

DOI: 10.5281/zenodo.12426987

CHANGE MANAGEMENT IN EDUCATIONAL INSTITUTIONS. TRAINING PROCESS BY RESEARCH COMPETENCIES

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Received: 26/10/2025
Accepted: 17/03/2026

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ABSTRACT

Change management is an emerging process in educational institutions, especially in training for research competencies. The objective was to analyze the needs for change in university and school teaching practice in order to propose guidelines focused on research, in addition to describing the practice of the Method of Constructive Investigative Interaction (MICI) to develop research competencies in teacher training in educational institutions. The methodology was with the epistemological paradigm structuralism, type of analytical research, survey technique and questionnaire instrument that was applied to a population of 1,630 students of the online Basic Education career at the State University of Milagro. The results reflected that university teachers face resistance to change, with traditional methods. However, progress was made with the implementation of the Method of Constructive Investigative Interaction (MICI) in university and school practices. In conclusion, the need to strengthen training in research competencies as change management in educational institutions is highlighted.

KEYWORDS: Pedagogical Promoters; Change Management; Educational Practices; Investigative Competencies.

1. INTRODUCTION

Teacher training based on research competencies to manage change in educational institutions from pre-professional practices is an issue that, according to Quesada, could be addressed worldwide in the lack of professional resources trained with constructivist pedagogical approaches for effective educational practices in university educational institutions. In this regard ((2019)Escribano Hervis, 2018, p. 15), mentions that in universities there may be teachers with insufficient methodological training in innovative competencies and practices, which could affect the training of students and as consequences deficient or low-quality educational practices.

In addition to the above, there is the approach of (Rodríguez et al. 2021; Castellano and Rojas 2023; Pérez 2023), who mention that there is often a discrepancy between what is taught in university classrooms and the reality of the work environment. They add that educational practices should function as a link between theory and practice, however, Ferreira et al. 2020; Juca 2016; Carlin et al. 2020), state that sometimes students in the process of teacher training find it difficult to properly relate the theory learned with pedagogical practice in educational management. Based on what the authors have stated, it can be thought and intuited that the professional training of teachers continues to be a definitive element when evaluating quality management in the practice of educational institutions, as an essential element in the training of university students.

In this sense, Farfán and Reyes highlight that educational practices can be defined as learning activities aimed at the application of knowledge about educational management, development of skills and abilities that will serve students for the future performance of their profession; They must be carried out in public, private, non-governmental, community organizations or spaces of the university and school educational institution.(2017)

In this order of ideas, it is relevant to mention that in Latin American countries, higher education institutions could also be going through the problems related to changes in educational management and practice due to a deficit of comprehensive and investigative competencies in the framework of educational practices, such as updating in teacher training with new management trends for educational change.

González et al., in a study carried out on teacher training focused on research, in which students had as a diagnosis a low level of training in integral

competencies, evidenced in the dimensions of being, doing, knowing and living together, in addition to presenting learning needs and interests on educational management in educational practices. In the study, it was possible to build teacher training guidelines focused on research competencies, as a strategy for change for teacher training institutions in higher education.(2010)

In relation to the above, it can be said that Ecuador as a Latin American country does not escape being immersed in the aforementioned problem, given that public and private universities in their educational management seek to improve educational practices, through the implementation of new educational approaches based on competency-based methodology for effective change management from educational practices.

As an example, the case of the State University of Milagro (UNEMI), where a project was developed with university teachers and students of the Faculty of Education, Basic Education Career, online modality in which the purpose was to manage the change in the virtual university teaching practice and the pedagogical practice in the school through a teacher and student training plan. (González et al. 2024, p. 2).

According to González, teachers assigned to the State University of Milagro in the Basic Education Career, online modality, a diagnosis was made in which it was expressed by the students, that the teachers showed resistance to change because they were anchored in traditional teaching methods, since they manifested boredom and demonstrated it with absences from class, they also stated that the (2024)Virtual educational practices were mostly carried out with traditional behaviorist strategies by university teachers, who taught classes as slide readers, video presenters, and then assigned tasks, making students feel passive and receivers of knowledge.

The problem of managing educational change by research competencies in the framework of pre-professional internships at the State University of Milagro, Ecuador, reflects global challenges that require attention. It is essential that university educational institutions address it in a comprehensive way, to manage change with active and student-centered methodologies, as well as to strengthen the connection between theory and pre-professional practice.

Based on the above deductions, the importance of the study is framed in the need for a training process with a multidisciplinary team, external teachers from other universities, university students and academic

tutors who manage the promotion of change from online university practice and at school during the internships with the educational community involved. through permanent training, promotion of readings, reflection-action, attendance at workshops and follow-up of educational projects of learning and linking with society.

After analyzing the diagnosis specifically at UNEMI, with the project developed Training of Promoters for Pedagogical Change Management from Pre-professional Practices period in its first and second phase of the research process, it managed to promote with improvement activities for change management through the training of teachers and university students focused on research competencies with the implementation of the Constructive Investigative Interaction Method (MICI) in virtual classrooms, in elementary schools and in communities with linkage projects as centers and spaces for the application of educational practices, which made it possible to sustain with theoretical bases of constructivism and connectivism the principles, purposes and processes necessary for educational change, which in turn generated practical contrast with the theories of organizational learning with the use of educational resources appropriate to the reality of the educational institutions of the Ecuador. (2024-2025)

In the same order of ideas, with the development of the aforementioned project in the phase of the approach and intervention university training, application in schools and communities with students of educational practices as promoters of change management from educational practices with the MICI, it was possible to work based on the diagnosis of the needs and interests of the entities involved, then develop action plans with educational projects in accordance with the educational policies of the Ministry of Education of Ecuador. (MinEduc .(2023)

After the systematization of the problem, the importance and justification of the research on the need for change management in educational institutions, the following questions arose: how to manage teacher training by research competencies in Higher Education? Does the university under study have teacher training guidelines for research, digital or technological competencies for its professors and students?

All the previous questions guided the research to answer the main question: How to manage change in educational institutions through a process of training by research competencies change in the virtual and pedagogical university teaching practice expressed

by UNEMI pre-professional internship students in the period May - December 2024? To provide an answer, the general objective was to analyze the needs for change in university and school teaching practice in order to propose guidelines focused on research.

The study also set as specific objectives to describe the practice of the Constructive Research Interaction Method (MICI) to develop competencies in teacher training for educational institutions based on the principles of research, action, reflection and constructivist and connectivist theoretical approaches. The MICI was applied in the virtual university educational reality, in basic schools and in society with linking projects promoting community participation during educational practices.

The epistemological paradigm used in the methodology used was structuralism, which is defined according to Hurtado (2012) as an approach that focuses on the analysis of the underlying structures that organize and explain reality, a type of analytical-descriptive research, a technique used in the survey with a digital questionnaire-type instrument, which was applied to a volunteer population of 1630 students of the online Basic Education career of the State University of Milagro of Ecuador.

The inquiry process allowed by its nature the recording of events and the application of a quantitative statistical treatment, then it was contrasted with the reality and with the elements of change management for educational practice in educational institutions (university (UNEMI), schools and educational communities of Ecuador) addressed by students during their educational and bonding practice semester period May-December 2024.

2. DEVELOPMENT

2.1. *A theoretical approach to constructivism and connectivism*

The research was based on the main theoretical-practical postulates of constructivism and connectivism, with González's constructive investigative interaction method (MICI); who cites the theories sources of learning is deduced from the postulates Piaget with constructivism, contributions of Vygotsky, with the zone of proximal development, contributions of Ausubel on significant learning and as a complement the proposal of the Interaction, Constructive, Investigative Method (MICI) that is based on the pedagogical principles of Esté and Elliott's action research in accordance with the theory of connectivism of Siemens cited by Padrón and Ortega. Next, a theoretical approach is developed on the postulates that supported the study. (2010)

(1995)(1996)(1996)(1998)(1997) (2012)

2.1.1. Constructivism

According to Serrano and Pons, cognitive constructivism has its roots in Piaget's psychology and genetic epistemology, but a constructivism with a socio-cultural orientation is inspired by the ideas and approaches of Vygotsky, and a constructivism linked to social constructionism leans towards the position of Berger and Luckmann and postmodern approaches in psychology that situate knowledge in discursive practices (Edwards and Potter, (2011) (1995)(1996)(2001)Edwards, 2001).

It is worth highlighting Ortiz's definition, who states that constructivism is a theory of learning that maintains that people build their own knowledge and understanding of the environment through experiences and reflections. (Tünnermann (2015)2011, p. 12) states that, according to the theory of constructivism, learning is an active process in which students not only receive information, but also process it, interpret it to integrate their own frame of reference. The author emphasizes that the Teachers who take this approach often foster a collaborative learning environment, where students can explore, ask questions, and work together to solve problems. This learning theory is in force in the training of students for all levels and modalities of face-to-face and virtual educational systems.

2.1.2. Connectivism

In relation to connectivism, the main reference for associating the theory of Connectivism with the social or sociopsychological sciences can be located in Network Theory. This theory has its origin in the Gestalt School and received its first impulse with the works of group psychology and the sociometric studies of Lewin.(1938)

According to Padrón and Ortega, connectivism is an alternative learning approach for the digital age proposed by Siemens. (2012) (2004)cited by Padrón and Ortega (2012), who defines it as: The integration of principles explored by the theories of chaos, networks, complexity and self-organization. Conceives and Learning as a process that occurs within diffuse environments of changing central elements - which are not entirely under the control of the individual.

In this sense, learning (defined as applicable knowledge) can reside outside of the being (within an organization or a database), it is focused on connecting sets of specialized information and the connections that allow learning more are more important than the current state of knowledge. This

theory fits teacher training in a virtual environment, it allows you to connect with yourself, with the resources at your disposal and with others.

2.2. Educational change for research skills

After characterizing the theories that underpin the teacher training process On the other hand, it is important to describe educational change by research competencies, for them it is necessary to review the postulates on educational practices, in the case of (Rodríguez et al. 2011; Popoca and Torres; Machi et al. , define it as (2022)(2019)mediation based on action research to improve educational pedagogical activity. In this order of ideas (Car and Kemmis 1988, as quoted Rodríguez et al. 2011), mention action research as a change to optimize pedagogical practice in the classroom and explain that through the inquiry of knowledge and the reflection of what has been learned is improved educational management.

As a complement, Rodríguez et al. mention that the (2011)Action research involves actors such as teachers, students and the community in educational management and the process is adjusted in: planning which includes observation, diagnosis, action plan and evaluation to reach reflection which is in continuous interaction through professional practices.

In addition to the previous approach, Ugas considers that action research allows teachers to develop research skills to approach reality with a clear epistemological and pedagogical vision, to deepen through reflection, dialogue and the collective construction of knowledge.(2015)

Retrospecting the authors' position, it can be considered that the MICI method is based on the postulates of Elliot's Action Research and Reflection, constructivism and connectivism as key theoretical-practical foundations for the training of a teacher by research competencies and as a promoter for the management of change in educational institutions

From this perspective, it is highlighted that change management by research competencies is focused on the practice of research-action-reflection with the Interactive-Constructive-Investigative Learning Method (MICI) for the construction of knowledge, which goes from the individual to the collective, from the organizational to the systematic, from theory to practice, from action to reflection and commitment to social co-responsibility.

2.3. Theoretical approach to competency-based training

In this regard, Cantillo states that current educational management should be the field where

teachers in training are allowed to develop research competencies, from educational practice, becoming an indispensable activity, due to the outstanding need for changes in training processes for the transformation of the reality of students, through timely and meaningful educational mediation that benefits observation, inquiry, problematization, reflection, systematization and innovation in the educational act.(2024)

2.4. Educational Practices in UNEMI Regulations

Within the framework of the research, it was important to define the educational practices according to article 42 of the instructions for the realization and monitoring of the pre-professional practices of the third level careers of the State University of Milagro UNEMI, they are learning activities oriented to put into practice the knowledge and/or professional competencies. The article highlights that the pedagogical pre-professional internships will be carried out in organizational, institutional, business, community or other environments related to the professional field of the career, public or private, national or international. (2024)

Similarly, Article 41 allows us to understand that teachers' planning must be linked to the environment where they develop and must be explicit in pre-professional practices and the execution of community or social service projects. Another article to mention is Article 17, which refers to the validation of the schedule of activities, such as the planning of activities during the educational management that is carried out during the pre-professional practice, which the academic tutor is responsible for validating (Instructions for the realization and monitoring of the pre-professional practices of the third level careers of the state university of Milagro title II pre-professional labor practices UNEMI 2024, p. 11).

3. ANALYSIS AND DISCUSSION OF RESULTS

This section records the results obtained from the application of the digital questionnaire to the 1630 surveyed students of the Basic Education Career, online modality of the Faculty of Education of the State University of Milagros (UNEMI), with the variables: change management with the MICI Method from educational practices and university training by research competencies, which were contrasted with the postulates of the theoretical bases referenced in the article.

For the variable change management with the MICI method from educational practices, the subdimension is reflected: methodology used, which was measured with the indicators: behaviorist, cognitivist, constructivist theory. The results of the subdimension: phases of educational practices are also shown with the diagnostic indicators, action plan and evaluation, which are graphed in the following figures as statistical data. For the variable research competencies with the subdimension investigative competencies and indicators: observation, analyze/interpret, write/disseminate and conclude/reflect is shown.

Subdimension: methodology used

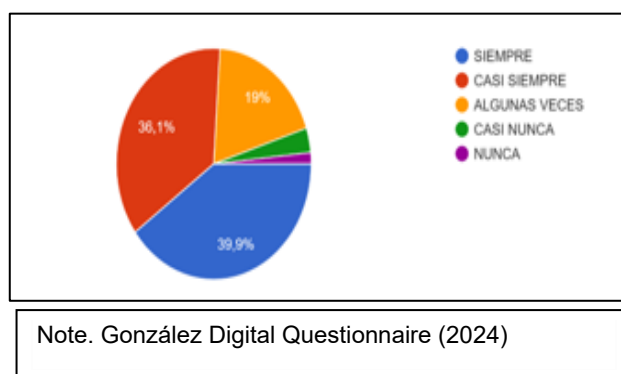


Figure 1 Indicator: behaviorist Do you participate in activities with a one-way methodology (Teacher-student)?

Figure 1 shows the distribution of the answers to the question Do you participate in activities with a unidirectional methodology (Teacher-student)? The data indicate that 39.9% always participate, 36.1% almost always and 19% is added sometimes, leaving 5% for the options almost never and never. The information reflects a clear and concise overview of how often respondents engage in activities with a one-way methodology during pre-professional practice .

It should be noted that the sum of the categories "Always" and "Almost Always" reveals that 70% of respondents participate in activities with a one-way methodology in most cases. It is evident that this teaching approach is predominant in the university context, as Quesada puts it, when he states that there is a lack of professional resources trained in constructivist approaches to manage effective educational practices in university educational institutions.(2019)

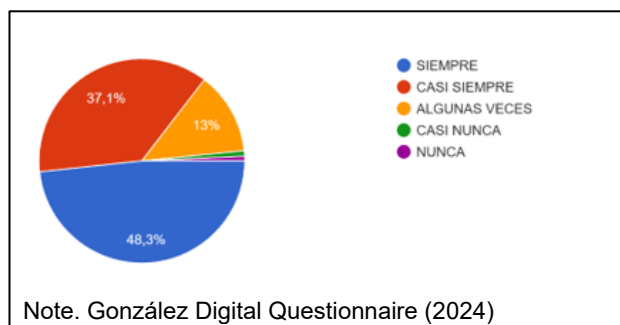


Figure 2 Indicator: cognitivist

Do you participate in activities with a cognitive learning (Meaningful Learning) methodology?

In Figure 2, it is observed that 48.3% always participate in activities with a learning methodology under cognitive theory and 37.1% almost always and 13% inclined to answer sometimes, which demonstrates the total sum that teachers prefer to apply cognitive learning methodology with students, only 1.6% are almost never and never do it that way.

In this sense, the sum of the categories "Always" and "Almost Always" reveals the high frequency of significant learning that 77.4% of respondents participate in activities important to them on most occasions. This suggests that this teaching approach has a significant presence in the evaluated context of the University. Result supported by González et al., who in a study showed that teachers, despite presenting a low level of training in research skills, attend to the dimensions of learning with being, doing, knowing and living together, to promote interests in the management of educational change in cognitive learning. (2010)

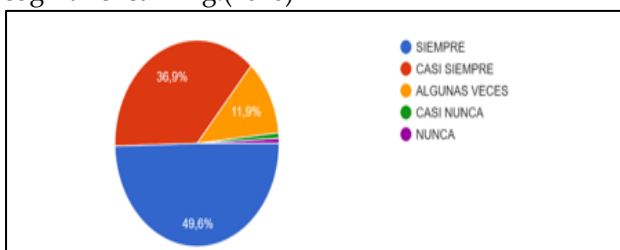


Figure 3 Indicator: constructivism

Do you sometimes participate in activities with a constructivist learning methodology (build your own learning)?

Figure 3, which is related to the constructivism indicator, shows that 49.6% when presented always participate in activities with a learning methodology under the constructivist theory (constructs their own learning), together with 36.9% with almost always and 11.9% with sometimes and 4.6% leaned towards the options almost never and never.

The positive responses provided a clear view that

the surveyed students participated in activities that favor autonomous learning. The information presented was useful to understand the importance of promoting this type of activities for the management of change in the educational field. The results show that the constructivist learning methodology is frequently applied in the activities in which the respondents participate. The high proportion of "always" and "almost always" responses is evidence of a good reception and implementation of this educational approach.

To contrast this result, Ortiz is mentioned, who emphasized in his study that educators who adopt this approach usually foster a collaborative learning environment, where students in a team can explore, ask questions and work together to solve problems in educational issues to promote the development of research competencies (2015)

Subdimension: phases of educational practices

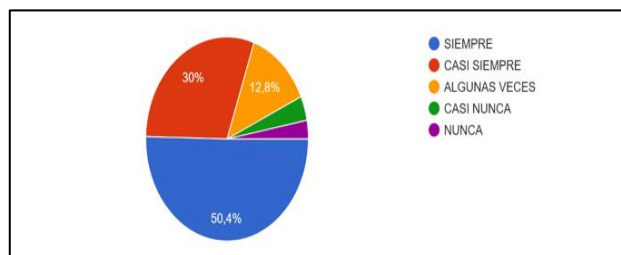


Figure 4 Indicator: Diagnosis

Did you systematize the diagnosis of the corresponding grade?

Figure 4 shows that 50.4% always systematized a diagnosis of the grade that corresponds to them in educational practices, 30% expressed almost always, and 12.8% stated sometimes. 5% were almost never and 2% never. The results obtained showed that the surveyed students valued the importance of systematizing the diagnoses made during their educational practice. The systematization of diagnoses is a common and valuable activity in many professional fields of governmental and non-governmental organizations.

In this regard, Rodríguez et al. mention that the systematization of a diagnosis in an action-reflection research involves all actors such as teachers, students and the community in educational management and the process is adjusted to: the planning phase which includes observation, diagnosis, design of the action plan and evaluation to arrive at reflection which is in continuous interaction through educational practices. (2011)

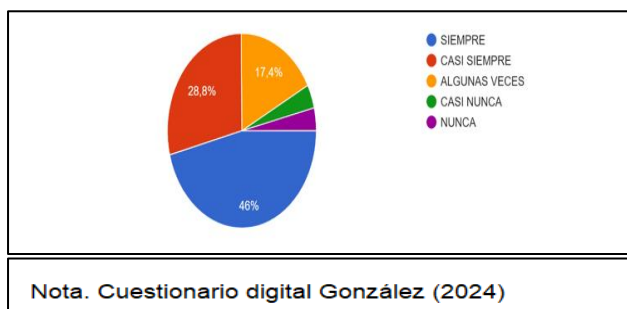


Figure 5 Indicator: Action Plan

Did you design action plans for your classes according to the level of pre-professional practices?"

Figure 5 of the survey of 1,630 students indicates that 46% designed action plans for their classes according to the level of pre-professional practices. A considerable percentage (28.8%) do so always or almost always, while 17.4% do so sometimes and 7.8% almost never. Regarding the results obtained, it is relevant to cite Article 17, which refers to the validation of the schedule of activities, such as the planning of activities during the educational management that is carried out during the pre-professional practice, which the academic tutor is responsible for validating. (UNEMI 2024 Regulation).

The results show that most of them design action plans for their classes considering the level of educational practices. However, the proportion of negative responses is higher compared to the previous question, which could indicate challenges or difficulties in this regard. It should be noted that the action plan allows teachers to plan and organize their classes effectively, which must be designed taking into account the characteristics of the students, the learning objectives and the available resources.

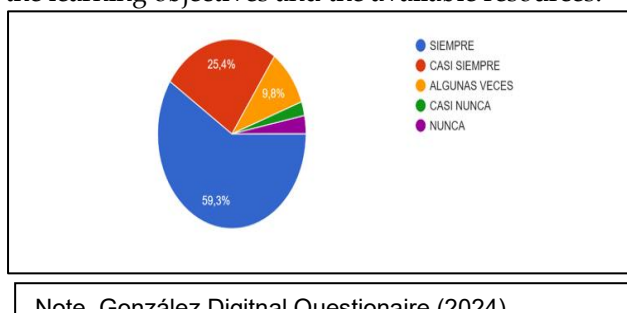


Figure 6 Indicator: Evaluation

Did you comply with the student learning assessment phase?

Figure 6, referring to the evaluation indicator, shows that 59.3% stated that they always comply with this phase of student learning assessment. A significant percentage, coupled with 25.4% of the option almost always and 9.8% sometimes, only 5.5% were placed in the options almost never.

These results indicated that the evaluation phase during the pre-professional internship is considered an important part of the learning process and that most students valued it and considered it necessary for feedback. They also reflect a high level of compliance with the student learning assessment phase. Most respondents evaluate their students systematically, either always or almost always.

The postulates that support this result are: Rodríguez et al., who mention that evaluation goes hand in hand with research-action-reflection and involves actors such as teachers, students and the community in educational management. The process is adjusted to the planning which includes observation, diagnosis, action plan and evaluation to reach reflection which is in continuous interaction through professional practices. (2011)

Subdimension: Research Competencies

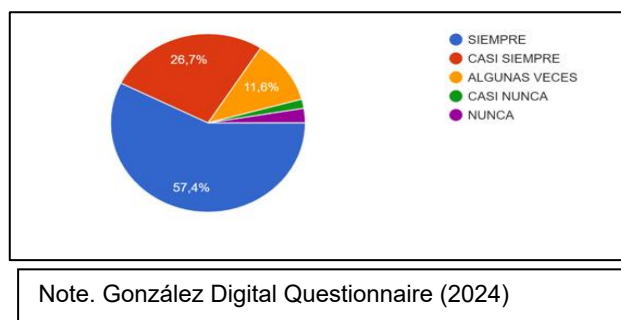


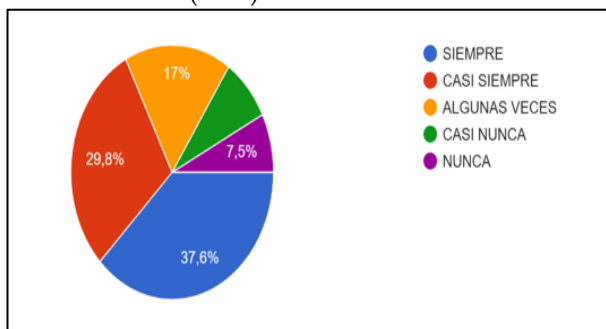
Figure 7 Indicator: Register

Do teachers keep records of daily activities as a research process?

The results obtained in Figure 7, on the question whether teachers keep records of daily activities as a research process during educational practice, for the option were always reflected in 57.4%, which represents the majority of respondents who stated that they keep records of their daily activities consistently as part of their educational research. A significant percentage of 26.7% responded that it is almost always, a significant percentage, which reinforces the idea that the recording of activities is a common practice in educational research, in addition to this population, 11.6% who do it sometimes, only 5% were placed in the options almost never or never. The data show that most of the teachers surveyed consider it important to keep daily records of their activities as part of their research process. However, there is a small percentage that does not, which could indicate different research approaches or lack of time or resources.

These results are based on what was stated by Rodríguez et al., who mention that action-reflection research involves actors such as teachers, students and the community in educational management and

the process is adjusted to planning which includes observation, diagnosis, action plan and evaluation to reach reflection.(2011)



Note. González Digital Questionnaire (2024)

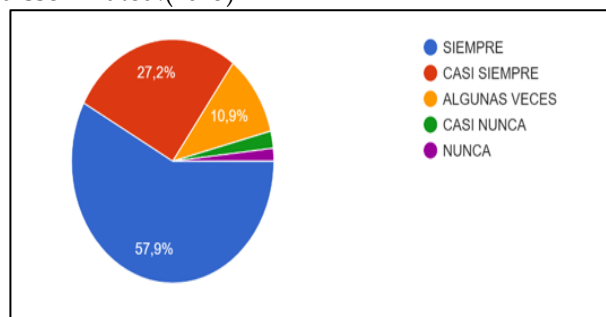
Figure 8 Indicator: Write/Disseminate

Did you write reports to disseminate research results in the classroom?

Figure 9 shows that 37.6% of the students surveyed responded that they always kept records (entries in notebooks, diaries of

field, instruments) of daily activities as an educational research process. 29.8% almost always, 17% sometimes, 8.1% almost never and 7.5% never. The results suggest that, although a significant proportion of teachers produce reports to disseminate their research, there is a diversity of practices in this regard. Some do it systematically, some less frequently, and some don't do it at all.

To discuss these results, mention can be made of what is referred to by Ugas, who considers that action-reflection research allows teachers to develop research skills to approach reality with a clear epistemological and educational vision, to deepen through reflection, dialogue and the collective construction of knowledge, which are written to be disseminated.(2015)



Note. González Digital Questionnaire (2024)

Figure 9 Indicator: Conclude/Reflect

Did you make conclusions/reflections based on educational research projects?

Figure 9 shows that 57.9% were inclined to always answer to give their opinion that they made conclusions/reflections based on educational

research projects, 27.2% almost always, 10.9% sometimes, 2% almost never and 0% for the never option. The results show that most of the teachers surveyed consider it essential to draw conclusions and reflect on their educational research projects. This reflective practice can be valuable in improving teaching practice and generating new knowledge. These results, as well as the previous one, are supported by Ugas, who also considers that action research allows the development of research competencies in both teachers and students to deepen the construction of theoretical-practical learning.(2015)

4. CONCLUSIONS

Based on the objectives proposed, it can be concluded that regarding the needs for change in university teaching practice and in schools, shortcomings in teacher training were identified, especially in the adoption of innovative pedagogical/andragogical approaches. University educational practices showed a prevalence of traditional methodologies that limit active and meaningful learning by university professors. This underscores the need to integrate strategies with constructivist and connectivist methods to strengthen the connection between educational theory and practice. In this regard, university students as future teachers in Latin America must emerge in their profile as graduates with training in research and active methodologies based on constructivism and connectivism in order to meet the demands of society and the educational policies of the Ministries of Education.

Regarding the educational practice that was based on constructivist and connectivist principles, the results reflected that a significant percentage of students participate in activities based on constructivism, which demonstrates the interest and potential of these principles to build autonomous learning. However, cognitivist and constructivist methodologies still need to be strengthened to overcome the prevailing behaviorist approaches. This supports the importance of promoting collaborative learning in university classrooms that is contextualized to the needs of Education.

With respect to the application of pedagogical strategies focused on research competencies, the systematization of diagnosis, activity planning and evaluation were identified as common and necessary practices in pre-professional experiences. However, more consistent university interventions and practices are required to develop holistic competencies to ensure that these phases are aligned

with educational policies and approaches focused on research competencies.

Regarding the management for educational change with the implementation of the Method of Constructive Investigative Interaction (MICI), it was concluded that during the training process for university teachers and students of the basic education career, online modality, significant advances were made in the development of research competencies (observation, recording, critical thinking, reflection, analysis, synthesis, questioning and disseminating). teamwork (leadership, autonomy, interaction, values, corporate identity). The students showed interest in the development of research works with educational topics and dissemination of results in scientific academic events, which allowed strengthening the research area as a pillar in teacher training and change management in the educational process in university and school institutions.

The implementation of the Constructive

Investigative Interaction Method (MICI) can be used as a strategy for teacher training and learning processes in virtual or face-to-face classrooms, it is a method validated in universities in Venezuela during the years (2007-2010) and in Ecuador during the period May-December (2024) in the Basic Education career online modality, with a future perspective applicable to any university education career in the face-to-face modalities, blended and virtual in Latin America.

Finally, the study contributed to the management of educational change with the knowledge and implementation of the Constructive Investigative Interaction Method (MICI) by students in all regions of the educational sector of Ecuador, where the importance of a comprehensive approach to training by research competencies that involves teachers, teachers, teachers, teachers, teachers, teachers, teachers, teachers, teachers, teachers, teachers, students and educational communities.

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