TEACHER TRAINING AND PRACTICES: SCENARIO TO PROMOTE EDUCATIONAL RESEARCH IN HIGHER EDUCATION

FORMAÇÃO E PRÁTICA DOCENTE: CENÁRIO PARA PROMOVER A PESQUISA EDUCACIONAL NO ENSINO SUPERIOR

FORMACIÓN Y PRÁCTICA DOCENTE: UN ESCENARIO PARA PROMOVER LA INVESTIGACIÓN EDUCATIVA EN LA EDUCACIÓN SUPERIOR

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ABSTRACT: This study referred to practice and teacher training as a scenario to promote educational research in higher education. A descriptive-correlational and transectional study was used. The sample included one hundred and seventy-five (175) academics at the University Education level, with a non-probabilistic procedure. Two validated questionnaires were applied, the teacher training one made up of (25) items divided into three dimensions: pedagogical training, disciplinary training, and teaching role. The pedagogical practices questionnaire included (28) items distributed in dimensions: planning, methodologies, evaluation, communicational aspects, learning environment, use of technological resources, and pedagogical reflection. Both Likert-type questionnaires obtained a high reliability of 0.955 and 0.866, respectively. The results showed a positive and moderate correlation (r=0.567) between teacher training and pedagogical practices. It was verified that there is no statistically significant correlation between disciplinary and pedagogical training with pedagogical practices, however, the teaching role showed a moderate to considerable positive correlation (r=0.738) promoting educational research. It was concluded that teacher training positively affects pedagogical practice; the teacher role dimension determines pedagogical practices. Strengthening teacher training plans related to educational research work is recommended.


RESUMO: Este estudo referiu-se à prática e à formação docente como cenário para fomentar a pesquisa educacional no ensino superior. Foi utilizado um estudo descritivo-correlacional e transeccional. A amostra incluiu cento e setenta e cinco (175) acadêmicos do Ensino Superior; com procedimento não probabilístico. Foram aplicados dois questionários validados, sendo o de formação de professores composto por (25) itens divididos em três dimensões: formação pedagógica, formação disciplinar e função docente. O questionário de práticas pedagógicas incluiu (28) itens distribuídos nas dimensões: planejamento, metodologias, avaliação, aspectos comunicacionais, ambiente de aprendizagem, uso de recursos tecnológicos e reflexão pedagógica. Ambos os questionários do tipo Likert obtiveram alta confiabilidade de 0,955 e 0,866, respectivamente. Os resultados mostraram uma correlação positiva e moderada (r=0,567) entre a formação de professores e as práticas pedagógicas. Verificou-se que não existe correlação estatisticamente significativa entre a formação disciplinar e pedagógica com as práticas pedagógicas, no entanto, o papel docente apresentou correlação positiva moderada a considerável (r=0,738) fomentando a pesquisa educacional. Concluiu-se que a formação de professores tem um efeito positivo na prática pedagógica, a dimensão do papel do professor determina as práticas pedagógicas. Recomenda-se fortalecer os planos de formação de professores relacionados ao trabalho de pesquisa educacional.

RESUMEN: Este estudio se refirió a la práctica y formación docente como escenario para promover la investigación educativa en la educación superior. Se utilizó un estudio de tipo descriptivo-correlacional y transeccional. La muestra incluyó a ciento setenta y cinco (175) académicos a nivel de la Educación universitaria, con procedimiento no probabilístico. Se aplicaron dos cuestionarios, validados, el de formación docente conformado por (25) ítems divididos en tres dimensiones: capacitación pedagógica, disciplinar y rol docente. El cuestionario prácticas pedagógicas comprendió (28) ítems distribuidos en dimensiones: planificación, metodologías, evaluación, aspectos comunicacionales, ambiente de aprendizaje, uso de la recursos tecnológicos y reflexión pedagógica. Ambos cuestionarios tipo Likert obtuvieron una alta confiabilidad 0,955 y 0,866 respectivamente. Los resultados mostraron correlación positiva y moderada (r=0,567) entre la formación docente y las prácticas pedagógicas. Se comprobó no existe correlación estadísticamente significativa entre la capacitación disciplinar y pedagógica con las prácticas pedagógicas, sin embargo, el rol docente mostró una correlación positiva moderada a considerable (r=0,738) promoviendo la investigación educativa. Se concluyó, que, la formación docente tiene un efecto positivo sobre la práctica pedagógica, la dimensión rol docente determina las prácticas pedagógicas. Se recomienda, fortalecer los planes formación docente referido al quehacer investigativo educativo.


Introduction

Worldwide, the university sector has undergone multiple changes related to the increase in enrollment and the democratization of education. This has required, in recent decades, a shift from a traditional teaching model, where the teacher is the source of information and knowledge, and the student is a mere recipient (BIGGS, 1999; PADILLA; GIL, 2008), towards a more active student model that uses various methods of active participatory teaching, ensuring the quality of education and preparing future professionals to face the challenges of the globalized world (TRONCOSO-PANTOJA et al., 2019; CASTILLO-MONTES; RAMÍREZ-SANTANA, 2020; CEBALLOS-LÓPEZ; SAIZ-LINARES, 2021; ENRÍQUEZ-CHASIN, 2021). In this context, educational methods are developed with a dual purpose: to produce discernment and improve teaching practice.

Consequently, as a forming and developing agent tasked with preparing individuals for specific roles, Chilean higher education is subject to inherent changes in the educational research process. In this context, professionals are expected to engage students in various areas to address the problems that permeate the educational scenario. This approach constantly raises questions about a variety of relevant topics (CASTELLANO et al., 2018).
Indeed, the interconnection between acquired knowledge and its application directs the student toward meaningful operational learning, enabling them to address challenges inherent to the educational context. The facilitator, in turn, takes on the responsibility of making relevant decisions, thereby contributing to the quality of the educational process.

Similarly, various instances in Chile have established criteria to guide teaching in the university setting. One such criterion is the emphasis on pedagogical competencies, which encompass discipline management and mastery, including "appropriate pedagogical knowledge and skills, including communicating objectives, selecting effective instructional methods, providing internship opportunities and feedback, and adapting to student diversity" (MURRAY et al., 2014, p. 12, our translation).

The formative model adopted by university education in Chile and globally is student-centered. Therefore, it is crucial for facilitators to have clarity on the strategies to be employed during educational practice and to commit to their ongoing preparation and training. In this academic context, the facilitator must cultivate their competencies and skills through engagement in research, applying this knowledge in educational practice, and using the necessary tools for the proper performance of their teaching activities and to promote research in the field (JIMÉNEZ-HERNÁNDEZ; GONZÁLEZ-ORTIZ; TORNEL-ABELLÁN, 2018).

Additionally, the lack of training and development for university professors is highlighted, resulting in a non-proactive teaching praxis less inclined towards research mastery. A professor trained over a decade ago, without pedagogical and research updates, tends to replicate the teaching model they received. In the 21st century, this gap in training and updating hinders the preparation of professionals capable of operating in a dynamic society characterized by uncertainty (FLORES-ZAPATA; ABALLE-PÉREZ, 2018). The lack of pedagogical training and research updates not only impedes the development of deep learning in students but also perpetuates the role of the teacher as a mere transmitter of knowledge, hindering student evolution and inhibiting the promotion of an investigative approach to teaching.

Indeed, the pedagogical task, according to Ripoll (2021), "constitutes an integral component that notably impacts the initial training of all teachers, as exposed and in order to assess the current situation of such an important element" (p. 1, our translation). The assessment of the current situation of this crucial element shows that continuous pedagogical practice allows for constant improvement of knowledge and pedagogical methods applied in educational encounters. This occurs in harmony with the needs and interests in the academic and research
field, as teachers engage in continuous processes of educational research, deepening teaching methods.

The pedagogical practice involves actions carried out by the teacher based on the application of theories, principles, and methods of pedagogy or andragogy in the teaching and learning process (LOAIZA; RODRÍGUEZ-RENGIFO; VARGAS-LÓPEZ, 2012). This practice is fundamental for the success of the educational process, as it allows educators to adapt and personalize teaching according to students' needs, interests, and individual characteristics. This results in the promotion of meaningful and lasting learning, stimulating the motivation and interest of students in absorbing knowledge and reflecting positively on academic performance and the holistic development of students.

Given the roles and pedagogical and research competencies inherent to a university-level professor, it is imperative to promote planned improvements in pedagogical training. This approach should be based on the specific profile of the teacher being trained, using experience and dialogue as guidance to introduce more effective teaching practices, especially in the context of online education. The discussion about teacher training in Chile emphasizes the close relationship between pedagogical and disciplinary training associated with appropriate teaching and research practices. It is observed that those with training in methodological and evaluative aspects tend to adopt more student-centered practices (TRONCOSO, et al., 2017).

In the Chilean context, university education stands out for its highly academic and research-oriented nature, focusing on providing quality education and developing students' critical, analytical, and creative skills. Teachers at this level are mostly experts in their respective fields of study, possessing extensive competence in teaching techniques and pedagogical methodologies. There is a notable shift in the educational approach, evolving from a teacher-centered model to a more student-centered one, promoting students' active involvement in their learning process.

This transition has led to the adoption of new teaching methodologies, such as collaborative learning, project-based learning, and integrating educational technology (ORTEGA; NOCETTI; ORTIZ, 2015). However, it is noted that this change in pedagogical practices often occurs without the proper self-reflection and self-assessment by teachers regarding their university praxis. Educators may implement new pedagogical approaches without a critical analysis based on what they have learned in their training or any potential opportunities for improvement.
Currently, various studies explore the relationship between pedagogical and disciplinary training and the adoption of appropriate teaching practices. It is observed that professionals with training in methodological and evaluative aspects tend to adopt more student-centered practices (TRONCOSO et al. 2017).

However, it is important to emphasize that the shift in student-centered teaching practices is not always linked to institutional training initiatives or research conducted. Evidence suggests that university professors’ practices are more associated with their learning strategies than the specific type of training received (CARRASCO et al. 2016).

Higher education institutions in Chile have teachers entrusted with the educational process. However, some face challenges in employing effective pedagogical methods, resulting in demotivation when student outcomes do not meet expectations. This scenario perpetuates a cycle detrimental to student learning. Additionally, there is a lack of appropriate research skills among these professionals (FONDÓN; MADERO; SARMIENTO, 2010).

From a methodological perspective, the research adopted a descriptive, correlational, and cross-sectional approach. The sample included one hundred and seventy-five (175) academics from higher education institutions selected through a non-probabilistic procedure. Data collection was carried out through two validated questionnaires. The first, on teacher training, consisted of (25) items divided into three dimensions: pedagogical training, disciplinary training, and teaching role. The second questionnaire, focused on pedagogical practices, comprised 28 (twenty-eight) items distributed across dimensions: planning, methodologies, evaluation, communicative aspects, learning environment, use of technological resources, and pedagogical reflection. Both Likert-type questionnaires showed high reliability, reaching values of 0.955 and 0.866, respectively.

The lack of pedagogical and research training among teachers is directly related to classroom planning and time management, resulting in challenges in the development of the educational task and teacher-student interaction. This, in turn, reduces the effectiveness of academic guidance and the research process in the educational context (FONDÓN; MADERO; SARMIENTO, 2010). Teachers properly trained in these areas, as evidenced, can positively influence the student's learning process, contributing to mutual trust between the teacher and the student, as well as providing more consistent feedback in tutorial or support processes for students. This, in turn, will contribute to the development of stronger competencies in the field of educational research.
The research results revealed a positive and moderate correlation ($r=0.567$) between teacher training and pedagogical practices. However, no statistically significant correlation was identified between disciplinary and pedagogical training and pedagogical practices. However, the teacher's role showed a moderate to considerable positive correlation ($r=0.738$) in promoting educational research. The conclusion is that teacher training has a positive effect on pedagogical practices, with the dimension of the teacher's role-playing a crucial role in this process. The importance of strengthening teacher training plans related to educational research is highlighted as a recommendation.

Teacher Training

The training of university professors comprises both disciplinary and pedagogical training. Teaching practice is intrinsically linked to teacher training, ranging from the selection of methodologies for a class to disciplinary mastery, high-level pedagogical interventions, and the ability to establish emotional bonds with students (YÁÑEZ; SORIA, 2017). While disciplinary training refers to a solid academic foundation in the teacher's area of specialization, where they delve into theories, concepts, and practices relevant to the discipline, it is equally crucial to be constantly updated in the face of new research and technologies applied to the field.

This includes the ability to explain complex concepts concisely, engage in research and project development, understand effective pedagogical methods in the context of university teaching, stimulate collaboration with other teachers and collaborators, as well as maintain an effective relationship with students (MONTES; SUAREZ, 2016; CUADRA-MARTÍNEZ et al. 2021).

Regarding the legal aspect, Law No. 18,834, which promulgates the Administrative Statute, defines training in Article 21, paragraph 3, as "the set of permanent, organized, and systematic activities intended to enable employees to develop, complement, improve, or update the knowledge and skills necessary for the efficient performance of their positions or official duties" (CHILE, 1989, our translation). This implies that training and its role in the development of teacher training represent an ongoing process aimed at enhancing teachers' attitudes, knowledge, and conduct. This improvement is achieved through pedagogical instruments, seeking to enhance deficient or outdated aspects of pedagogical and disciplinary practice in
general. In other words, planned training strategies are proposed based on identifying specific problems in each context.

**Pedagogical Practices and Educational Research**

Pedagogical practices and educational research are intrinsically related in the field of education. Educational research aims to improve the quality of teaching, and pedagogical practices are the means to implement the results and recommendations obtained through this research.

Consequently, pedagogical practices should be based on educational research, requiring higher education teachers to be up-to-date and well-informed about educational research in their areas of specialization. Such engagement will enable them to enhance their pedagogical practices and assist students in achieving effective learning.

Additionally, university professors must pay attention to three essential aspects: educational practice, research, and extension (Brito-Lara; López-Loya; Parra-Acosta, 2019). Through educational research, they can improve and inform their pedagogical practices, becoming examples for their students and contributing to the advancement of knowledge in their respective areas. It is emphasized that in educational praxis, professors should not only focus on the transmission of knowledge but also commit to research and continuous improvement of their pedagogical practices. By engaging in educational research, university professors can play a significant role in improving education overall, promoting the formation of critical and reflective students.

Similarly, the importance of institutional and pedagogical factors under the direct control of the educational institution is highlighted. In the pedagogical realm, teaching methodologies and assessment methods are identified as crucial (Matiенко, 2020).

Finally, pedagogical practice is characterized as a dynamic and reflective process that encompasses situations or events involving both the teacher and the student in pedagogical processes before, during, and after classroom action. In other words, pedagogical practice involves decision-making to select educational actions suitable for the context and temporality, and it should be integrated into a reflective and critical institutional project, adjusted to social reality (García-Reina, 2021).

This pedagogical practice stands out for articulating theory with practice, creating essential reflective spaces for teaching work, and allowing the implementation of educational
improvements. An effective pedagogical practice should be motivating, transformative, creative, dynamic, and, above all, based on the sharing of knowledge and attitudes for the comprehensive development of the student (LOAIZA-ZULUAGA; RODRÍGUEZ-RENGIFO; VARGAS-LÓPEZ, 2012).

Methodology

Methodologically, this basic research study continuously seeks knowledge related to teacher training and pedagogical practices of higher education academics. It is classified as cross-sectional descriptive, as defined by Hernández-Sampieri and Mendoza (2018), since its goal is to "investigate the level or state of one or more variables in a population; in this case, at a single time" (p. 171, our translation). It is also correlational, as it aims to measure whether the variables are related or not.

Regarding the population, this study covered higher education teachers in Chile (N = 175 teachers), using a non-probabilistic sample. Two questionnaires were used as instruments to measure the variables: teacher training and pedagogical practice. The first questionnaire addressed teacher training, providing information on the dimensions of disciplinary training, pedagogical training, and the teacher's role.

For data collection related to the pedagogical practice variable, covering the six dimensions identified for this study (teaching planning, teaching methodologies, learning assessment, communicative aspects, and learning environment, use of technological resources, and pedagogical reflection), a structured questionnaire with a Likert scale frequency format, containing five options, was used.

Finally, a positive and moderate correlation was observed between teacher training and the pedagogical practices of higher education teachers. When testing the hypothesis between the variables of teacher training and pedagogical practices, Imberón (2011) argues that teacher training favors the advancement of teachers in their professional role as educators, positively impacting pedagogical practices.
Results and Discussion

The variable teacher training comprised two dimensions: pedagogical training and teaching role. The pedagogical training dimension included the following indicators: a) Teaching methods, b) Assessment methods, c) Information and Communication Technologies (ICTs), and d) Pedagogical or educational planning. On the other hand, the teaching role dimension was constituted by the following indicators: a) Learning facilitator, b) Promoter of learning environments, and c) Learning assessor.

The instrument used to measure teacher training in the pedagogical training dimension in the research demonstrated very good internal reliability, with a Cronbach's alpha of 0.850. The total sample included 67 trainings in all measured indicators conducted by both the university and other entities. The results revealed a higher percentage of teachers trained in the topics of teaching methods and ICT, with 95% and 92.9%, respectively. The lowest percentage of trained teachers was found in pedagogical or educational planning (82.3%). The highest number of trainings received by teachers regarding teaching methods was observed in problem-based learning methodology (22.5%), followed by master classes with 30 trainings (15.2%).

In the assessment methods indicator, the highest number of training was based on the construction and use of observational assessment tools, such as rubrics (22.8%), followed by written exams (21.9%). Regarding training related to Information and Communication Technologies (ICT), teachers showed a higher number of training in the use of Moodle (institutional teaching platform, 62.1%), while in the use of social media in teaching, this number was 15.8%.

The internal reliability coefficient was very good in the teaching role dimension, with a Cronbach's alpha of 0.942. Analyzing each indicator, it was observed that the response mean was often (score 4.00), indicating that all requested actions are frequently performed by at least one participant in the study. However, in the indicators of learning facilitators and promoters of learning environments, some teachers do not take action to optimize their teaching role in research work. Regarding the learning facilitator indicator, actions such as "activities in real research contexts," stimulating curiosity and creativity, and challenging the student to learn are less utilized, with an average of 3.65.
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