

Autonomous Learning in Students of Regular and Higher Basic Education

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Abstract

This systematic review article is focused on the issue of educational autonomy, for which the objective was set: to analyze the current state of knowledge in the autonomous learning of students of basic and higher education between the years 2013 and 2020. Regarding the Research method, this is a systematic review under a quantitative and bibliometric approach, information sources from Scopus, Scielo, Ebscohost and Scimedirect databases were consulted, first, in a general search, using terms: learning, autonomy and learning autonomous, and then an advanced search supported by logical operators like "and", "or" and "not"; In the selection of the documents, the prism technique was used, which helped us to determine the sample of 22 articles, assuming the inclusion and exclusion criteria through the Pedro file. Regarding the discussion of results, we can see that the majority of scientific articles were published in 2020, the country that publishes the most is Spain, and most articles have a quantitative approach applied. It was concluded that the majority of scientific articles coincide in the definition that autonomous learning in students develops the capacities, abilities and attitudes to generate their own learning, assuming an active role; It also considers that the teacher is a facilitator-mediator to achieve the competence of learning autonomously.

Keywords: Learning, process; educational autonomy, self-learning, autonomization.

Introduction

Autonomous learning starts from conception that this is a process in which student becomes aware of their own learning, understood as an active process, making them a direct participant in their training, a permanent evaluator of their progress, difficulties and assumes control of their learning process, in a disciplined, responsible and committed way regarding the continuous improvement of this and its results (García, Ortiz, & Chávez, 2017). To achieve autonomous learning requires student to organize and empower themselves, using different strategies and learning processes throughout their academic life. (Medina & Nagamine, 2019. p. 8). In this document we seek to answer the question What is the current state of knowledge in the autonomous learning of students of basic and higher education? A deep approach to learning is characterized by use of previous knowledge, the set of ideas, information and knowledge possess or can be developed, the application of new knowledge, the relationship of knowledge with concrete experiences, the search for main information of texts, verification of ideas, revision of one's own knowledge (Argüelles, 2004). Employing such skills and strategies requires considerable effort and time, but also more easily leads to meaningful and functional learning (Cabanach, 1997), cited by (Assessment, 2020).

The autonomous person is when he governs himself; when using its own thinking, and guided by its interests and needs, it makes decisions for itself (Bravo et al., 2017). The autonomous person uses his previous experiences and defines strategies to face new situations and solve new problems. Those who achieve a high degree of autonomy, not only depart critically and reflexively from other proposals or decisions, but are able to create others (Rodríguez, Montoya, & Hurtado, 2019). The valuable information rescued in search engines, help us to understand that autonomy in a general context, is considered as a variable covers a wide spectrum of human intellectual abilities, mainly because all people are born with different degrees of autonomy and, it is possible with appropriate strategies, to enhance it significantly (Ibarra & Rodríguez, 2011). International schools have relied on this type of approach to develop autonomy skills. Likewise, we think that this proposal should always be taken into account in the various Educational Institutions to develop autonomy in students, using various forms and strategies so that students do not depend too much on the thinking of others (Sotto, 2016).

In a specific context autonomous learning takes boom as a superior competence from curricular designs of 2009, previously it was observed as an ideal element, but in the latest designs it is being given the true enhancement, the National Curricular Design (DCN, 2019), refers "The student develops autonomous learning processes in a permanent way for continuous improvement of them and their results" (p. 17), this element is indicated in graduation profile, as a product of daily work of teacher, this implies every teacher must seek mechanisms, strategies and spaces to favor autonomous learning, the same that must be evidenced as a process and as a product, that is why in this article we propose to analyze current state of knowledge of development of autonomous learning of students of basic education from scientific articles published on this subject.

Pérez (2020) about autonomous learning highlights that seen from Modernity, autonomous learning has occurred in structured conditions very rarely favor emergence of it, in addition it is evidenced a temporality and a mode of relationship are maintained from its origins until today, because both teachers and students are at a specific time and place, almost every day, for long hours and for many years, in order to study some contents that are not learned massively in daily life; and in very few scenarios true autonomous learning occurs, because the transmission of information from the teacher to the student is prioritized, so this fact must be changed, affecting work of teacher, which must be based on establishing relevant processes to achieve self-regulated learning. Carrillo & Vásquez (2018), quote (Crispín et al., 2011), considers that "autonomous learning (AL) as a competence, through which the student 'learns to learn'. It implies a metacognitive process, since student self-regulates his learning to extent he becomes aware of his cognitive and socio-affective processes" (p. 6), this definition is the one that seems to us the most pertinent to assume in this research, put according to the theorists, the autonomy of the individual lies in ability to perform his academic activities independently, regulated by his internal and external motivations, always under a conscious act of his activities.

To address main theories of autonomous learning, we will start by indicating this concept has as dimensions individual learning, collaborative learning (interlearning and cooperative learning) and learning from ICT. In individual learning, personal initiative is encouraged to promote use of various strategies, for problem solving and therefore autonomy in decision-making. Regarding collaborative

learning, it seeks to promote experiences of learning, which must be structured, so that the members of the group can enrich themselves from the contributions of others, for example, designing heterogeneous groups according to gender or different learning styles (Roselli, 2016), cited by (Cortes & Estelles, 2019). On the other hand, cooperative learning is used to learn from peers and get an effective tutoring that enhances the search for help. Learning from ICT seeks to propose activities require initiative where greater use is applied or made of strategies to learn through the resources of Information and Communication Technologies (ICT); which in turn promotes motivation to carry out work that entails challenges for students (Sunkel, 2006), current tools such as technologies, educational software that facilitate and help autonomous learning (Llatas, 2016; Montero, García Salazar, & Rincón Mendez, 2008).

Method

Research is based on quantitative paradigm, established and accepted by a substantial number of people in a study community (Mendoza et al., 2020), of bibliometric type, framed within systematic review (Moreno, Muñoz, Cuellar, Domancic, & Villanueva, 2018), for search of information has been carried out in the databases Scopus, Scielo, Ebscohost and Science Direct; which are housed in virtual library of the César Vallejo University, has been held from July to December 2020. This search for information in databases is given in two ways: General or basic through the term autonomous learning and advanced has been done with descriptor terms selected from UNESCO thesaurus such as "learning", "autonomy", "autonomous learning", "self-regulated learning" and "collaborative learning" and making use of Boolean operators "and, or and not" (García and Lévano, 2017) and in each database it has been done differently according to the nature and format of the information search of the documents.

Results

Search in the databases consulted has been carried out using operators such as "and", "or" and "not", (García and Lévano, 2017), following a formula, which has yielded interesting results according to descriptors used, which are shown in Table 1, where it is observed the main selected articles are in the Scopus database. It should be noted in a general search the number of articles on a descriptors such as learning or autonomy, is abundant, while in an advanced search using operators these are considerably reduced, but difficulty we have encountered in the Ebscohost database, is that the documents are of the higher education level. A similar case happens with other databases. In conclusion, selected articles basically refer to level of EBR and coincide in theme, methodology, region where research was applied or developed, and in the documents of the higher education level they have been chosen for the similarity in type and design of research.

Table 1. Using Boolean Operators.

Database	General		Outpost (Search variables with logical operators)		%
	Descriptor	N° of Results	Descriptor	N° of Results	
Scopus	“Autonomous learning”	6849	(TITLE-ABS-KEY (icts OR “Autonomous Learning” OR “Autonomy in learning” NOT "Teaching")) AND (TITLE-ABS-KEY (“Basic education” OR “Peru” OR “Primary”)) AND (TITLE-ABS-KEY (“Autonomous Learning” NOT “Superior”))	18	0.26%
Escohost	“Autonomous learning”	95284	TITLE-ABS-KEY (“Autonomous Learning”) TITLE-ABS-KEY (“Autonomous Learning” NOT “Teaching” NOT “Superior “)	231	0.24%
Scielo	“Autonomous learning”	737	TITLE-ABS-KEY (“Autonomous Learning” NOT “Teaching” NOT “Superior “)	12	1.63%
Sciedirect	“Autonomous learning”	174	TITLE-ABS-KEY (“Autonomous Learning” NOT “Teaching” NOT “Superior “)	2	1.15%

Analysis of scientific production according to gender of first author

The articles downloaded, analyzed and organized under criteria such as gender of first author, show us data in which incidence of female authors (68.18%) is observed in a higher percentage than male authors (Figure 1). Of the 22 selected articles, 68.18% evidence as first author to the female gender, while 31.82% belong to the male gender. This is mainly due to fact that there is a greater number of publications made on autonomous learning by women who feel the need to develop this competence in their students, researchers promote with greater emphasis the work of learning autonomously and this is what we evidence in our search carried out.

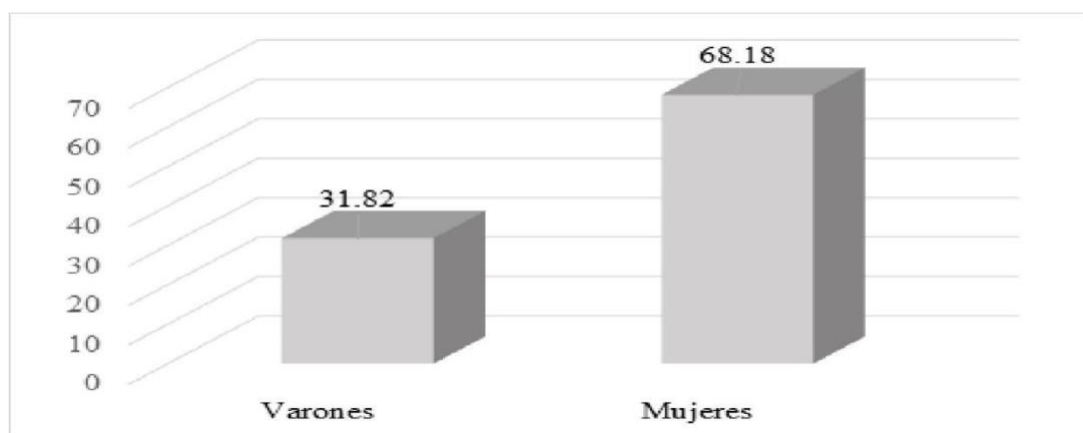


Figure 1. Percentage of articles by gender of first author

Analysis of scientific production according to year of publication.

Research carried out on the subject analyzed began in 2013, being constant publication from 2016. Articles selected under criteria of level where research is developed, type and methodology of research, as well as other criteria of interest in this article belong to years 2017 to 2020, being greater the number of publications between the last two years, as evidenced in Figure 2.

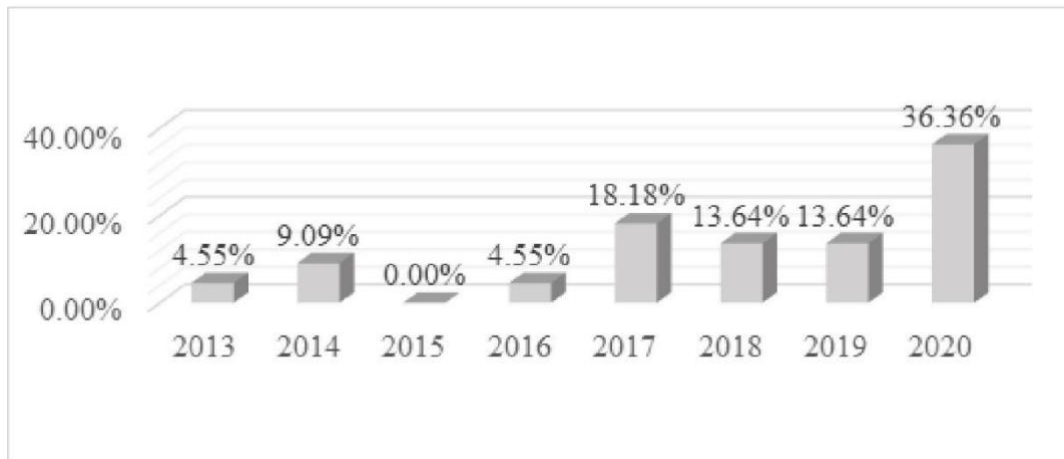


Figure 2. Percentage of articles by year of publication

Among selected articles, have been taken as main reference, those have been published in 2017 and 2020, to evidence more topicality, in addition, it is appreciated that variable of autonomous learning has been emphasizing since much before 2013, only that in this graph is considered those that have been published officially, with this we affirm our systematic review has necessary support and that this variable must be investigated a little more because this document will be public outside the national academic field. (R. Hernández & Mendoza, 2018).

Analysis of scientific production according to the author's country of origin.

Figure 3 shows that selected articles about autonomous learning have highest percentage in Spain, where greater emphasis is being placed on this form of work, both before and during the pandemic. In Peru, documents on this variable have also been obtained, being higher in universities, but there are only a considerable number of them that have been applied at the level of Regular Basic Education.

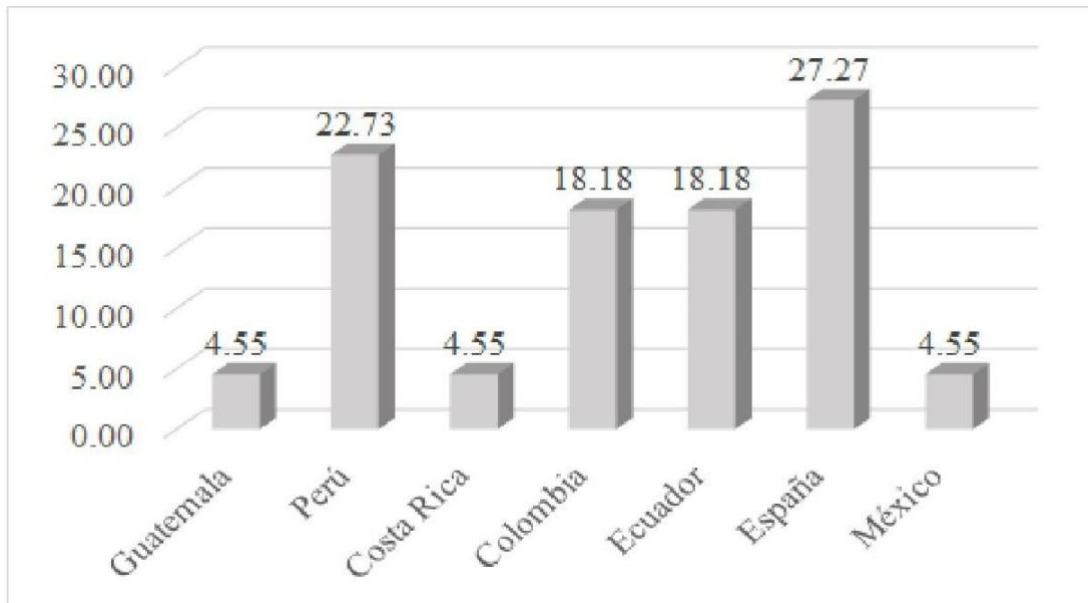


Figure 3. Percentage of articles by country of publication.

In Table 2, referring to definitions of autonomous learning, from selected articles, 6 of them have been developed in higher education and coincide in definition, conceiving autonomous learning as one that promotes the development of competencies, skills of higher order, such as: interpret, discuss to reach a cognitive independence, emphasizes that higher education has gone from the university of teaching to university of learning. On the other hand, 4 articles agree that, to develop autonomous learning, these can be achieved by making use of technological resources, as hashappened with the platform "I learn at home", during the year 2020. The most important conclusion on the definitions of educational autonomy or autonomous learning, is that the majority of articles, affect that autonomous learning seeks that students are able to develop their abilities, skills and attitudes to generate their own learning, assuming their active role, in addition, conceives the teacher as a facilitator-mediator, knowing that learning varies from one individual to another, so each person must assume his own role in a self-regulated way, so the role of the teacher is to propose and generate strategies so that it is possible to develop the competence of learning autonomously to mind. In two articles there are differences, because they conceive that autonomous learning only occurs in people who have a certain degree of difficulties and they are the ones who truly achieve this learning as a resource to communicate, either helped by technological applications or some devices.

Table 2. According to author, title, autonomous learning and journal of publication.

Article Title	Author	Autonomous learning	Publication magazine
Autonomous learning strategies in the reading comprehension of high school	Medina & Nagamine, (2019)	The article responds to the need to know if young people at the secondary and higher levels have strategies for independent learning and determine how this variable explains the difficulties of critical thinking in Peru. This	Research Articles

students		document interests us because it establishes the definition as well as the bases of autonomous learning, that is, it conceptualizes autonomous learning as a tool that allows the development of competences of the higher order.	
ICT resources that promote autonomous learning strategies: the autonomous and self-regulated student	Rodríguez (2014)	When reviewing the research, it is clear that the author aimed to determine the development of an autonomous student and was able to verify the impact that the new Information and Communication Technologies have generated new labor and, therefore, educational needs. This article shows two variables of considerable interest in our literature review ICT and autonomous learning, these variables developed in a relevant way generate in students the ability to relate new elements and solve their problems in a current context.	Trials
Teaching strategies for the promotion of autonomous learning in university students using LMS platforms	Vargas & Villalobos, (2019)	This article identifies the characteristics of a student who has the ability to learn autonomously, with the help of tools based on LMS, assumes a clear position regarding the conception of autonomous learning, identifying collaborative work as the very important axis for autonomous learning, so it is necessary to train teachers to avoid bias when handling such tools.	Electronic Journal Quality in Higher Education
Assessment of Autonomous Learning	Lec, (2020)	The revised article presents the results of the thesis "Evaluation of Autonomous Learning in the School of Postgraduate Studies of the Faculty of Humanities, University of San Carlos de Guatemala". This document establishes the importance of the evaluation of autonomous learning for the student as the protagonist of their own learning. It is evident the reference of different bibliographic sources, as well as the definition of autonomous learning with the only difference that, this is directed to higher education. It presents a descriptive analysis of the research, being the most relevant that, autonomous learning, promotes autonomy, research, self-discipline, provides freedom of time management and turns the student into a critical person.	International Scientific Journal
Autonomous learning in higher education, virtual modality: a reading from the anthropotechnics	Pérez, (2020)	In this research it is observed that the main finding is that the strengthening of autonomous learning in the distance or face-to-face modality is linked to the exercises and the time that the student dedicates to it in a sustained way. In addition, much has to do with the academic culture of the student and the permanent guidance of the teacher with a greater mastery of formal knowledge.	Academia and Virtuality Magazine

Considerations for autonomous learning in the asynchronous environment: case of gradual implementation of classroom invested in engineering	Cortes & Estelles, (2019)	While it is true that this document is developed at the top level, the work of the inverted classroom developed by the author is very important to achieve autonomous learning, but its results are not the best because there is evidence of a decrease in academic performance, in the asynchronous modality, this because the subjects of the sample do not evidence or do not have well-structured the capacities of autonomous learning (honesty, discipline, perseverance).	INNODOCT 2018
Technological tool for autonomous sign language learning	Hernández et al., (2020)	The article we present is developed with people with hearing disabilities, who showed difficulties in communication, causing isolation, the researchers developed a technological application that allowed them to increase their level of autonomy in learning sign language. It is important because of the methodological aspect used.	Spaces Magazine
Metacognition and autonomous learning in Higher Education	Roque et al., (2018)	The document presents a clear objective about the strategies that the university student must carry out to develop capacities that allow him to self-learn, autonomous learning that lead him to develop the formation of critical thinking during his studies, emphasizing the role of self-learning and metacognition.	Higher Medical Education. 2018;32(4)
Relationship between the academic-personal motivation of the novice student in education and self-employment strategies	Pegalajar, (2020)	The article is based on a descriptive-correlational methodology, to establish the relationship between the academic-personal motivation of the student who enters the higher level and the strategies of autonomous work developed in their initial training process.	University Education Vol. 13(5), 257-268 (2020)
The influence of Audiovisual resources for autonomous learning in the classroom	Marcos & Moreno, (2020)	This article emphasizes the role of acquiring skills and abilities around autonomous learning as an essential element of individual learning throughout life, in addition to trying to reduce the audiovisual consumption of young people.	D-Advances
Autonomous learning. Their role in developing specific competencies in higher education.	González, (2018)	This article delves into the development of professional competences through autonomous learning as a key tool in the formation of professional competences, but all this framed in the level of higher education. We highlight in this document the instruments for collecting data on specific competences.	Contemporary Dilemmas Magazine: Education, Politics and Values.
Strategies of Autonomous Work in New University Students of Education	Pegalajar, (2020)	The article is based on a descriptive research, from the application of a questionnaire of strategies of autonomous work to 407 individuals at the University of Jaén (Spain), the most jumping aspect of this document the results regarding the strategies to develop	REICE. Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación, 2020, 18(3), 29-45.

exams and individual work.

Cybermultimedial educational environments and autonomous learning	Zapata, (2014)	The author of this article emphasizes education as a communicative process related to cyberculture and autonomous learning, well-structured theories in relation to variables are quite clearly appreciated.	Revista Luciémaga. Faculty of Audiovisual Communication - Politécnico Colombiano Jaime Isaza Cadavid. Faculty of Communication Sciences
Autonomous learning and skills	Solórzano, (2017)	The revised document presents bibliographic information related to autonomous learning, focused on higher education but touches on a section of the other levels, explains the current demands of education in Ecuador, pointing towards conscious and reflective thinking to develop as citizens of the world.	Scientific Journal: Mastery of Science
The psychological basis for the development of autonomous learning	Bravo et al., (2017)	The article covers many topics, but what stands out most are the teaching-learning processes, focused on the processes that the student develops. This emphasizes that students must be trained on the basis of autonomy and flexibility, where the teacher takes advantage of and stimulates their potential and directs them towards the formation of professional skills in these.	Scientific Journal: Mastery of Science
Collaborative online learning and autonomous learning in distance education	Leiva (2020)	In this article, the author highlights the mechanisms that must be carried out by educational authorities and teachers to deal with education in times of social distancing, he rescues contributions from several articles, where the effectiveness of the method used during confinement is visualized, as well as its shortcomings, concludes in the imperative need to reduce the digital divide between urban and rural areas.	Scientific Journal, Culture, Communication and Development, 5(3), 95-100.
Relationship between Critical and Creative Thinking skills and autonomous learning in students of the Faculty of Mathematical Sciences	Peña & Cosi (2017)	This research work shows us how critical and creative thinking and learning strategies are related to each other, although it is true it is a work developed at the higher level, in the Faculty of Mathematical Sciences of the National University of San Marcos, places us in the national context, of how students of basic education arrive, rather, the level of graduation from basic education.	PESQUIMAT 20(2): 37{40 (2017)
Skills development through autonomous	Cárcel, (2016)	This article focuses in a pertinent way the integral development of the individual, focuses very well the role of the competences and the	3Ciencias

learning		strategies to achieve them, whose main north is to achieve autonomous learning, and that this, allows him to be motivated for future learning.	
E-learning platforms and tools for autonomous learning of mathematics in Regular Basic Education: A systematic review of the literature	Hinostroza y Epiquien, (2020)	This document addresses the non-face-to-face work due to the presence of the Coronavirus (COVID 19), clearly identifies which are the best platforms and technological tools in the field of mathematics that allow self-learning of students.	Universidad Peruana La Unión
Empowerment from learning to an autonomous approach using PERA test	Rodríguez et al., (2019)	In this article we find information from the field of psychopedagogy, through it is raised didactic tools on: representation systems, cerebral hemispheres, learning styles and the theory of color psychology, as mechanisms that explain the learning of students.	Revista Luciémaga. Faculty of Audiovisual Communication - Politécnico Colombiano Jaime Isaza Cadavid. Faculty of Communication Sciences
Approaches to attention to diversity, learning strategies and motivation in secondary education	Núñez et al., (2014)	This article, an exploratory study that establishes and analyzes the differences between various strategies and motivation patterns of students, concluded that there are statistically significant differences between learning strategies (relationship building) and motivation (intrinsic, to work in a group and internal attribution).	Educational Profiles
Strategies aimed at autonomous learning at the Universidad Estatal Península de Santa Elena, Ecuador	Espinoza et. al., (2017)	The revised article addresses the concept and mechanisms of how autonomous learning allows students to achieve better academic performance, also includes the best strategies to generate self-employment, in students of the higher level in Ecuador.	Cuban Higher Education Magazine. 2017. 3. 74-84

Analysis of scientific production according to type of research.

In Figure 4, regarding to methodology of documents reviewed (Monje, 2011), we find the largest percentage has a quantitative approach, of type applied, this is because in most of investigations is considered as a problem the little management of autonomous learning, in addition to documents of exploratory correlational type, in this work they occupy the third place, being the second for works on autonomous learning of descriptive type.

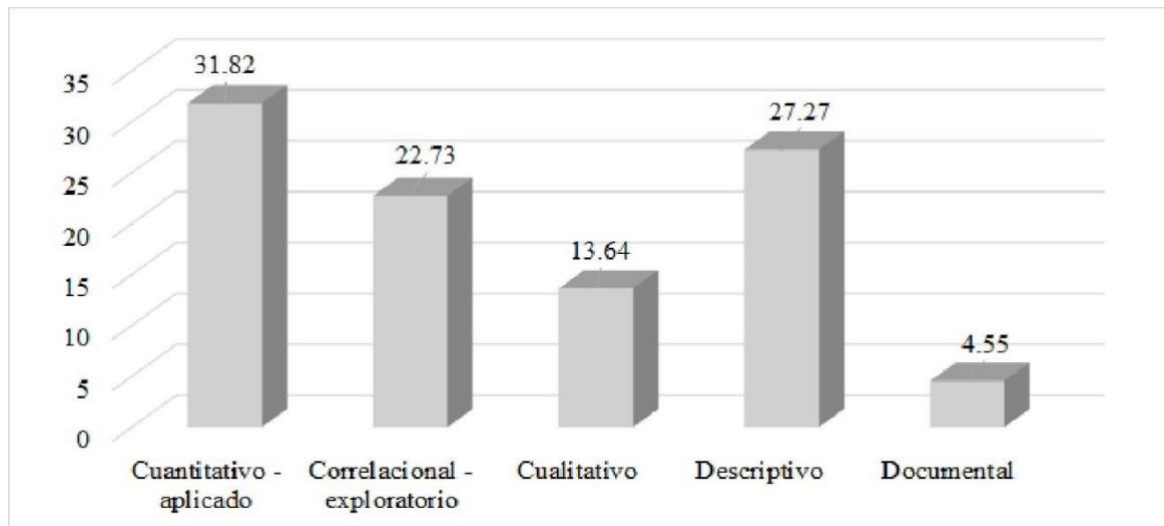


Figure 4. Percentage of articles by type of research.

Evolution of autonomous learning concept

Montealegre (2016), cites Piaget (1975) as the psychologist who introduces the term self-learning, in the same document Vigotsky is quoted, referring to the term as "independence in learning"; but it is Holec (1981) who is known as the father of the theory of the autonomy of apprentices. Benson and Voller (1997) call it self-directed learning, on the other hand Novak (2002) calls it "learning to learn"; Manrique (2004), establishes that autonomous learning is the result of knowledge, know-how and wanting; Landa & Vega, (2006) quotes Zimmerman and Pintrich refer to as self-regulated learning;; Barrera and Donolo (2009), students should adopt abilities to learn for themselves, in a self-regulated way; Crispin(2011),refers to autonomous learning as a process where the student self- regulates their learning and becomes aware of their own cognitive and socio-affective processes.This awareness is what is called metacognition.

Discussion

To understand, define and value autonomous learning, a systematic review of attitudes and pedagogical knowledge has been carried out in both students and teachers described in the documents, in addition it has been observed how these variables influence the process of teaching performance and their impact on student training (Hernández et al., 2018). Regarding articles reviewed we have selected 22 documents that contain the variable autonomous learning, with similar definitions, understood as the process of learning on their own, under established principles (Reyes, 2017), for this we have first carried out a general search in databases, according to descriptors: learning, autonomy and autonomous learning.

Most of them have been published by female researchers, which is because these researchers emphasize more the process of learning under the principles of self-regulation, a phenomenon is handled very well by intellectual women, because they are a clear example of emancipation (Ochoa, 2008). Figure 2 shows us that, in course of the last two decades, the competition to learn autonomously is gaining more strength, there being many more works aimed at students between the years of 2017 to 2020; but in previous years it has also been emphasized, but not with transcendence

and importance of recent years. Taking as a reference the country where more work has been done (Figure 3), we find that it is Spain that leads in the last decade, this is due to educational policies (Gonzales et al., 2017), in Peru there is also a considerable amount of work that aims to develop autonomy, in the same way the countries of the region, also evidence work in this area. Likewise, in Table 2, where we show articles reviewed according to author, title and definition of autonomous learning, all of them aim to promote autonomous learning, either with active methodological strategies or technological tools (Flores & Meléndez, 2017), and in most documents autonomous learning is used to achieve higher competencies such as critical, reflective and creative thinking (Roque et al., 2018). About the research methodology reviewed in the articles, it is diverse predominating the quantitative approach of applied type (Ruiz & Del Valle, 2014), that is, what is intended is the solution of the problems its variants of self-learning and self-regulated learning (Aguilar, 2018).

Conclusions

Taking into account that learning is the ability to assimilate knowledge and know how to use it in a timely manner, learning autonomously, means that the subject is able to do it autonomously, for this he must develop skills of responsibility and honesty, that he permanently exercises strategies of self-regulation about his potentialities to produce his own knowledge. In education, both teachers and the system have a great task, to train students not only with knowledge but with skills for the development of autonomous learning in any area or subject. The systematic review of information on autonomous learning has allowed us to focus on what our role as teachers should be, to review the characteristics that teachers must take into account so that our students can develop their autonomous learning. It has been possible to consolidate the necessary factors for autonomous learning, differentiate the elements that the student must use to reach such autonomous learning, the transition from collaborative learning to self-regulated learning, as well as autonomous learning using technological resources. All countries of the Latin American region emphasize the process of autonomy in education, since this competence is necessary so that the citizen of the world can easily develop and adapt to the moment of graduation from the school system. Results of this systematic review article have helped us to understand, differentiate and assess on which countries in the region and other regions have the same interest in studying, as well as to identify since this year we have been emphasizing this variable and under what approach such research has been developed, without forgetting, that it is females who have an impact on developing autonomous learning in all contexts, because this is and should be the tool of current and future generations.

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