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Research in action: alternative training proposal

Investigación en la acción: propuesta de formación alternativa

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ABSTRACT

The objective is to contribute to the construction of a proposal for teacher training for research, so that it affects their management, innovation, and teaching activities. It is a qualitative research in critical-dialectical logic and action research; the subjects were nine teachers from the three educational levels. An open questionnaire was applied. A heuristic-reflective analysis was performed using analysis tables. The results were the recognition and consolidation of the Training Workshop Seminar in and for Research, and a Diploma proposal in which the lived experience is captured.

Keywords: Strategy; Training; Skills; Research, Mediation.

JEL CODE: I23



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RESUMEN

El objetivo de este artículo es analizar una propuesta de formación docente con perfil investigador, a fin de incidir en sus actividades de gestión, innovación y docencia. Este es un estudio cualitativo. Con base en la lógica, crítica-dialéctica e investigación acción. Los sujetos fueron nueve docentes de los tres niveles educativos. Se aplicó un cuestionario abierto. El procesamiento de datos fue heurístico-reflexivo. Se usaron cuadros de análisis. Los resultados conducen al reconocimiento y consolidación del Seminario Taller de Formación en y para la investigación y una propuesta de un Diplomado en la que se plasma la experiencia vivida.

Palabras clave: Estrategia; Formación; Habilidades; Investigación; Mediación.

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INTRODUCTION

Research as an attitude for learning provides the teacher with the skills that allow him to face the challenges of the contemporary world (Moreno, 2002: 30). Among them are the challenges in technological matters in the use and transfer of knowledge (Díaz & García, 2011; Silva et al., 2012; Molina, 2015).

The teacher-researcher develops a critical and purposeful character. Knows to confront conflicts and respond to them. He is a professional who acts following the policies of the United Nations Educational, Scientific and Cultural Organization (UNESCO). UNESCO in its declaration on higher education in the 21st century mentions that through research knowledge is generated, promoted, and disseminated.

The United Nations Organization (UN, 2015) in the 2030 Agenda, goal four, points out that universities are fundamental both in the education of scientists and in the creation of knowledge. With these last two, it is sought to find a solution to local, national, and global problems in all areas of sustainable development.

Under this vision, higher education should support scientific, technological, social, and cultural research. It must strive for training that allows the teacher a contemporary theoretical and methodological positioning of the research. That the teacher develops investigative skills and contributes to learning in the management -rational, critical, reflective, and ethical- of the multiple sources of information (Uribe, 2009; Fernández, 2011; Rugeles, Mora & Metaute, 2015).

There is a vast academic proposal in the methodological update (del Castillo, 1993; Fernández, 1994; Martín, Mora & de Valderrama, 2007; Hewitt & Barrero, 2012; Espinosa, 2014). In addition to a large amount of literature on the subject. This literature does not come close, with sufficient clarity, to a logical research process, such as the art of making inferences that are based on formal criteria.

The research is supported by organized and congruent arguments. For students of logic, an argument is an attempt to put together a series of premises that can be inferred in a coherent, not contradictory way. Good arguments have two qualities: Sus premisas son fuertes, tienen razones para ser aceptadas ya que se apoyan en evidencias derivadas del método inductivo o deductivo.

- Its premises are strong, they have reasons to be accepted since they are supported by evidence derived from the inductive or deductive method.

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Research as a logical process represents a set of skills, which allow identifying aspects of the world that are intended to be understood, and in the same way, it helps to signify the theory so that it leads to a discovery process with clarity and logic.

Science graduates generally only update and train because they lack a logical process. They limit themselves to transmitting knowledge about the method without further understanding, to teaching investigative competencies that only professionalize (Mas-Torelló, 2015). The result is the development of a thesis work with which the degree studied is obtained but with little scientific profile. In the training process the result is different:

“It consists in promoting and facilitating in a systematic non-schooled way access to knowledge and the development of skills, habits and attitudes and internalization of values, which requires the realization of the practice called research, a process that is carried out with the intervention of mediations, among them, trainers as human mediators ”(Moreno, 2002: 36, 37).

Research training implies considering the subject in training as the main actor in his training process; in the transformation of their capacities that, in turn, enable them to solve problems creatively and innovatively (Moreno, 2002: 36). An example that recovers the aforementioned is the Master of Administration in Management and Development of Education (MAGDE), from the National Polytechnic Institute (IPN), in Mexico City.

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The objective of this master's degree is the professionalization of managers and leaders of educational institutions. In this, the degree is obtained with the preparation of a thesis that is defended through an exam (IPN, 2017). It is in this space of the Master that an action research project arises. The project gives an account of the object of study. The methodology is based on the action itself of the researchers, who assume active participation in the teaching practice. They achieve this through systemic observation, analysis, and interpretation of the work as a teacher-researcher (Rodríguez, Gil & García, 1999: 52).

In 2015, within the MAGDE program, an alternative training proposal was started called "Training Workshop Seminar in and for Educational Research" (STFIE-IPN). It is a non-profit, non-schooled space that responds to the rhythm of each participant.

Therefore, it does not establish an end date, it is voluntary. The workshop favors academic dialogue and multidisciplinary learning. In it, an attitude of critical, analytical, and reflective collaboration is sought around the debate of the methods, methodologies, and techniques used in research.

In addition, in this space actions, thematic, pedagogical, and didactic material is proposed to solve problems that transform the teacher's practice. The transformation encompasses the

following fields: management, innovation, linking, teaching, and dissemination. Always in the formative accompaniment of research professionals (Vargas, 2015).

THEORETICAL FRAMEWORK

The theoretical perspective that integrates the body of the article corresponds to the proposal of Moreno Bayardo (2002: 17-41). The author conceptualizes the terms of research, training, research training, mediation, strategy, and investigative skills. With its conceptual construction, it helps to answer the questions that were the guide of this work. What does it mean to train for research? Why raise concern in higher education programs about the need for teachers trained for research? How are knowledge and decision-making skills generated in problem-solving based on formative research?

Investigation

Moreno Bayardo (2002), builds the meaning of research from the proposal of Ipola and Castells (1975: 41). These last two establish that research is a representation of scientific activity. This activity brings together a set of knowledge production processes unified by a common conceptual field.

The conceptual field is organized by norms inscribed in institutional apparatuses. In addition, it incorporates the three types of research that Ducoing et al. (1988: 23) distinguish: 1) that which will generate knowledge, 2) that which explains problem-solving through the knowledge generated, and 3) that which fosters learning.

Moreno Bayardo (2002) agrees with Ipola and Castells (1975) in considering two actions related to types of research as fundamental. The first action, the theoretical, methodological, and application phases are related throughout the research process. Second, research manifests itself in the academic life of institutions as an attitude towards learning, not updating or training. Manifestation, not only in higher education but throughout the training process at all educational levels.

The research concept proposed by Moreno Bayardo (2002: 30) is established as the set of knowledge production processes, fundamentally in the practice that consists of generating said processes, guiding them, supporting them, recovering them, rebuilding them, so that they lead to the production of knowledge.

Training

Research is seen as a practice in the production of knowledge. It is considered a structural task (Guerra, 2017). Research always begins with a problem, with a theoretical and

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conceptual construction, without data obtained from fieldwork, without a protocol, without results, and, of course, without conclusions. A doing that deduces the creation of knowledge and, therefore, is complex in the practice of research; it is a challenge that implies training for research (Moreno Bayardo, 2002, p. 31).

Heller (1977) points out the importance of man's contact with culture through interaction with his peers. Díaz Barriga and Rigo (2000: 87), recover what was said by the author in the construction of the formation. These last two indicate that the formative development of a subject implies the growth of their potentialities. Potentialities that will be made available to other subjects in the daily social relationship. Also in the different contexts in which he lives or works. Luhmann and Schorr (1993: 79) refer to training as the internal conformation of each human being, for them it is a task of itself.

Pasillas (1992) establishes that training is about a personal project because it is not the school or the teacher who offers the knowledge and marks the trajectory, [...] the one who is trained is the one who decides and the one who actively participates in the process. Ferry, Wieder, and Jiménez (1991: 55) incorporates another element in the integration of the term, in the first instance, it ratifies the fact that the person is formed on their initiative and through mediation.

72 The mediations are diverse: the formators are human mediators, so are the readings, the circumstances, the accidents of life, and the relationship with others. Hence, the training process is carried out through mediation, not only with school or institutional programs but also in the family, work, and professional spheres.

Moreno Bayardo (2002), recovers from Díaz Barriga and Rigo (2000: 87), Luhmann and Schorr (1993: 79), Pasilla (1992), and Ferry, Wieder, and Jiménez (1991: 55) the elements that make up the conception of training: access to culture, historical reconstruction of it, connection with work, acquisition, construction and development of knowledge and skills, intellectual production and internalization of a set of values. All this together becomes a project of its own, assumed by the person. Thus, the concept of training, the author refers to as:

“A differentiated issue, given that the individual has a rhythm and a path of his own to develop, assume, and actively participate in the various training processes in which he is involved. Even though it was noted that training is a project that each subject assigns as their own, it is also assumed that the process can be systematic and formal, supported by trainers, these being human mediators ”(2002: 33-34).

Research training

Investigating is a practice for which it is necessary to be trained, not updated, not trained, not educated, on the contrary, it is a training process for research. Filloux (1991) cited in Moreno

Bayardo (2002) establishes a distinction with three expressions that give meaning to the process:

“Training in, training by and training for. Training in refers to the content of knowledge acquired or to be acquired; training by referring to the procedure or mediations that will be used to support the learner; training for refers to the practice, function or profession to be performed by the subject in training”(2002: 34).

Although the term training is spoken of generically, the truth is that it depends on the intention of its use. Expressions such as research training, researcher training, research training, and training through research are used. Moreno Bayardo (2002: 35), in an exhaustive search finds the proposals of Sánchez (1987: 56; 1995: 125, 127), Rojas (1992: 90), Mingo and others (1989: 25) and Reyes (1993: 76 -78). With the arguments of all these authors, the distinction of each of the following expressions is determined:

- *Training of researchers.* It is an academic task that aims to teach research, which consists of the transmission of theoretical and practical knowledge, strategies, abilities, and skills.
- *Teach to investigate.* It is much more than the transmission of knowledge, it implies the development of a series of skills and attitudes typical of the scientific mentality.
- *Office of the researcher.* Understood as a set of elementary strategies and skills, that is, the knowledge that is put into practice.
- *Comprehensive training of researchers.* It consists of a formative process that fosters epistemological, methodological, philosophical, and technical knowledge. Process in which scientific knowledge is generated in a specific field. In it, the socialization of the works in written and oral form is promoted. Through knowledge, practice is promoted to transform the being and doing of the subject in training.
- *Research training.* It alludes to the objectives to be achieved by a study plan, whether in face-to-face or virtual mode.
- *Training through research.* It is allowed to use and question the dominant knowledge, acquire new ways of understanding reality, face problems in the production of knowledge, face what is known and what is not, be humble in the face of knowledge problems and give less importance to knowledge matters that are frequently asserted.

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Each of the aforementioned expressions, even located in the context of training, emphasize different elements, whether they deal with the what and why of the subject in training, the

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task for which it is trained, or the formative value derived from the actual practice of research. The most common elements are:

- A specific practice, for example research.
- The exercise that demands knowledge, skills, habits, attitudes and values, willing to be obtained or perfected by the subject in training.
- An academic task, whose mediating function is to promote and facilitate access to knowledge and the development of skills, habits, attitudes and values.

Moreno Bayardo (2002) considers the listed elements in the construction of what it means to train for research. The subject being formed is not lost sight of. In that sense, the concept remains as:

“Process that involves practice and diverse actors, in which the intervention of the trainers as human mediators is specified in a consistent academic task, and in promoting and facilitating systematically (not necessarily schooled) access to knowledge and the development of skills, habits and attitudes and internationalization of values, which demands the realization of the practice called research ”(2002: 6).

The research thus conceptualized, emphasizes the intentionality and the product of the academic work contemplated in the features that characterize the concept of training - incorporated in the theoretical section of the article- and following the work of Barbier and Rivero (1993), also analyzed by Moreno Bayardo (2002: 37):

“Not only in terms of facilitating the appropriation of knowledge, which could be related to teaching, or promoting the development of research competence, which would be identified with professionalization; but with the mediating function that consists of dynamizing the process of transformation of the person in terms of the evolution of their potentialities - identifiable with the expression used by Barbier- as “transformation of capacities”, which also involves the purposes assigned to teaching (appropriation of knowledge) and professionalization (development of competence). ”

Talking about research training allows us to note what Ferry, Wieder and Jiménez said:

“Training requires trainers to have a style of intervention that is very different from that of traditional teaching intervention. That is to say, work of motivation, of facilities for the elaboration and realization of projects, either through tutoring or in workgroups ”(1991: 75).

TRAINING STRATEGY FOR RESEARCH

Sánchez (1987: 31 cited by Moreno Bayardo (2002: 38-39) introduces the strategy term as a scientific act by which knowledge is generated. Unpublished act in each investigation in particular. Consequently, scientific work is a process, an operation that seeks efficiency and is structured by a principle.

This task, in order to achieve its objective, it chooses the best paths and selects the most appropriate means. Likewise, it metaphorically states that the research professor is a strategist when he is skillful and skilled in the production of the entire knowledge generation process.

Moreno Bayardo (2002), based on Sánchez (1987) by pointing out that each knowledge generation process is unique; although they share some common elements that seek the same purpose, and hence, it is up to the researcher, therefore, to build the path that he considers most appropriate to achieve his objective.

In this way, the strategy is seen as a non-isolated act since designing a strategy supposes visualizing the entire knowledge generation process in a particular case and identifies actions that, successively or recurrently, constitute concrete ways of moving forward. in the achievement of the objectives (Moreno, 2002, p. 39). Thus, the author arrives at the concept of strategy:

"As the analysis of possibilities in the choice and incorporation of the means that allow reaching an end in the best possible way and acting in response to each particular situation, based on the series of circumstances in which it takes place" (2002. p 39).

The strategy involves a series of options that lead to reaching an objective when it is possible to intervene in decision-making and considering that the task to be carried out demands a creative and effective response; Consequently, Moreno Bayardo (2002: 41) emphasizes the relevance of talking about strategy in the generation of knowledge, but also about training strategies for research incorporated in a program whose process aims to make the participants achieve a consistent training that incorporates skills, habits, attitudes, values, learning experiences and advisory styles of trainers.

Finally, the training strategy for research thus conceptualized is not only the choice of a didactic or curricular type, it is framed within the epistemic, methodological, sociological, and philosophical dimensions of the practice of research itself.

Investigative skills

Ability, aptitude, competence, dexterity, and ability are terms that tend to be confusing since they are generally considered synonymous; In this sense, Moreno Bayardo (2002) makes the distinction and argues that there is a close link between them, but not an identity:

"Fitness is an innate disposition, it is a natural potential that the person has, he can put it into action, he can exercise it and stimulate it to promote its evolution, all together becomes a skill, when this happens in a way Gradual -that goes from a minimum level to an optimal one- results in the development of skills, which when reaching its tendency towards the optimum is transformed into a skill that has acquired a certain level of competence and at a

given time dexterity, thus the Skills will be those skills that the person has developed with a high level of competence, however, it is not necessary to reach a skill level to determine the development of the determined skill, the latter is obtained by progressive dynamization (a consequence of experience, exercise, and learning) through which higher levels are accessed in question.” (2002: 41-42)

The skills are educable since they manage to evolve towards better performances, that gives them a character of stability, they apply and share to multiple situations that are of the same nature; Hence, the skills developed by a subject can be partially internalized as habits that configure a peculiar way of carrying out or solving problems in areas of a given activity.

In this sense, Moreno Bayardo (2002: 43) conceptualizes skills as a construct that is associated with the performance of certain actions that a subject can perform or is reduced to the actions themselves. The author incorporates a series of skills, for example, to argue logically, to express ideas in order, to think relationally, to symbolize situations, to synthesize, and to problematize.

Consequently, investigative skills are those developed by a person conducting research. These are skills associated with the knowledge generation processes, the development of which enhances the training of researchers in training or the office so that they can carry out
76 good quality research.

In intentional educational situations, Moreno Bayardo (2002) expects that certain activities or learning experiences contribute to the development of certain skills, regardless of the nature of the educational programs. Although some programs already have them incorporated into their curriculum, they are disconnected. In any case, they can be incorporated into a training process of this nature, as long as the academies are aware of what it means to train and train for research.

MASTER OF ADMINISTRATION IN EDUCATION MANAGEMENT AND DEVELOPMENT

Within the educational offer at the National Polytechnic Institute (IPN) is the Master of Administration in Management and Development of Education (MAGDE). It is located in the Superior School of Commerce and Administration, Santo Tomás Unit (ESCA). It is one of the higher education schools of the IPN. In 2008, it was incorporated into the National Register of Quality Postgraduate Programs (PNPC) of the National Council of Science and Technology (CONACyT), thanks to which scholarships are awarded to students.

With this commitment, MAGDE has to meet the criteria that the same body stipulates to continue on the standard of excellence. Among the criteria are the following: graduation of up to 80% of enrollment per year, teacher and student productivity following international standards, and collegiate work from the academy.

The academic offer of the Master's Degree corresponds to research training (Moreno Bayardo, 2002). This type of study seeks to achieve the objectives; in this case, those of MAGDE. For this, the student is supported in the preparation of a project called thesis that he defends before a jury, the result is the obtaining of the degree, the only graduation requirement.

The program has a curricular grid composed of a series of elective courses located in two Lines of Generation and Application of Knowledge (LGAC), which are separated when students take them. Within these courses, there are those related to methodological issues, which are mandatory.

About the above, MAGDE offers an updated proposal. This is far from a formative process in the terms exposed by Moreno Bayardo (2002), in the sense of practice with diverse actors, with intentional personal projects to develop skills, habits, attitudes, and values that investigative practice demands. In the context and conditions in which MAGDE is developed, it is the appropriate space to promote an alternative training proposal for research. ⁷⁷

The program began in 2015. As part of its results, the work team involved in the program participated in the organization of an international congress. In 2019, the registration of a Research Training Diploma was obtained, aimed at teachers and authorities of the National Polytechnic Institute and the general public. In 2020, the IPN authorized the project for the development of a book in which the experience of the Training Workshop Seminar in and for Educational Research at the National Polytechnic Institute (STFIE-IPN) is recovered.

RESEARCH METHOD

It is a qualitative investigation. A study group was formed with ex-students, students, professors, and experts in the training of researchers from MAGDE. This group joined a research training process in 2015. The participants in the group are teachers of primary, secondary, secondary, and higher education. The ages range from 30 to 60 years. The experience of some of them, in addition to teaching, is in directive management.

It is an investigation based on the critical-dialectical logic and action research, based on the fact that the subject is recognized with its manifestations such as their passions, feelings,

emotions, and thoughts that vary concerning the contexts where they develop (Mardones & Ursúa, 2003; Sánchez, 1998).

These manifestations are based on historical, testimonial, and argumentative support that leads the participants to become aware of the importance and need to transform their thinking and their personal, family, work, professional and social activities. The key players are nine teachers:

- Four of basic education: one of primary, three of secondary
- Two high school
- One of higher education
- Two postgraduate researchers

Information retrieval was carried out with qualitative techniques and instruments: interview and open questionnaire. The interview (Table 1) was applied to the nine members of the research group (STFIE-IPN) based on the open questionnaire. The questionnaire allowed us to internalize the experiences, interactions, and inferences of the group as part of their formative process: a process that is about the epistemic, ontological, teleological, and prospective dimensions (table 2).

Table 1. Questionnaire

INSTITUTO POLITECNICO NACIONAL TRAINING WORKSHOP SEMINAR IN EDUCATIONAL RESEARCH Formative Assessment (Metacognition)		October/2019
Researcher:		
The Modular content of the STFIE, consists of seven Modules, which has been developed in the period of approximately 5 years, although, about a year and a half ago, a formative evaluation exercise was carried out, now it is proposed to evaluate in the conclusion stage of modular contents.		
Although it is the same instrument, now it is possible to carry out the approach of Ferry Ferry, Wieder, and Jiménez (1991), move from the pedagogy of process to the pedagogy of analysis, that is, what has left us as learning, as an approach formative in the field of educational research, the effort and studies deployed through a dialogic group interaction?		
Clarifying that it is not a summative or punitive evaluation, much less exclusion, on the contrary, to consciously recognize our progress and above all that which is necessary to identify as issues to improve in the research journey.		
Subsequently, systematization of the responses and their heuristic and reflective analysis will be carried out.		
Regarding the epistemological construction:		
Comment on the findings, the contributions, which have allowed you to build the consulted references, as knowledge about the research methodology.		
What aspects of the topics developed have generated doubts, concerns, or epistemic difficulties?		
What would you add to the thematic content of the two Modules developed or take away from them?		

Continued on the next page...

An ontological dimension has been considered as a purpose, and concerning it:

How do you now conceive yourself as a researcher after the sessions developed at the Seminar?

What is thinking as a researcher?

What investigative strengths and weaknesses have you discovered in yourself?

What have you discovered about the nature of educational research, through readings and group dialogue?

About the axiological dimension of research and being a researcher:

For you, what values and/or virtues does being an educational researcher demand?

What is the ethical meaning of being a researcher?

What challenges or goals has the Seminar generated for you with:

His person

Your daily educational task

To training for educational research:

What is the point of conducting educational research processes?

Prospective

How do you consider being or being in five years, to your professional work and the field of educational research?

Training process

What do you think of the schedule?

What critical observations or would you suggest would you have for the better organization and development of the sessions, as well as the training support implemented so far?

Reference

Álvarez M. J.M. (2001) *Evaluar para conocer, examinar para excluir*. Spain: Editorial Morata

Source: Own elaboration.

Table 2. Dimensions of the training process

Dimension	Purposes
Epistemological dimension	Know and practice the theoretical-methodological elements of educational research to support proposals for improvement
Ontological dimension	To constitute a space with a humanistic and formative intention, where the qualities of being are recreated and enhanced, such as the sense of historicity, superior cognitive abilities, and the understanding of oneself, of each one of the members
Axiological dimension	Live the experience of a training process sustained to promote values such as respect and trust, virtues and attitudes of collaboration, solidarity, a sense of exchange of knowledge, and training approaches, all based on an ethic among peers.
Teleological dimension	Recognize as one of the purposes the development of the life project of each one as essential to the purposes of the group project in the field of training and self-training in critical pedagogy.
Prospective dimension	Implementation of consultancies with a sense of formative accompaniment that transcends a transformation of the practice of management, consultancy and teaching.

Note. The table sets out the purposes of each of the dimensions. Derived from the sessions of the STFIE-IPN research group.

Source: Own elaboration.

The systematization of the questionnaire responses was carried out with a heuristic and reflective analysis, which consisted of making an analysis table by dimension, in which the axes, questions and answers of the dimensions were incorporated. Examples are shown in Tables 3 and 4.

Table 3. Analysis chart

Elaborated: JGM.

Date: 3/17/2019

Question for Analysis: 9. What is the ethical meaning of being a researcher?

Axles analysis	Event	Block	New category	Observation
Professional ethics	May he develop his role and knowledge for the benefit of humanity (for the common good). Do not lie and do not act based on economic or productivist interests or with improper practices such as: plagiarism and / or simulation.	Do not lie, do not act according to economic, productivist or improper practices		
	It refers to the fact that the researcher must have values and a critical sense	Values and a critical sense		
	The researcher is undoubtedly due to his effort and dedication, without losing sight of the fact that the institutional base on which we are being trained faithfully represents our society to which we also owe a good part of what we have, for which we are obliged to correspond and without cheating or simulations.	We are obliged to correspond and without cheating or simulations.		
	Act based on knowing the phenomena present in daily life to promote a change for the benefit of all. Therefore, be congruent with what you think, feel, say and act.	Be consistent with what you think, feel, say, and act.		
	The essence of the process carried out by the researcher is to obtain relevant information that facilitates obtaining reliable results which provide objectivity to the investigation, bearing in mind the respect and defense of the truth above all else, without making prejudicial conclusions and manipulated, with their criteria, honesty in reflections, impartiality, equity and responsibility in all areas: social, political, legal and ethical; in addition, to have an open mind to criticize the problem analyzed.	Obtaining reliable results which provide objectivity to the investigation. Without making prejudicial and manipulated conclusions, with their criteria. Honesty in reflections, impartiality, fairness and responsibility in all areas. Open mind to criticize the problem analyzed.		

Source: Own elaboration with the proposal from Raúl Vargas Segura, STFIE-IPN member.

Table 4. Analysis chart

Prepared: MBG.

Date: 03/31/19

What have you discovered about the nature of educational research, through readings and group dialogue?

Axes analysis	Event	Block	New category	Observation
Subjectivity in qualitative research	I have discovered that due to the characteristics of educational research (qualitative) and the fact that different points of view, experiences, and interests are taken into account, the perspective becomes subjective and the solution becomes more complex, due to the various factors that converge. It has cost me work because I have almost always been more objective.		Qualitative research Subjectivity in research	
Research training	There are different research logics, methodologies, and approaches, so we have to have a well-defined position in our research.		Methodologies Approaches Investigative stance	
Accompaniment in research training	In short, I have discovered that research by itself is complex and, in a particular way, educational research is not an easy task at all; however, I have witnessed that the accompaniment and the work teams represent an effective tool in the training of the researcher.		Complexity in research Training support in research	
Instruments for qualitative research Methodologies	Doing educational research is to recognize that you work with people who have a life history, due to the influence of their social practices that develop in specific socio-cultural environments and that therefore their study goes beyond data or statistical samples. Meanwhile, understand their behavior and thinking in terms of knowing their internal-hidden elements that are not easily perceived, but rather through establishing a researcher-subject of study relationship, inserting themselves in their natural environment, and interpreting their behavior by recognizing that they are unique beings and better yet to design proposals for action, is without a doubt talking about research in the educational field. In this sense, to emphasize that the investigations be carried out offer a contribution in action, thereby promoting a change in the educational community, that is, offering a cognitive-transformative process.	Studies that go beyond statistical data	Life stories Social practices Research in action	
Methodological approaches	That there are different methodological approaches to carry out an investigation, in the same way, the readings have allowed me to know the different philosophical currents, the history, and the foundations that have been raised to understand the internal aspects of the human being and his work within the universe than the one we live and develop.	The readings have allowed me to know the different philosophical currents, the history, and the fundamentals	Methodological approaches Theoretical positioning	

Source: Own elaboration with the proposal from Raúl Vargas Segura, STFIE-IPN member.

RESULTS

They are presented based on the results derived from the analysis of the information obtained from the open questionnaire applied to the members of the STFIE-IPN. The intention was to understand the meaning of learning and the process experienced in dialogic interaction in relation to the epistemic, ontological, axiological, teleological, and prospective dimensions, shown in Table 1.

Consequently, the elements to be incorporated in a training proposal were identified. In this sense, it begins with the antecedents of the Training Workshop Seminar regarding its consolidation as a research group; It continues with the knowledge acquired and ends with the proposal for the Diploma.

Background

84 In 2015, it was the beginning of a formative adventure with the construction of a space for a group of education professionals to meet, their initial attitude was one of enthusiasm, always under the expectation of what would happen. The only information they obtained was that they were joining a group, that what they learned would transcend in their personal, family, work, professional and social life, and that they were not going to receive any official document that awarded them points for their promotion.

On the contrary, time would be required outside of their daily responsibilities, time that they would dedicate to their training process in and for research. They were informed that the proposal was not schooled and that it does not belong to the program where it is taught, that the space is granted because the person in charge is a member of the MAGDE academy, a condition that at some point may change derived from the authorities in turn.

As a result of five years of a permanent training process (2015-2020), a research group was consolidated in which they are recognized and identified as the Training Workshop Seminar in and for Educational Research at the National Polytechnic Institute (STFIE- IPN). It is a training space that has transcended the areas already referred to in this work; that he has had good and bad moments, encounters and misunderstandings, so each of the members have assumed them as part of their learning process; and those who leave know that they can return at the time they want or when their activities allow them.

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The theoretical perspective that supports the formative proposal is taken from the work of Moreno Bayardo (2002) developed in the theoretical section of this writing, and the formative accompaniment that gives meaning to the issue of mediation is incorporated:

“Formative accompaniment whose orientation is to promote an area of critical, purposeful dialogue, of permanent debate, which leads each participant to feel part of a supportive and self-committed academic community in their self-training. Meaning the epistemological content, the own being of the researcher or the researcher (ontological); appropriating the ethical sense of the investigation (axiological); that allows participants to dare to outline new professional or personal purposes with a social (teleological) sense and, above all, to believe in the construction of alternative future scenarios in the field of education (prospective)”(Vargas, 2012; 2015).

The agenda to be developed in the STFIE-IPN consists of seven modules, it is open and flexible to contemporary contributions in the field of research, education, and training thought, it is face-to-face in the Seminar-Workshop mode, and debate among its members is encouraged.

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MEANING OF LEARNING AND THE PROCESS LIVED IN DIALOGICAL INTERACTION

The qualitative treatment of each one of the questions was carried out according to the categories previously determined in an analysis table; Afterwards, a reflective work was carried out in dialogic interaction and with it, internalize what was learned in the Training Workshop Seminar in and for Educational Research, and determine the contents of the Diploma that was built for registration with the National Polytechnic Institute. Analysis that was in charge of the members of the STFIE-IPN. Due to the length of the questionnaire, which can be seen in Table 2, only some of the questions are shown and the synthesis of the learning obtained is incorporated (Table 3 and 4).

A) Axes and questions.

What have you discovered about the nature of educational research, through readings and group dialogue?

What is thinking as a researcher?

What investigative strengths and weaknesses have you discovered in yourself?

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Axes. Training for research, Instruments for qualitative research, Accompaniment in training for research, and Methodological approaches.

Some responses from the interviewees are:

- That there are different research logics, different methodologies, and approaches, so we must have a well-defined position in our research.
- In short, I have discovered that research by itself is complex and, in a particular way, educational research is not an easy task at all; however, I have witnessed that the accompaniment and the work teams represent an effective tool in the training of the researcher.
- Doing educational research is to recognize that you are working with people who have a life history, due to the influence of their social practices that develop in specific socio-cultural environments and that therefore their study goes beyond data or statistical samples.
- I have not considered an ontological dimension as a purpose, but I consider that I am slowly understanding what there is, the nature of being, existence, and reality, through the seminar readings, realizing that I still do not consider myself a researcher, due to the great bibliographic heritage that exists in the different research logics.

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About knowledge. You learn to:

- Position itself methodologically; with them, he identifies the positions of the research process.
- That the studies go beyond statistical data, the analysis landscape is broadened.
- Understand that research is complex and therefore requires the accompaniment of a researcher trainer.
- It must be recognized that training is not done alone, it is collegiate work.
- It must be recognized that learning is fostered by all members.
- Position themselves theoretically, which allows knowing the different philosophical, historical, and inductive, and deductive thought currents.
- Understand the nature of being, existence, and reality through the readings and heuristic dialogue carried out in the Seminar.
- Identify the differences between logic and research approaches, methods, and methodologies.

B) *Axes and question.*

What is the ethical meaning of being a researcher?

What values and / or virtues does being an educational researcher demand?

What is your daily educational task?

Axes. Professional Ethics, Ethical responsibility, Investigative practice, Acquired knowledge, Research-transformation, Act-reflect-act, Share experiences and what has been learned.

Some responses from the interviewees are::

- That they develop their role and their knowledge for the benefit of humanity (for the common good). Do not lie and do not act based on economic or productivist interests or with improper practices such as plagiarism and/or simulation.
- Responsibility and ethics are two main axes to conceive yourself as an educational researcher, based on awareness of the social relevance of your educational practice and collaboration.
- All investigators must conduct themselves with honesty when investigating.

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About knowledge. You learn to:

- Do not lie, do not act according to economic or productive interests or improper practices.
- Be critical.
- Correspond and without cheating or simulations.
- Be consistent with what you think, feel, say and act.
- Obtain reliable results which provide objectivity to the investigation.
- Do not be judgmental when drawing up conclusions.
- Have an open mind to criticize the problem analyzed.
- Act with the social relevance of educational practice and collaboration.
- Act with transparency and honesty.
- Act under moral standards, principles, and values.
- Apply what has been learned in educational practice.
- Work as a team, collegiate and collectively.
- Investigate in action, as a training element.
- Change teaching practice by emphasizing, identifying the problem, inquiring, and having in-depth knowledge.

- Expand horizons to collaborate with institutional, national, and international researchers.

Training Workshop Diploma in and for Research

The alternative training proposal was built in the research team (STFIE-IPN). It was made official by obtaining two records from the National Polytechnic Institute. The first is obtained in 2018, it is granted by the General Coordination of Training and Educational Innovation (CGFIE), an institution that was converted into management in the first months of 2020; With this registry, only teachers and authorities of the IPN can attend and they do so at no cost. The second is obtained in 2020, it is granted by the Directorate of Higher Education (DAE) of the IPN; With this registration, the Diploma is offered to all professionals inside and outside the polytechnic community; that is, it can be taken by all interested parties, whether or not they belong to the Institute, it has a cost (table 5).

Table 5. Records in the National Polytechnic Institute

General Coordination Registry for Training and Educational Innovation CGFIE/061218/1220/AFD/200/P/VI/DO/221 6-Dec -18 to 05-Dec -2020
Record. Directorate of Higher Education DES/ESCA UST/D/027/2019 January 10 - 2020 to January 10 - 2022

Source: Own elaboration.

Generalities:

- Diploma in the training category
- Scholarized Modality
- Duration 200 hours. 45 five-hour sessions once a week
- Aimed at all and all education professionals interested in training and / or practicing educational research
- Teaching method: heuristic
- Discovery learning strategy.

General purpose of the Diploma:

Develop a critical investigation, through the application of contemporary theories, methodologies and epistemologies; to provide a meeting space based on academic dialogue and multidisciplinary learning in real situations, to propose solutions to problems in educational practice (management, advice and teaching). The foregoing as the result of a permanent process of training and self-training in the field of educational research (table 6).

Table 6. Thematic content of the Diploma Training Workshop in and for Research

Modules						
1	2	3	4	5	6	7
Integration of the Collective and Fundamentals of Research	Logics, Methods, and Methodologies	Design, Project, and Object of Knowledge	Components of Research Methodologies	Systematization and Treatment of Information	Preparation of the Analysis and Final Report	Research dissemination
Purpose						
A group is integrated where teamwork is encouraged in an atmosphere of dialogue based on the understanding of the fundamentals of research to promote heuristic thinking.	Analyzes the dimensions of the research logic, methods, and methodologies through a theoretical-methodological position and stance to support educational research processes.	It analyzes the sustenance and components that constitute the research designs, through heuristic thinking for the construction of a research object.	It analyzes the methodologies, techniques, and instruments, based on the areas and contexts in which the research is carried out to relate them to the logic and the object of study.	Analyzes the theoretical underpinnings of the systematization and treatment of the information, about the data obtained from the fieldwork, so that they are consistent with the logic, methodology, and object of study.	Design the information analysis process and the conclusions of a research project, through the selected theoretical-methodological positioning, so that they build the research report focused on logic, method, and intentionality.	Prepare a dissemination proposal, according to the criteria of an academic event and the moments of the investigation (theoretical, field, analysis, and results); as an essential strengthening strategy in the permanent training of the researcher.
Intentionality						
It is the promotion of a dialogue between peers and collective construction of knowledge in the field of research	It is the epistemological approach to research theory	It is the identification of the components that constitute the research designs (protocol)	It is the epistemological positioning of the research methodology and logic	It is the significance of the information to identify the findings and tensions obtained through the research process	It is the integration of the preliminary research writing, as a result of the potentiation of research skills, derived from the partial works of the previous modules	It is the characterization of the various spaces for the dissemination of research, dimensioning the differentiated possibilities of each event

Note. Content prepared by the STFIE-IPN research group.

CONCLUSION

The activities of the Training Workshop Seminar in and for Research had as a formative intention a differentiated process, at its own pace and path to develop, assume and participate in the various processes in which the participant is involved.

Consequently, a proposal for alternative training was built, embodied in a Diploma for research with recognition from the National Polytechnic Institute, an institution that granted two records, one for the polytechnic community and the other for the general public. About the above, an answer is given to the general question posed in the research referred to at work, how to contribute in the construction of a teaching training proposal for a research, to influence the creation of knowledge, development of skills, habits, attitudes, and values required to carry out research practice?; That is why it is concluded:

- That after five years of collegiate work, the STFIE-IPN is consolidated with the establishment of training activities that transform the being and doing of research.
- With the recognition and construction of the acquired knowledge derived from the interaction of the members of the STFIE-IPN as part of their training process. The process that helps to:
 - That the epistemic, ontological, axiological, teleological, and prospective dimensions are understood.
 - That they become a research group.
 - That they have a methodological position that leads them to understand the knowledge in the logics, methods, methodologies, treatment, and analysis of the information.
 - That they acquire investigative skills.
- Recognizing the importance of self-assessments with a tendency to improve in the research process and as a formative assessment practice.
- Encouraging participation in academic events (forums, meetings, and congresses) so that the knowledge derived from research projects is socialized.
- Promoting reading and writing as an incentive for the publication of scientific articles.
- Encouraging and inviting members who have not yet graduated to finish their thesis project and obtain their academic degree.

REFERENCES

- Barbier, J. M. & Rivero, M. (1993). *La evaluación en los procesos de formación*. Barcelona España: Paidós.
- del Castillo, A. R. (1993). Docencia e investigación: vínculo en construcción. *Perfiles Educativos*, (61).
- Díaz Barriga, F. & Rigo, M. A. (2000). Formación docente y educación basada en competencias. En Valle Flores, María de los Ángeles (coordinadora). *Formación en competencia y certificación profesional* (pp.76-104). México: CESU-UNAM. Link: http://www.matedu.cinvestav.mx/~proyectocecyt4/lecturas/form-comp_p03.pdf
- Díaz, I., & García, M. (2011). Más allá del paradigma de la alfabetización: La adquisición de cultura científica como reto educativo. *Formación universitaria*, 4(2), 3-14.
- Ducoing, P., Escudero, O., Pacheco, T. & Nino, N. (1988). La formación en investigación en el Colegio de Pedagogía. Un análisis metodológico en la perspectiva del plan de estudio. *Cuadernos del CESU*, (9), 23-30.
- Espinosa, M. (2014). Necesidades formativas del docente universitario. *REDU. Revista de Docencia Universitaria*, 12(4), 161-177.
- Fernández, A. (2011). La evaluación orientada al aprendizaje en un modelo de formación por competencias en la educación universitaria. *REDU. Revista de Docencia Universitaria*, 8(1), 11-34.
- Fernández, M. (1994). *La profesionalización del docente*. Madrid: Edit. Escuela Española.
- Ferry, G., Wieder, R. E. & Jiménez Silva, M. (1991). *El trayecto de la formación: los enseñantes entre la teoría y la práctica*. México: UNAM.
- Filloux, J. C. (1991). Consideraciones sobre la investigación en educación. Carbajosa, D. & Esquivel, J. (Coord.). *Epistemología y Educación. Cuadernos del CESU*. México: UNAM.
- Guerra, M. (2017). ¿Formación para la investigación o investigación formativa? La investigación y la formación como pilar común de desarrollo. *Revista Boletín Redipe*, 6(1), 84–89. Link: <https://revista.redipe.org/index.php/1/article/view/180/177>

Heller, Á. (1977). *Sociología de la vida cotidiana*. Barcelona: Península.

Hewitt, N. & Barrero, F. (2012). La integración de los saberes: una propuesta curricular para la formación en investigación en la educación superior. *Psychologia*, 6(1), 137-145.

Instituto Politécnico Nacional (2017). Reglamento de estudios de posgrado del Instituto Politécnico Nacional. México. Link: <https://www.ipn.mx/assets/files/eseo/docs/Posgrado/reglamentos/reglamento-de-posgrado.pdf>

Ipola, E. & Castells, M. (1975). *Metodología y epistemología*. Madrid, España: Editorial Ayuso.

Luhmann, N. & Schorr, K. E. (1993). *El sistema educativo (problemas de reflexión)*. México: Universidad de Guadalajara-Universidad Iberoamericana-ITESO.

Mardones, J. M. & Ursua, N. (2003). *Filosofía de las ciencias humanas y sociales*. México: Ediciones Coyoacán.

92 Martín, M., Mora, L., & de Valderrama, E. (2007). La investigación como eje transversal en la formación docente: una propuesta metodológica en el marco de la transformación curricular de la UPEL. *Laurus*, 13(24), 173-194.

Mingo, A., Wuest, T., Martínez, S. & Arredondo, M. (1989). Los procesos de formación y conformación de los agentes de la investigación educativa. *Cuadernos del CESU*, (13).

Molina, Ó. D. (2015). La transferencia de conocimiento científico y tecnológico: un reto que deben afrontar las universidades. *Portal de la Ciencia*, 9-15.

Moreno Bayardo, M. G. (2002). *Formación para la investigación centrada en el desarrollo de habilidades*. México: Universidad de Guadalajara.

Mas-Torelló, Ò. (2015). La influencia de la experiencia en las competencias investigadoras del profesor universitario. *Revista Complutense de Educación*, 27(1). https://doi.org/10.5209/rev_RCED.2016.v27.n1.44706

- Organización de las Naciones Unidas, (2015). Declaración de incheon y marco de acción para la realización del Objetivo de Desarrollo Sostenible 4. EE.UU.: ONU. Link: https://unesdoc.unesco.org/ark:/48223/pf0000245656_spa
- Pasillas, V. (1992). Pedagogía, educación, formación. *Revista de Acatlán Multidisciplina*. Link: https://www.academia.edu/38264971/Ok_educacion_pedagogia_y_formacion_migu_el_pasillas_8401
- Reyes, E. (1993). La investigación y la formación en las escuelas normales. *Cero en conducta*, (8),76-78. Link: <https://www.ceroenconducta.org/revistas/Revista33-34/Revista33-34Sello%20%28arrastrado%29%207.pdf>
- Rodríguez, G., Gil, F. & García, J. (1999). *Metodología de la investigación cualitativa*. Málaga: Ediciones Aljibe.
- Rojas, R. (1992). *Formación de investigadores educativos. Una propuesta de investigación*. México: Plaza y Valdez.
- Rugeles, P. A., Mora, B., & Metaute, P. (2015). El rol del estudiante en los ambientes educativos mediados por las TIC. *Revista Lasallista de investigación*, 12(2), 132-138. 93
- Sánchez, G. S. (1998). *Fundamentos para la investigación educativa: Presupuestos epistemológicos que orientan al investigador*. Santa Fé de Bogotá: Cooperativa Editorial Magisterio.
- Sánchez, P. R. (1987). El caso de la enseñanza de la investigación histórico-social en el CCH. *Cuadernos del CESU*, (6), 23-37.
- Sánchez, P. R. (1995). *Enseñar a investigar. Una didáctica nueva de la investigación en ciencias sociales y humanidades*. México: UNAM.
- Silva, L. C. S., Gaia, S., de Matos, E. A. S. A. & de Francisco, A. C. (2012). The challenges faced by Brazils Public Universities as a result of knowledge transfer barriers in building the technological innovation center. *African Journal of Business Management*, 6(41), 10547-10557.
- Uribe, A. (2009). Interrelaciones entre veinte definiciones-descripciones del concepto de alfabetización en información: propuesta de macro-definición. *Acimed*, 20(4), 1-22.

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Vargas, S. R. (2012). *Acompañamiento formativo: ¿Qué connotaciones tiene en procesos de formación docente?* Brasil: Intertexto Editora e Consultoría.

Vargas, S. R. (2015). Acompañamiento formativo: Una estrategia para la formación en investigación educativa de directivos, docentes y asesores de educación básica y superior. *Revista Entreideias: Educação, Cultura e Sociedade*, 4 (1), 35-49.