

Collaborative Work to Build Meaningful Learning in Basic General Education

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Abstract---*The teaching system that is taught in educational institutions must have implicit processes that ensure the motivation of students to discover new experiences, active methodologies that allow them to obtain their attention for a longer time and that give them the opportunity to learn collectively. and integral within a team, avoiding monotony and traditionalism in the classroom, which often occurs due to the lack of application of innovative pedagogical strategies. One of these participatory tactics is collaborative work, which is focused on the procedure rather than on the product and works with a shared responsibility among its members who possess diverse abilities and skills. This article aims to investigate the incidence of the application of this procedure in the construction of meaningful learning in basic general education. The results were obtained from a bibliographic investigation, which provided information from truthful sources, making use of the methods: analytical-synthetic, inductive-deductive, by means of which the information was submitted to reflective and critical study, reaching the conclusion of that it is necessary to educate students from the years of basic education, developing their competences to learn in teams, applying interactive methods and techniques that have been shown to promote the construction of new knowledge, based on communication and mutual aid.*

Keywords---*Active methodologies, collaborative work, meaningful learning, basic general education.*

I. Introduction

The educational environment must assume the enrichment and development of competences and skills in children and young people. It is necessary to implement new active methodologies that allow the construction of knowledge, and the training of students with skills such as autonomy, development of work in small multidisciplinary teams, participatory attitude, communication and cooperation skills, problem solving, creativity, among others (Aiche, 2011).

In this research collaborative work is approached as an active methodology, applied in basic general education. This is a process in which an individual learns more than he would learn on his own, as a result of the interaction of team members, who know how to differentiate and contrast their points of view, in such a way that they generate a process of knowledge construction (Guitert & Jiménez, 2000).

Collaborative work is based on the development of new knowledge through interaction with team members, its application has proven to be useful in training, to improve learning and coexistence, this methodology has its

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philosophical basis in sociocultural theory proposed by Vygotsky, who assumes development and therefore learning as a product of the interactions established between the person who learns and the other mediating individuals of the culture (Vygotsky, 1983).

In the school environment, the relationship between peers, students and adults is essential. Teachers are in charge of designing interactive strategies that promote zones of proximal development, a concept that refers to the distance between the real level of development, determined by the ability to independently solve a problem, and the level of potential development, defined through of solving a problem under the guidance of an adult or in collaboration with another more capable partner (Vygotsky, 1979).

This study is based on research such as that carried out in Salamanca Spain, on collaborative work experiences using Information and Communication Technologies among teachers, carried out with a sample of 185 teachers, of whom 76% teach in Primary Education. and 50% in Secondary Education, the following results were obtained: almost 40% have had no experiences of collaborative work through ICT with either the students or their fellow teachers, 25% carry out this type of work with both students and with colleagues. Also a percentage of 28.11% carried out the work methodology with their students, but did not apply it with their classmates and 7.57% who are few teachers collaborated with their colleagues, but did not carry out the work experience through ICT with students (González, Martín, & Arriba, 2016).

According to these results, the authors state that it is essential to promote collaborative work as a training opportunity that occurs not only among students but also among teachers, since this allows them to learn better and acquire new experiences that enrich their teaching practice. and the educational task in which they are immersed.

In another research carried out in Mexico, on collaborative work in the classroom as a pedagogical strategy to improve the learning of the students, in which when applying a survey to 38 sixth-grade students, 55.3% stated that it improves their learning, if they work with their peers in small groups, on the other hand, 78.9% mentioned that collaborative work can improve coexistence with their peers in the classroom, and 52.6% considered that collaborative work is the basis of the Reform Educational to improve their learning at school (Oropeza, 2015).

Education in Ecuador currently focuses on standardized objectives that are evident in the student's exit profile, a reality that creates the need to propose new methodologies that promote collaborative work at all levels of study, which must be the product of an integral and interdisciplinary training in the educational institution, of the ability to learn to learn, to promote the quality not only of education but of life (Pérez, 2013).

In a study carried out in the city of Santo Domingo de los Colorados, on active methodologies, a need in the Kingdom of England Educational Unit, applied to a sample of 14 teachers, it was shown that 64.2% of teachers do not know about the active methodologies, 35.71% have an in-depth knowledge of active methodologies and 7.14 identify certain characteristics of active methodologies. Likewise, when asked about the frequency with which they received training on active methodologies, 42.86% stated that they had not received such workshops, 35.71% had been trained with a frequency of two years, and 21 , 43% said that they have trained on the subject with an interval of 1 year (Cano, Aguiar, & Mendoza, 2017).

The authors state that training and knowledge on active learning methodologies is a necessity, because they help teachers to improve their teaching practice, in addition to providing innovative training, overcoming traditional teaching methods that involve monotonous classes that limit interest. of students for learning.

Ecuadorian educators 65% have the need to research new techniques to develop content in class, methodological strategies that allow students to establish a relationship with the knowledge and experiences of the environment, as the lack of these methods and work techniques Group learning in the country's school classrooms slow down the development and stimulation of learning, also affecting the personal growth of students, conditioning them to stay in traditional learning (Morquera, 2016).

This research arises from the need to investigate the scarce application of active methodologies, such as collaborative work, by teachers in basic general education. In general, the use of this type of activity has been reserved for students of higher levels such as high school or university, paying little attention to the productivity that it could have if it were used as a learning strategy in basic education levels.

This research is interesting because it gives teachers the opportunity to learn about a new pedagogical tool and integrate it into their teaching practice, so that they can avoid traditionalism and provide instruction according to the needs of students, where children and young people are protagonists of meaningful learning, which arises when the student can relate the new task, in a rational and non-arbitrary way, with his previous experiences, stored in his cognitive structure and in interaction with his peers and with the environment (Ausubel, 1976). This work aims to determine the incidence of the application of collaborative work in the construction of meaningful learning in basic general education.

II. Materials and Methods

In this study, a bibliographic type of exploration was used, which provided the knowledge of research, theories, hypotheses, experiments, and existing results on the proposed topic, present in books, magazines, theses, and digital scientific articles to support the investigative process of this work. The investigated information was subjected to critical and reflective analysis, using the analytical-synthetic method, which allowed us to extract the relevant ideas that gave the argument and significance to this work; in addition, the inductive-deductive method was used; that admitted the processing and structuring of the evidence found to provide efficient and truthful information, generating the production and dissemination of knowledge on the subject dealt with in this study, reaching the conclusions raised that show the results obtained from the reasoning and exhaustive review of the research literature (Hernández, Fernández, & Batista, 2010).

III. Result and Discussion

In this era of knowledge and innovation, new approaches emerge that attempt to transcendently change educational processes, leading the student to develop their own learning, the traditionalist style of education has remained in the past; giving way to strategies, methodologies and techniques that are available to teachers for the improvement of their pedagogical practice and the development of good training.

Active methodologies seek the development of abilities, capacities and skills in students that allow them to face and intelligently solve the daily problems of life. Currently, a broad classification of these strategies is handled, they refer to methods, techniques, and strategies that teachers use to convert the teaching process into activities that

promote the active participation of students and lead to meaningful learning (Labrador , 2008). The following graphic briefly describes some aspects related to this topic.

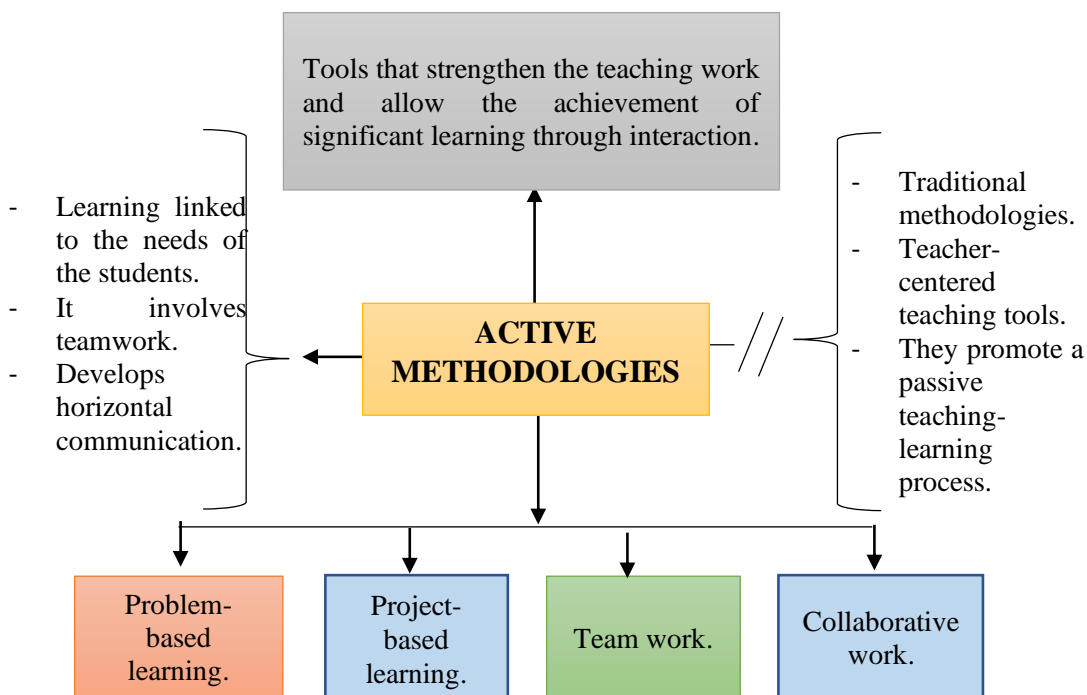


Figure 1. Conceptual mind on active methodologies.

Figure 1 shows a synthesis corresponding to the active methodologies, proposed as tools that teachers must have at their service, to support themselves when they work in the classroom, their main characteristics, and some of these teaching strategies- learning as: problem-based learning (ABP), project-based learning (ABP), cooperative work (AC), collaborative work (AC), among others.

On the other hand, it is proposed that collaborative work, in an educational context, constitutes an interactive learning model, which invites students to build together, for which it demands combining efforts, talents and competences through a series of transactions that allow them achieve the goals established by consensus (Martín, 2001).

The need to educate from basic levels of schooling

In Ecuador, the situation of learning at basic levels has gone through deficiencies related to different aspects, such as the lack of training for teachers, the application of traditionalist methodologies, the lack of motivation and disinterest in students to learn, and despite the fact that they have struggled to improve it, it still has drawbacks that do not allow it to achieve the profiles of educational quality that are intended to be achieved, as determined in a study on the educational system of Ecuador carried out in 2008 by Tito Madrid , following SITEAL (Information System of Educational Trends in Latin America) where the comprehension of third and sixth grade students of basic general education was evaluated, resulting in cognitive deficiencies as the years pass in education accentuate. Ecuador is in the group of countries with less than 50% of correct answers, that is, on average only half reach the proposed objectives. This trend is confirmed by the Third Regional Comparative and Explanatory Study (TERCE) of the United Nations

Educational, Scientific and Cultural Organization (UNESCO). Although the average of learning achievements increased, most of the scores were at the lowest levels of the classification (Madrid, 2008).

Based on this analysis, it is easy to deduce that the end of education that is taught at the levels of basic general education must be rethought, so that innovative and interactive strategies are applied, active methodologies that reinforce teaching practice and increase the development of intellectual, psychomotor, and attitudinal capacities, creating for them an educational system where not only their IQ is evaluated but their abilities as a whole, and in this way they can increase the quality standards of the Ecuadorian educational system.

The education that is imparted in the educational institutions of Ecuador, is given by levels of schooling, as presented in the General Regulation of the Organic Law of Intercultural Education, in Chapter III Of Educational Levels and Sub-levels, Art. 27.- Denomination of educational levels: The National Education system has three (3) levels: Initial, basic and high school (Ministry of Education, 2017).

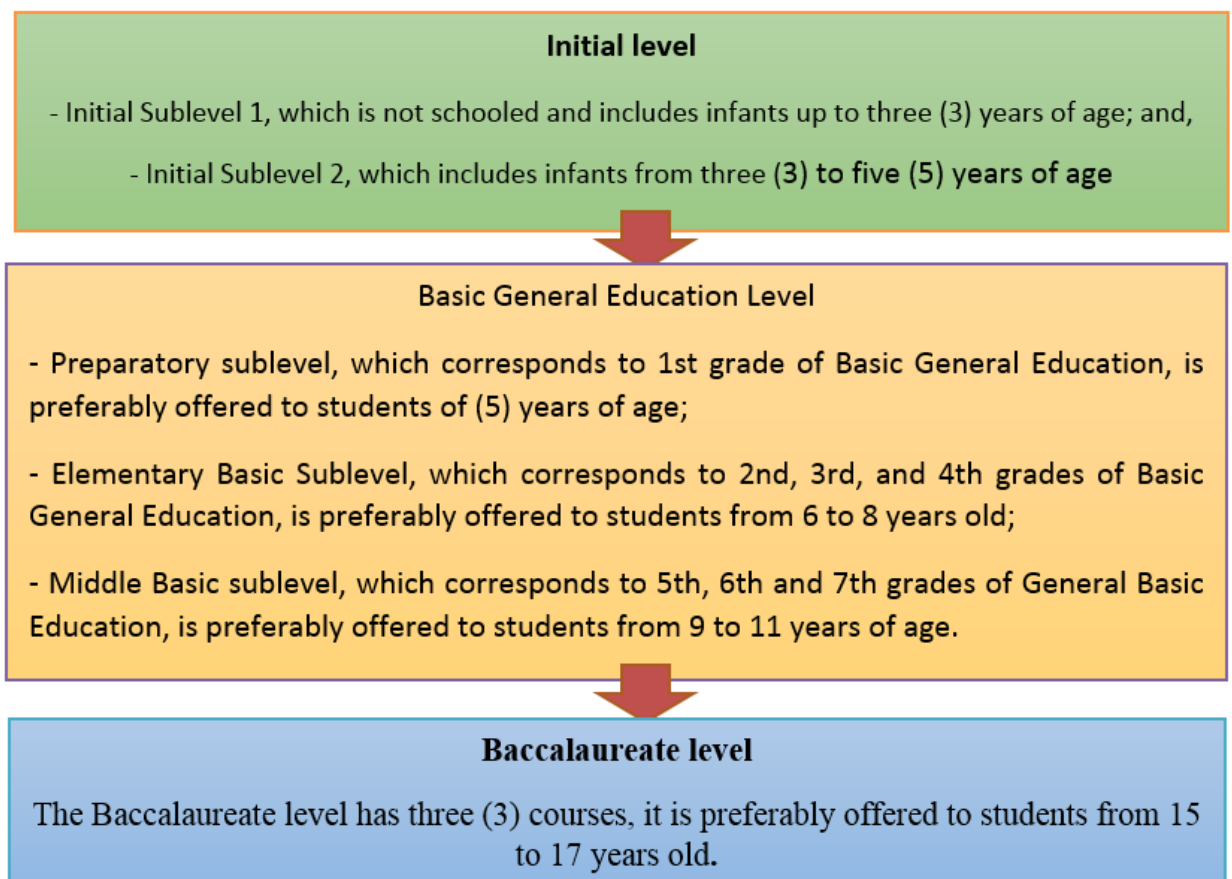


Figure 2. Education levels in Ecuador

In figure 2 the levels and sub-levels of education that make up the Ecuadorian system are analyzed, it is necessary to mention that the development of comprehensive education must begin to be founded from the early stages of schooling, in these periods the individuals are in the process of formation and they require the necessary guidance to

develop their skills. On certain occasions special interest is paid to higher levels such as high school, it follows that instruction is more important there because it is when students go to graduate, obtain a degree and demonstrate to society the acquired skills, it is often intended without positive results, the bachelor meets his exit profile, so that he is able to intelligently face the challenges of the university.

To deliver a quality education, it must first be clear what this concept refers to, educational quality is a complex reality because it depends on several factors and not on a single indicator; therefore, it must be fully evaluated, taking into account teaching or teaching, learning, research or the generation of knowledge, its maximum dissemination, and aspects such as relevance, coverage, performance levels, effectiveness, efficiency, among others (Sánchez, 2011).

As mentioned before, it is opportune to provide quality education in high school, however, it is equally crucial to mediate adequate training from the initial level, and basic general education, to form thinking from the early ages, this statement is based on the Cognitive theory, put forward by Piaget, which states that the cognitive development of an individual goes through four stages, according to age, until reaching 12-14 years, approximate ages in which thought is considered to have matured (Piaget, 1979) in the following table describes the stages raised by this psychologist:

Table 1. Stages of cognitive development of Jean Piaget

STAGES	APPROXIMATE AGE	FEATURES
sensorimotor	0 to 2 years	Intelligence relies on the actions and movements.
Pre-operational	From 2 to 7 years	The use of symbols begins.
From concrete operations	From 7 to 12 years old	Logical operations are carried out, his thinking is limited to concrete aspects of the world around him.
From formal operations	From 12 to 14 years old	Abstract ideas, reasoning processes and hypothetical deductive reasoning appear.

Table 1 shows the stages of cognitive theory, the approximate ages at which they occur and their main characteristics, as evidenced, thinking begins its transformation from 0 years, here is the need to rethink whether training and Methodological strategies that are offered at these ages are appropriate for each stage of evolution of the individual, so that they facilitate cognitive development and the progressive acquisition of different cognitive processes. This theory shows that educating students is essential at an early age corresponding to infancy, childhood, in addition to the adolescence stage.

Teachers should not fall into the error of considering that greater attention should be paid to teaching at higher levels, since it must be borne in mind that in these ages thought is almost formed, so valuable opportunities to exploit the potential will have been lost. of students in each of the ages corresponding to each level of basic general education.

After analyzing the importance of educating thought in each of its stages, starting with the early ages, the question arises, what methodologies can teachers use to strengthen the development of skills in their students in all their stages of evolution? , the answer is not always found in the much-mentioned Information and Communication Technologies (ICT), which currently seem to be the focus of attention to be used as learning strategies in classrooms, but what happens? in geographical areas where access is difficult, and where such technologies do not arrive, or in institutions where the technological resources do not exist to be applied?

When teaching is difficult, it is time for alternative pedagogical tools to emerge that allow teachers to continue their teaching legacy; In addition to ICT, teachers must have knowledge of innovative strategies that can be used in the classroom, with the human and material resources available to them, so that they can develop an interactive class where their students feel interest in discover new skills and build meaningful learning.

Therefore, there are several active methodologies at the service of the teacher that will help them in their work; In this article, collaborative work is presented to teachers as a teaching strategy, focused on generating interactive training spaces, where some learn from others and achieve common goals, generating impactful learning for their lives.

Collaborative work as a methodological tool

Collaborative work is an interaction process whose basic premise is the construction of consensus. Authority is shared and responsibility for team tasks is assumed by all (Panitz & Panitz, 1998). This methodology is a process in which the parties agree to learn something together. What must be assimilated can only be achieved if the team's work is done collaboratively. It is the group that decides how to execute the task, what procedures to adopt. Communication is essential in this process to maintain interaction and a good work climate within the team and thus ensure effective learning (Gros, 2000).

In collaborative work, the analysis of the interaction between peers and teacher-student is considered essential, since the work seeks the achievement of academic goals and also the improvement of social relationships (Salinas, 2000). This pedagogical strategy is assumed as the set of methods of education and preparation supported by tactics, to promote the progress of mixed skills (learning and personal and social development), where each member of the team is responsible for both their learning and the knowledge, they acquire the others (Lucero, 2003).

Collaborative, cooperative and group work

It is common to confuse collaborative work with cooperative and group work, the difference between these methodologies must be clear, since, although their concepts seem similar, they do not refer to the same thing. This is demonstrated in the following comparative table:

Table 2. Differences in collaborative work, cooperative work and group work

WORK COLLABORATIVE	WORK COOPERATIVE	WORK GROUP WORK
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<p>Horizontality agreed by teamwork. Group of internally organized individuals with a clear objective.</p>	<p>Focused on a person acting as a supervisor.</p>	<p>Set of individuals with something in common.</p>
<p>The collaborator shares their experiences and interests. Mutual support.</p>	<p>Optimization and division of labor prevail.</p>	<p>Individual success. Own benefit.</p>
<p>It fosters shared and collective responsibility.</p>	<p>It is more direct and controlled.</p>	<p>Individual responsibility.</p>
<p>It is supported by mediated interaction and dialogical communication. It favors interdependence.</p>	<p>Privileges verticality and control.</p>	<p>Independence.</p>

As can be seen in Table 2, working in collaboration is not the same as working cooperatively, much less in a group. In collaborative work there is diversity and all its members have a common goal, each one has its role and is internally organized; In addition, the responsibility of people is shared and collective, that is, what one does depends on and influences what the other does and vice versa, that is why there is interdependence, in this methodology the support is mutual, based on trust, generosity and especially in dialogical communication, therefore success will be shared and celebrated by all team members.

For its part, cooperative work focuses on a person who acts as a superior, in this methodology the division of labor prevails, characterized by being a more direct and controlled strategy where verticality and control are privileged, as observed in the table 2, being a teaching style more similar to group work.

As for group work, people are united by something in common, such as a group of friends, or a group of individuals who share a classroom, in a group the responsibility is individual, that is, each one does their job independently and does not depend on anyone to do their homework, seeking their own benefit, no one needs to support each other and usually the success you get will be individual.

These methodologies are ideal to apply in the classroom, emphasizing that collaborative work is done in cohesion, for the same objective, which facilitates the construction of meaningful learning, which occurs from the interaction of team members. , based on communication and shared responsibility. (Fingermann, 2015).

Recommendations for applying collaborative work in the classroom

To develop collaborative work in the classroom, it is necessary to know some guidelines that will help to obtain positive results, starting with the space and the furniture; These are crucial aspects to create an adequate environment in which this teaching-learning methodology can be carried out. The blackboard in the classroom must be visible to all work teams, the teacher's table must be placed to one side, because he becomes a guide and is no longer the

protagonist of learning, it is also necessary to consider that there must be enough space between the work tables, so that the teacher can visit the area to monitor the activities carried out by the students in the different teams.

In order to put collaborative work into practice, teachers must form a base team, which must be heterogeneous, that is, the members that make it up must have the most different characteristics possible, so as to favor learning from experience. and diversity.

It must be ensured that the teams are made up of 4 or 5 students, of different levels, a high-level student, that is, who has the capacity for teamwork, leadership, who knows how to manage conflicts, and who academically has the necessary tools to help his peers. A low-level student, when referring to a low level, not only describes a student with low academic results, but students who have difficulties in teamwork, or students with special educational needs (SEN). One high-level student and one lower-middle-level student (Granado, 2020).

In addition to working with new study content, collaborative work allows reinforcing and giving feedback to those topics in which students have a certain degree of difficulty, on the other hand, the teams that are formed to develop this methodology will allow for coexistence, responsibility and shared work, working to achieve the same goal and build meaningful learning together, as stated (Comes, 1968), no meaningful learning can occur without a meaningful relationship.

The teacher must create cohesion in the work teams, it is not enough to be together, but it is also necessary, to create a climate of solidarity and respect, where mutual aid prevails, using dynamics or cohesion games, which are taught to the students the value of teamwork and the need to collaborate with each other to achieve the same goal.

By applying collaborative work in classrooms, from the basic general education level it is helping students to develop their skills from a young age, to work as a team and thereby acquire skills such as conflict resolution, which will serve them As a basis for the higher years of study where this methodology is often applied, students going from high school to university will carry countless skills and competencies coupled to teamwork in their cognitive structures, so it will not be something new or uncomfortable for them, since they will have developed coexistence, interaction and interpersonal intelligence since childhood, which according to (Gardner, 1995) is the one that will help them understand their classmates, communicate and interact satisfactorily within the classroom .

Teachers must constantly monitor the teamwork process, since doubts may arise that the students cannot solve on their own and need the help of the teacher, on the other hand, it is necessary for the teacher to generate the necessary spaces and a climate comfortable for this methodology to be carried out efficiently. The teacher can use various tools to evaluate collaborative work. The evaluation of the methodologies used in the classroom is necessary, since it represents a method of data collection to know the environment, judge it and improve it; on the other hand, it continuously provides information on the improvements achieved (Fernández, 2010).

The evaluation will allow the teacher to see if the students are carrying out the process of this methodology in a correct way, or if its application must be restructured in some aspect, in order to obtain the desired results, which are effective and based on the needs of the students. students. Among the most effective tools with which you can evaluate teamwork is the rubric.

For (Mansoor & Grant, 2002), the rubric is an evaluation instrument that specifies the expected general performance and the various levels of competence that the learners can reach in the development of a given skill. The following table presents an example of a rubric to evaluate collaborative work:

Tabla 3. Rúbrica para evaluar el trabajo colaborativo

INDICATORS	EXCELLENT (2 points)	GOOD (1.5 points)	ACCEPTABLE (1 point)	DEFICIENT (0.5 points)
Organization and defined objectives.	All team members are well organized and have clear goals that they want to achieve together.	Four team members are well organized and have clear goals they want to achieve together.	Three team members are organized and have clear goals that they want to achieve together.	One or two team members have organized, while the others are not and it is not clear what objectives they want to achieve together.
Shared responsibility.	Everyone equally shares responsibility for homework.	Four students equally share responsibility for the work to be done.	Three students share responsibility for homework.	One or two students carry out the activities and facilitate them to the other members so that they can replicate them.
Interaction between team members.	They all interact, and maintain a climate of communication in the team.	Four team members interact, and maintain a climate of communication between them.	Three team members interact and maintain a climate of communication.	One or two participants try to interact with their teammates, but communication is poor.
Conflict resolution.	All team members are ready to solve the problems that arise.	Four team members are capable of solving the problems that arise.	Three team members are ready to solve the problems that arise.	One or two students solve the conflicts in the team, while the others are not interested in solving these problems

<p>Interdependence and mutual support.</p>	<p>All team members support each other, everyone is clear that their actions affect each other.</p>	<p>Four team members support each other, and understand that the actions of some affect everyone</p>	<p>Three team members support each other, and they are clear that the actions of some affect the others.</p>	<p>One or two students support each other and help each other, while the other team members work on their own, they do not understand that the tasks must be carried out with mutual help..</p>
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As seen in Table 3, a rubric is presented detailing all the aspects and indicators that can be evaluated in collaborative work, this is just one of the many templates that teachers can use to evaluate the performance of students within of this methodology, it is practical and easy to carry, in addition, it is not rigid, that is, it is subject to the modifications that the teacher wishes to make to adjust it to their reality.

Meaningful learning and collaborative work

The significant verbal learning theorized by Ausubel proposes to defend and practice that learning in which a true authentic change is brought about in the subject. This takes place when the student, as the builder of his own knowledge, establishes relationships between the concepts to be learned and gives them meaning from the conceptual structure that he already has, that is, from his previous knowledge and from the experiences that he already has. The process can be generated by both discovery and reception, but it must always be present that the student wants and is interested in learning (Alviárez, Guerreiro, & Sánchez, 2005).

Meaningful learning is progressive, the meanings are being internalized in the space of interaction with other people, the word being the main mediator (Viera, 2003). Collaboration is a teaching method that uses social interaction as a means for the construction of knowledge (Paz, 2000). It focuses most of the responsibility of learning on the students, requiring them to conceptualize, organize, test ideas, in a continuous process of evaluation and reorganization of the same, with the assistance and guidance of the teacher as facilitator of the teaching and learning process (Biesenbach, 2004).

In collaborative work, groups face problematic situations and it is through social interaction that collaboration processes are generated allowing the team to develop a possible solution, representing a consolidation of individual contributions, generating new ideas, Conclusions

From the research carried out, the theories reflected and the comparisons of concepts raised, it is concluded that it is essential to educate thought from an early age, strengthening in children the necessary skills for teamwork.

In short, collaborative work is an effective and efficient teaching-learning methodology that generates significant learning in students, through a climate of interaction, dialogical communication, solidarity and mutual help,

where you learn better than if you did it individually, from enriching experiences formed from the versatility and diversity of skills present in the members of the work team.

Finally, collaborative work, as an active methodology, is little practiced in the classrooms of basic levels of schooling, which in many occasions slows down the personal and social development of the students, generating monotony in the educational task, falling into traditionalism . Therefore, this pedagogical strategy must be applied in class, so that the teacher uses contemporary teaching tools to achieve in the students the interest in learning, and the motivation necessary to generate new knowledge, since there is no significant learning if the student is not interested in learning, with this methodology participatory spaces are generated where aspects related to concepts or contents, procedures and attitudes are improved, thus generating comprehensive education based on the needs of the students.

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