citizenship, to relating in public, to the increase of self-esteem, and stimulates the confidence to deal with situations that involve public presentation. Citizenship in the Brazilian context is very important to the development and preservation of democracy, for it emphasizes civil, economic and social rights. This path is taken with the aid of the educational field and its interactions with the social-political medium, through cooperative and collaborative relations, where true knowledge occurs through the practice of social constructivist and socialinteractionist paradigms to reach citizen practice.

Group work in ETET contributes to the development of the spirit of collaborative work, to the interest in research, to self-evaluation, to the search in the improvement of work and to the exchange of ideas and responsibilities in the preparation and execution of tasks, that is, in order to the action-reflection-action process to occur.

The construction of reports contributed to the systematization and dissemination of the acquired knowledge. With ETET, there was the development of the capabilities of the respondents for academic and professional formation.

The students frequently used digital technologies to organize their research, demonstrating that there is a digital inclusion of the group.

The Theatrical Technologies made it possible to develop communication abilities, leadership and creation for the academic formation of the pedagogical praxis, contributing to the development of critical subjects that comprehend their role in society.

One can affirm that the practice of Educational Technology in Educational Theater contributes to the acquisition and production of scientific knowledge in teacher training.

The practice of educational theater in the initial formation of teachers contributed to the production of scientific pedagogical knowledge in a ludic way and strengthened group development, promoting and developing autonomy, discipline, self-esteem, self-confidence and professional self-worth, thus collaborating to the integral development of teachers' potentials and to expand their intellectual capital.

The scientific research in junction with the instrumental of educational technology in educational theater developed with the help of theatrical skits contributed to the formation of teachers, articulating educational technology as a process in the production of scientific and pedagogic knowledge during the initial formation of teachers.

Considering the above, one can conclude that the practice of educational theater in the initial formation of teachers contributed to the production of scientific pedagogic knowledge and supported the development of groups in academic formation, promoted the development of autonomy, of discipline, of self-esteem, of self-reliance and of professional self-worth, collaborating to the integral development of the teacher's capabilities and to expand their intellectual capital. Thus confirming the first hypothesis of the investigation.

One can also conclude that the scientific research in junction with the instrumental of Educational Technology in Educational Theater, developed with the support of the theatrical skit, in the Pedagogy course, contributed to the formation of teachers and articulated educational technology with the process of scientific and pedagogic knowledge production in the initial formation of teachers. Also confirming the second hypothesis in this investigation.

In addition to this, as result of the investigation there was contribution to science and technology. This way, and based in the guiding reflections of the definition of the problem of this investigation, which is "what is the contribution of Educational Technology in Educational Theater practicetothe acquisition and production of scientific knowledge in teacher training?"A problematic was faced,promoting many concerns and moments of conflict, thought and complementary reading that aided the elaboration of the hypotheses of research investigation. Thus, grounded in the investigation, and after the conclusion of the research and data analysis, one can respond with assurance the proof of the hypotheses presented, which is considered positive to scientific investment.

The first hypothesis was proven, this is: the practice of educational theater in the initial formation of teachers contributes to the production of scientific pedagogic knowledge in a ludic way and strengthens

the development of groups in academic formation promoting the development of autonomy, discipline, self-esteem, self-reliance and professional self-worth, collaborating to the integral development of the teacher's capabilities and to expand his intellectual capital.

And one can affirm the proof of the second hypothesis: the scientific research in junction with the instrumental of educational technology in educational theater developed with the support of the theatrical skit in the pedagogy course contributes to teacher training while articulating the educational technology as a process of scientific and pedagogical knowledge in the initial formation of teachers.

Furthermore, the practical actions that follow are recommended: First, patent the ETET. Make public the existence of this research, via publications of scientific quality. Provide its use by accredited institutions, as a motivational tool for reflexive practices and to the encouragement of investigations. Promote lectures and workshops for professionals and people interested in the area. Include the investigation in the research group indexed in the Lattes platform, to encourage its repetition by students and researchers. Disseminate the technology in the semestral meetings of scientific and technological initiation.

And present this investigation in the Tutorial Education Program (PET) in Pedagogy, to contribute the innovation in other courses in the area of Educational Science, in the interior of the Pedagogy course and in other degrees or extension and teaching groups dedicated to the effective adult learning. Include this research in the Institutional Program of Initiation to Teaching Scholarship (PIBID), seeking to socialize the technology developed by public and private learning institutions to favor the practice of teacher training.

Promote the use to the implementation of supervised internship disciplines, to provide digital inclusion and the practice of theater as an incentive to the new perspective on educational technology, and encourage the improvement of the quality of access to information in computer laboratories, providing greater access to research platforms to the students and the community. Creating the semestral meeting for the presentation of the practices developed, adding the participation of the external public in the presentations as a form of incentive to other groups that may desire to expose their projects in the Federal University of Piauí. Guarantee a physical space for the development of extracurricular projects. Make partnerships with teaching organs and institutions to orient the new practice.

Secondly, grounded on the results taken form the development of the research, a few questions arise that may serve as indications to the realization of future research, an incentive to all the professionals that may have interest in the research with the Technology of Educational Theater and desire to contribute to the improvement of the quality of undergraduate teaching:the realization of researches directed to the Paulo Freire Platform (PAFOR), using the format of collaborative groups with students and bachelor teachers, approaching digital technologies and learning objects and their applicability in virtual environments in distance and presence learning. The absence of these studies with teachers in exercise was identified, in the courses of licensure in Brazilian public universities.

Finally, to model the studies about the knowledge of the content and of the evaluation processes, the conception and the teachers' attitude in long distance teaching, in relation to contents specificto education in the process of formation and study of their own practice. With the realization of the research involving a permanent advisor in a collaborative work group about the use of distance education combined with attended teaching, provoking the reflection regarding content, qualitative evaluation of the content, and regarding its own practice.

6. References

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