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Comparative study of practical teaching and learning methods: higher education

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Abstract

The level of higher education has been undergoing changes where there has been an increase in the difficulty of the work of teachers and university students, therefore, they opt for strategies that teachers develop to be able to teach and perform learning techniques that will allow them to solve real problems: Practical teaching methods: (a) Didactic strategies applied in the formation of competencies, (b) Criteria for conceptualization, classification, selection and characterization of teaching methods. Practical learning methods: (i) Competency-based higher education teaching-learning model, (ii) Learning strategies in higher education. In synthesis, the didactic strategies applied in the formation of competencies is a process that will encourage students and university teachers to be able to use learning tools and techniques to achieve their particular objectives. This study can be improved by increasing variables and obtaining more precise results based on methodological techniques to improve teaching and academic learning.

Keywords: Learning method, Teaching method, Higher education, Higher education strategies

1. Introduction

The higher education level has been undergoing changes that have increased the difficulty of the work of university teachers and students, in addition, the training that make up the higher education system adopts different requirements that can be adapted to the needs and advantages of each student and how they can analyze and structure all information in different ways for the development of their skills and to allow them to obtain learning environments where they can express themselves by performing activities that develop their capabilities (Cañada et al., 2021; Losada, Cárdenas, & Vásquez, 2020). In addition, the teacher must analyze and identify the university student to know about their learning environment, teaching methods, types of exercises in order to obtain a complete and effective learning structure (Cañada et al., 2021; Zapata, 2018). However, the lack of knowledge about learning techniques or methods is one of the many problems in higher education training, not knowing about styles or ways of learning, such as: interacting, accepting and processing emotions and stimuli of university students (Cañada et al., 2021; Gutiérrez, 2017).

Therefore, the techniques are used by methodical strategies that the university teacher develops to be able to teach their higher education students; by performing learning techniques it will be possible to solve real problems, to know about the characteristics of these styles allowing to adapt to these changes and to make beneficial decisions such as: developing strategies to couple teaching information (Cañada et al., 2021; Matienzo, 2020).

In addition, it is known that learning techniques focused on university students should manage on their capabilities, the knowledge of things and learning methods (Cañada et al., 2021). Likewise, it is demonstrated in the study of Talavera et al., 2021 that university students can predominate over theoretical techniques or methods to be able to obtain changes and improve skills. The contexts on the

transformations that university students and teachers have had on how they can adapt to changes in the future is surprising based on a solid learning background (Otero, Crowe and Sartuquí, 2021).

Porello, es necesario que se puedan considerar las TIC en las técnicas siendo indispensable para fomentar This method with aspects that will allow the teacher and professionals in higher education to be able to improve and strengthen the teachings to facilitate learning and improve skills, also the student must improve the potential with enthusiasm and demonstrating their skills in the face of different challenges or adversity (Figueroa and Vallejos, 2020; Talavera et al., 2021).

At the levels of learning is the higher education environment is of methodological development impact because it provides a great change in the relationship to learning and teaching methods (Cañada et al., 2021; Guerra, Rodríguez and Artiles, 2019). It is prospective that a person with education can master both techniques and methods of learning in order to demonstrate that it is indispensable tools, techniques and methods if they want changes and growths in the state that are fundamental elements to obtain an order, method and adequacy the student. In this way, it is emphasized that the practical method is composed of different criteria that are fundamental for it to be carried out, such as: (a)teacher, (b) university student, (c)content and (d) variety of characteristics that are associated with teaching and learning; implying an advance and increase of strategies associated with decision making for learning with the objective of perfecting teaching based on educational practices (Cañada et al., 2021; Figueroa and Vallejos, 2020).

Likewise, education is currently demanding many challenges in the educational area due to poor investments by the state, poor management processes within the educational entity, lack of organization and implementation of learning and teaching strategies that are not used by the teaching staff and are being withdrawn due to lack of interest in the course or career. It is necessary that education is seen as a field where you can perform techniques with the aim of attracting the attention of both the student and the same teacher that is simple to understand and understand didactic, which focuses that what is presented is dynamic and with essential meanings this will generate an impact on the student positively (Toapanta, 2019). In summary, there has not been recorded a comparison study of these learning techniques and methods that is essential for higher education students based on teaching strategy orientations (Cañada et al., 2021; Figueroa and Vallejos, 2020; Toapanta, 2019).

Considering about the research analysis, the present method comparison study brings knowledge to teachers and students to learn and teach, therefore, based on related theories about the techniques of how to improve in the educational field based on expert procedures are fundamental to improve different concepts in order to improve their methods (Merino, Pionce, & Moreira, 2017; Corrales & Hernandez, 2020; Benavides, 2018). In addition, this work is done an exploration and verification of literature on education styles and methods that can improve techniques and promote education based on methodical applications that benefit both the student and the teacher to improve academic activities (Carrión, 2019; Mendoza, Cadavid, & Santana, 2017; Merchan, & Hernandez, 2018). Therefore, it should be considered that each individual develops a different learning style and each teacher a different teaching method or technique in order to contribute to the educational training of future professional technicians by adjusting their learning styles and preferences with academic instructions, taking into account the learning processes (Morocho, Rosero, & Sinchi, 2020, Pérez et al., 2019; Torres & Silva, 2019).

On the other hand, the main objective of the study is to compare the methods or techniques of learning and teaching in higher level education based on conceptual terminologies of reference frameworks in order that both the teacher or university student can implement the methods and can improve academic performance based on referent research being evident the different indexed databases or platforms that govern related research to expand the information and promote strategic

alignments of learning reference frameworks and meaningful teaching methods to improve the capabilities and skills of a referent teacher or a university student academically (Pérez et al., 2019; Merino, Pionce, & Moreira, 2017; Jurado et al., 2019; Macancela et al., 2020).

2. Techniques and methods

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Table 1:Practical teaching methods		
Practical teaching methods		
INDICATORS	Didactic strategies applied in the formation of competencies Students-Commercial Engineering-FAFI-Universidad Técnica de Babahoyo (Jácome et al., 2018)	Criteria for conceptualization, classification, selection and characterization of teaching methods (Gómez, 2018).
YEAR OF INITIATION	2018 (Jácome et al., 2018)	2018 (Gómez, 2018).
COUNTRIES IMPLEMENTED	Chile, Ecuador, México y Perú (Jácome et al., 2018)	Cuba (Gómez, 2018).
DEFINITION	Practical teaching is a process that drives students to analyze and handle real situations as objects and to be able to establish a connection with everyday cases in actuality (Jácome et al., 2018).	The method is a tool of the educational teacher's characteristic, which manifests a teaching and learning technique so that it can achieve the general objective. All this encompasses fundamental characteristics to be carried out such as: the order, alignment processes and purpose of the techniques (Gomez, 2018).
CHARACTERISTICS	Being able to develop organized strategies in order to generate teaching and learning becomes an unnecessary critical point for the development of people. In addition, it helps in the process of knowledge through processes and methods, oriented to a specific population, since today it is difficult for students to learn and understand the topics of teachers being a challenge for them (Jácome et al., 2018).	Pedagogical, Gnoseological, Comprehensible, stimulation, oratory and comprehension work with students (Gomez, 2018).
PROCESSES	Synoptic Chart, Comparative Chart, Cognitive Maps and	Change of expressions through vector notations, Feedback of

values based on a variance-

Conceptual Map (Jácome et al.,

	2018, p.7-8-9).	covariance matrix and observation of multivariate analysis (Gomez, 2018).	
METHODS	Strategies to inquire about prior knowledge, Didactic Strategies that promote comprehension by organizing information, Strategies that promote comprehension, Group Strategies (Jácome et al., 2018, p. 10).	Cuban teaching, focuses in its development of center of attention on the internal view of the methods, establishing the different classifications, however, many do not deny each other, rather complete from one to another about the elements. Therefore, teachers are advised their pedagogical and didactic conception that was assumed for the route of the process for teaching learning (Gomez, 2018).	
BENEFITS	Teaching is applied in having meaningful learning processes in students. Therefore, the strategies and techniques where the systems implemented will redefine the work of the university with the needs demanded by society. Likewise, the skills where the teaching and learning process is used advocate group and autonomous learning. Finally, the tactics and techniques are combined has allowed, the growth of the students' skills, as protagonists, in the practice of what is studied theoretically (Jácome et al., 2018).	The content is called the content to know the part of the teacher where the objective, content, method of the teacher's experience is related, to be able to give the circumstances in the process, change and adjust in the method. In this way, the conditions in the working classroom are considered. Where particularly it is characterized in a customizable way of the students in the group, since, dynamically the group has the expression of interpersonal communication (Gomez, 2018).	
	Table 2: Practical learning methods		
_	Practical learning methods		
INDICATORS	Competency-based higher education teaching and learning model (Barba and Buenfil, 2021).	Learning strategies in higher education (Visbal, Mendoza, Diaz, 2017).	
YEAR OF INITIATION	2021 (Barba y Buenfil, 2021)	2017	
COUNTRIES IMPLEMENTED	Ecuador (Barba y Buenfil, 2021)	Colombia	
DEFINITION	In the system is traditionally	In education develops a	

	separated to the theory and practice that leads to have in the differences of scientific disciplines is so the art of the teaching process of learning, is generated in a crisis of professional level, the more emphasis is put on the theory the memoristic process of any information, without measuring the consequences of such activity (Barba and Buenfil, 2021).	strategy that have been increased in the argument to the interest of the long time, since education be the way of development of a country and improved in the quality of life of people (Visbal, Mendoza, Diaz, 2017, p. 73).
CHARACTERISTICS	Higher institutions is that both teachers and students find their raison d'être in the common search for knowledge, thus participating in a never-ending process of research that strengthens innovation and creativity (Barba and Buenfil, 2021).	It promotes learning with an effective, where it allows to have the sequence of order and work with precision for better appearance, therefore, cooperative work is encouraged for the process of teaching and learning. In this way, it is promoted to avoid the mechanical memorization of didactic materials of which students are no longer recipients to become agents of their own learning process, manage their own knowledge (Visbal, Mendoza, Díaz, 2017, p. 73).
PROCESSES	There is a tolerance for uncertainty, risk and insecurity, working in multidisciplinary teams. In this way, one learns to listen to others and to communicate one's own ideas (Barba and Buenfil, 2021).	Strategies are taken to provide the processes in which it is developed in the encoding, retrieval and acquisition of information (Visbal, Mendoza, Díaz, 2017, p. 73).
METHODS	A strategic plan that includes these relationships as priority activities, both for the company and the university, thus offering projects in which they can work together to achieve the expected results (Barba and Buenfil, 2021).	Having the information ordered makes it easier to have recourse to it at any time, that is, if the techniques expressed above are consciously performed, access to all the information stored in memory can be obtained more quickly. Therefore, the ideas are ordered and written that

		facilitates remembering the necessary information at any given time (Visbal, Mendoza, Díaz, 2017).
BENEFIT	Tactics, information acquisition strategies are carried out, where the codification of information has an adequate recovery for the benefit of learning (Barba and Buenfil, 2021).	In education, these technologies provide resources that benefit the student's learning process, so in this context education-technology, materials and resources have special characteristics that enable the autonomous learning process. These didactic resources can be helpful tools to carry out the formative task (Visbal, Mendoza, Díaz, 2017).

3. Results and discussion

Jácome et al. (2018) described didactic strategies applied in the formation of competencies because from their perspective, practical teaching is a methodological process gives impetus to students to be able to analyze, manage and make decision in real situations and to be able to engage in a connection with everyday cases. Regarding this, he agrees with the work of Gómez (2018) because he differs that the teaching method is a characteristic tool of the educational teacher, which is manifested through teaching technique in order to achieve the goal to achieve processes such as order, alignment and purpose of technique. On the other hand, in the study of Jácome et al. (2018) the countries where teaching methodology strategies are implemented are in: Chile, Ecuador and Peru. However, Gómez (2018) mentions that their conceptualization, classification and selection criteria were implemented in the country of Cuba. On the other hand, for the characteristics criterion Jácome et al. (2018) mentions that the development of its strategies is based on the organization in order to become a critical point for the development of people. Regarding this, it differs from the work of Gómez (2018) because its characteristics are punctual by pedagogy, gnoseological, comprehension, stimulation, oratory development and analysis comprehension. Then, in the criterion of process of practical teaching method the work of Jácome et al. (2018) stated that their methodological procedures in (a) Synoptic Chart, (b) Comparative Chart, (c) Cognitive Maps and (d) Conceptual Map. However, in the study of Gómez (2018) stated that he performs his teaching method (i) Change of expressions through vector notations, (ii) Feedback of values based on a variance-covariance matrix and (iii) Multivariate analysis observation. According to the method of Jácome et al. (2018) it is based on strategies for prior knowledge such as comprehension strategies, data organizational comprehension strategies and group strategies. Furthermore, in the work of Gómez (2018) it focuses on attention through methods for classifying different forms of information and advancing processes by process and advancing by each step based on a pedagogical conception and assuming process route for teaching learning. Finally, in the criterion of benefit Jácome et al. (2018) teaching is a benefit that is applied in meaningful learning processes there are different techniques where group and autonomous skills are employed is combined tactics and techniques that has allowed the development of students based on practice and theory. Likewise, the work of Gomez (2018) makes knowledge about the objective content and method of the

teacher's experience to provide process teaching, change in order to adjust conditions of quality teaching, in addition students learn to improve their interpersonal communication.

Dahik et al. (2018) mentioned that the teaching model of higher education learning by competence separates the theory from the practice of scientific disciplines for the teaching and learning process generating a higher rate of importance to the memoristic theory of which information. On the other hand, learning strategies base the interest of education based on the development of people to improve the quality of life through traditional methods (Visbal, Mendoza, Diaz, 2017). On the other hand, the implementation countries Barba and Buenfil (2021) implemented their learning model country of Ecuador, However, Visbal, Mendoza, Diaz (2017) implemented their learning strategies in the country of Colombia. On the other hand, in the criterion of characteristics Barba and Buenfil (2021) wrote that both as teachers and students should find their raison d'être in the search for knowledge, therefore, it must participate in an indeterminable process of research in order to strengthen innovation and creativity in the learning processes. On the other hand, in the study of Visbal, Mendoza, Díaz (2017) promotes learning to improve the cooperative precision aspect in the teaching and learning process where the student ceases to be a receiver to be an actor of his own learning and manager of his processes. However, in the study of Barba and Buenfil (2021) mentioned that in the process tolerance is possessed, uncertainty in multidisciplinary work is why it focuses on listening to others and being able to communicate ideas based on clear decisions, regarding this coincides in the work of Visbal, Mendoza, Diaz (2017) took strategies to provide the processes in the development of teaching for encoding, retrieval and acquisition of information for learning method. In other words, in the method criterion Barba and Buenfil (2021) explained that the method to improve learning is to encourage as a priority activity to improve projects that can work together and achieve expect united work. Likewise, in the study of Visbal, Mendoza, Diaz (2017) seeks to order the information to facilitate techniques to obtain access in a faster way to all the information stored based on ordered and written ideas to facilitate the recall of information at a given time. Finally, in the criterion of benefit Barba and Buenfil (2021) explained that the model of teaching and learning by competencies carries out tactics and strategies of acquisition and information for the purpose of the benefit of learning. This result is similar to the study of Visbal, Mendoza, Diaz (2017) employed technologies providing resources that will benefit the learning process of students, these teaching resources are tools to carry out a particular task or objective.

4. Conclusion

The conclusions of the research study were as follows:

The didactic strategies applied in the formation of competencies is a process that will encourage students to analyze and manage real situations. However, the criterion conceptualization, classification, selection and characterization of teaching method employs tools for the educational teacher manifesting a teaching and learning technique so that he can achieve his particular objective. On the other hand, Gómez (2018) synthesizes characteristic helps in the teaching process with processes such as (a) pedagogical, (b) gnoseological, (c) comprehensible, (d) stimulation, (e) oratory and (f) comprehension work with students, however, Jácome et al. (2018) mentioned strategies to inquire about previous knowledge, didactic strategies by organizing information and group strategies. Next, the process of didactic strategies applied in the formation of competencies proves to be more efficient by the most conceptualized techniques such as: (i) synoptic table, (ii) comparative table, (iii) cognitive map and (iv) concept map. However, the criteria of conceptualization, classification, selection and characterization of teaching method employs the analysis observation and multivariables being complex to understand for users in general. In the strategic method of Jácome et al. (2018) shows to be a unique method in applying different meaningful processes in students therefore exercises strategies, techniques and

technologies for teachers and students. However, Gómez (2018) employs a pedagogical and didactic strategy for the process route for teaching learning. Didactic strategies applied in the formation of competencies the benefit is applied in having learning processes to demonstrate the skills of a student, this result is lower than the criterion conceptualization, classification, selection and characterization of teaching method because it focuses on the content by knowing the teacher of how it relates to the objective in particular teaching method, experience and circumstance in the process through an interpersonal communication.

On the other hand, the model of higher education teaching and learning by competence employs various scientific and artistic disciplines in the teaching and learning process to improve the professional level, this result is shows a great difference compared to that of learning strategies in higher education since it focuses on developing education and improving the quality of teaching based on a strategic educational system. Next, Barba and Buenfil (2021) find the raison d'être in the common search for knowledge to strengthen innovation and creativity in knowledge. This study is inferior to the study of Visbal, Mendoza, Diaz (2017) because it shows strategies for the development of information retrieval and acquisition. Likewise, the model of higher education teaching and learning by competence improves the strategic plan and facilitates the relationship activity being a priority criterion to obtain more accurate results, this study is different from that of learning strategies in higher education facilitates the access in a quick way to all the information stored based on orderly and written ideas that facilitate remembering the necessary information at a given time.

5. Recommendation

The recommendations of this research are the following: This qualitative study can be continued in a quantitative way by assigning variables, numerical and statistical data with the objective of being able to measure the indicators selected and mentioned in order to be able to promote learning and teaching criteria. To carry out a classification study is a good option to obtain methods, techniques and procedures of teaching and learning and to be able to know which is the most suitable for specific sectors and educational or higher education teaching staff. To develop the research work using the convergent mixed method to obtain qualitative and quantitative data and to compare the information in search of similarity and/or difference. It is advisable to conduct longitudinal studies to analyze and detail technological changes in teaching and learning methods and techniques. Conduct classification research covering more than 6 methods or procedures to improve the quality of teaching and learning to increase the alternatives for the selection of a complete method or technique that exercises different feasible criteria that meets the needs of stakeholders. Finally, to increase the number of variables with the objective of taking the research to a deeper study to provide support to teachers or students of higher education with the assurance of being able to obtain more accurate results based on methods that can help academic teaching and learning.

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