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Research Competences Focused on Trainee Teachers in Early Childhood Education

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Abstract

This study deals with the research skills of trainee teachers at the early education level at the National University of Education and their valuable contribution to the teaching- learning process of educational research oriented towards the development of their curricular integration work (ICT). The objective is to diagnose the research skills of students in the fifth and seventh cycles of the Early Education course, with the aim of aligning what is learnt in the classroom in the subject of research with the implementation of the end-of-cycle research work known as the Project for the Integration of Knowledge (PIENSA). The methodology applied is framed in a qualitative study, of an interpretative nature, with the use of an interview with the students under study. The results obtained are analysed by means of a first level codification based on the categories of knowledge, skills, abilities, attitudes and effective performance in the research process. The results show that research competences should be strengthened in a logical sequence in educational research that promotes continuous improvement and is adapted to the projects that are developed permanently in each cycle.Furthermore, the fact that there is a convergence of different criteria on the research competences developed prioritises the search for quality in research and the use of methods that contribute effectively to the fulfilment of the objectives set.

Keywords: *Research Skills, Curriculum Integration Work, Trainee Teachers.*

Introduction

At the National University of Education (UNAE), the research processes in each study cycle are aligned with the problem cores and the integrating axes. On the one hand, the problematic cores are research questions that provide a framework for addressing essential and complex issues, and on the other hand, the integrating axes organise cross-cutting thematic units that allow for cohesion with practice. Together, they aim to form reflective and critical citizens, capable of applying theoretical concepts to solve problems and contribute in a meaningful way to educational and social conflicts. For UNAE, the subject of Research is essential, as students are trained as teachers and researchers (UNAE Educational Pedagogical Model, 2024).

However, it is noted that the lack of a sequential and cumulative guide to organise the information obtained in each cycle of the research subject poses a significant limitation. This shortcoming becomes evident when students reach the ninth cycle, at which point they must develop their ICT or project based on pre-professional practice. In these cases, it is perceived that the information previously studied has not been adequately consolidated. As a result, students show limitations in dealing with previously reviewed content, which causes delays in the development of their project and an increase in time and effort to remember and apply concepts related to research and academic writing.

In order to theorise this problem, it is necessary to address two concepts: competences and research competences. First, the term competence has undergone a remarkable evolution over time. According to Pidello and Pozzo (2015), it initially emerged in modernity, where hierarchies of values were redefined and processes of desocialisation and deinstitutionalisation were addressed, leading to the need to develop socio-cognitive-affective competences in order to integrate into changing contexts. Subsequently, the concept was oriented towards efficiency in work performance, with a behaviourist approach. In the 1990s, education adopted a constructivist approach, redefining competences as the ability to use knowledge, skills and

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attitudes to solve problems in various contexts. Today, this approach has been consolidated, incorporating cognitive and behavioural perspectives, and valuing how students apply their knowledge in real situations.

Today, competences encompass the knowledge, skills and attitudes needed to perform effectively in a variety of situations and are essential for individuals to function well in different contexts. They can be acquired and developed throughout life, which highlights the importance of continuing education and lifelong learning.

The second concept to be theorised are research competences, which consist of a set of skills, knowledge and attitudes that enable individuals to carry out research processes effectively and rigorously in the field of education, considering the characteristics and critical context of university practice. These competences enable problems to be identified, information to be selected and systematised, and analysed using research methods. In this way, cognitive capacities are developed to master the theoretical and epistemological foundations of research processes, applying them effectively in educational situations. They also involve the development of a critical and reflective attitude, as well as research ethics, ensuring that the processes and results are valid and reliable. These skills are not only essential for the production of new knowledge, but also for the application of existing knowledge in solving concrete problems (Pérez, 2012).

In this respect, the Educational Pedagogical Model of the UNAE (2024) states that in the curricular approach by competences:

> The articulation of the substantive functions is fundamental by virtue of comprehensive education, based on the construction of a complex, multi-, inter-, trans-, trans-disciplinary, critical and ecosystemic vision of the curriculum development process. The latter implies a university that transcends the classroom to transform itself by learning from the educational contexts and territories through its integration with the environment, responding to social requirements (p.30).

Therefore, the identification and assessment of competences are fundamental to preparing students to cope and thrive in changing environments. This multidimensional approach fosters the development of key skills such as critical thinking, problem solving and effective collaboration for the consolidation of competences. For, according to Poulain et al. (2007), research competences enable students to adapt to the demands of a constantly changing world, thus contributing to their holistic education. This prepares them to actively participate in solving challenges and creating a positive impact on society.

Several researchers have previously explored this issue. For example, researchers (Arzuaga et al., 2023) conducted a study to analyse the scientific production on research competence in higher education in Latin America between 2008 and 2019. They used data from various academic databases (Dialnet, Scielo, Scopus, WOS, Redalyc, Latindex and DOAJ) with the support of the PoP7 application, following a 13-cycle iterative protocol. Scientific articles in indexed journals addressing research competence in Latin American countries were included. The analysis was divided into a bibliometric metadata study and a content analysis in three stages: familiarisation, coding and report preparation. Reliability was ensured through methodological rigour and triangulation of results, providing a detailed assessment of scientific production in this field. As a result, Cuba leads in research competence publications in Latin America, followed by Colombia and Ecuador. The areas of Health and Education are the most researched. Qualitative studies predominate (77%), focusing on the development of research skills and competences. There is diversity in methodological approaches, such as disciplinary, formative and cross-disciplinary, suggesting the need for greater consensus. Publications have increased especially in recent years, with Cuban journals being the main sources.

At the Professional School of Education of the National University Santiago Antúnez de Mayolo, Peru, researcher Ayala (2020) analysed technological and research skills. The study used a quantitative descriptive-correlational approach with a census sample of 88 male and female students. Two instruments were applied: Rubio's (2015) Questionnaire on investigative competences and Cabrejos and Montenegro's (2017) Questionnaire on informational competences. A significant correlation (Spearman's Rho = 0.304, p = 0.004) was found between information competences and research competences. The majority of students

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showed a fair command in both information competences (67.05%) and research competences (77.3%), with a small group showing a poor command in these areas (11.4% in both).

At the University of Guayaquil, Ecuador, researchers (Esteves-Fajardo et al., 2021) examined research competencies in university students through a quantitative descriptive- correlational approach, using a documentary design that included the collection and critical analysis of information from various sources. They focused on developing and evaluating organisational, communicational and collaborative competences to strengthen the academic and ethical training of the student researcher, promoting the effective use of technological resources. As a result, the research strengthened organisational, communicational and collaborative competences in university students, promoting research ethics and effective use of technological resources.

This background provides a detailed overview of how research competences have been developed and assessed in different contexts. The analysis of scientific production in Latin America reveals that in Ecuador students do research and publish, but as is evident in the other studies, research competences need to be mediated and enhanced.

Therefore, from a pedagogical perspective, this research facilitates the identification of the critical, analytical and methodological skills that students possess and that are key to consolidating their research competences. An in-depth knowledge of these competences will enable teachers to adapt, improve and guide research processes throughout the different educational cycles, with the aim of increasing the effectiveness of PIENSA and Curricular Integration Projects.

From a social perspective, this research is relevant because it provides insight into the reality of students' research competences and contributes to their improvement. Developing them will facilitate the acquisition and effective application of knowledge, which enables students to actively participate in the scientific field. In this way, by addressing social, educational and community problems with analytical and improvement approaches, students will be prepared to contribute to social development.

Materials and Methods

The present study is framed within an interpretative paradigm, as it aims to understand human behaviour in the face of meanings known to the interviewee with the intention of converging on essential aspects of the research competences derived towards the diagnosis of an educational scenario. The idea is to collate criteria, reasoning, referring to the subject with the purpose of sketching in a dynamic way in order to obtain results that allow an analysis to be carried out and to expose them based on the nature of reality (González Monteagudo, 2001).

A qualitative approach was adopted, which is characterised by its ability to provide a deep and detailed understanding of social, human and educational phenomena. According to Hernández, et al. (2018), the qualitative approach is based on observation and interpretation of non-numerical data, allowing meanings, experiences and contexts to be explored from a holistic perspective. This approach is particularly suitable for the analysis of complex and multifaceted phenomena, where the richness of the data and the depth of the interpretations exceed the possibilities of traditional quantitative methods.

To carry out the research, a convenience sample was used, which according to the definition of Hernández et al. (2018) is characterised by the selection of individuals who are easily accessible to the researcher due to their proximity or availability. In this study, the sample consisted of 84 students from the Early Childhood Education course at the National University of Education (UNAE), who were in the fifth and seventh cycles. This selection was based on criteria of accessibility and relevance, ensuring that participants could provide relevant and meaningful information for the objectives of the study.

The choice of participants was made strategically to ensure that the sample adequately reflected the experiences and perspectives of students at different stages of their academic training. Students in the fifth cycle accounted for 76.4% of the sample, while 23.6% corresponded to students in the seventh cycle. This

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distribution provided a comprehensive view of the different stages of the educational process, allowing for a detailed exploration of variations in students' experiences and perceptions throughout their academic journey.

The inclusion of participants in the study was formalised through the signing of a letter of acceptance, a fundamental procedure that ensures informed consent and the voluntary willingness of the students to participate in the research. In accordance with established ethical principles in scientific research, this process is essential to respect the autonomy and rights of participants. Informed consent implies that individuals receive complete and comprehensible information about the purpose of the study, the procedures, the potential risks and the expected benefits, enabling them to make a conscious decision about their participation.

The semi-structured interview technique is applied to the fifth and seventh cycle students of the UNAE, as the research has a qualitative approach. The purpose is to diagnose the interviewees' perceptions of the research competences acquired through their pre-professional internships and experiences in the field of research. The questionnaire was developed with questions that respond to the aforementioned categories and indicators that aim to diagnose knowledge about research competences (Ibarra-Sáiz, et al., 2023). With the formulation of the following questions: What is research applied to education, Do you consider research in the field of education beneficial, Why, What methods have you applied in a research process, Why is it relevant to detect a research problem, How do you delimit the research, What is the purpose of theoretically sustaining the research, How do you formulate and solve a problem in the field of education, How do you formulate and solve a problem in the field of education, How do you formulate and solve a problem in the field of education, How do you formulate and solve a problem in the field of education? How do you formulate and solve a research problem?, What is the objective for you as a teacher when carrying out educational research?, How do you encourage interest in research in the educational environment?, How do you promote research in your environment?, What are the steps that you outline when carrying out research?, What instruments have you applied in past research to guide the research in an appropriate way?

Results

Transcript of Interviews

The responses from the interviews with the trainee teachers were transcribed using Google Forms and Microsoft Word. This procedure allowed the responses to be transformed into a more structured and readable format to facilitate analysis. Participants completed the interviews using Google Forms, and then the responses were transcribed verbatim, capturing every word of the interviewees in order to preserve the accuracy and context of their contributions. Due to the volume of information collected, the full transcript was not included in this article.

Data Coding

Below is a table that organises and codes the data collected, breaking them down according to the categories of research competences and their respective subcategories. These categories include: knowledge, skills, abilities, attitudes and effective performance in the research process. The table details how each response relates to these categories, providing a structured and clear analysis of the interview data. This coding allows for the identification of relevant patterns and trends, facilitating a deeper understanding of the research competencies assessed through the questions posed.

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Table 3. Coding

Indicators	Coding (questions)
Knows the characteristics of research in education	Innovator for education, search for improvement in education, strengthens the teaching-learning process, collects information, identifies situations or problems, investigates specific issues and focuses on the solution for the improvement of educational practice. In terms of benefits, information and knowledge is provided to people, changes are produced in society through ways of teaching and innovating, strategies are provided for an approach to the labour field. The methods applied in the research process are action research, qualitative, participant observation, *lesson study*,
Describes with confidence the concepts that accurately delineate an investigation.	The research is delimited by defining the scope of the study, determining a problem, with clear objectives. A problem to be investigated that is relevant in practice is detected through observation and its focus on research that contributes to viable solutions or strategies in the educational field, which is clear and concise. The purpose of the theoretical underpinning of the research is based on previous and theoretical knowledge that justifies the work, supports the research, is solid and coherent, and helps to deepen the topic of study. A research problem is formulated through observation, a clear and concise problem.
Conducts research with educational impact	The aim of conducting research is to acquire knowledge, improve and transform education. The interest in inquiry is encouraged when doing practical work, when a specific problem is to be solved. Research is promoted through literature searches, providing resources and the necessary support so that trainee teachers can develop and carry out projects.
Obtains relevant information for an investigative process.	In terms of outlining a research, some start with a specific problem and others with a topic. Most interviewees use the field diary as a tool for collecting information. Regarding the development of educational proposals, most of them are unaware of the usefulness of their application.

Note: Coding was developed from the analysis of the interviews.

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Content Analysis

Within the framework of the subcategory of knowledge, skills, abilities and attitudes related to research competences among trainee early childhood education teachers, it was found that most of the trainee teachers have a solid understanding of what research applied to education entails. The participants describe research as a process that involves the investigation of specific topics with the aim of finding solutions to needs detected in educational practice. In this context, it is noted that research seeks to solve practical problems and promote improvements in academic and pedagogical processes through concrete, evidence-based solutions.

In particular, some respondents define applied research in education as the collection of information on specific topics requiring study, using a variety of sources, including serious websites. This perspective highlights that research not only involves data collection, but is also an innovative process that strengthens students' academic learning. Thus, participants consider that research allows for the deepening of theoretical knowledge, providing new perspectives and approaches. In addition, the ability to conduct applied research is valued as a key tool for improving teaching practice, facilitating the identification of areas for improvement and the development of effective strategies to address educational challenges.

In the analysis of knowledge about applied research in education, some respondents highlight that applied research in education is defined as the comprehensive collection of information on specific topics that require in-depth study. This research process is carried out using a variety of sources, including digital tools such as the internet, which provide access to a wide range of data and perspectives. Participants agree that educational research is not only about data collection, but is also an innovative process. This approach allows for a significant deepening of theoretical content, facilitating a more comprehensive and detailed understanding of educational issues.

However, a small proportion of interviewees offer a more limited view of the purpose and impact of educational research. For these participants, research is perceived primarily as a methodology for solving specific problems affecting individuals, addressing issues of teaching and study through scientific literature and anecdotes. Some of them describe research as simply a method of study, indicating a less developed understanding of the breadth and impact of applied research. In addition, it is noted that a small group of respondents expressed insufficient knowledge of education research, indicating a gap in training or exposure to this field of study. This variability in perceptions highlights the need to strengthen education on research methodologies and their relevance in teacher education to ensure that all future professionals can apply these tools effectively in their pedagogical practice.

Regarding the benefits that educational research provides, most of the interviewees underline that this practice significantly improves educational strategies in the teaching and learning processes. Research makes it possible to identify and address specific problems and needs in the educational context, facilitating the implementation of effective solutions.

Through research, teachers can make evidence-based decisions, which is crucial for the resolution of challenges and continuous improvement in the educational environment. In addition, research fosters collaboration through the use of innovative strategies and tools that provide valuable solutions and promote educational quality. Importantly, research contributes to the professional development of teachers by applying appropriate methods and strategies in the classroom, strengthening their skills and competences in pedagogical practice.

In relation to research methods, techniques and designs, interviewees indicate that their experiences focus mainly on approaches such as participant observation, action research, qualitative approaches and lesson study. These methods are valued for their ability to provide

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an in-depth and practical understanding of educational phenomena. However, it is noted that methods such as focus groups, interviews and questionnaires, although commonly used in educational research, were not as often mentioned by participants. This lack of reference to certain research methods could reflect a preference for approaches that allow a more direct immersion in the educational process or less familiarity with other techniques. The diversity in the methods applied highlights the variability in research practices and suggests the need to broaden knowledge and the application of different research approaches to enrich the educational research process.

Regarding the relevance of identifying a research problem, most of the interviewees point out that it is fundamental to initiate the research process, as it establishes the direction and focus of the study. Defining a specific problem makes it possible to concentrate efforts on relevant aspects, which facilitates the formulation of clear objectives, the appropriate selection of methodology and the optimisation of tools and resources to address the needs and problems of the context. As for the delimitation of the research, it is considered crucial to define the limits and scope of the study, which allows focusing resources effectively and ensuring that the study is manageable and applicable within the given context. In addition, the theoretical foundation is valued for providing a solid base that supports and justifies the research, ensuring coherence and relevance in the analysis of the topic.

In this context, some interviewees emphasise that the theoretical foundation of the research provides valuable knowledge and information on the topic, using appropriate techniques and instruments to arrive at an effective solution. Regarding the formulation of the research problem, most of them mention that it is identified through observation or participant observation in the field of practice, which allows detecting problematic situations or specific needs. Subsequently, the problem is stated with a clear, detailed and contextualised description, which facilitates the formulation of objectives and strategies to address the problem effectively.

In relation to the subcategory of effective performance in the research process, the analysis of the indicator on research with educational impact reveals that the majority of future teachers see research as a key tool for improving teaching and pedagogical practice. These trainee teachers emphasise the application of innovative and reflective teaching strategies as the primary objectives of educational research. In addition, some interviewees express a strong interest in acquiring in-depth knowledge on specific topics, which motivates them to become actively involved in research and in the continuous improvement of their educational practices.

Regarding the promotion of interest in research in practice, interviewees point out that observing the educational reality helps them to identify specific problems that can be solved through research. This approach contributes significantly to the improvement of teaching practice and encourages constant reflection. Some participants also take part in programmes and projects that offer collaborative spaces for research with colleagues and teachers, which strengthens their commitment to educational research.

In terms of obtaining relevant information for a research process, it is observed that half of the respondents start by defining a problem based on real contexts, while the other half select specific issues they wish to address. The research process is structured in several stages, including the formulation of objectives, the review of the theoretical framework, the selection of an appropriate methodology, the collection of information and the presentation of results.

This methodological approach ensures that the results are relevant and aligned with the objectives of the study.

Regarding the instruments used in previous research, most of the interviewees report having used the field diary as the main tool for data collection. This instrument allows for a detailed and continuous observation of the research process, facilitating the documentation and analysis of the researcher's experiences and reflections. In addition, some participants have used interviews, questionnaires, documentary analysis tools and observation guides, thus broadening the range of techniques used to obtain diverse and enriching

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information. The combination of these instruments contributes to a more comprehensive and multifaceted data collection, tailored to the specific needs of each study.

Regarding the proposals developed during pre-professional practice, it is observed that only nine (9) respondents show adequate knowledge about the concept and application of proposals in this context. The majority of respondents demonstrate a lack of familiarity with the use of proposals, suggesting a need for further training and guidance in this area. This knowledge gap could limit the ability of future teachers to design and implement effective strategies to respond to the educational challenges identified during their training.

Interpretation of Results

In summary, educational research manifests itself as a fundamental process in student learning, focused on the exploration of specific topics that allow for the improvement of academic and pedagogical processes. This research approach not only seeks solutions to practical problems, but also contributes to the continuous improvement of educational quality by addressing real situations through innovative strategies. Research makes it possible to face short- and medium-term challenges and generate significant knowledge in the educational field, promoting innovation and the creation of more effective pedagogical practices adapted to the emerging needs of the educational environment.

Most students outline their research through participant observation, a methodology that allows them to detect irregularities that affect teaching and learning processes. This methodological approach is crucial for the formulation of clear objectives and the selection of appropriate tools aimed at solving problems and meeting specific needs within given contexts. Participant observation facilitates a deep and contextualised understanding of the situations investigated, thus promoting more effective and relevant solutions.

Clearly delimiting the research is essential to focus efforts and resources efficiently. Establishing the boundaries and scope of the study ensures proper management of resources and optimises research efforts. Theorising plays a crucial role in this process, providing the theoretical basis that anchors the study and guides the search for theoretical solutions to the identified problems. This theoretical approach strengthens the research and enhances its ability to provide meaningful and informed answers.

Participant observation, as the main method used by most of the students, proves to be an essential tool in the development of research practice. This method enables the application of innovative teaching strategies, creating more effective and appropriate learning environments. Through participant observation, students can identify problems more accurately and apply solutions tailored to specific needs, thus contributing to the continuous improvement of educational practice and fostering deeper and more meaningful learning.

In addition, interest in research arises from practical experience, where the observation of tangible transformations and results generates motivation and commitment. This interest is driven by the ability of research to bring about real and visible improvements in educational practice, fostering reflection and continuous professional development. The ability of teachers to reflect on their practice and implement research-based changes is crucial for their professional growth and for the continuous improvement of the educational environment.

However, despite progress, many students are still deficient in the understanding and application of educational approaches. Although lesson study has started to be implemented from the fifth cycle, its development and application is still limited and requires more detailed attention. The lack of familiarity with the conceptualisation and effective implementation of educational approaches underlines the need for more solid training in this aspect, to ensure that future teachers are better prepared to face educational challenges and apply innovative approaches in their professional practice.

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The findings obtained during the diagnostic process on students' research competences highlight the importance of maintaining a logical sequence in the research process. This structure is important for obtaining reliable results in the medium and long term; it also favours the continuous evaluation of progress and the implementation of necessary adjustments at critical moments. In this way, a methodical approach enables students to check their progress systematically and make substantial modifications when deviations occur, thus ensuring robust and efficient research development. Logical sequencing in research facilitates a thorough review of methods and results, promoting continuous and adaptive improvement in research projects.

It also emphasises the need for students to be coherent in their reflections on practice and theorising. The ability to effectively integrate these two aspects is fundamental for the socialisation of results at key moments in the research process. Coherence between practice and theory allows for an adequate awareness of the resources and tools used, thus optimising the quality of the research processes. Therefore, spaces for discussion and analysis, where different criteria converge, are essential to improve the quality of research, allowing students to refine their approaches and methods, and ensure that the tools and techniques applied are the most appropriate for the proposed objectives.

Finally, the need to go deeper into specific research topics is highlighted, particularly in the development of educational proposals. Although students frequently work on these proposals within their internships, there is a tendency to lose the common thread during the process of theorisation. This disconnection between practical application and theoretical grounding limits the effectiveness of the proposals and can lead to less coherent research development. To overcome this challenge, it is necessary to strengthen students' ability to maintain logical and theoretical continuity in the development of their projects, ensuring that each phase of the research process is aligned and contributes effectively to the research objectives.

Discussion of Results

In higher education, the demand for research competences focuses on their usefulness and their response to the current requirements demanded by technology and the fields of work. In this way, the commitment acquired by higher education students in their training must be constituted in a motivating way that allows analysis to rethink research stigmas and thus efficiently seek strategies applicable in the educational field that continuously improve practice (Sánchez, et al., 2021).

In this context, the experiences that lead to quality research processes arise from logical sequences applied in educational research, which, based on the research chair, provide a set of tools aimed at an educational task that responds to certain clear guidelines for the knowledge, management of skills and abilities in relation to a research process. For Canova- Barrio, et al. (2023), constant participation in these processes improves knowledge and skills for research. Indeed, the use of methods, techniques and tools is oriented towards their appropriate application according to the requirements and the organisation that optimises resources and time.

The effectiveness that the researcher employs in the development of research processes responds to finding appropriate knowledge and procedures for the success of the project. It is essential to detect a problem situation in the educational field that provides opportunities for reflection to meet the need, determine the context and relevance of the topic, set objectives that respond to the research question and adequately outline the research through an appropriate methodology. These are elements that contemplate active learning relevant in the 21st century, contributing to knowledge, but also to understanding the uncertainty and frequent change in which we live (Restrepo, 2023). In addition, the didactic strength of the trainee teacher is highlighted when he or she is equipped with methods that contribute to the fulfilment of their personal projects through quality research tasks (Tafur and Izaguirre, 2022).

In summary, educational research addressed in teacher training is acquired sequentially in the various cycles through knowledge, skills and abilities that provide opportunities for improvement in academic and

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pedagogical processes in order to seek solutions to realities in practice, through the development of research skills. In this way, it is a benefit of educational quality based on real facts and approaches that require solutions in the short or medium term in order to innovate and generate significant knowledge in the area of education as mentioned in the New Pedagogical Model of the UNAE.

Conclusions

The study analyses the research competences of trainee teachers in early childhood education, focusing on their understanding of applied research in education. The responses reflect strengths, weaknesses and opportunities. There is evidence of a solid understanding of applied research, which is recognised as a valuable process for solving educational problems, developing effective and innovative practices and making assertive decisions. In addition, they perceive improvements in their own research competences through the deepening of declarative, procedural and attitudinal contents, collaborating in the professional growth of teachers.

On the other hand, the data show that a small part of the sample has a limited understanding of research competences and their scope, and most of them are not sure about the purpose of the educational proposals. The future teachers see research competences as a simple method of solving specific problems, which reveals gaps in their previous training. It is considered relevant to extend training in methodologies with different approaches in order to continue enriching the research competences of trainee teachers and to deepen their understanding of the importance of educational proposals as a means of transforming specific realities.

In terms of opportunities, we can mention the strengthening of research competences, ensuring that future teachers have the necessary tools to apply research processes in their teaching practice, and that they are also generators of change in the quality of education at the initial level. By fulfilling this first point, a research-based culture is promoted in higher education institutions. It will also help to reduce the lags in access to quality education in educational research.

Recommendations

It is recommended that universities maintain affordable Continuing Education programmes to complement the professional training of future teachers.

Encourage the participation of trainee teachers in university projects, being direct collaborators in the whole process, as well as the professionals in the research team.

Encouraging collaborative work to promote learning and the exchange of experiences and knowledge.

Higher education institutions should create internal and inter-university spaces for junior researchers to share research results and experiences gained in the process.

To have the support of higher education institutions for the creation of research networks in which they collaborate in research projects within the degree course and between degree courses at the university itself and external universities. Future initial education teachers will be able to do internships.

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