

Educational Researcher: New Functionalities and Challenges

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Abstract: Today's societies require actions in accordance with the spirit of this historical era on the part of educational actors. Unfortunately, some educational researchers are unaware of their new functions, and those who choose to develop some are hampered and do not receive institutional support because some educational and institutional authorities are also unaware of such functions or privilege other issues such as: infrastructure, technology, economic budget, among others.

Faced with this situation, the present work identifies the functions of the educational researcher in today's societies and those carried out by three educational researchers who work in different Mexican educational graduate institutions. The functions are classified in two principles: must-do and can-do. The former principles are characterized by being mandatory and the latter by conviction, professional ethics and are based on model 2 of knowledge production.

The research carried out is qualitative, based on a theoretical approach with an empirical reference. Interpretive analysis, situational approach, prospective intentionality, case study oriented to professional biography are privileged in the present work.

Key words: educational researcher, functionalities and experiences

“Solo hay una forma de conseguir que alguien haga algo: conseguir que quiera hacerlo”

Dale Carnegie

1. Introduction

The present work has a double intention: to identify the functions that the educational researcher should have and can perform in today's societies, as well as describe those functions carried out by three researchers who work in different Mexican educational postgraduate institutions. It is expected that the elements described below allow us to understand that the actions undertaken by educational actors have to be in accordance with the spirit of the times of today's society and receive minimal institutional support so that their development benefits research profession, the educational researcher, the institution and society.

Some of the questions that motivated the present work are: why is the educational researcher an important factor in the Mexican educational system? What are the institutional and professional functions of the educational researcher? What are the characteristics of models 1, 2 and 3 of the production of the knowledge? And how are the professional functions rooted in model 2 of knowledge production objectified?

The work is based on the following assumption: the functions assigned to Mexican higher education and

postgraduate institutions have increased mainly due to the institutionalization of educational research, the technological expansion, the internet effects reflected in the spirit of current times. Unfortunately, some educational actors, mainly educational and institutional authorities and educational researchers only know some functions established in the agreements for the creation of higher education and postgraduate institutions, such as teaching. However, they remain largely unaware of other functionalities due to a lack of economic budget and the rationality of the administrative bureaucracy.

Today's societies require actions, managements and innovations pertinent to this historical epoch because the circumstances, problems, challenges, interests, concerns, among other issues, are different compared to the previous ones: feudal society and industrial society. The presence of technology and the Internet in all areas of life occupy a privileged place in social dynamics, regardless of whether, in some societies, they are oriented towards the generation of economic and human capital, to the management and production of knowledge, or to fast and efficient communication and global culture (García, 2015a, 2015b, 2019).

Furthermore, it must be mentioned that educational actors are part of the 17 thematic areas studied to build the states of knowledge of Mexican educational research coordinated by the Mexican Council for Educational Research (COMIE) and that the products achieved in the three experiences carried out in different periods (1982–1991, 1992–2001 and 2002–2011) emphasize the importance of the educational researcher as an agent of educational research, leader, intellectual, creator of cultural enterprises and learning organizations, critic of the State, businessman, technologist, human capital trainer, knowledge manager, among other aspects (García, 2015a, 2015b, 2019).

Analyzing the functions carried out by the researcher within the institution where he works and in the scientific communities where he participates, is an important and transcendent issue that allows to minimize the controversies, oppositions, debates, utopias and paradoxes existing on the profession and on the researcher himself and recognize that, in most of them, interpretations, positions, arguments, attitudes, ideas, proposals, interventions, managements, innovations, functions, entrepreneurial actions, judgments and comments, are supported by a set of attributes and conscience constructed by him gradually, consecutively and permanently through the exercise of research and training processes.

Fortunately, some educational researchers do not act as negative officials, whose characteristic is to abide and obey (Hirsch, 1996) without questioning the instructions of the institutional and educational authority. Based on professional ethics, in addition to fulfilling the basic functions, they also carry out others with a greater radius of action, wide scope and in accordance with today's societies, because they are also social subjects, political subjects, in short, historical human beings who they never end up interpreting the world and interpreting themselves (Gadamer, 1993a).

The educational researcher understood as a historical human being is the subject of study of this work, because even when facing the obstacles to carry out institutional functions, they also face challenges to develop the functions required by today's societies, with, without and despite of the rationality of the administrative bureaucracy and the characteristics of the institutional authority. The economic expenses generated by carrying out their own functions are generally covered in a personal way and on an honorary basis.

2. Materials and Methods

The present work has is based on two references. The first are the results obtained from the research titled:

“The educational researcher in the knowledge and information societies” and the second is titled “Advances made on the research Educational researcher and modes of knowledge production”. In relation to the first reference, the qualitative research carried out was characterized by having a theoretical aspect. It was situated in the spirit of the time of this historical period and poses as a conjunctural moment the technological expansion and the internet. The second is a qualitative research, also with a theoretical nature with an empirical reference. It was oriented to professional biography, situated in the context of Gibbons’s model 2 of knowledge production (2008) and the semi-structured questionnaire oriented to professional biography.

The study subjects’ choice has been complex because it requires not only their consent to participate as main informants in a research oriented to professional biography, but also an active professional and academic relationship built in a collaborative way, focused on interdisciplinarity, and emanating from a common interest in managing learning organizations and the recognition of their professional careers.

An organization called Red Mexicana de Investigadores de la Investigación Educativa (REDMIE), as well as the active participation of some researchers were key for locating the informants because in this network a dynamic of horizontal, democratic, collaborative organization predominates, focused mainly on intellectual will.

The chosen informants, which are 3 in total, in addition to being active members of REDMIE, are researchers in the educational field, they work in different postgraduate institutions located in different states of the Mexican Republic such as Mexico, San Luis Potosí and Zacatecas, and have a professional trajectory focused on cultural capital constituted by degrees of study (instituted), intellectual production (objectified) and recognition (symbolic) (Colina & Osorio, 2004) of epistemological and deontological authority.

The semi-structured questionnaire aimed at professional biography is the instrument used to obtain the information required in this work. It consists of three sections: Personal data, Institutional functions and Professional functions. The first aspect is constituted by the topics: name, gender and age. The second by Name of the institution where he/she works, employment, institutional and research seniority and functions carried out. The third aspect is constituted by Research networks (national and international where it participates, year of admission, commissions developed and activities carried out and products achieved), Collaboration in the COMIE (states of knowledge, congresses, programs and commissions), Entrepreneurial activities (for example: personal investment for the publication of research products, dissemination of research, among others), Management in Academic Agreements, Collaborative work between academic peers (For example, organizers of inter-institutional academic events, symposia, conversations, workshops, among others.), Collaborative work of a social and cultural nature (for example, organizing a reading group with neighbors, in the parish church, with groups of people with special abilities and native-ethnic groups, among others) and Publications derived from collaborative work Between peers.

Based on the responses issued by the informants, information and comparative charts were created in order to identify the existing similarities and differences and to improve the analysis. In the work, only some comparative tables are presented to demonstrate certain arguments on the institutional and non-institutional functions carried out by the informants.

The research design consists of four phases. The first three are characterized by research activities around the classification made by García (2017) on the functions of the educational researcher, the particularities of Gibbons (1998) and Chiquiza (2016) models 1 and 2 of knowledge production and the functions carried out by the informants of the work. The fourth consists of the identification of the professional functions performed by the informants.

The analysis was characterized by three moments: to identify the functions performed by the informants and analyze similarities and differences, to elaborate a series of evaluations based on the group of functions of the educational researcher and model 2 of knowledge production and finally, to identify the obstacles and challenges to carry them out.

3. Results and Debate

On the following stages of the work four axes of analysis will be presented: Educational researcher, Functions of the educational researcher, Models of knowledge production and Professional functions performed by the informants.

3.1 Educational Researcher

In relation to the educational researcher, it is emphasized that some have distinguished themselves from others, not only because of their diverse types of cultural capital (instituted, objectified and symbolic) (Colina & Osorio, 2004) and their status of experts and specialist researchers (García, 2017b), but also due to their epistemological and deontological authority assigned by the researchers with whom they interact, their professional ethics, their critical, entrepreneurial, innovative, and management positions and, among others, for being agents of educational research (García, 2017a, 2017b).

In order to point out the controversial and contradictory nature of the educational researcher, a set of expressions used by students to refer to the institutional actor are presented, which are usually heard in different postgraduate educational institutions.

Table 1 Expressions Used to Refer the Educational Researcher

Aspect	Positive		Negative	
Knowledge	Expert		Liar	Pretender
	Specialist		Improviser	Charlatan
	Authority			Ignorant
Power	Tolerant	Responsible	prepotent	Ironie
	Patient	Kind	arrogant	Vain
	Respectful	Tenacity	Authoritarian	
Desire	Seductive	Committed	Unfair	intransigent
	Systematic		Coward	almighty
	Creative		Frustrated	Narcissist

Source: García Perea, M. D. (Fuente: García Perea, M. D. (2012). Las nociones de formación en los investigadores. Castellanos Editores, México, D. F.

Other types of expressions characterized by opposite meanings have also been heard. While some can be favorable in one respect, they can also unfavorable in that or another respect. Among them are: authority-authoritarianism, greed-lavishness, expert-ignorant, simulator-boastful, cowardly-ambitious, grumpy-adulterous, insensitive-unbridled, apathetic-irascible, shameless-self-conscious, mean-vulgar, fearful-daring and envious - happy.

Another aspect of discussion about the educational researcher is the complexity of his profession. All professions are complex in themselves, not only due to the particularities, but also due to their multi-referentiality, history and requirements. In this case, the functions of the educational researcher will not escape this situation

mainly because of the participating human component, the training and accreditation processes that they contemplate and the ethical values that constitute it.

With regard to the latter, the educational researcher is expected to: reveal what is hidden in nature, in the universe and in society, make use of his freedom of reason, receive information and offer opinions and recommendations, freely communicate the results of the research, do not elaborate interpretations hastily, assume a critical attitude, defend the autonomy, neutrality and objectivity of the daily work, safeguard the freedom of the investigation before the factual powers of society and selflessly seek knowledge (Núñez, 2000).

Likewise, it is also expected that the educational researcher tries to maintain the freedom and independence of the factual factors in his research topic and in the methodology to develop, to use scientific discoveries for the benefit of humanity, to refuse to cooperate in research that directly harm human beings and the environment, to be able to limit the excessiveness of the investigation, to think that the truth is a heritage of all humans, to communicate with honesty, generosity and joy their own knowledge, not to lose the attitude of search for the truth, to be constant in the work undertaken -especially if you think it is worth starting-, be willing to reformulate their own hypotheses if experimentation shows you that they are false, avoid all kinds of reductionisms and restrictions in the conceptions of man and humanity, be competent in their knowledge, flee from competition and any struggle in research and present the results and always enjoy the task so that the research is the source of their happiness and personal fulfillment (Núñez, 2000).

Among others, the Educational Researcher must fight for the assigned functions to stop having a specialized technical meaning (Puigros, 1981), humanize science to stop the gallop of technoscience (Núñez, 2000) and incorporate the constant values of research work (change, innovation, democratic opening and equal opportunities) (Martínez, 1997), taking steps to democratize knowledge, among other issues.

In the notions found, there are elements that allow understanding the type of conception, the functions performed, the radius of action, the impact and scope of their actions and what is expected of them.

Table 2 Notions About the Educational Researcher

Authority	Interpreter	Critical	Intellectual
Interlocutor	Expert	Technologist	Leader
Specialist	Cultural Enterprise creator	Estado critical	Historical actor
Content and reality mediator	Knowledge creator	Concept creator	Cultural and historical subject
Friend	Innovator	Biographer	Scientific
Research trainer	Committed with himself and reality	Knowledge crafter	Individual and group change creator
Teaching	Diffusion	Tutor	Adviser
Facilitator	Instructor	Knowledge Producer	Ideological reproducer
Human Capital trainer	Negative official	Unidimensional thought creator	Works at a higher education institution

Sources: García Perea, M. D.: Las nociones de formación en los investigadores (2012), El investigador educativo en las sociedades del conocimiento y de la información Tomo I (2015a), Tomo II (2015b) e Investigador educativo y difusión de la investigación. Hechos, paradojas y utopías (2019) y Gutiérrez Serrano, N. La institucionalización de la investigación educativa (1999).

3.2 Educational Researcher's Functionalities

The functions that the educational researcher must and can perform are presented in the following chart. The classification was developed several years ago. Based on the new sources of information reviewed and the analyzes carried out, some clarifications have been made to distinguish institutional functions from professional functions.

Table 3 Educational Researcher's Functionalities

Functionalities	Group	Name	Characteristics	Context
Institutional	1	Traditional	Knowledge production	Renaissance society
	2	Normative	Teaching, research, diffusion, extension, and management	Industrial society
Professional	3	Institutionalized	Creator of cultural companies, solve educational problems, leader, authority, intellectual and critic of the State	
	4	Formative	Educational Research Agent	
	5	Occupational	Expert, specialist, biographer, interlocutor, interpreter, artisan of knowledge, historical subject, concept weaver, mediator of content and reality, trainer of professionals and researchers, scientist, professional of science, generator of individual and group changes, friend, way of life, negotiator.	Transition from industrial society to post-industrial society
	6	Emergent	Entrepreneur, technologist (knowledge professional), netizen, knowledge manager, creators of learning organizations and tele trainers.	Post-industrial society

Source: García Perea, M. D. Las nociones de formación en los investigadores (2012), El investigador educativo en las sociedades del conocimiento y de la información Tomo I (2015a), Tomo II (2015b) e Investigador educativo y difusión de la investigación. Hechos, paradojas y utopías (2019), Gutiérrez Serrano, N. La institucionalización de la investigación educativa (1999, 2012, 2017 y 2019) y Drucker P. F. (2008). "La productividad del trabajador del conocimiento: máximo desafío", en *Gestión del capital humano*. Ediciones Deusto.

The traditional function was originated in the Renaissance society (Heller, 1980). Initially it was carried out by scientists or researchers in the hard sciences, hired under certain requirements and with the allocation of an economic budget. It was probably also carried out clandestinely due to the personal conviction of the scientist to produce knowledge from experimental disciplines.

The normative functions have a legal endorsement and are contemplated in the agreements for the creation and transformation of educational institutions and research centers. Consequently, they have a financial ceiling, they are regulated and controlled by administrative and bureaucratic rationality, and are subject to evaluation and accountability. In a similar way to the previous one, the hiring of the researcher is rigorous in terms of the requirements of cultural capital, but there are cases where the suggestions and the conjunctural moments have greater determination. The budget ceiling is assigned drop wise and material, human and technological resources are spared more quickly due to the reduction of the economic budget and bureaucratic-administrative criteria.

The development period is the main aspect that differentiates the traditional and the normative functionalities. In the first, temporality lies in the production of knowledge: short, medium and long term. In the second, it is determined by the administrative and academic rationality of the academic plans.

The institutional and occupational functions are similar because they are in accordance with the spirit of the time of the historical period and are differentiated by different aspects: the duration, the conditions of performance, the support received by the researcher and the economic costs. Likewise, the professional functionalities do not have an administrative legal structure and an economic budget, they are exempt from planning, monitoring, and evaluation. The educational researcher has the option of choosing them based on the object of study that he investigates or his personal interest, he is responsible for the economic expenses, time and resources and sends the information to the institution when it is requested by the administrative area.

Professional functions are born from the spirit of this age and respond to current needs, web pages and the internet. They are technological tools that facilitate their development, they do not have an economic budget that supports them legally, nor do they have a legal and administrative structure. Their development depends mainly on the person who uses them; therefore, the educational researcher no longer has the exclusive right to develop

them.

Based on the information contained in Table 3, the professional functions are grouped into the following groups: Institutionalized, Formative, Professional and Emerging. However, it is important to point out that the traditional and normative functionalities are part of the professionals, even with the administrative legal character that characterizes them.

In relation to institutionalized functions, they were created when Mexican educational research was institutionalized, approximately in the eighties of the last century. Research and knowledge transmission — diffusion, dissemination and dissemination (Gibbons, 1998) is developed in scientific and research communities (networks, councils, associations, etc.) created by non-profit researchers and are characterized by being carried out through starting from a horizontal organization. They do not have a financial ceiling for its realization and are leaders of the scientific and research communities who implement mechanisms to cover the expenses and generally the members cover their personal expenses.

The training functions, also known as “Agent of educational research” (Colina & Osorio, 2004), are characterized by having a double impact of constructed knowledge, enriching the thematic field and transforming the researcher. Not all the functions and actions of the scientific and research communities transcend the status of research agent, for multiple reasons. For example, it is said that the researcher, in addition to their specific characteristics, has to be a specialist and expert and the products achieved through research have to be endorsed by members of a nationally recognized institution.

Occupational functions, also known as social and cultural have been named as such for three reasons: they allude to daily tasks that also characterize previous professional practices, they emphasize the particularity of a postgraduate educational institution and finally, they are issued by a group of educational researchers who strive to become agents of educational research with, without and despite institutional support (García, 2015a, 2015b, 2017).

Emerging functions are based on the technological expansion. The radius of action and impact are wide and powerful, they can be carried out by all educational actors and interested persons, they are no longer exclusive to the researcher and are generally developed outside the institution because it does not have jurisprudence and, on occasions, are carried out outside the working hours (García, 2019). Likewise, they are supported by post-industrial societies, knowledge societies and information societies. Its importance is supported by the following aspects: the achievements are short-term, the results have an individual, professional, institutional and social impact, the benefits are of the economic, political, training and ethical order, the collegiate work is privileged and collaborative between national and international educational and non-educational research communities, among other issues.

Ignoring or not developing the new functions on the part of the educational researcher means his symbolic death because other educational actors, people, scientific and research communities, companies, industries, social groups carry them out with success.

3.3 Knowledge Production Models

The production of knowledge is subject to and determined mainly by the spirit of the age. For this reason, it is temporary, historical, complex, dialectical due to social, cultural, political, technological movements, needs and situations, principles and interests of hegemonic groups, scientific communities, among other aspects, that characterize a historical epoch and the difference of other.

The production of knowledge is a permanent factor in all societies. Through this, not only is the advancement and development of science achieved, but also the development of a country by using new knowledge. The increase in number, complexity, radius of action, technological tools, participants, institutional conditions, development time, scope and impact of the results, among other aspects, respond to the spirit of time and the conditions, needs and problems of societies. Authors such as Chiquiza (2016), Gibbons, (1997), Sutz (2002), are references for the models created, especially their use in research and knowledge management.

Until now, three models of knowledge production have been located. There is no information on the creators of model 1. However, model 2 was created by the group of researchers led by Gibbons (1998). On the other hand, Carayannis and Cambell (Cfr Chiquiza, 2016) promote model 3. (Chiquiza, 2016).

The historical context in which model 1 was originated is unknown. However, it is probably related to the Renaissance society (Heller, 1980) because it represents a historical conjunctural moment in the construction of the science in different and specific disciplinary fields. This fact allows us to suppose that the model is used initially and exclusively in experimental research centers, laboratories, scientific communities and personnel. Industrial society is the context of its consolidation and expansion in different institutions without thereby losing the characteristic element of the disciplinary field and individual work.

Currently, model 1 is insufficient not only because of the disciplinary approach that characterizes it, but also because of the sense of specialization, exclusivity of the profession, dynamics of its publication and limits of application (Sutz, 2002). At the end of the 20th century, specifically in the 90's, the team of researchers led by Gibbons (1998), in addition to proposing Model 2, describe the aspects that characterize and distinguish them in the book: "The new production of knowledge. The dynamics of science and research in contemporary societies".

Considering the stages and time of publication of a book, especially the processes described in the book about the meetings, activities, actions and projects carried out by the authors to build the proposal, it must be assumed that the concerns about the limitations of Model 1 arise much earlier and in a consecutive and gradual way in several ideas, arguments, premises, principles, structures, actions, etc.

The transition from industrial society to post-industrial society is the conjunctural moment for researchers within developing countries to propose, not only model 2 of knowledge production, but also to use with the collaboration of government agencies, civil society, economic corporations, research communities, among others.

Post-industrial society, without a doubt, is the context of model 3 of knowledge production. Specifically, its origin is found in societies located in developed countries. Although critical documentary sources have already stated the complexity and failure of its development (Ávila, 2005), others also allude to the successful results obtained by such model (Chiquiza, 2016).

Identify the weaknesses and limitations of model 1 as well as the benefits and advantages of model 2 are tasks that the educational researcher must achieve in postgraduate courses. The institutional and educational authorities should also invite them to reflect on how desirable it is that the actions undertaken are in accordance with the spirit of the time in which we live.

The analysis carried out in this work does not cover model 3 of knowledge production because it begins from the premise that to use such model implies, on the one hand, overcoming model 1 and favoring model 2, and on the other hand, collegial and collaborative work between the educational researcher or research areas and active participation -in all aspects- of government institutions.

Table 4 Characteristics of Knowledge Production in Modes 1 and 2

Mode 1	Item	Mode 2
Homogeneous-Academy Government laboratories Collegiate centers	Where?	Heterogeneous-Different potential places to generate knowledge The context of application (Society, industry, companies, academia, etc.)
Academic problems Theoretical analysis	What	Context needs or issues
Academic Staff	Who practice it?	Different subjects of the context
Scientific/Linear	Production method	Applied research, different methodologies
Undisciplinary Multidisciplinary	Problem solving strategies	Transdisciplinary Multisectoral
Hierarchical University Structure	Knowledge organization	Various structures Non-Hierarchical
Communities of scientists and academics	Knowledge validity	Cognitive and social dimensions Social, economic and political interests
One-way relationship with technology	Responsibility and social reflection	Public interest and concern Increased social sensitivity Subjects = educational actors
Specialized magazines Scientific and academic communities Forums, seminars	Communication density	Social media Interest groups Who needs the information can access it through ICT

Source: Gibbons, La nueva producción del conocimiento. La dinámica de la ciencia y la investigación en las sociedades contemporáneas.

Table 5 Characteristics of Knowledge Production Model 3

Approach	Innovative and Democratic. It arises from concern of the economic crisis of the planet under a political, economic and epistemological scope.
Development	Sustainable. Brings together innovation, entrepreneurship and democracy through the relationship between science and technology, generating a competitive, sustainable and prosperous advantage for development
Actors	Retrieves those corresponding to Model 2
Architecture	Harnessing higher-order learning processes, along with the triple and quadruple helix, social movements
Conceptual base	Systems approach for knowledge creation, dissemination and utilization
Innovative Networks	Real innovation networks and virtual infrastructures
Knowledge pools	They are the co-specialized agglomerations that complement and reinforce knowledge assets
Research Model	Fractal of education and innovation ecosystems

Source: Chiquiza, M. P. (2016). La nueva producción del conocimiento y su relación con la educación media. Ponencia presentada en 2 Simposio Internacional de Postgrados en temas y problemas de investigación en educación. Retos y desafíos de la educación en la época de la inclusión y la interculturalidad.

As can be seen in the last chart, the complexity of model 3 is evident, but also the entire problem to be investigated. Despite the difficulties, challenges and requirements that it implies and the epistemological obstacles and institutional conditions that may arise, the postgraduate educational researcher and the institutional and educational authorities have to consider its importance and give themselves the opportunity to use it.

3.4 Functionalities Performed by Informants

Once again, it is pointed out that the job informants are researchers who work in different Mexican

educational graduate institutions and still live and practice the profession in different states of the country. They share academic, professional, labor, cultural, social concerns, political and personal needs and interests. They are also distinguished in the professional functions chosen, in the time allotted to perform them, professional contacts, years of seniority in the institution, among other aspects.

Table 6 Working Characteristics of Main Informants

Informant	1	2	3
Institution	ISCEEM	UAZ	CINADE
Seniority	27 years	36 years	8 years
Institutional Functions	Teaching, Research and Diffusion		
		Management	
			Book Coordinator
Administrative and academic jobs	Academic Secretary Teaching Coordinator Head of Postgraduate Institutional representative in the Postgraduate Network in education	PhD Coordinator Institutional representative in the Postgraduate Network in education	Research representative Knowledge field representative Institutional representative in the Postgraduate Network in education PhD support Research monitoring area

Source: Semi-structured questionnaire oriented to professional biography.

In the chart, we can see the similarities on the institutional functions carried out under the criterion of duty-to-do of the researcher in the three educational postgraduate institutions. The difference is due to the institutions' creation agreements: The ISCEEM, as a dependent and later decentralized organization, receives instructions from the Secretary of Education of the State of Mexico, the UAZ is a university and its autonomy allows the incorporation of other functions and CINADE is a private institution with the purpose of training educational administrators, it includes that the basic educational researcher coordinates the publication of one book per year.

Table 7 Informants and Their National Research Networks

Informants	Research Networks
1	Red Mexicana de Investigadores de la Investigación Educativa (REDMIIE) 2011, Red Nacional de Investigadores en Educación y Valores (REDUVAL) 2009, Consejo Mexicano de Investigación Educativa (COMIE) 2016, Red de Investigación sobre la Niñez y Juventud (RINJ) 2014, Red de Posgrados e Educación (2013), Asociación Nacional de Asesores, consultores e Instructores Independientes (ANACI) 2010, Sociedad Mexicana de Geografía y Estadística del Estado de México, (SMGEEM) 2006 y Sociedad Mexicana de Educación Comparada 2019 (SOMECE).
2	Red Mexicana de Investigadores de la Investigación Educativa (REDMIIE) 2009, Red de Investigadores educativos de Zacatecas (REDIEZ) 2019, Red de Investigación sobre la Niñez y Juventud (RINJ) 2011 y Red de Posgrados e Educación (2009).
3	Red Mexicana de Investigadores de la Investigación Educativa (REDMIIE) 2011 y Consejo Mexicano de Investigación Educativa (COMIE) 2014.

Source: Semi-structured questionnaire oriented to professional biography.

Regarding professional functions, this work has privileged, on the one hand, the incorporation to research networks due to the criteria of objectivity that characterizes it: admission management, welcome letter, certificates of participation, annual fees, publications, diffusion, among others. The national research networks where they are active members are presented below.

It is important to specify that two informants are founding members of two research networks. Likewise, it is necessary to recognize the lack of information on the validity, the administrative appointments and coordination of congresses, the publications made, the types of support, the economic investments, among other aspects. Probably in a future investigation it will be possible to delve into both aspects.

As can be seen from the information contained in Table 7, the informants are also active members of international research networks. It is important to note that while informants 2 and 3 sometimes receive financial support and institutional work time to attend meetings called by the networks, informant 1 only receive work authorization to be absent from academic activities, but with the commitment to carry out the activities that were scheduled.

Based on the information contained in Table 8, differences are observed not only in thematic areas, but also in the number of international research networks. The spirit of the informants is decisive in their attitudes and active participation. The economic investment to attend meetings, coordinate congresses, participate as speakers, lecturers, symposia, workshops, dialogues, dictating papers, among others, does not generate monetary capital, but rather intellectual products and friendships and such the efforts made generate personal satisfaction. Likewise, the benefit of this type of activities has a favorable impact on the institution insofar as they are promoted and promoted by them.

Table 8 Informants and Their International Research Networks

Informant	International Research Networks
1	Red Iberoamericana de Pedagogía (REDIPE) 2016, Asociación Francófona Internacional de Investigación Científica en Educación, Sección Mexicana (AFIRSE) 2014, Red Docente de América Latina y el Caribe (KIPUS) 2008, Asociación Latinoamericana de Filosofía de la Educación (ALFE) y Red Mundial de Educación 2017 (REDEM).
2	Asociación Interuniversitaria de Investigación en Pedagogía (AIDIPE) (2016). Bloque de investigadores de Latinoamérica y Red temática de Formación y asesoría de tesis en posgrados en educación en Latinoamérica (2014).
3	Red Internacional de Práctica Educativa.

Source: Semi-structured questionnaire oriented to professional biography.

Informants also carry out activities belonging to professional functions. The Table 9 presents the responses issued through the semi-structural questionnaire aimed at professional biography.

In order to close the section, it is stated that the informants have taken steps towards entrepreneurial attitudes and management (Collison, C. Parcell, 2003) so that the results of the investigations carried out are published in the publishing houses of the institution where they work or by external. Among them are:

- Procedures to enter the National Researcher System (SNI), the National Council of Science and Technology (CONACYT), PROMEP and PRODEP.
- Promote the presentation of the books of their own authorship or coordinated in national and international academic events.
- Implement actions for the sale of books.
- Participate in programs to foster productivity.

Table 9 Informants and Other Professional Functionalities

Informant	I	2	3
Other activities			
Interinstitutional procedures	<p>Institutional link: Academic agreements: ISCEEM-UAZ e ISCEEM-CINADE</p>	<p>Academic agreements: UNAM/ IISUE-Higher Education (UADS)/ Master's Degree in Humanities and Educational Processes (MHPE), UADS -MHPE/Union of Telesecundaria-Zacatecas Education Workers (SITTEZ), UADS-MHPE/General Directorate of Industrial Technological Education (DGETI), UADS-MHPE/Higher Institute of Education Sciences of the State of Mexico (ISCEEM), BUAZ/ Consortium of Mexican Universities (CUMEX — mobility and exchange between teachers and university students).</p>	<p>Institutional link: Academic Agreement ISCEEM-CINADE</p>
Inter-institutional collaborative work	<p>Coordinator: I Student Encounter of Educational Research in Postgraduate Studies. "Advances, problems and challenges in the research experience" ISCEEM-CINADE I and II Interinstitutional Forum for Postgraduate Research. Advances, challenges and problems in the research experience. ISCEEM-UAZ Participation in the States of knowledge of educational research 1991–2001 and 2002–2012 Referee of national and international events. Coordinator and participation in symposia, debates, dialogues, book presentation, etc.</p>	<p>Collaborator in: National Congress of Postgraduate Studies in Education (biannual since 2013), International Congress of Humanities and Education (BUAZ), International Congress of Educational Research (AIDIPE, biannual since 2017). Leader of the Academic Body UAZ 150 "Culture, curriculum and institutional processes" 2007–2010 and 2013–2017. Symposiums in the National Congresses of Educational Research (COMIE) and in the National Congresses of Postgraduate Studies in Education. I and II Interinstitutional Forum for Postgraduate Research. Advances, challenges and problems in the research experience. ISCEEM-UAZ Participation in the States of knowledge of educational research 1991–2001 and 2002–2012 Coordinator and participation in symposia, debates, dialogues, book presentation, etc. Referee of national and international academic events</p>	<p>Coordinator: I Student Encounter of Educational Research in Postgraduate Studies. "Advances, problems and challenges in the research experience" ISCEEM-CINADE Participation in the States of knowledge of educational research 1991–2001 and 2002–2012 Referee of national and international academic events. Coordinator and participation in symposia, debates, dialogues, book presentation, etc.</p>
Collaborative social and cultural work	<p>Reading group with the neighbors (2009-2010) Participate in the organizations of Christmas celebrations, Mother's Day, forestation, cleaning, national holidays, among others in the subdivision where I live. Participate in the Condominium Committee (2005-2006)</p>	<p>Member of the choir of the Cathedral/ Zacatecas.</p>	

Source: Semi-structured questionnaire oriented to professional biography.

- Locate cheap hotels.
- Staying in the houses of friends, family and colleagues.

- Share rooms with other colleagues in order to reduce expenses.
- Cover registration, transfer, food and lodging in national and international events where he participates as a speaker.

An informant made the decision to cover the expenses of her publications due to the scarce economic possibilities existing in the institution where she works. The books have been published in the same publisher and have gone through the review process. The titles are:

- *La lluvia de las estrellas* (2020)
- *Investigador educativo y difusión de la investigación. Hechos, paradojas y utopías* (2019)
- *El investigador educativo en las sociedades del conocimiento y de la información. Tomo II (Gestión del conocimiento y Teleformación)* (2015b)
- *El investigador educativo en las sociedades del conocimiento y de la información. Tomo I* (2015a)
- *Aprender a aprehender la esperanza* (2013)
- *Las nociones de formación en los investigadores* (2010, 2012)
- *El concepto de percepción en Georg Berkeley* (2009)
- *Formación, concepto vitalizado por Gadamer* (2006, 2007, 2015)

Among the business actions are accepting the invitation to give a keynote conference negotiating that their books be exhibited for purchase, and there are cases where the institution covers the sale of several copies.

To increase the book sales, they use political discourse to attract and conquer new customers. They look for friends and members of networks to request their presentation, thus opening up new sales markets. There are those who go to the digital media of the Internet with successful results.

It is probable that some educational researchers do not agree with the idea of becoming entrepreneurs because of the prejudice of holding the government and educational institutions responsible for selling the books published by them in order to be self-sustaining. The problem is that most Mexicans do not have the habit of reading, much less buying books. This fact generates that the economic investments to sell the books have little result. To avoid economic losses, they stop implementing actions and avoid selling what is published by other publishing houses.

Other researchers, not receiving financial support for research, dissemination and publication of educational knowledge, seek financial funding by participating in programs of the SEP, CONACYT, the European Union, among others. The success of this activity depends on the linguistic ability to sell the research project and then to meet the established goals.

4. Conclusions

The functions of the educational researcher have increased in number, radius of action, complexity and personnel who carry them out inside and outside the institution of adscription due to the technological expansion, the internet and research policies.

The traditional and normative functions are part of the professional functions of the educational researcher. Unlike the professional functions, they have a mandatory nature of planning, monitoring and evaluating by the administrative areas, even though the institutional financial support assigned for their development is very low.

The old functionalities remain present due to the force of custom and tradition. The new ones are generated by the spirit of the time. Therefore, it is important that educational actors, especially the educational researcher,

remain attentive to their appearance and give themselves the opportunity to learn and apprehend them so that their actions are in accordance with the historical period.

The educational researcher who carries out his work not only professionally but also lives it as part of his existence, develops traditional and normative professional practices under the principle of must be and must do due to its institutional nature.

While the traditional and normative professional functions are carried out by the educational researcher in a compulsory way, they are subject to planning, monitoring and evaluation. They have a juridical-legal character and the institutionalized, training, official and emerging functionalities are chosen by personal decision, carried out with pleasure, interest, responsibility, commitment, ethics, professionalism and critical ethos through the means (economic, intellectual, time, efforts, etc.) that they offer themselves and, even if they do not receive any salary remuneration, they are reported to the administration institutional.

The educational researcher who develops some of the professional functions, is aware of the complexities and problems of carried out also in the traditional and normative functionalities, because in the latter they are governed by the 'Must-do' principle, while the professionals by the 'can-do'.

Undoubtedly, the functions of the researcher have to be in accordance with the spirit of the time of the time in which he exercises the profession and the educational and institutional authority have to offer the minimum support because their impact favors everyone, especially the educational researcher as well as the institution itself.

For the actions to be in line with this time, the postgraduate professional researcher has to develop new professional practices, since these are the first indicators that affirm that, in addition to exceeding model 1 of educational knowledge production, there is the opportunity to use model 2.

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ANNEX 1

Questionnaire Functions of the educational researcher oriented to professional biography

Dear educational researcher, thanking your disposition, I will appreciate the development of the following aspects.

Personal information

1. Gender
2. Age

Institutional functions

1. Name of the institution:
2. Job position, institutional and educational research seniority.
3. Substantive functions performed in the institution:
(in ISCEEM they are: teaching, research, dissemination and extension)
4. Others

Professional features

(Although they require work authorization because they have to be developed outside the institution where they work, the institutional authority does not oblige them to carry out the activities and they are developed by will and personal interest and no financial payment is received)

1. National (s) and international (s) research networks where you participate, year of entry, commissions developed and activities carried out and products achieved
2. Collaboration in COMIE:
 - Participation in states of knowledge:
 - Programs and commissions
3. Entrepreneurial activities (for example: personal investment for the publication of research products, dissemination of research, among others).
4. Procedures in Academic Agreements.
5. Collaborative work between academic peers. (Organizers of inter-institutional academic events, symposia, conversations, workshops, among others.)
6. Collaborative social and cultural work. (For example, organize a reading group with neighbors, in the parish church, with groups of people with special abilities and ethnic-original groups, among others).
7. Publications derived from collaborative work among peers.