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Article

Formative learning and its characteristics applied in the classroom in university students

El aprendizaje formativo y sus características aplicadas dentro del aula de clases en estudiantes universitarios

Aprendizagem formativa e as suas características aplicadas na sala de aula para estudantes universitários

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Abstract: Formative learning is considered as part of the improvement of the education process in students at the university and thus develop their skills in their profession, the present research topic aims to identify how the formative learning process is performed and what are the characteristics applied in the classroom, sampling was performed by selecting 369 students, with the application of a structured survey with 10 closed questions, 86% like to update their knowledge and this has allowed 71% of students to learn management of reliable sources and the application of APA standards.

Key words: learning, formative, perception, students, learning.

Resumen: El aprendizaje formativo es considerado como parte del mejoramiento del proceso de educación en los estudiantes en la universidad y de esta manera desarrollar sus habilidades en su profesión, el presente tema de investigación tiene como objetivo identificar como se realiza el proceso de aprendizaje formativo y cuáles son las características aplicadas en el aula de clases, se realizó muestreo seleccionando 369 alumnos, con la aplicación de una encuesta estructurada con 10 preguntas cerradas, el 86% le gusta actualizar sus conocimientos y esto ha permitido que el 71% de los estudiantes aprendan manejo de fuentes confiables y la aplicación de normas APA.
Palabras clave: aprendizaje, formativo, percepción, estudiantes, aprendizaje.

Resumo: A aprendizagem formativa é considerada como parte da melhoria do processo educativo nos estudantes da universidade e assim desenvolver as suas competências na sua profissão, este tópico de investigação visa identificar como é feito o processo de aprendizagem formativa e quais são as características aplicadas na sala de aula, a amostragem foi feita através da selecção de 369 estudantes, com a aplicação de um inquérito estruturado com 10 perguntas fechadas, 86% gostam de actualizar os seus conhecimentos e isto permitiu que 71% dos estudantes aprendessem a gestão de fontes fiáveis e a aplicação das normas da APA.
Palavras-chave: aprendizagem, formativa, percepção, estudantes, aprendizagem.

INTRODUCTION

Learning disabilities are a generic term that refers to a heterogeneous group of disorders, manifested by significant difficulties in the acquisition of

general knowledge from the basics to the updating of a described scientific subject. These disorders are intrinsic to the individual, and presumably due to a dysfunction of the nervous system, and may continue throughout the life process. They can manifest themselves in different actions at the moment of intervening in an educational and social way, these facts do not interfere in the way of learning and focusing on the acquired knowledge. Although learning disabilities may occur concomitantly with other disabling conditions (e.g. sensory deficit, mental retardation, severe emotional disorders) or with extrinsic influences. (Arranz, 2013). Learning is one of the spaces that best supports training, and allows the production of knowledge about its practice and, based on this, the generation of knowledge and its transformation. The most valuable impact that educational and pedagogical research can have is to educate its own actors and, consequently, to contribute to the transformation of their practice. (Oviedo PE, 2014). For this study, formative learning is understood as that oriented to academic and professional training within a defined curricular framework. The research modality is differentiated by its pedagogical purpose, that is, to improve the teaching-learning processes, and to develop the objects of a study that are previously determined, and finally, because it can be placed within the teaching function of the university professor. (Restrepo, 2003). Nowadays there are radical changes in training, research and preception of knowledge acquired by students, nowadays the increase of quality in training seeks to develop skills and methods of perception, for this it must be understood that research goes hand in hand with academic training and how the influence on studies, with current approaches and methodologies. At the State Technical University of Quevedo, the teaching processes to students is done through constant research and practice of circumstances and phenomena that occur in daily life when developing the profession, each career encompasses many important factors

for excellence in professional performance, in the first point is the academic training where processes of criticism, reflection and participation of topics of interest according to the subject is performed. Regarding the formative learning of the students of the university, it is expected to obtain good results, since research benefits the professionalism of the students, and contributes to the knowledge and the quality of development of their professional activities. This research corresponds to a quantitative, descriptive, cross-sectional study, a purposive sampling of the students of the university was carried out, selecting a random sample of 369, where a structured survey with 10 closed questions was applied, 77% of the students know about formative learning, 97% did not know how to prepare a research project, 86% of the students have attended seminars, while 14% have not, 100% state that teachers require them to conduct research, 86% like to update their knowledge and this has allowed 71% of the students to learn how to handle reliable sources and the application of APA norms, 100% affirms that formative learning improved their quality of knowledge, and that the execution of research projects reinforces their specialization, practice and improve learning in the professional career. It was concluded that when starting the university career, seminars, research activities, project development are included, these processes are decisive for the student to create a continuous formation, and also help the development of skills, better analysis of information and development of knowledge, the influence of formative learning allows students to know how to develop an excellent application of research methods and develop the general learning of their professional career.

Higher education with its learning options both fiscal and particular, lead to develop internal strategies to guide in teaching the student. Traditional strategies do not allow responding to the formative needs of current university students, given the democratization of university enrollment, the diversity in

the composition of the student body and the need for greater accompaniment to guide their deep learning (Biggs, 2018). The challenge for educators is to transmit the learning process using strategies that allow an investigative approach and develop student participation in class.

In order to build the learning process, an active participation between student-teacher must be built, this helps to develop the activities in the classroom and to carry out mutual study collaborations. It is really learned when contexts are generated that impel the student to orient his process from a deep approach (Rué, 2017).

Learning approaches - shallow or deep - refer to ways of learning a task and not to learner characteristics (Biggs, 2018). A student's adoption of a particular learning style does not depend exclusively on his or her personal characteristics, but is directly linked to the formative relationship, since the organization of activities may generate more or less personal activation (Rué, 2017).

For learning to be a form of daily inquiry and curiosity on the part of the student requires interesting actions on the part of the teacher to create a continuous teaching environment. The teacher acquires the competencies to create and orchestrate complex learning environments, incorporating students in activities where they can build knowledge in environments of social and personal interaction; fostering collaboration, reflection, analysis and criticism with the ability to monetize the different spaces where knowledge is produced (UNESCO, 2014). The insertion of ICT in teaching demands a professional competent in knowing what information is needed and how to apply it, a designer of learning environments mediated by ICT with the ability to take advantage of the different spaces where knowledge is produced. (UNESCO, 2014).

The new generation is involved to the maximum with learning through technology, using the mastery of different devices, and the famous internet, this comprises the famous digital era. They are characterized by surpassing their teachers/adults in the mastery of technologies and have easier access to data, information and knowledge circulating on the network; they live in a culture of interaction and their communicational paradigm is based on interactivity by using an instantaneous and customizable medium such as the Internet (Oblinger, 2015).

The authors (Garcia & Escofet, 2017)emphasize the differentiated use of technologies by young people. Their conclusion is that they use ICTs to live, but not to learn or develop in the practical tasks of educational work. They possess technological skills that they use in social and leisure activities, but they are not able to transfer them directly to their learning processes and knowledge construction. The use of ICT is a great help to improve students' learning and to develop their research capacity, since technology provokes updating and curiosity to learn more about a pedagogical topic.

Formative learning in higher education is a pedagogical issue-problem, it addresses, in fact, the problem of the teaching-research relationship or the role of the teacher (Gutierrez, 2008)This problem places us in the field of teaching strategies and specifically evokes the investigative teaching or learning by discovery, this arises as a problem in educational and didactic pedagogy, for which teaching strategies must be established, since its presence is consubstantial, as already suggested, to one of the major aspects or teaching strategies: learning by discovery and construction. (Gómez, 2017).

Learning, as mentioned by the authors Rochina, Ortiz and Paguay in their article "The methodology of teaching and learning in higher education", cannot be separated from teaching. (Rochina, Ortiz, & Paguay, 2020) to ensure that learning achieves autonomy in the teaching/learning process is a

great challenge for teachers, since we are convinced that meaningful learning implies that the student actively participates and relates what is learned with previous knowledge, encompassing both perception and feelings, this is achieved with a comprehensive education that provides knowledge, skills and attitudes that allow him/her to be a competent individual in personal, professional and social areas. (Fondo, 2020).

MATERIALS AND METHODS

This research corresponds to a quantitative, descriptive, cross-sectional study, purposive sampling was performed, selecting a random sample of 369 students. (Díaz Barriga, 2014)The sample of 369 students of the university was selected randomly, all students enrolled at the State Technical University of Quevedo in the current period.

A structured survey with 10 closed questions was applied. (Hernández Sampieri, 2018), to identify whether they have participated in workshops and research projects where learning, research, characteristics, benefits and implementation of the knowledge acquired in the different subjects taught will be measured and how it helps the improvement of their professional career.

The population is the students of the institution with a total of 9429 students of the Quevedo State Technical University.

The sample was obtained using the following formula:

$$n = \frac{\mathrm{N} \times Z_a^2 \times p \times q}{d^2 \times (N-1) + Z_a^2 \times p \times q}$$

N: Population (9429)
Z: Confidence level (1.96)
p: probability of success (0.5)
q: probability of failure (0.5)
E: sampling error (0.05)

$$n = \frac{9429\,(1{,}96)^2(0{,}50)(0{,}50)}{(0{,}05)^2(9429-1)+(1{,}96)^2(0{,}50)(0{,}50)}$$

$$n = \frac{9429\,(3{,}8416)(0{,}25)}{0{,}0025\,(9428)+(3{,}8416)(0{,}25)}$$

$$n = \frac{9055{,}6116}{23{,}57+0{,}9604}$$

$$n = \frac{9055{,}6116}{24{,}5304}$$

$$\mathbf{n = 369}$$

The sample is given with a stratified probability sampling resulting in 369 students for the application of the survey.

Dialectical - Materialistic; The problem is understood within the educational and structural context. (Ruiz Olabuénaga, 2016)of the university taking into account the students' perceptions of formative learning, determining the different aspects involved in the formation of the student.

Analytical - Synthetic; I facilitated to carry out the discussion of results to contrast the degree of veracity of the hypotheses. (Pineda, de Alvarado O, & de Canales, 2014), the synthetic method helped the integration of the most important results and thus obtain the conclusions of the research of the proposed topic.

Statistical - Descriptive; It was used to quantify and qualify the information obtained from the students on the formative learning perspective, using tables and graphs for the analysis of the results. (Mejía Mejía, 2005)

Interpretative; The assumptions and purposes guiding the research led us to choose this perspective focused on the search for meanings in order to understand education from the words of the subjects involved. The approach to the knowledge of the meanings constructed by young people and adults around the educational, involves the choice of strategies and means for obtaining descriptive data where each subject of the research provides a

valuable perspective in relation to their beliefs, thoughts, ideas, assessments, etc, the interpretive paradigm becomes the theoretical and methodological framework from which to describe, interpret and understand the data. (Ruiz Olabuénaga, 2016)..

RESULTS

According to the research applied to the students of the State Technical University of Quevedo, it was identified that 77% of the students know about formative learning since the teachers have applied it since the beginning of their professional career, when entering the university 97% of the students did not know how to develop a research project, so it is a high percentage of ignorance of one of the most important tools of research, 86% of the students have attended seminars during their career, while 14% have not done so perhaps due to economic factors or a special case, While 14% have not done so, perhaps due to economic factors or some special case, since the Universities constantly train students by offering this type of educational tools, while 100% state that teachers require them to do research constantly, both practical and theoretical to reinforce their knowledge, it can be seen that 86% like to update their knowledge by researching different sources of information in their specialty such as books, magazines, etc., This has allowed 71% of the students to learn how to handle reliable sources and the application of APA norms for their research work. 100% of the respondents affirmed that formative learning improved their quality of knowledge, and that the execution of research projects reinforces their specialization, practice and research, all these factors improve learning in their professional careers.

In higher education it is necessary to provide learning experiences to students, it allows to develop and improve teaching methods, improve the quality of education and from care management contribute to the cost - benefit of the

care provided. It is a process that validates and improves existing knowledge and generates new knowledge that influences practice. (Ariza, 2014)With the results of this research, it was proven that formative learning from the beginning of a professional career helps to improve both traditional and modern tools such as ICTs used for practice and nurtures the knowledge of the chosen profession. (Guerrero, 2014)Formative learning is also necessary to generate knowledge about education, administration, health services, attributes and roles of everyday research. The contributions of these studies influence practice and thus contribute to the enrichment of the discipline's body of knowledge. (Ariza, 2014)In all the careers, seminars, workshops and constant practice are needed to perfect the skills for this, these procedures must be inculcated constantly, based on the research, the majority of students practice and are actively conducting research and developing their topics of interest for their careers. In response to the descriptive category usefulness of research training, all the units of meaning are related to generic competencies, of which reading and critical thinking stand out, these allow a significant professional advancement to deploy disciplinary activities in areas such as education and bibliographic search among others; also the findings coincide with the stipulation that by encouraging critical thinking it allows then to generate a reflective judgment. (González J, 2004). The scientific production of knowledge should be a permanent concern among professionals of any educational discipline, since it constitutes one of the indispensable mechanisms to achieve improvements in the development of practice, enrich knowledge and qualify the service being provided to society. (Angeles, 2013). In this aspect, the results show a tendency to highlight the importance of formative learning to contribute to making their scientific knowledge more visible. (Do Prado M, 2011).

CONCLUSIONS

Formative learning improves the research processes and knowledge of students at the Quevedo State Technical University, at the beginning of the university career, seminars, research activities, development of research projects are included, these processes are crucial for the student to create a continuous training, it also helps the development of skills, better analysis of information and development of knowledge. The opinions of the students regarding the benefits of putting into practice what they have learned are described as useful for the improvement of the process of their studies, in the investigative, practical and theoretical aspects, since with the skills adopted by the process they improve the quality of knowledge. The influence of formative learning allows students to know how to elaborate an excellent application of research methods and develop the general learning of their professional career.

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