Socio-formative Pedagogical Counseling: Professionalization and Improvement of Teaching Practice in Compulsory Education in Northern Mexico

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Abstract: Technical and pedagogical counseling as accompaniment benefits teachers' development. However, there are information gaps on the specific impact of counseling with a socio-formative approach on both professionalization and the improvement of teaching practice. The objective is to analyze the relationship between these three elements. A cross-sectional study with a quantitative approach was employed. A validated questionnaire was applied to a representative sample of 212 teachers. The information analysis was carried out through statistics: descriptive, correlational, and linear regression, whose level of significance was: <.01-. 05. Teachers consider that technical and pedagogical counseling from socio-formation fosters the development of an ethical life project, promotes problem solving in their educational practice, collaborative work, metacognition, and entrepreneurship (92.78 ± 14.3). The correlational analysis showed a significant relationship between socio-formative pedagogical technical counseling and teaching practice, the latter of which was enhanced by the former. In the linear regression analysis, the best model of pedagogical technical counseling is made from socio-formation, which predicts a 71% improvement of teaching practice. As a result, this form of counseling benefits both professionalization and teaching practice through metacognition.

Keywords: *Technical and pedagogical, accompaniment, problem solving, metacognition, ethical life project.*

Introduction

Technical-pedagogical counseling is recognized in some countries as a process of pedagogical accompaniment, which implies a process of construction between peers through the exchange of experiences with the possibility of improving the professional learning of teachers (Cantillo & Calabria, 2018). It is also considered as a process of support, accompaniment, and pedagogical guidance. According to the 2018 report "The Teaching Profession in Europe: Access, Progression and Support", in 26 countries, teachers are supported in the development and improvement of their teaching practices (Comisión Europea/EACEA/Eurydice, 2018). Thus, pedagogical technical advice, is considered, an institutional professional development strategy for active teachers, coordinated and implemented by supervisors, managers and supported by experienced advisers (López & García, 2021).

The counseling technical-pedagogical, promotes educational innovations that improve student learning, since it is focused on improving the performance of teachers and helping them achieve their goals, based on the development of their competencies and the solution of the challenges they may face (Reséndiz Melgar, 2020). Likewise, the accompaniment of teachers strengthens their professional capacity in the workplace. Thus, the improvement of teaching practices is not due to an external imposition but to reflective processes when analyzing the context of their teaching practice and supporting proposals for improvement (Agreda & Pérez, 2020). Therefore, technical-pedagogical advice is defined as a theoretical, methodological, systematic, and planned activity that requires training and responsibility.

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Technical-pedagogical counseling can be approached in different ways: amongst them, from the socio-formative approach, where is developed through reflection processes (metacognition) for the teacher to analyze and solve relevant problems of their teaching practice within their context (Tobón et al., 2015). The reflective approach according to Anijovich and Capelletti (2018) aims to develop a pedagogical practice in continuous evaluation and decision-making for its improvement and for the achievement of the expected learning in its students.

The essential characteristics of socio-formative pedagogical counseling are:

a) *Ethical life project:* It consists of identifying the personal and professional areas that people wish to develop and project them while respecting the rights of others through specific support.

b) *Entrepreneurship*: It is carried out when a problem is solved through innovative projects that use learning technologies and knowledge acquisition.

c) *Collaborative work:* It requires interaction between teachers in spaces that facilitate professional development. The first one enhances the analysis of teaching experiences and the sharing of possible solutions.

d) *Knowledge management and co-creation*: individual or collaborative process that involves the search for information, its understanding, and its creative and innovative use to address the problems of teaching practice.

e) *Metacognition*: It is about becoming aware of one's own knowledge by answering questions such as: what we know, to what extent, how, why and for what. All the above implies working on one's own learning in a strategic way (Cerezo et al., 2019).

In line with the afore mentioned characteristics, pedagogical and technical advice, understood from a socioformative approach, is defined as the process of reflective and collaborative accompaniment in which teachers analyze the problems of their practice, define their ethical life project, and undertake changes innovative in their work, according to the current context through the application of ICT (Tobón et al., 2015), and Technology for Learning and Knowledge. However, for the effective use of these technologies in the accompaniment process, it is necessary that teachers are updated in the use of these tools and that they also develop the pedagogical aspect so that through creativity they integrate both technological and pedagogical aspects. That is, to use the TRACK model, which integrates knowledge of curricular content and the science of teaching, so that through information and communication technologies they structure, facilitate, and generate motivation in the teaching and learning process of their students (Janssen et al., 2019). Therefore, the teacher training process should be developed with the Technological, Pedagogical and Content Knowledge Model TPACK, which contributes to the integration of the necessary academic content, the pedagogical knowledge that teachers must master to improve their teaching practice and the technological knowledge, i.e., the digital skills to strengthen the learning of their students, in the process of counseling or teacher training (Peña et al., 2017). Thus, the application of the TPACK Model in the process of technical pedagogical counseling to teachers contributes to their professionalization and to improve their teaching practice through the TRACK model, which in this SARS-Cov2 virus pandemic (COVID-19), they have had to implement a hybrid training process.

Tayag (2020) recognizes that a major challenge in this context is blended learning. Even when teachers have been trained in this subject, the mastery they present is superficial. Therefore, it is necessary for teachers to receive pedagogical advice to design teaching and learning processes relevant to the current needs and interests of students. According to Carpenter et al. (2021), teachers in this health emergency discovered that social networks are an easily accessible tool, so they turned them into a didactic resource to work on programmatic content, without forgetting that they are a current and versatile means of communication.

Thus, socio-formative pedagogical counseling through reflective processes with the application of technological and digital tools, contributes to the progressive construction of the teaching practice; by generating experience and new professional learning as the weaknesses in teaching performance that affect the development process of children and young people are revealed and evaluated (Ferrá, 2018). For such reflection to be more effective, it is necessary to practice it with the help of qualified personnel to guide it (Freire, 1997).

Hence the importance of technical pedagogical counseling with personnel prepared for it; nevertheless, teachers seek advice from their colleagues. They approach those who have characteristics similar to their own and, to a lesser extent, seek advice from those who are more expert. In this sense, the relationships that are established between teachers are considered important for improve their educational practice, as it is from these interactions that they build various professional learning processes, both curricular and pedagogical in content. (Berebitsky & Andrews-Larson, 2017).

The recognition that each school must assume the responsibility of continuous improvement, based on its own identity and cultural reality, opens the doors to the option of receiving help and that the counseling function makes more sense. Each teacher can generate the necessary answers to solve their educational problems, making use of their autonomy, which does not exclude, nor is it incompatible with external help processes (Estepa & Gallego-Domínguez, 2018).

It is necessary for the school to determine its educational reality from the teacher's perspective, i.e., characterize their needs and interests to create socio-formative pedagogical counseling relevant programs and favor the socioemotional aspect of teachers as individuals to avoid early burnout, reduce frustration and cynicism (Bressman & Winter, 2018).

Some of the benefits of socioformative pedagogical counseling are to promote the professionalization of teachers. According to Tejada-Fernández et al. (2017), this process is intertwined with everyday work experiences. In addition, it provides professional identity and brings together individuals who share similar teaching competencies and requirements for access, professional development, and assessments to form a community.

For Imbernón (2017), teacher professionalization needs to be rethought. Today's society is constantly mobilizing and changing. On the other hand, the health contingency posed by COVID19 has created unexpected scenarios for compulsory education. This opens new lines of work within continuous training processes, as well as in the personal development of teachers, school management and organizational models. In the first, collaborative work, solidarity, intelligent innovation, shared responsibility, and participation in the training processes of other teachers are strengthened.

Pedagogical intervention is defined as the influence of professionalization in teaching practice. It also encompasses the strategies applied by the teacher to promote student learning, which is why it is considered a dynamic and reflective activity (Zabalza, 2017). The elements that make up teaching practice are knowledge of the subject, teaching strategies, evaluation, teaching materials, classroom management and the use of ICT (Solbes, et al., 2018).

Given the nature of current challenges, it is necessary to rethink teaching practice. This implies continuous monitoring and advisory processes. In this sense, teacher accompaniment constitutes a continuous and planned process that allows gathering relevant information to improve classroom performance, in order to respond to the requirements of the digital era (Zeballos, 2020).

Several studies show the benefits of providing pedagogical technical counseling to teachers at different educational levels. In a study carried out in Peru with secondary level educational institutions with a full school day; it was observed that there is a high significant correlation between pedagogical accompaniment and the role of teachers as the preponderant factor of educational success (Yana & Adco, 2018).

An investigation carried out in Chile observed that counseling increased both the educational quality and the internal efficiency of the schools. However, to achieve this, considerable time was required to advise the teachers in the fulfillment of their objectives. Therefore, counseling is a gradual and systematic work that is adapted to the needs or circumstances of teachers. This process also requires the use of tools to detect and measure the needs of the teaching community with the intention of designing an improvement plan, as well as its evaluation instruments (Garay & Bórquez, 2015).

In their research carried out in Mexico, Ávila et al. (2016) found that teachers perceive counseling as a training activity in which problems are rethought when carrying out frequent collective work between them and a technical pedagogical advisor; likewise, it favors the transformation of teaching and didactic planning.

However, pedagogical technical counseling can show adverse results when individual and collective creativity as well as the professional development of teachers are not motivated; which is shown in the results of an investigation carried out in two educational centers in Santo Domingo (one public and one private) with the purpose of evaluating the pedagogical support strategy for the professional development of practicing teachers, through an approach qualitative in which group interviews were developed. Where the results showed that the value it has is not granted, the participation of all teachers in the organization of actions to promote professional development and thereby improve the learning of their students (Galán, 2017).

Ríos and Villalobos (2016) investigated the basic conditions of an efficient pedagogical technical advice, where it was demonstrated that sustained plans must be developed over time to avoid wasted efforts. While planning, it is important to devise strategies to resolve conflicts, encourage parental involvement, and set high expectations for student performance. The objectives of the plan will be achieved as long as teachers and principals participate collaboratively and systematically in various activities.

Rodríguez (2017) points out that the counseling process can be carried out in two dimensions: a motivational one, in which the teaching group is encouraged to carry out their practice in the best possible way and another, of a technical-instrumental nature, consisting of the assistance derived from counseling. However, since the workload assigned to these units is diverse in nature, their main task can be complicated.

The studies reviewed show the benefits of pedagogical technical counseling in the updating of teaching practice considering the conditions of teachers. This through sustained plans over time and through the implementation of various strategies for continuous improvement. However, they also show the weaknesses of technical counseling that must be overcome. Likewise, there are information gaps on how pedagogical counseling with a socio-formative approach benefits teaching practice and the professionalization of teachers. Therefore, it was considered necessary to conduct this research to analyze the characteristics of this type of counseling.

It is also evident in the current scenario of compulsory education due to COVID-19; to analyze the counseling models in accordance with what they raise (Murillo & Gallego-Domínguez, 2018) so that technical pedagogical counseling reinforces its credibility both in the centers and in the other areas of the educational system.

The research questions guiding this study are:

- Is there a significant relationship between socio-formative counseling, professionalization, and the betterment of teaching practice?
- What is the most suitable socio-formative pedagogical technical counseling model?
- What model of socio-formative pedagogical technical counseling favors professionalization the most?
- What model of socio-formative pedagogical technical counseling favors the improvement of teaching practice the most?

Methodology

It consists of a non-experimental cross-sectional study with a quantitative approach. The target population was approximately 850 people who work as technical pedagogical advisers at the preschool, elementary and middle school levels of the federal system and high school teachers from different subsystems in the state of Chihuahua. The initial probabilistic sample was of 267 teachers and the corrected sample of 203, which was determined with a confidence level of 95% that corresponds to a value of z = 1.96 and the significance level of 0.05. The final sample comprised 212 teachers.

The hypothesis of the research was the following: there is a significant relationship between socio-formative pedagogical counseling, professionalization, and improvement of teaching practice. Statistical analyses were applied for its verification, as shown in the analysis of the information of this study.

The research instrument was made up of 94 items organized in four dimensions: Pedagogical Technical Counseling with six items, Socio-formative Pedagogical Counseling with 30 Items, Teacher Professionalization with 25 items and Teaching Practice with 33 items; all the formers were answered with a centesimal scale, in which zero represents the total absence of the attribute and 100 the greatest presence of said attribute. The independent variables correspond to the Pedagogical Technical Counseling and Socio-formative Pedagogical Counseling; the dependent variables were Teacher Professionalization and Improvement of Teaching Practice.

The instrument was validated using three techniques: Expert judgment, which involved the participation of ten experts. The items were evaluated through univocity and relevance criteria according to the validation proposal of Carrera et al. (2011). The results of this validation indicated that 15 items should be removed, 30 should be modified, and 66 remain unchanged.

The second analysis of relevance by expert judges was carried out using the Content Validity Indicator (CVI) (Polit et al. 2007), for this analysis it was determined that values 2 and 3 of a scale of 4 values, They will be taken as an agreement between judges and expressed with the value "1"; On the other hand, the evaluations by the judges of 1 and 0 are considered to be in disagreement and are expressed with the value "0".

The following table presents the results by categories, in which a value is obtained in S-CVI / Ave that ranges between .90 to .93 and in the S-CVI / UA resulting values that range between .80 to .90 and According to Yusoff (2019), a minimum value of .78 with 10 experts is considered acceptable.

Table 1. Category Rated Indicator of Content Validity (CVI): Item rated 2 or 3 on
4-Point pertinent scale

Category	No Ítem	Average I-CVI/Ave	S-CVI/UA
I	7	0.91	0.9
II	30	0.9	0.8
III	26	0.93	0.81
IV	33	0.92	0.82

On the other hand, the internal consistency analysis of the instrument threw a Cronbach's Alpha of 0.994, a coefficient which demonstrated the instrument's high reliability and that its results could be generalized to the study population when applied to the sample (Oviedo & Campo, 2005).

By categories the value of Cronbach's alpha (Table 2) ranges from .736 to .987, only the first category does not reach the level of high reliability, however, it is considered acceptable.

Table 2. Cronbach´s Alpha for Sub-dimension

Category	n Var	n pob	ac
I. Pedagogical Technical Counseling	7	212	0.736
II. Socio-formative Pedagogical Counseling	30	212	0.987
III. Teacher Professionalization	26	212	0.978
IV. Teaching Practice	32	212	0.992
TOTAL	**95**	**212**	**0.994**

The final version of the instrument was made in Google Forms and sent electronically to the subjects of the sample. Response time was 15 minutes.

The information analysis was developed using descriptive and inferential statistics with a significance level of .01 - .05; as follows:

An exploratory analysis was carried out to assess whether variables' behavior was normal. A descriptive analysis of means (univariate) was performed to identify variables with a higher or lower value of $<X -1\sigma, X + 1\sigma>$. Variables that exceed the limits of normality were called upper or lower atypical. The former would correspond to the variables to which teachers and students assigned a lower and higher value respectively.

Significant relationships were established between the simple variables that make up the study's dimensions: pedagogical technical counseling, socio-formative pedagogical technical counseling, teacher professionalization and teaching practice with a significance level of .01.

Likewise, a multiple linear regression analysis was performed to define the best model of socio-formative pedagogical counseling, in which socio-formative pedagogical counseling was chosen as the dependent variable and the simple variables of professionalization and improvement of teaching practice as explanatory variables; for which it was important to check in the correlation analysis that there was no multicollinearity between the variables; that is, that there was no positive relationship greater than .70.

Statistical analyzes were performed using Statistical Package for the Social Sciences (SPSS v.25) and Statistica 64 v.10.

Results

Of the 212 people included in the sample, 62 are ATPs, 12 heads of teaching, 13 supervisors, 38 directors, 14 deputy directors, 61 teachers, 1 academic liaison, 1 administrative, 1 coordinator, 2 teachers in charge of direction, 2 subject experts, and 4 ATP with the role of subject leader. 150 were women and 62 were men.

The descriptive analysis showed that the most important aspect for respondents is teacher professionalization (97.7 ± 8.63), technical pedagogical counseling at school (95.51 ± 13.59) and technical pedagogical counseling's contribution to teacher professionalization (93.04 ± 15.64). They believed in the importance of accomplishing the former from the socio-formative approach. The characteristics of socio-formation that participants highlighted the most in terms of their impact on professionalization included: the elaboration of an ethical life project, the encouragement of problem solving for teacher's educational tasks, carrying out collaborative work, opening spaces for metacognition aimed at teaching practice and entrepreneurship to face obstacles or come up with projects (92.78 ± 14.3).

However, participants considered that they received counseling to a lesser extent (55.23 ± 2.60) and that the time provided by authorities to partake in pedagogical technical counseling was insufficient (67.78 ± 2.33).

Results reveal that it is important for teachers to have pedagogical technical counseling developed from a socio-formative approach, given that said approach motivates problem solving and facing obstacles in their practice in a collaborative way, while keeping entrepreneurship and constant reflection in mind.

The correlational analysis showed that pedagogical technical counseling and teacher professionalization are significantly related ($p < .001$). In the latter, it especially refers to the continuous updating of teaching skills ($r = 0.502$).

Similarly, technical pedagogical counseling is notably linked to teaching practice, mainly in the exploration of students' prior knowledge ($r = 0.514$) as well as by encouraging learners to solve problems in their context, that is, real problems ($r = 0.501$).

Three counseling models derived from linear regression analysis:

1. The socio-formative pedagogical counseling model: with $R = 0.739$, $R2 = 0.546$, adjusted $R2$ of 0 .531 with a standard error of estimation of 9.88. This model considers technical counseling and collegiate planning at school as important factors, and views counseling as a systematic, continuous, open, and flexible process. Likewise, it uses deliberation and decision-making with the intention of improving student learning, promoting entrepreneurship, and strengthening the

operation and organization of schools. In this case, the model predicted that socio-formative pedagogical technical counseling stands out with a 53%.

2. The model of teacher professionalization: with R = 0.534, R2 = 0.286, Adjusted R2 of 0.272 and standard error of estimation of 7.36. This model takes the importance of technical counseling into account and favors socio-formative pedagogical technical counseling, which encourages teachers to have an ethical life project, promotes problem solving, collaborative work, metacognition, and entrepreneurship. Likewise, it carries out a diagnosis of teaching work, and supports teaching groups in the practice of internal evaluation in a permanent and formative manner. All the above contribute to the improvement of students' learning and, in the case of this study, the model favors teacher professionalization by 27%.

3. The teaching practice improvement model: with R = 0.851, R^2 0.723, adjusted R^2 = 0.710 and a standard error of estimation of 10.58. In this model, socio-formative pedagogical technical counseling encourages teachers to have an ethical life project, encourages problem solving in their educational practice, collaborative work, metacognition and entrepreneurship. It also supports educational quality, facilitates agreements between the adviser and the advisees, fosters problem solving within teaching practice in the teachers' workplace; when all the factors above are considered, the model predicted that teaching practice improved by 71%.

Discussion

This study highlights the contribution of counseling to the improvement of teaching practice when it is carried out from socioformation. However, the participants stated that the time dedicated and authorized for counseling is insufficient. This is similar to other research that indicates that the effectiveness of counseling is the result of dedicating enough time to work on the internal efficiency of schools (Garay & Bórquez, 2015).

Likewise, a significant relationship was observed between socio-formative pedagogical counseling and the continuous updating of teaching skills, exploring the students' prior knowledge, and guiding them in solving problems in the context. Which agrees with the study carried out in Peru where it was observed that there is a significant high correlation between pedagogical accompaniment and the role of teachers as the preponderant factor of educational success (Yana & Adco, 2018). This leads to an appreciation of the importance of the socio-formative approach during the counseling process. Tobón et al. (2018) mention that socioformation promotes training by competencies, so that people act appropriately in various contexts. It promotes the development of an ethical life project so that they are motivated to build their own, in addition to promoting the development of complex thinking and innovation in teaching practice through reflection processes in a collaborative environment that uses Technologies for Learning and Knowledge.

Thus, the application of the TPACK Model in the process of pedagogical technical advice to teachers contributes to their professionalization and to improve their teaching practice through the TRACK model, which in this SARS-Cov2 virus pandemic (COVID-19), they have had to implement a hybrid training process. According to Carpenter et al. (2021) the scope of socio-formative counseling is evident when it comes to contributing to teaching practice. This is achieved through metacognitive processes in which complex thinking favors the approach to problems from a transdisciplinary perspective. In these processes, intervention and pedagogical training are reconnected with the human conditions and needs of students and teachers in an uncertain context. The current pandemic, for example, forced educators to implement various technological and virtual tools to continue training students. Therefore, the application of socio-formative pedagogical counseling can favor the innovative solution of the intrinsic challenges of teaching practice. Which can be provided virtually, as did some educational institutions, which used ICT for a comprehensive approach to the virtual pedagogical accompaniment process, recognizing the needs that may arise in teachers, regarding the available technological resources (Voras, 2021). This through the application of the Technological, Pedagogical and Content Knowledge Model TPACK, which contributes to the integration of the necessary academic content, pedagogical knowledge that teachers must master to improve their teaching practice and technological knowledge, i.e., digital skills to strengthen the learning of their students, in the process of counseling or teacher training (Peña et al., 2017).

Other of the most relevant characteristics of socio-formative pedagogical counseling, pointed out by teachers, are the realization of collegial planning and favoring advice as a systematic, continuous, open, and flexible process on which decision-making is based in improving student learning, promoting entrepreneurship, and strengthening the functioning and organization of schools. For Ríos and Villalobos (2016), the objectives of collegiate planning are achieved to the extent that teachers and managers commit and participate. Likewise, planning seeks to optimize efforts in a set of activities derived from consulting. Hence the importance of technical pedagogical a counseling with prepared staff to be carried out in a sense of horizontality, where collaborative work and peer learning is privileged, since as mentioned by Berebitsky and Andrews-Larson (2017), Teachers seek advice among their colleagues to improve their educational practice and, to a lesser extent from those who are more expert, of course when it is done from a traditional approach.

In contrast the socioformative counseling goes beyond being an instrumental technique, as mentioned by Rodríguez-Molina (2017), it is an counseling process that benefits teacher professionalization, by accompanying teachers in the construction of an ethical life project; generate a reflective practice through metacognitive and collaborative processes

that support problem solving; entrepreneurship; and the innovation of teaching strategies so that a different pedagogical intervention is carried out according to the current socio-educational context.

Professionalization contributes to teacher development when it favors the construction of an ethical life project that drives people to achieve self-realization both in their personal sphere and in more general aspects of human development. It also motivates personal growth when there is the accompaniment of the advisor and teachers work on personal aspects of their choice (Imbernón, 2017).

Therefore, it is necessary for the school to determine its educational reality from the teacher's perspective, that is, to characterize their needs and interests to create relevant socio-formative pedagogical counseling programs and to favor the socioemotional aspect of teachers as individuals to avoid early burnout, reduce frustration and cynicism (Bressman & Winter, 2018) that could be being generated in this pandemic.

Another aspect to highlight in this research is that teachers consider that socio-formative pedagogical counseling increases educational quality, which coincides with research conducted in Mexico, where teachers consider counseling as a formative activity that favors the transformation of education teaching (Ávila et al., 2016) and their continuous professional development.

This study also defined a model of socio-formative pedagogical counseling that benefits teaching practice. Mainly, by supporting the advice in the collaborative planning. This facilitates agreements between the advisor and the advisors and promotes the solution of problems on the campus. Additionally, pedagogical advisors can observe teacher intervention through Zoom, Google Meets and provide feedback to identify areas of opportunity.

Finally, it can be affirmed that the socio-formative pedagogical counseling is carried out from a motivational dimension that encourages teachers to innovate their teaching practice (Rodríguez-Molina, 2017) to make continuous improvements according to the learning needs of their students and the challenges of the current context of education.

Conclusions

Results show that pedagogical counseling with a socio-formative approach is a valuable element in Mexico's educational system because it influences in the professionalization and specifically the improvement of educational practice the most. Teachers also consider socio-formative pedagogical counseling as a relevant factor for the continuous updating of their skills.

This research defined the characteristics of socioformative pedagogical counseling: being systematic, continuous, open, and flexible; requiring collegial planning between teachers and advisors; involving deliberation and decision-making aimed at enhancing learning; strengthening the functioning and organization of educational institutions by nudging school improvement; having teachers undertake projects to address issues within their practice in a collaborative way by applying metacognition, and developing ethical life projects.

Secondly, it demonstrated that the socio-formative pedagogical counseling model predicts the improvement of teaching practice (71%) with a higher degree of specificity than teacher professionalization (21%).

Thirdly, the hypothesis was verified by a cross-sectional study with a quantitative approach, in which statistical analyzes were carried out as follows: descriptive, correlational, and linear regression, with a significance level of <.01-. 05; therefore, pedagogical counseling benefits professionalization and betters teaching practice.

Lastly, these results could lead to the elaboration of alternative research, this time from the teachers' perspective, to analyze the extent to which socio-formative pedagogical counseling contributes to the development of complex thinking. The outcome of the said investigation would ultimately pave the way to generate proposals to address teaching practice from a transdisciplinary approach.

Recommendations

Future research on socio-formative pedagogical counseling should be conducted to evaluate the virtual counseling model that was provided to teachers during the COVID-19 health contingency, with a mixed-method approach, to recover the teachers' perception of the innovations they had to undertake when they had to move from face-to-face classes to online classes and how contributed the pedagogical accompaniment to this and to their professional development.

Limitations

Finding pedagogical technical advisers proved challenging given the working conditions and political context happening at the time. Some of them were on strike and others had resigned because their position as advisors had not been recognized, as a result of a promotion contest derived from the General Law of Professional Teaching Service.

Author Contribution Statement

Cordero: contributed to concept and design, data analysis, interpretation, drafting manuscript. Parra: contributed to concept and design, data analysis, interpretation, drafting manuscript, critical revision of the manuscript, statistical

analysis, technical or material support, supervision, and final approval. López: contributed to concept and design, data analysis, interpretation, drafting manuscript.

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