

Research Development Policy and Its Practice in Mexican Teacher Training Schools

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Abstract

In Mexico, basic education teachers are trained in places called Normal Schools. In 1984, these Mexican Teacher Training Schools were classified as Higher Education Institutions, implying that, besides teaching, they must carry out and disseminate research. Currently, research is still in development and, in some cases, incipient. The objective of this article is to understand why research has not yet been consolidated in Mexican Teacher Training Schools. We used a qualitative approach, interviewing school board members, conducting surveys of teacher educators and focus groups, and employing participant observation. Teacher educators are motivated to do research, but given the lack of adequate working conditions in which to conduct it, teaching continues to be their main activity.

Key Words: Research development, Mexican Teacher Training Schools, teacher educators' training needs, Mexican educational policy, qualitative study

Introduction

In Mexico, basic education teachers are trained in places called Normal Schools; in 1984, these Mexican Teacher Training Schools were classified as Higher Education Institutions, implying that, besides teaching, they must carry out and disseminate research. More than 30 years have passed since the creation of this educational policy; in some cases, research is still incipient and in others, in development (Chávez & Mú, 2011; Paredes-Chi & Castillo-Burguete, 2018). For instance, the Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) reports 20,918 people working at Mexican Teacher Training Schools: 61% are teacher educators, 3% are board members, 28% are administrative staff, and only 8% are classified as 'Researchers or Research Assistants' and 'Others.' 88% of the Academic Groups related to these schools and officially registered in the Program for Teaching Performance (Prodep, its Spanish acronym) are still in formation, while the rest are being consolidated (Casanova, 2017; Secretaría de Educación Pública, 2017). Prodep, a programme of the Mexican Ministry of Public Education, certifies that Full-Time Teacher Educators at Mexican Teacher Training Schools carry out research and has as its main purpose the

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professionalization of said teacher educators, "...in order to fulfil the capabilities of research-teaching, technological development, and innovation, with social responsibility; thus, they articulate and consolidate themselves in Academic Groups and hereby generate a new academic community skilled in changing their environment" (Secretaría de Educación Pública, 2016a, n.p.). The Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) reports that nationwide, only 1% of professors who work in public Mexican Teacher Training Schools have Prodep profiles.

To date, the expectations that Mexican Teacher Training Schools develop research are still in place (Secretaría de Educación Pública, 2012). The educational curriculum for Primary Education and Preschool Mexican Teacher Training Schools establishes that in order to get a bachelor's degree in primary or preschool education, there are two options: writing a thesis or preparing a report of professional teaching practices (Secretaría de Educación Pública, 2014). In addition, the Law of Education in Yucatán stipulates that those teachers must be knowledgeable about educational research methodology in order to incorporate it into their teaching practices with a scientific mindset focused on continuous growth (H. Congreso del estado de Yucatán, 2016).

This study aims to understand why the function of research has not yet been consolidated in Mexican Teachers Training Schools. To do so, it analyses teacher educators' working and training conditions (professional background, continuous training, and knowledge) in these institutions, related to the function of research.

Çakmak and Gündüz (2019) stress the importance of studying teacher educators' role in that they shape the practice of future teachers. Tatto (2020) explains that there are not clear mechanisms through which teachers and teacher educators could incorporate and conduct research in their practice. Consequently, it is very important to study why research is not consolidated in this area.

This study is crucial for understanding what conditions are required to facilitate the implementation of an educational policy that facilitates teacher educators conducting research to improve their teaching practice. Readers will encounter in this paper a general description and analysis about why Mexican Teacher Training Schools emerged, their reforms and new expectations related to conducting research, details about the context of the study, and the methods and techniques used to collect and analyse qualitative data. Finally, we present the findings and a discussion to provide a recommendation: Specifically, to take into consideration board members and teacher educators' perspectives.

Theoretical Framework and Literature Review

Mexican Teacher Training Schools' reform

The emergence of teacher training schools dates back to 1794 in France, where they were created to train professors how to teach: "...the pedagogical principle that

would guide schools consisted of learning not the sciences, but the art of teaching them” (Fernández, 1983, p.76).

The process of teacher training in Mexico has been unstable, as a result of several key historic and political moments; during the Independent Mexico era (1820-1854), teaching was a free activity, and only families with the necessary resources hired teachers to teach their children individually. Subsequently, as part of the educational transition, each municipality hired and paid a salary to teachers with credentials showing they had enough basic knowledge about literacy to teach groups of children (Secretaría de Educación Pública, 2015b).

In México, initial teacher training dates back to the early 1800s, and the Lancastrian Company has been attributed to be in charge of training the best students to become teachers of other students (Ducoing, 2004). According to Arteaga and Camargo (2009), Mexican Teacher Training Schools emerged in the late 19th century due to the discontinuation of the Lancastrian system. Mexican Teacher Training Schools were formally established in 1833. At that time, they were not Higher Education Institutions (HEIs) (Morales, 1998). The first titles emitted for teachers were Elemental Professor and Superior Professor. According to Justo Sierra, the university students were in charge of creating science and students from Mexican Teacher Training Schools of moulding the nation (Arteaga & Camargo, 2009).

Similar to schools in France, the first Mexican Teacher Training Schools were the ones in charge of establishing teaching standards (Secretaría de Educación Pública, 2015b) in order to provide their students with practical knowledge about how to teach (Oikión, 2008).

Mexican Teacher Training Schools can be classified as urban or rural; the latter emerged in 1920 to train teachers to meet the educational needs of the most remote regions of the country. The students at these schools came, as they do today, from rural communities; therefore, these schools operated as a kind of boarding school. Currently, there are 450 Mexican Teacher Training Schools, both public and private; of this total, 16 schools are rural, compared to the 35 that used to exist at its apogee (Juárez, 2017). In Mexico, as opposed to the USA and other international contexts, Mexican Teacher Training Schools continue to be the main official institutions in charge of training teachers for elementary education; primary level teacher education is not provided at universities (Paredes-Chi & Castillo-Burguete, 2018).

Since their establishment, Mexican Teacher Training Schools have undergone transformations resulting from the political outlook of the moment (Secretaría de Educación Pública, 2015b). In 1984, 151 years after their formal implementation, a major change occurred with the order that all the training schools’ educational programmes would be at a bachelor’s level and it would be mandatory to have a high school degree

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in order to study their majors (Madrid, 1984; Secretaría de Educación Pública, 2015b). Some people considered this a radical change because it included a vision more oriented to educational science than a didactic approach (Oikión, 2008). Similar changes have occurred in other parts of the world. For example, in the USA, the teacher training process that was initially held in normal schools changed to universities, requiring a four-year degree to teach (Fraser, 2007 cited in Ryan, 2019). In parallel, Pigott and Prasse (2019) explain that in the USA, the No Child Left Behind Act emphasises scientific research as a basis for instruction. Hogarth (2020) adds that in Australia, educational policies expect that teachers conduct research-informed teacher learning and practitioner research activities. Thus, teacher educators are often expected to be researchers (Cochran-Smith, 2005; Yogev & Yogev, 2016). Smith (2015, pp. 43-44) explains that:

...in Norway, as in many other countries, there is political pressure to make teacher education more research based under the assumption that it is a means to improve teacher education... and as such both teacher educators and students are expected to read research in the acquisition of required knowledge as well as skills... there are also expectations that teacher educators and students become producers of research.

To meet those expectations, teacher educators need to have expertise as consumers and developers of research to read, interpret, design, and implement their own research projects (Cochran-Smith, 2005).

In order to accomplish the new mission, Mexican Teacher Training Schools' organization and functioning were modified with the expectation that, besides teaching, they would assume two new primary tasks: research and dissemination (Chávez & Mú, 2011). It was projected that the curriculum derived from that reform would train qualified teachers to conduct educational research (Secretaría de Educación Pública, 2015b).

Implications of 1984 reform

With the reform of 1984, essential changes were clearly expected in the organization and functioning of Mexican Teacher Training Schools. Nevertheless, we agree with Oikión (2008), who states that research conducted to understand the implications of this reform in Mexican Teacher Training Schools is insufficient. In this section, we will describe the transformation process that these schools underwent with that reform and with the new researching task, as well as general answers to their lack of research consolidation.

The reform of 1984 included a new curriculum to train future teachers and the requirement of a high school degree to enter Mexican Teacher Training Schools, where after finishing courses, students would get a bachelor's degree in elementary educa-

tion. Previously, only technical training had been offered (Oikión, 2008). The new curriculum “is based on a teacher-researcher model under which innovative classes such as Teaching Laboratory and Educational Research I and II are included” (SEP, 1984-III cited by Oikión, 2008, p. 75). Smith (2015, p. 43) states that, “As with any other higher education, teacher education shall be research based,” also being the case for the USA, Australia, Norway, and other European countries. Oikión (2008) explains that the new curriculum in Mexico aimed to acknowledge teachers’ work as much as other professions, such as doctors or engineers, by providing them with knowledge about a scientific culture coming from educational science. For some authors, teachers had a lack of scientific background with which to justify their technical work. It could be interpreted that as of 1984, teacher educators at Mexican Teacher Training Schools had to have a background with university-style elements and their new students would have a high school degree; teacher educators would also develop research and work in a collegiate group (Oikión, 2008).

Navarrete-Cazales (2015) explains that teacher educators were not prepared to fulfil their new responsibilities. In addition, there was no change in their organization or administration, nor in their profiles, which made it impossible to achieve the expected results. Oikión (2008) added that many of the teacher educators in the 1980s studied at Superior Mexican Teacher Training Schools, a few of them had a doctorate degree in Pedagogy in the same institution, and a minority had studied another degree at universities such as UNAM, UAM, or IPN. Most of them were not trained to do research.

The teacher educators at Mexican Teacher Training Schools did not participate in the design of the curriculum in 1984, which created dissatisfaction among that educational community. In order to implement it, they only had one week-long training course, which was insufficient if we consider the radical change expected in their work (Oikión, 2008). Britt (2019, p. 114) clarifies that “...projects that are forced on teachers from the outside or above rarely take root....” Thus, she recommends constructing the proposal with teachers, suggesting a similar form of work with teacher educators.

Oikión (2008) also explains that some Mexican teacher educators thought that they did not need to get trained to implement the new curriculum and accomplish their new tasks, because they thought it would be a similar program. For others it posed problems, but they recognised the need for training so it could function appropriately. The implementation of the new curriculum to teach how to do research was also subject to interpretation. Fundamentally, it related to following a set of normative and methodological steps instead of cultivating a critical mindset in students, starting from research of their own teaching practices or conducting action research. Other teacher educators expressed that they kept teaching the same way they did before the reform was implemented (Oikión, 2008). Cabello (1994, p. 5) adds that this reform:

...omitted the structural characteristics of the professional practice of the teacher educators at Mexican Teacher Training Schools in order to focus on knowledge, habits, and attitudes closer to the characteristics of a university-level professional practice, ignoring some heterogeneous features, rites, and endeavours of the teacher educators of Mexican Teachers Training Schools, whose value, utility, and development are part of an articulated whole that is the academic-political culture of the Mexican Teacher Training School professional.

Andión (2011) states that preschool-level Mexican Teacher Training Schools need to be reorganized so teacher educators learn how to generate knowledge based on their contexts and on what they experience in their professional life. Cabello (1994) points out that another problem that made the development of research difficult was the lack of budget with which to carry it out and thus train teacher educators to research. The author found that, in a study of people responsible for research areas in 36 Mexican Teacher Training Schools in the state of Mexico, most of them had only a bachelor's degree (73%) and almost all (96%) graduated from Mexican Teacher Training Schools where they had been trained to teach, but not to research. This situation is different "in university-based teacher education, (such as) ...in Norway, (where) ...the majority of teacher educators have a disciplinary doctorate, and research is their first-order expertise, whereas they might experience more frustration with the teaching component of their job" (Smith, 2011 cited in Smith 2015, p. 45).

Smith (2015) also alerts that in other contexts, teacher educators' research competence is limited to their master's thesis, in the event that they completed a dissertation. Institutional leaders don't support them in developing this kind of competence. Additionally, DeMonte (2017) explains that conducting research on teacher education is not esteemed and it lacks financial support and cooperation between peers. Oancea (n/d, s 25-27) adds that other challenges to teacher educators conducting research are:

... institutional reluctance to invest in emerging research cultures, perceived financial disincentives to institutions' investing in TE research..., insufficient recognition of research as part of workload allocation, ..., time and workload pressures, difficulties in securing employment conditions that match higher levels of research training and capabilities.

Navarrete-Cazales (2015) detected another problem: Mexican Teacher Training Schools have no autonomy to aim for better academic development. The Mexican Ministry of Public Education states that, even when professional training for teacher educators increased in 2015, the courses lacked quality because they were offered by private institutions of low academic level. Nor are there transparent processes for hiring faculty in Mexican Teachers Training Schools, which would allow for the incorporation of teacher educators with the ideal background to perform roles beyond teaching

(Secretaría de Educación Pública, 2015b).

Another recent expectation, a product of the educational policy of 1984, is that Full-Time Teacher Educators at Mexican Teacher Training Schools must have ideal backgrounds and form Academic Groups recognized by Prodep.

For their background to be deemed ideal, the characteristics that teacher educators must have are:

- a. To have a Full-Time Teacher Educator position
- b. To have a doctorate (preferable) or master's (minimum) degree
- c. To be able to demonstrate participation in activities such as:

(a) Teaching and (b) Generation, or innovative application, of knowledge. Proved quality output every year, during the previous consecutive years up to the date of submitting the application to the program, or during the time elapsed since the first appointment as a Permanent Full-Time Teacher Educator in an HEI or since the date the last degree was obtained (Secretaría de Educación Pública, 2015a). For Mexican Teacher Training Schools, "having actively participated in a project of generation or innovative application of knowledge in the educational field is also considered" (Secretaría de Educación Pública, 2016, p. 105). This is demonstrated through academic production.

It is also expected that Full-Time Teacher Educators at Mexican Teacher Training Schools belong to the Mexican National Research System (SNI, in its Spanish acronym), which has established unambiguous evaluation criteria for membership. The minimum level of studies requested is PhD and teacher educators must be assigned to an HEI on the National Registry of Scientific and Technological Institutions and Companies (RENIECyT, in its Spanish acronym).

In light of those expectations, Medrano, Ángeles, and Morales (2017) state:

The principals and teacher educators at Mexican Teacher Training Schools point out that within their institutions, they face serious difficulties creating and consolidating Academic Groups, as well as encouraging research, publication, and dissemination of the results. Therefore, in some cases, they fail to meet the minimum criteria requested when they are evaluated externally. The development of these activities necessitates, as a baseline, the existence of an adequate number of full-time professors with a post-graduate degree, committed to the development of some area of research (Medrano, Ángeles, and Morales, 2017, p. 48).

In order to meet the expectations and changes resulting from the Reform of 1984, institutional policies are required to ensure the admission of Full-Time Teacher Educators with ideal profiles and to get financial support to do research and train those who

should already be performing that function (Cabello, 1994; Secretaría de Educación Pública, 2015b). Navarrete-Cazales (2015) supports Cabello's argument (1994) indicating that research should be encouraged with resources, training, and sufficient time to perform it. Yet in Mexico, as in other countries, "...teacher preparation is often treated as an afterthought in discussions around improving the public education system" (National Academy of Sciences, 2010, p. 7). Cochran-Smith (2005, p. 221) supports this claim, adding that in the USA, there is a "critique and even dismissal of this kind of work in many policy and research contexts." The Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) emphasizes the need for creating the right institutional conditions to enhance research in and strengthen Mexican Teacher Training Schools. Andión (2011, p. 44) also explains that:

...a very deep cultural transformation is required, in such a way that its academic action ends up favouring the construction of authentic communities of teacher educators trained as professors, researchers, and disseminators of socially relevant educational knowledge for an increasingly computerised modern society.

In this regard, Ramírez (2016) asserts that there is still a need to research the micropolitics and power delimitation in Mexican Teacher Training Schools that restrict the development of research. Medrano et al. (2017) contribute to the implications of the Reform of 1984, that was in effect until 1996 when the government proposed areas of action to transform Mexican Teacher Training Schools with the Transformation and Academic Strengthening of these schools, in order to convert them into real HEIs. Rodríguez (2013) explains that some of the areas of action of this program are: curricular transformation, teaching staff renovation, development of institutional management standards, regulation of academic work, and improvement of buildings and equipment. Medrano et al. (2017) explain that between the years 2002 and 2013, the Institutional Improvement Program of Mexican Public Teacher Training Schools was implemented. This encouraged each state to elaborate a State Strengthening Plan, overseen by the State Management Strengthening Program of the Mexican Teacher Training Schools and developed by each state's educational management. The programs for Strengthening Mexican Teacher Training Schools were designed by each state institution. Medrano et al. (2017) also assert that even with these strengthening efforts, in the New Educational Model of 2016, concerns about transforming Mexican Teachers Training Schools into HEIs persisted.

From that model, in 2017, the Minister of Education introduced another strategy to strengthen Mexican Teacher Training Schools. This meant new curricula and syllabi, new regulations for admissions and promotion of faculty and staff, and the eradication of the automatic permanent teaching position for graduates of Mexican Teacher Training Schools (Secretaría de Educación Pública, 2017b). The Minister declared that

awards would be bestowed to those who showed excellent results within these institutions, which are the core of educational change. The strategy proposed six main issues:

- a. Pedagogical transformation, so children learn to learn;
- b. Strengthening of indigenous and intercultural education through the training of teachers to meet the needs of this area;
- c. Learning English, hiring teacher educators to train future teachers to pass the language on to boys and girls in basic education schools and in the new bachelor's degree in English Teaching;
- d. Professionalizing teaching staff, strengthening admission and normativity of permanence, continuously training teacher educators, and supporting applied research and innovative practices;
- e. Promoting, nationally and internationally, academic networks between Mexican Teacher Training Schools, universities, and research centres;
- f. Redesigning curricula and syllabi, improving infrastructure and stimulating excellence.

As part of the implementation of this strategy, in 2017 there was a call for participation to compete for 582 permanent Full-Time English Trainer Category C positions, divided among the 32 states of the republic (Secretaría de Educación Pública, 2017a).

Teacher educators who were hired were expected to assist approximately 80 students, teach 24 hours of classes per week, tutor, and coordinate language laboratory activities (NOTIMEX, 2018). This recruitment does not yet seem to have strengthened the development of research in Mexican Teacher Training Schools, and the document called the Diagnostic of Mexican Teacher Training Schools to date indicates that the purpose of becoming HEIs and performing their expected functions has not been accomplished (Secretaría de Educación Pública, 2015b). A new government has been in place since 1 January 2019, and whether this kind of strengthening of Mexican Teacher Training Schools will or won't continue depends on the vision of the new President and his Minister of Education. Although they have conducted a public consultation to plan the strengthening of Mexican Teacher Training Schools, their educational-political vision for Mexican Teacher Training Schools is not yet clear.

Methodology

We conducted a qualitative research study, seeking to incorporate the points of view and interpretations of teacher educators working in Mexican Teacher Training Schools in order to understand the research situation in these institutions to contribute to their strengthening. Given our geographical location in the country and the budget available to develop the project, we focused on studying the case of Mexican Teacher Training Schools in Yucatán, one of the country's 32 states. Yucatán is located in the southeast region, bordering the Gulf of Mexico in the north, the State of Quintana Roo

in the southeast, and the state of Campeche in the southwest.

In Yucatán, there are six public Mexican Teacher Training Schools dedicated to training students who will be early, preschool, primary, and secondary education teachers. In the Preschool Education Teacher Training School, the bachelor's degrees taught are: Preschool Education, Bilingual Intercultural Preschool Education, and Early Education; in the Primary Education Teacher Training School, a bachelor's degree in Primary Education is taught. The Higher Education Teacher Training School of Yucatán offers bachelor's degrees in: Secondary Education with specialties in Spanish, mathematics, chemistry, biology, civics and ethics, history, English, physical education, arts education, and special education. These three schools are located in Mérida, the state capital of Yucatán, while the other three are located in the municipalities of Ticul, Valladolid, and Dzidzantún. The latter schools offer bachelor's degrees in Primary Education, one of them in the Mayan-Spanish bilingual modality.

Our research process was the following:

1. At the six Mexican Teacher Training Schools in Yucatán, we presented the project to principals and deans and they invited the teacher educators to participate voluntarily. At two of the schools, we also presented the project to teacher educators. At each institution, we handed in a plain language statement to principals and teacher educators, clearly describing the research and what their participation would consist of. Teacher educators from five schools agreed to participate in the study. The principal of the non-participating school explained that they were saturated with academic activities, and also made clear that within the institution, there were micropolitical issues that discouraged people from participating in this kind of activity;

2. With those teacher educators who agreed to participate, we firstly diagnosed the level of development of research; we then interviewed seven board members (principals and deans) using a semi-structured interview guide to obtain information, analyse the problems related to carrying out research at Mexican Teacher Training Schools, and diagnose teacher educators' needs regarding research in the educational field;

3. We conducted a survey of teacher educators, with open and closed questions, in order to know their professional profile, explore their training needs in research, and to obtain data about the need for conducting research in their workplaces and the types of problems faced; 84 of 245 teacher educators answered the survey;

4. In two Teacher Training Schools, we conducted two focus groups where we analysed, in a participatory way with 33 teacher educators, the problems related to the need for developing research;

5. We requested statistical information about the six Teacher Training Schools from the Coordination of Mexican Teacher Training Schools within the Ministry of Public Education.

Finally, we conducted content analysis based on the process of Krippendorff (2004).

Findings

The profile of teacher educators and their working conditions related to research

Of those who answered the survey, 50% were hired only to teach and have no permanent position, 32% are Full-Time Teacher Educators, 14% have a permanent position with less than 40 hours, 4% have an hourly contract and, at the same time, a part-time schedule counted as a permanent position. These data are similar to those provided by the Mexican State Coordination of Mexican Teacher Training Schools: almost half (46%) of teacher educators have no permanent positions, but rather an hourly teaching contract (see Table 1). Those who must carry out research are the Full-Time Teacher Educators; however, it is shown (Table 1) that only 16% (40 teacher educators) have that status; of those teacher educators, nine are principals or deans at Mexican Teacher Training Schools, four are commissioned to activities outside the Teacher Training School they belong to, and the others are heads of department or assistants; in addition, they perform functions of teaching, tutoring, and dissemination. These data are similar to those nationally reported by the Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) stating that 36% of teacher educators working at public Mexican Teacher Training Schools are Full-Time Teacher Educators and 42% have hourly contracts.

Table 1.
Faculty of the participating Mexican Teacher Training Schools

Name of Teacher Training School	Faculty with tenure			Faculty with contract	Total
	Without full-time	Full-time	Sub-total		
Preschool Education Teacher Training School	12	12	24	23	47
Higher Education Teacher Training School of Yucatán	41	9	50	37	87
Teacher Training School of Ticul	10	5	15	28	43
Teacher Training School of Valladolid	3	9	12	9	21
Teacher Training School of Dzidzantún	22	5	27	20	47
Total	88	40	128	117	245

We identified that the maximum level of studies of most teacher educators (65%) is a master's degree, while 18% studied a PhD and 17% have only a bachelor's degree. This would suggest that the majority are qualified to conduct research, but one of the principals interviewed explained that they study their masters and doctorates to professionalise in teaching or educational strategies, but they do not carry out research. Participants indicated that they are interested in receiving training on qualitative research methods and Participatory Action Research; they are more familiar with quantitative methods. 61% of teacher educators studied their major at Mexican Teacher Training Schools (see Table 2).

Table 2.
Schools of origin

Type of school	%
-Mexican Teacher Training Schools	57
-Autonomous Public University	20
-Private University	5
-National Pedagogical University	5
-Eastern University	4
-Mexican Teacher Training Schools and university	4
-Technological Institute	3
-X University	1
-Did not answer	1
-Total	100

An interviewed board member at a Teacher Training Schools, who is a real believer and promoter of research in these schools, explained:

I studied it (bachelor's degree in primary education) in the '97 plan, in which there were some topics about research; with the reform of 2003, research disappeared from the curriculum, but I did have a chance to dabble a little in those subjects and I did have an interest (in research).

Another interviewee added:

... it seemed like there was absolutely no research. In fact, it did not exist as a class, I mean, not as a course title like 'Research Methodology,' as it had in the '84 plan, etc., but when the '97 plan was put in place, they said, 'So what happened to... that (thing) called research?' Then obviously it was thought that what's totally disappearing is that (thing), research... none of the classes, as you can see, says absolutely anything about research; it is not in the terminology, is not in its title, it is not in absolutely anything.

Although they do not refer to the same plan, the previous opinions reflect that there was a curriculum in which the teacher educators interpreted research as not being part of the activities and discouraged from being taught in Mexican Teacher Training Schools. Hogarth (2020) alerts that if the link between teaching and research is not taught explicitly, it is very probable that teaching practices will be not informed by scientific research results. For future studies, we suggest analysing curricula to understand how they influence the progress of research in Mexican Teacher Training Schools. It would be necessary to consider that, as in this case, more than half of teacher educators studied at a Mexican Teacher Training Schools. The principal of one of these educative centres emphasized:

... another issue that is seen reflected in research is the teacher educators of Mexican Teacher Training Schools, almost all or most of them - not all; most - are primary (school) teachers; they are not fully dedicated to Higher Education.

At a national level, the Ministry of Public Education reported that 69% of the teacher educators at Mexican Teacher Training Schools have been trained in the area of education and the rest (31%) in “areas very little or not at all associated with the field of education and teacher training” (Secretaría de Educación Pública, 2015b, p. 38).

82% of the respondents indicated that teaching is the most important function developed in Mexican Teacher Training Schools. Only two of 84 teacher educators indicated that research is their main activity: they are heads of research departments that promote this function in their schools. Both of them are necessary to encourage research in their institution; in one case, they formed an Academic Group registered with Prodep, but both explained that they cannot accomplish the task by themselves, although some teacher educators understand that only the heads of these departments are responsible for doing research. In this regard, one interviewee mentioned:

...when I was assigned the responsibility of the department and I started promoting (research), I invited professors and they feel that I have the obligation to fill in their documents. For example, when I sent them the call to participate in a conference, it seemed like they expected me to prepare a talk, write their names on it, and then we'd go to the conference...

Only the heads of the research department are formally assigned hours within their workload to carry out research; as one interviewee pointed out:

The impact (of the educational policy of 1984) did not reach the classrooms... but it did impact at least the administrative and institutional life, meaning that, “I demand that you... produce the same as a university professor, but with what you have available;” as an example: If you check the

working schedule of a university professor, it is well specified how many hours are meant for teaching, how many hours for research, how many hours for dissemination, but at Mexican Teacher Training Schools, they still continued privileging teaching while doing research and dissemination is desirable, but with only what there is (available).

What the interviewees presented explains why 95% of the respondents answered that they spend zero hours on research. Nevertheless, for 80% of them, carrying out research in Mexican Teacher Training Schools is important because it represents the possibility for solving educational problems.

89% indicated they were not part of an Academic Group dedicated to research; when we obtained the data, there was no Academic Group registered with Prodep, but we identify two groups that develop research and plan to become registered. The Prodep webpage (Secretaría de Educación Pública, 2017) shows that one group with four members has obtained registration as an Academic Group in training. The Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) points out that of all 32 federal entities, there are only 18 with Academic Groups in their Mexican Teacher Training Schools.

65% expressed not participating in research; they explain the reasons in the focus groups:

- a. There are no formal hours in their work schedule to perform this function;
- b. Some of them perceive that their load of teaching hours is too excessive to also incorporate research. In this regard, one vice-principal differs: “At Mexican Teacher Training Schools, we must stop saying that we are saturated with classroom hours or that we have no budget to do research. We need to be motivated and willing to do it. Through normativity, a Full-Time Teacher Educator must only have 12 hours of teaching time a week and has 28 office hours that are supposed to be used for doing research, but they do not”;
- c. Their type of contract only allows them to teach; the teacher educators working in the masters programs at Mexican Teacher Training Schools, who have the profile to conduct research, have no full-time permanent working position that supports them and offers favourable institutional conditions in which to do it; they work at more than one educational centre to come closer to a decent salary;
- d. There is a lack of information, training, and budget to develop projects, infrastructure, and specialised software to carry out research;
- e. There is no actionable follow-up practice for projects that have already started;
- f. There are no spaces for collaborative work, nor interaction between teacher educators in different shifts and areas of expertise; there is a lack of bonding and ability to reflect together;

g. There is a lack of interest, willingness, and motivation, and it is not mandatory.

Other teacher educators explained that they carried out research individually while others would like to do it and have the profile for it, but they were not Full-Time Teacher Educators and they lack proper institutional conditions to do research. The interviewees explained that because of administrative orders by the Mexican Ministry of Public Education, Mexican Teacher Training Schools could only hire teacher educators to teach, even if they had needs that could be met by hiring hourly staff. For example, they could not hire teacher educators to carry out research, even if they had the profile and motivation to do so. We identified three teacher educators who had been hired contractually with university degrees and solid training in research. Two had PhDs from high-quality universities abroad, another had a master's degree. All had given presentations at conferences and written publications in national and international journals. All three demonstrated and expressed their interest in conducting research at Mexican Teacher Training Schools. The coordinator of these schools and the principals and deans explained that if they had been hired as Full-Time Teacher Educators, they would have strengthened the research in Mexican Teachers Training Schools. However, they were only able to hire these teacher educators to teach classes part-time, and there were no permanent positions available to incorporate them as Full-Time Teacher Educators.

Regarding the lack of budget, three interviewees explained that Mexican Teacher Training Schools were not financially independent and they had no budget to do research. They had to request resources depending on the planning they were asked to do, and they had to be very creative in order to use their budget for activities related to research, such as participating in conferences. A board member pointed out that:

There is a planning session every two years that is part of the program for strengthening Mexican Teacher Training Schools and we have already used the budget for 2016. The 2017 budget doesn't cover research, but it does for the areas of infrastructure and equipment.

Another board member explained: "...the budget...does not arrive at the school; [it] is sent to the Ministry of Education and...everything the school needs...is not really acquired because everything is concentrated there and the money is used for other needs."

Another interviewee also expressed dissatisfaction because there are no sanctions for not carrying out research and there is a lack of encouragement to do so, and noted:

... the university teachers must keep up productivity because that is a condition in order to keep their job and it is a condition to access extraordinary resources. Here (at the Mexican Teacher Training School), whether

I conduct research or not, nothing happens regarding my salary. We have a policy for obtaining extraordinary resources - it is the incentive for teaching performance - which by law should be granted every year, but the same law says that it would depend on the availability of resources and since there are no resources, there is no incentive. Thus, the only incentive for which we would do research does not exist.

We also inquired about their experience with writing or directing theses. When they studied their bachelor's degree, 36% got their diploma by writing a thesis; those with master's degrees, 51%; and most of those who studied a PhD wrote a thesis. When we asked if they had directed theses, only 29% answered affirmatively.

Regarding their participation in conferences, only 38% had participated at least once, mostly in the education field. Of these, 8% participated as assistants, 1% as a tutor, and the rest had presented a poster or book and given a talk or workshops. Their participation represents a strengthening opportunity because they can share their experiences and guide others.

Regarding publications, only 15% expressed having published their work as article(s), book chapter(s), or conference report(s) between 2014 and 2017. The results suggest that there is a need to encourage publication in high-impact scientific journals, dissemination, and guidance on how to do it.

Discussion

In this study, we aimed to understand why research is not consolidated in Mexican Teacher Training Schools although since 1984, educational policy established that these teacher education institutions would become HEIs and research and dissemination would be among their functions, in addition to teaching.

The slow progress of research in Mexican Teacher Training Schools could be explained through several factors similar to the challenges reported in other countries by DeMonte (2017), Smith (2015), National Academy of Sciences (2010), and Oancea (n/d). First, Mexican Teacher Training Schools were created to train how to teach and for over 150 years, they served this purpose (Secretaría de Educación Pública, 2015; Oikión, 2008). Despite the Agreement of 1984 (Madrid, 1984), we find that most of the teacher educators at Mexican Teacher Training Schools in this study continue to perceive and perform teaching as their main activity; within their work schedule, there is no time for research; only at schools where there is a research department has its office chairperson established time to do research. This also represents an obstacle, since others perceive that only he or she should perform this action. Board members recognize that they cannot do research by themselves. Furthermore, teacher educators lack the training to do research, direct theses, and publish their work.

Hogarth (2020) explains that it is important to analyse what being a teacher implies, considering the various roles expected of them, recommending a change in

teachers' conception towards grasping that they are not only teachers but also researchers. In this sense, we argue that it is important to conduct this analysis and change with teacher educators in order for them to, in turn, transmit this understanding to pre-service teachers. Tatto (2020, p. 145) complements this perspective, indicating that it is difficult to learn how to do research in education, since "...learning research methods requires from the learner a significant change in perspective; an inquiry attitude needs to become a habit of mind." Philpott and Poultney (2018) assert that it is a challenge to change the mind-set of teachers in order for them to use evidence-based research in their educational practice. Nevertheless, Tatto (2020) argues that it is vital that teachers conduct research to analyse, regulate, and transform their own educational practice.

Another factor we found, as Cabello (1994) did, is the lack of adequate budget with which to do research and train staff to do so, as well. In a similar manner to Navarrete-Cazalez (2015), we found that Mexican Teachers Training Schools are not financially independent, which makes it difficult to use resources to fulfil their functions. Scott (2020, p. 9) explains that a similar situation exists in the United Kingdom: "Recent policies have given schools more responsibility for training new teachers, but the system overall remains highly centrally regulated." Additionally, there are no incentives for those who carry out research, nor sanctions for those who don't.

We agree with the Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) that another restraining element for research development is the lack of adequate number of Permanent Full-Time Teacher Educators with a profile appropriate for carrying out research. The educational policy has established that they must conduct research, but their numbers are insufficient. Moreover, of those who are Full-Time Teacher Educators, most do not know how to do research, while others are not interested. In addition to the above, authorities argue that there are no open positions for Full-Time Teacher Educators, and Mexican Teacher Training Schools cannot hire academics by the hour to develop research.

In this regard, the Mexican Ministry of Public Education (Secretaría de Educación Pública, 2015b) points out that some policies are required in order to hire Permanent Full-Time Teacher Educators with the ideal profile to carry out research, as well as institutional, administrative, and academic conditions for doing research, but results of this study show that educational policies are insufficient to reach such agreements. Consequently, it is crucial not only to decree that Mexican Teacher Training Schools should have the rank of HEI and conduct research, but it is also necessary to create the right conditions to put them into practice, taking into account the characteristics and real needs of teacher educators and allowing for the incorporation of new academics with ideal backgrounds to strengthen Mexican Teacher Training Schools and turn them into complete, competent HEIs. Pigott and Prasse (2019 p. 239) assert that:

“The political context for university-based teacher preparation programs remains difficult, with decreased enrolments and increased competition of well-funded alternative certification programs. Challenges remain both outside and inside the university with financial constraints and debates about the mission of schools of education.”

Our study provides guidelines about the kind of working conditions needed in Mexico.

It is notable that the Mexican Ministry of Public Education itself (Secretaría de Educación Pública, 2015b) has come up with several explanations about why research is not improving in Mexican Teacher Training Schools, clearly indicating what is needed to strengthen research in them. However, it seems like their results and those from other academics have not been taken into account in the actions to strengthen Mexican Teacher Training Schools. One example is the latest governmental strategy of prioritizing English language teaching over other more urgent needs within the system.

Conclusion

Considering our results and the suggestions of Navarrete-Cazales (2015), Secretaría de Educación Pública (2015b), Andión (2011), Cochran-Smith (2005), and Cabello (1994), we concluded that it is necessary to:

- a. Listen to the voices of experienced teacher educators about their needs and incorporate the results of educational research in the construction of policies and strategies to strengthen Mexican Teacher Training Schools.
- b. Motivate teacher educators to carry out research, teaching them the advantages of doing so and creating an incentive program.
- c. Train them continuously in their role as researchers, consider hours for research in their workload, open spaces for reflection and exchange of research experiences within Mexican Teacher Training Schools, to strengthen or form research groups, and promote the gathering of teacher educators interested on doing research to promote intra- and intergroup learning, taking advantage of their strengths and capabilities.
- d. Generate Permanent Full-Time Teacher Educator positions and hire those with ideal profiles to perform functions of teaching, research and dissemination. Hire academics to do research.
- e. Be conducive to financial independence of Mexican Teacher Training Schools and to manage economic resources and infrastructure to carry out research.
- f. Research the power delimitation within the system and the use of time during working hours.

Finally, although it is not surprising to find that teacher educators who were employed only to teach in non-research based institutions do not engage in research, we learn that this does not seem to be clear for policy makers. Thus, it is crucial for educational researchers to present their research results to policy makers, creating the spaces and opportunities to disseminate their findings. In our case, we presented the results to the principals of each participating school, the teacher educators who participated in this study, the Higher Education Director of the State, and made the study available on the public consulting platform. Nevertheless, we do not know yet if this information has been used to face the barriers that teacher educators experience to conducting research. Consequently, we suggest that future research in this area incorporate feedback from the participants of the studies when trying to find the best way to promote the use of research results in the construction of educational policies and planning of strategies to improve the factors evaluated in said studies.

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