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# Teamwork as an emancipatory strategy in teacher training

Trabajo en equipo como estrategia emancipadora en la formación docente

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#### **ABSTRACT**

Teamwork is one of the most valued transversal competences in the educational sector and one of the teaching strategies in the initial training of teachers. The objective is to propose guidelines to promote teamwork as an emancipatory strategy in students' teacher training in the UNE Rafael María Baralt Biology and Chemistry Project. A quantitative, projective type, field design and non-experimental methodology was used. The sample was census-based, made up of 20 teachers and 45 students. A questionnaire with 5 response alternatives was applied. The results indicated that teachers more frequently use traditional individual and group activities, and moderately consider the emancipatory vision of teamwork for teacher training. In conclusion, although there are some elements of teamwork in teacher training within the PBQ, these are still in development. The lack of knowledge and disinterest in emancipatory strategies limit their full implementation.

#### **Keywords:**

Teacher; Emancipatory; Team; Strategy; work; Training

#### RESUMEN

El trabajo en equipo es una de las competencias transversales más valoradas en el sector educativo y una de las estrategias docentes en la formación inicial del profesorado. El objetivo es proponer lineamientos para fomentar el trabajo en equipo como estrategia emancipadora en la formación docente de los estudiantes del Proyecto de Biología y Química de la UNE Rafael María Baralt. Metodología cuantitativa, tipo proyectiva; diseño de campo, no experimental. La muestra fue censal conformada por 20 profesores y 45 estudiantes. Se aplicó un cuestionario de 5 alternativas de respuesta. Los resultados indicaron que los docentes emplean con mayor frecuencia actividades individuales y de grupos tradicionales, consideran moderadamente la visión emancipadora del trabajo en equipo para la formación docente. En conclusión, aunque existen algunos elementos de trabajo en equipo en la formación de docentes dentro del PBQ, estos se encuentran aún en desarrollo. La falta de conocimiento y el desinterés por estrategias emancipadoras limitan su implementación plena.

#### Palabras clave:

Docente; Emancipadora; Equipo; Estrategia; Trabajo; Formación

#### INTRODUCTION

Today, the university as an institution simultaneously reflects and composes a broad and globalized social world and can be viewed as a complex reality, comprised of a diversity of actors. It is in this space that multiple relationships, meanings, and conceptions originate regarding what should be taught, learned, and worked on there to train, from a team perspective, future professionals who will later be part of a world that requires the concerted effort of each of the individuals who comprise it.

Based on these aspects and taking into account what is stated in article 3 of the Universities Law (1970), these institutions must "create, assimilate and disseminate knowledge through research and teaching, complete the comprehensive training initiated in previous educational cycles and form the professional and technical teams that the Nation needs for its development.

While these goals have been discussed within Venezuelan universities, it's worth noting that they are not exclusive to the university. Research is being conducted internationally that highlights the need to transform universities. This can be seen in documents such as the one produced at the Regional Conference on Higher Education (CRES, 2018), held in Argentina one hundred years after the Córdoba Reform.

It proposes, among other things, that universities should cultivate scientific knowledge from a human perspective and direct it toward the common good. They then textually assert that "working communities where the desire to learn and the dialogical and critical construction of knowledge between teachers and students is the norm" should be forged (...); fostering democratic learning environments.

A close look at the CRES (2018) recommendations reveals the need for university education to consider teamwork as a fundamental strategy. Otherwise, how would it be possible to raise awareness about the importance of the common good, the dialogical and critical construction of knowledge, or the creation of democratic learning environments? It is obvious that this would be an impossible task from an individualistic perspective. At this point, it is

important to clarify that addressing the individuality of individuals does not equate to fostering individualism.

On the contrary, it is possible to strengthen the personal and individual growth of each student, while preparing them to function as a team. If this applies to the training of any university professional, it is even more so when it comes to those who will be responsible for preparing future generations: teachers.

In this regard, the final document of the 2021 Education Goals (2010), developed under the auspices of the Organization of Ibero-American States (OEI), emphasizes the role of teachers as key to determining educational quality; therefore, any reform or improvement must address the initial and ongoing training of these professionals, enabling them to function in teams and networks.

Taking the aforementioned document's exact words, achieving change requires teamwork; and this implies a concerted union of efforts among educational stakeholders. In this regard, it is useful to consider the definition that, although recent but not relevant, Pozner (2000) presents regarding teamwork, which reflects its main characteristics: teamwork is a way of articulating the work activities of a group of people around a set of goals, objectives, and results to be achieved.

In this sense, it implies an active interdependence among the members of a group who share and assume a work mission. Taking these elements into account, it is worth highlighting what was proposed in the initial documents for the development of the 2019-2025 Homeland Plan, which proposes deepening the objectives outlined in the preceding document and emphasizes the importance of joint work for the development of the republican in all the areas developed in that document, including the personal, social, and technological.

On the other hand, the report on the Educational Situation in Latin America and the Caribbean (2013), published by the United Nations Scientific and Cultural Organization (UNESCO), among other aspects, mentions that for today's Latin American universities, it is a challenge to better connect and open up to their own societies. This implies the training of professionals whose

social and teamwork skills allow them to establish connections with other human beings in their environment, based on fair, equitable, empathetic, and supportive treatment. In this way, the isolation experienced by many higher education institutions and the lack of a sense of teamwork with which their professionals are being trained are prevented, especially those who will dedicate themselves to teaching and who will need these skills to carry out their educational work.

In this regard, it is important to mention the opinion of Galiano (2014), who asserts that in Latin American countries, teaching strategies are used that do little to encourage student participation, especially in areas such as chemistry.

Along these same lines, the Education 2030 report (2015:33), also developed by UNESCO, recognizes the problems present in Latin American university education, of which Venezuela is no exception, regarding the quality of teacher training and the use of strategies for the general training of professionals in the region. Therefore, among its strategic actions, it proposes that teachers apply student-centered, dynamic, and collaborative pedagogical approaches. Likewise, it recommends cultivating equity, inclusion, and respect for diversity; this requires the training of teachers who possess the tools for organized work with others within a framework of respect and recognition of all as valid interlocutors.

Regarding the above, Fernández (2010) argues that it is common for teachers to argue that active group methodologies present certain difficulties. In some cases, they claim that they are not necessary because debates and dialogues already exist in class. In others, they complain that organizing this type of methodology is complicated, consumes a lot of class time, and can lead to the dilution of the main ideas among the many accessory ideas that may arise during the discussions.

This negative view is caused, according to Azorín (2018), because the culture of collaboration is conspicuously absent, and competitiveness, hierarchical structures, and the exclusion of less qualified individuals are much more common. This makes it obvious that not only is it necessary to cooperate in order to learn, but one must first learn to cooperate. This same author asserts that the

implementation of cooperative learning is beyond the reach of teachers due both to weaknesses in their initial training and the habit of applying traditional passive and teacher-centered strategies.

Within the Zulia university context, Querales (2016) denounces the low quality of teaching due to the lack of initial preparation of professors; especially in terms of didactic strategies that involve the active and joint participation of teachers in training, since they are limited to the use of lectures and privilege individual activities, which have their important place but should not be the only ones. Vera et al. (2012) agree on this point, stating that expository strategies predominate within the Zulia university context and teamwork has a moderate presence; this does not contribute to the social emancipation of students.

In the case of the Rafael María Baralt National Experimental University (UNERMB), specifically in the Education Program, Biology and Chemistry Project (PBQ) at the Ciudad Ojeda campus, this reality is no an exception. There, the situations described in the previous paragraphs regarding the use of traditional strategies in the classroom are reproduced to a greater or lesser extent.

There is, for example, the excessive use of expository strategies by professors, which has been increasing due to the low number of students enrolled in each section and their irregular attendance throughout the semester. Considering that a professional teacher in Biology and Chemistry requires laboratory activities, participation in work teams, and field visits, the training currently being received is perceived as less than adequate, given that UNERMB, Ciudad Ojeda campus, does not even have well-equipped laboratories to conduct even the experiments.

Although the problems described affect everyone equally and are, in fact, very serious, it is even more serious to observe that, just as in the UNERMB Biology and Chemistry Project, there are good teachers who have become overwhelmed by the current difficult conditions, and there are others whose poor practices are due to poor initial training in teaching strategies, disinterest, or irresponsibility.

Due to this, both teachers in charge of training and those currently in training must learn to work

as part of a team in an environment of mutual respect, where members identify with each other and with the whole. Any failure in this regard could be due to a lack of knowledge about how to manage work teams and, especially, how to do so from an emancipatory perspective, taking into account the ontological, teleological, and epistemological aspects, without forgetting the psychological and pedagogical approaches.

Regarding the importance of training future teachers in and for teamwork, Azorín (2018) goes further and suggests that such training needs to extend from primary to university education, considering it a cross-curricular content. Teachers need training in the use of cooperative strategies, which will give them greater confidence to include these methodological changes in their classrooms. Such training should be addressed transversally and scientifically in university classrooms.

Within the scope of this research, the authors seek to propose theoretical and methodological guidelines to promote teamwork as an emancipatory strategy in the teacher training of students in the Biology and Chemistry Project at the Rafael María Baralt National Experimental University, Ciudad Ojeda campus.

Concerning the situation described, this study was conducted with the aim of proposing guidelines to promote teamwork as an emancipatory strategy in students' teacher training in the Biology and Chemistry Project at the Rafael María Baralt National Experimental University, Ciudad Ojeda campus.

## **METHOD**

The study is guided by a quantitative, projective approach. This approach examines whether they consider their emancipatory potential and whether they correctly apply the steps for forming, maintaining, and disbanding teams. This research has a non-experimental field design, as it was conducted without manipulating the variable, observing it as it unfolds in its natural environment. It was also a cross-sectional study, as the data necessary for its development were collected in a single session, without the need to evaluate the evolution of the phenomenon over time.

Similarly, the study population consisted of 20 professors and 45 students from the Biology and Chemistry Project at UNERMB, Ciudad Ojeda campus, during the 2018 academic year. The technique used is direct observation, using a questionnaire. An instrument was designed: a questionnaire composed of closed-ended items related to the study's dimensions and indicators, organized on a Likert-type scale. In this case, each item offers five selection alternatives.

The information was processed and analyzed using descriptive techniques, using analysis to interpret the average and standard deviation based on the calculation of percentages and averages for each item in each of the variable's categories.

**Table 1.** Category of analysis for the interpretation of standard deviation

Range	Interval	Category
1	3.21 - 4	Very High Dispersion
2	2.41 - 3.20	High Dispersion
3	1.61 - 2.40	Moderate Dispersion
4	0.81 - 1.60	Low Dispersion
5	0 - 0.80	Very Low Dispersion

### **RESULTS**

The presentation and analysis of results constitutes a fundamental phase of the research process, as it represents the stage of integration of the theoretical and methodological effort that the researcher undertakes to answer a research question and thus achieve the proposed objective.

In this regard, derived from the processing of the questionnaire, Table 2 is presented below:

**Table 2.** Variable: Teamwork as an emancipatory strategy in teacher training

	Teaching Staff		Students	
Dimensions	Average	Standard Deviation	Average	Standard Deviation
Strategies for the organization of classroom work	4.11	0.70	3.12	1.04
Stages in the functioning of teamwork	4.21	0.76	3.18	1.17
Elements of teamwork such as emancipatory strategy	4.10	0.67	2.23	1.12
Perspectives on teacher training  Total Result	4.11	0.67	2.20	1.05
	4.14	0.70	2.68	1.10

Table 2 shows the overall results for the variable "teamwork as an emancipatory strategy in teacher training." The responses given by the teachers surveyed averaged 4.14 with a standard deviation of 0.70, placing them in the high category, with low response dispersion. While for students, an average of 2.68 with a standard deviation of 1.10 is evident, placing them in the moderate level category with a low dispersion of the responses issued.

Based on these results, it is observed that, in general, teachers believe they tend to use strategies in their classes that can be classified as emancipatory; however, it should be noted that this information comes solely from the teachers themselves, and sometimes teachers protect their own performance from others.

Below, in Table 3, a detailed overview will be given of the average presented by each type of

strategy applied in class for work organization:

**Table 3.** Dimension: Strategies for organizing work in the classroom

Indicators	Teachers		Students		
	Average	Standard	Average	Standard	
		<b>Deviation</b>		<b>Deviation</b>	
Strategies	4.10	0.70	3.12	1.04	
Individualized					
Strategies for traditional groups	4.13	0.70	3.11	1.07	
Strategies for cooperative	4.11	0.70	3.10	1.04	
teams					
<b>Total Result</b>	4.11	0.70	3.12	1.04	

In the table above, referring to the dimension "strategies for organizing classroom work," teachers have an average of 4.11 with a standard deviation of 0.70, placing them in the high-level category with a very low dispersion of responses. This indicates that teachers organize classroom work in the way they consider most effective and do not allow the class to develop randomly and without any organization. Regarding students, an average of 3.12 with a standard deviation of 1.04 is evident, placing them in the moderate-level category with a low dispersion of responses. This implies that, from the students' perspective, teachers only sometimes apply strategies for organizing classroom work; whether these are traditional group strategies, cooperative strategies, or individualized strategies.

The "individualized strategies" indicator yielded a mean of 4.10 (high) with a standard deviation of 0.70, which demonstrates very low response dispersion. Regarding students, the mean was 3.12 (moderate), with a standard deviation of 1.04.

(Low). Regarding the "strategies for traditional groups" indicator, there is a high average of 4.13 and a very low standard deviation of 0.70. For students, there is a moderate average of 3.11 with a low standard deviation of 0.1.07.

Likewise, the "strategies for cooperative teams" indicator remains at a high average of 4.11 and a standard deviation of 0.70, similar to the previous indicators; while, in the case of students, an average of 3.10 (moderate) with a standard deviation of 1.04 (low) is evident. Table 4 below.

**Table 4.** Dimension: Elements of teamwork as an emancipatory strategy

Indicators	Teachers		Students	
	Average	Standard	Average	Standard
		Deviation		Deviation
Critical-reflective vision	4.11	0.67	2.23	1.12
Union of theory and practice	4.10	0.67	2.23	1.12
Cooperative Work	4.19	0.67	2.23	1.12
Contextualization	4.12	0.67	2.23	1.12
<b>Total Result</b>	4.10	0.67	2.23	1.12

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In table 4 for the dimension "Elements of teamwork as an emancipatory strategy" is evident for teachers with an overall average of 4.10 (high), with a standard deviation of 0.67, the same as the deviation also present in each of their individual indicators (low dispersion of responses). This indicates that the teachers surveyed admit that they frequently employ teaching strategies that, according to them, stem from a critical vision and foster the emancipatory nature of education. Regarding students, the average was 2.23 (low) and the standard deviation was 1.12 (low), which contrasts with the opinion of teachers, who responded that the presence of elements of teamwork as an emancipatory strategy is very low.

Regarding the indicators in this dimension, the standard deviation for all of them was 0.67 for teachers (low dispersion of responses) and 1.12 for students (low dispersion). Specifically, among "critical-reflective teachers' responses, perspective" had an average of 4.11, "union of theory and practice" had an average of 4.10, "cooperative work" had an average of 4.19, and finally, "contextualization" had a 4.12 average. According to the scale, all of these indicators frequently appeared in teachers' responses. The student responses were particularly unusual because the average was 2.23 for all indicators, indicating that they perceived teamwork as an emancipatory strategy as a very low frequency in classes. Table 5 below presents perspectives on teacher training:

Table 5. Dimension: Perspectives on teacher training

Indicators	Teachers		Students	
	Average	Standard	Average	Standard
		Deviation		Deviation
Traditional	4.11	0.67	3.20	1.05
Technique	4.11	0.67	3.20	1.05
Staff	4.11	0.67	3.20	1.05
Criticism	4.11	0.67	3.20	1.05
<b>Total Result</b>	4.11	0.67	3.20	1.05

In Table 5, the "perspectives on teacher training" dimension, in the case of the survey conducted with teachers, shows an overall average of 4.11 (high) with a standard deviation of 0.67 (very low), indicating a low dispersion in the responses. These numbers are equally repeated in the case of each of the indicators that make up this dimension (traditional, technical, personal, and critical perspectives). A similar situation occurs in the case of the responses given by the students. There, the resulting average was 3.20 (moderate), both for the overall dimension and for each of its indicators; and the standard deviation was 1.05 (low) for both dimension and indicators.

These numbers show that, from teachers' perspective, there is a certain balance in the high presence of each of these perspectives in the

attitude of PBQ teachers when approaching their teaching activities. However, students believe that the presence of all these perspectives is actually moderate. The four perspectives mentioned are taken from the research of Rodríguez Gómez (1996).

Finally, based on these results, theoretical and methodological guidelines were designed to promote teamwork as an emancipatory strategy in teacher training within the Biology and Chemistry Project at UNERMB, Ciudad Ojeda campus, which constitutes the last of the specific objectives of this research.

#### **DISCUSSION**

The findings show that teachers, in their own opinion, apply appropriate strategies for organizing classroom work, respect the stages of group functioning, apply some emancipatory strategies, and there is a certain balance in the concepts of teacher training they employ. Furthermore, in the case of the students surveyed, the results indicate that teamwork as an emancipatory strategy in teacher training is moderately present in classroom activities, which contrasts somewhat with what the teachers expressed.

This particular result seems to agree with the opinion of Galiano (2014), who asserts that in Latin America, teaching strategies are used that do very little to encourage student participation; especially in areas such as chemistry. This result is in agreement with Díaz and Hernández (2002), who affirm that it is the teacher who must promote the application of all those strategies necessary for students to construct their learning (teaching strategies), by virtue of their expertise in the area; which does not mean that the participation of each of the students in terms of the selection of that strategies is eliminated.

It is worth noting that, although the results show a high presence of teamwork elements as an emancipatory strategy in the practices of the teachers surveyed, this high presence only occurs when teachers apply strategies for cooperative teamwork and almost never occurs, if the students' responses are taken into account. This alternates with traditional group work and individualized work. Therefore, it would be advisable to increase those strategies that favor critical knowledge that empowers them for collective action participation in social transformation, in contrast to Martínez and Celorio (2015), who affirm that, if working from individualistic continues or only apparently cooperative perspectives, these goals cannot be achieved.

#### **CONCLUSIONS**

The present research aimed to propose theoretical-methodological guidelines to promote teamwork as an emancipatory strategy in the teacher training of students of the Biology and Chemistry Project at the Rafael María Baralt National Experimental University, Ciudad Ojeda

campus, Zulia State, Venezuela, for the II academic period 2023. After collecting and analyzing the data from the selected sample, the following conclusions can be drawn:

Teamwork as an emancipatory strategy in teacher training is present in a moderate way, even though teachers believe they are applying it more consistently and frequently. Teachers often protect their own practice when they feel challenged in any way. Therefore, although teachers rarely apply appropriate strategies to organize work in the classroom, respect the stages of group functioning, apply some emancipatory strategies, and maintain a certain balance in the concepts of teacher training used there, there is still a long way to go. But this path begins with the initial and ongoing training of teachers in teamwork as an emancipatory strategy.

A significant finding of this research is that, although some elements of teamwork exist in teacher training within the PBQ, these are still under development. A lack of knowledge and lack of interest in emancipatory strategies limit their full implementation. Therefore, it is essential to strengthen these practices to foster critical thinking and empower teachers to actively participate in social transformation.

In conclusion, the results of this research demonstrate the need to implement teamwork strategies as a fundamental pillar of teacher training. Based on these findings, it is proposed to widely disseminate the results, raising awareness among all stakeholders, and, above all, promoting the creation of teamwork dedicated to designing and implementing training activities that promote the development of collaborative and critical skills. It is also essential to establish continuous evaluation mechanisms that allow for adjustments to the actions implemented and ensure the achievement of the stated objectives.

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