



**THE EVALUATION “IS THE BALL TURNING ON THE WHEEL”  
REFLECTIONS ON EVALUATION PRACTICES AT UNIVERSITY**

A AVALIAÇÃO “É A BOLA GIRANDO NA RODA”  
REFLEXÕES SOBRE PRÁTICAS AVALIATIVAS NA UNIVERSIDADE

LA EVALUACIÓN "ES LA BOLA GIRANDO EN LA RUEDA"  
REFLEXIONES SOBRE PRÁCTICAS EVALUADAS EN LA UNIVERSIDAD

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**ABSTRACT:** The paper analyzes how action-collaborative research constitutes a space for dialogue and reflection on educational and evaluative practices in the university. It is a research dynamic developed with teachers from several areas of a public university in the state of Bahia, who regularly discuss their pedagogical practices in the contexts of teaching in which they work. For this article, we analyze the reflections made by a professor at the University's Department of Sciences, in order to understand how the teacher is inserted in a self-evaluation process through which she reveals and (re) defines her educational and evaluative practices in the context of chemistry teaching. As a methodological device, we used teacher narratives produced in the form of oral reports during a research group meeting. The results of the study show that, initially, the teacher conceives the evaluation of learning as a verification process, whose concern is the existence of a note as a reflection of learning. The sharing, exchange of experiences and self-assessment about practices in university teaching promote reflections that reverberate other ways of understanding and developing teaching at the university.

**KEYWORDS:** Self-evaluation. Formative evaluation. Collaborative research-action.

**RESUMO:** O trabalho analisa como a pesquisa ação-colaborativa se constitui em um espaço de diálogo e reflexão sobre práticas educativas e avaliativas na universidade. Trata-se de uma dinâmica de pesquisa desenvolvida com docentes de diversas áreas de uma universidade pública do estado da Bahia, que regularmente discutem suas práticas pedagógicas nos contextos de ensino em que atuam. Para este artigo, analisamos as reflexões que faz uma professora do Departamento de Exatas da universidade, com o objetivo de compreender como a docente se insere num processo auto avaliativo por meio do qual revela e (re)significa suas práticas educativas e avaliativas no contexto do ensino de Química. Como dispositivo metodológico, utilizamos narrativas da docente produzidas em forma de relatos orais durante um encontro do grupo de pesquisa. Os resultados do estudo evidenciam que, inicialmente, a docente concebe a avaliação da aprendizagem como um processo voltado para aferição, cuja preocupação é com a existência de uma nota como reflexo da aprendizagem. A partilha, a troca de experiências e a autoavaliação sobre as práticas na docência universitária promovem reflexões que reverberam outros modos de compreensão e de desenvolvimento do fazer docente na universidade.

**PALAVRAS-CHAVE:** Auto avaliação. Avaliação formativa. Pesquisa-ação colaborativa.

**RESUMEN:** El trabajo analiza cómo la investigación acción-colaborativa se constituye en un espacio de diálogo y reflexión sobre prácticas educativas y evaluativas en la universidad. Se trata de una dinámica de investigación desarrollada con docentes de diversas áreas de una universidad pública del estado de Bahía, que regularmente discuten sus prácticas pedagógicas en los contextos de enseñanza en que actúan. Para este artículo, analizamos las reflexiones que hace una profesora del Departamento de Exactas de la universidad, con el objetivo de

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comprender cómo la docente se inserta en un movimiento autoevaluativo por medio del cual revela y (re) significa sus prácticas educativas y evaluativas en el contexto de la enseñanza de química. Como dispositivo metodológico, utilizamos narrativas de la docente producidas en forma de relatos orales durante un encuentro del grupo de investigación. Los resultados del estudio evidencian que, inicialmente, la docente concibe la evaluación del aprendizaje como un proceso orientado a la evaluación, cuya preocupación es con la existencia de una nota como reflejo del aprendizaje. El compartir, el intercambio de experiencias y la autoevaluación sobre las prácticas en la docencia universitaria promueven reflexiones que reverberan otros modos de comprensión y de desarrollo del hacer docente en la universidad.

**PALABRAS CLAVE:** Autoevaluación. Evaluación formativa. Investigación-acción colaborativa.

## INTRODUCTION

The objective of this study is to understand how teachers participating in a collaborative action research, develop their educational practices and how in the dialogic, reflexive and self-evaluative process with the peers, they produce innovations in classroom interactions and, consequently in the different ways to evaluate learning. As a cut for the discussion in this article, we analyze the narrative of a teacher participating in the research, with the objective of understanding how she, in the reflection with the peers about her teaching at the university, reveals perspectives of evaluative and educational practices that she develops in teaching Chemistry.

The discussion that takes place here, takes into account the identification of the paradigms about evaluation of learning that are evidenced in the results of the wheels of conversation that the teacher produced in some moments of action research. It is, therefore, the experiences with the evaluation practice that the teacher develops in the university and that shares with the other teachers participating in the collaborative action research.

The collaborative action research, in its third year of development, has 14 professors from two universities, as well as 4 postgraduate students, 4 fellows of Scientific Initiation and some volunteers. As described in their project (RIBEIRO and MUSSI, 2015, p.10), it is a "research design that involves the teachers themselves as researched subjects and researchers of their own pedagogical practices, so that they can transform them in innovative practices ". According to Pimenta (2005, p.06),

[...] the pedagogical praxis of the teachers involved in the research, starting from the teaching action, reflected, based theoretically and systematized constitutes a form of continuous formation with ample transformative and emancipatory possibilities.

Among its objectives, the research that originated this work presents:

To identify the problems that involve the pedagogical practices of university professors; Collaboratively seek support among peers and theoretical references to

overcome the problems that involve the pedagogical practices of university teachers, to face them in an innovative way. (RIBEIRO; MUSSI, 2015, p.11).

We established, in the referred collaborative action research, some instruments for collecting and producing the data, such as: the focus group, the interview, the video recording of the teachers' classes and the reports of these subjects in round of conversations that happen every 15 days, for 2 hours, in the core research room.

The report is characterized by the personal description of the teachers, the episodes, the lived experiences, the feelings and emotions linked to their pedagogical practice, through which we can learn about the reality of the university teacher's classroom, narrated by the protagonists. (RIBEIRO; MUSSI, 2015, p.20).

In the collaborative action research, built by a group of teachers from different areas of knowledge, a fertile learning environment was created so that the self-evaluation process of each one is active in a constant exchange, socializing difficulties and, therefore finding, referrals and procedural solutions. We begin to see as results that some participants begin to theorize what they do and integrate the theoretical pedagogical base in such a way that a critical awareness of the changes is being constructed. In this context, evaluation as an element of human actions and necessarily also academic, begins to use the dynamics of self-assessment as a propeller of cognitive construction theoretically grounded, in other words, allowing to understand the dynamics of teaching practice based on the constructivist learning conception of the emerging paradigm.

For this work, we take the data received during one of the round of conversation, in which we filter the senses and ways of understanding and practicing the evaluation in the educational practices that a teacher does in the university. We try to understand, which paradigms on evaluation are present in the educational actions developed by the collaborating teacher.

In order to understand, what are the paradigms that base the learning conceptions and their evaluation practice that are present in the educational actions developed by the teacher collaborator, we seek to establish a dialogue between the results found with the paradigms that guide the evaluation practices in higher education.

Understanding, proposing and managing the evaluation of learning, taking into account its complexity has become a challenge for university teachers to try to transpose the evaluation practice as a verification of learning. To evaluate in the constructivist learning conception of the emerging paradigm presupposes a dialogic construction between different subjects - teacher and student - that involves a paradigm that is based on the idea of construction of cognitive processes that put in evidence the reflexive action of knowledge construction, therefore, development of learning. In this context, the evaluation presents itself as a dynamic mobilizing understanding of the reflexive action that the subject makes around himself, the other and the world around him, with a view to building mechanisms of production and analysis on learning.

This perspective of understanding starts from the assumption that the evaluation is an essential element in the human actions, is a process that allows to manage the relation with itself and with the other, has as instructive principle in the knowledge and reflection of itself and its practice that the teacher develops when one throws at the idea that to evaluate presupposes, in the first instance, to evaluate oneself and the ways in which the evaluative action develops in its practice. In this context, the evaluation has a close relationship with the metacognitive processes that generate the subject's self-assessment, and it is at this point that he places himself in the reflexive position of understanding himself and his purposes in the educational action he develops in the university.

In university practice, teachers have adopted teaching strategies that have as a fundamental principle the development and effectiveness of student learning. It is under the condition of favoring dynamic and feasible forms of knowledge acquisition, that teachers resort to educational actions, and reflect on them in the perspective of understanding them in their formative essence for students.

In this search, the evaluation in its formative function emerges as a complex dynamic that aims to favor the functionality of both the educational practices of the teachers and the cognitive results revealed by the students. In this direction, in seeking to move in the sense of understanding the legitimacy of its practices and the process of evaluation that it uses, the teacher often inserts himself into the self-evaluating perspective, which according to Hadji (2001, p. 102) should focus on self-balancing, trying to make self-regulation more conducive to improvement "[...] of the internal guidance system in order to increase the efficiency of self-regulation ...".

Self-regulation triggers a particular way of understanding that the teacher develops, in order to focus on the centrality of the evaluative process, through which he seeks to develop reflections on how he evaluates and from where the motivations come. Generally, it is the attempt to ensure that students are aware of what it is necessary to learn from what teachers teach and what evaluation is presented in educational practice as something necessary to measure whether learning happens or not.

This implies considering that the evaluation of learning and teaching has a close relation with the self-assessing processes that the teacher develops of itself, considering the ways of teaching and developing teaching strategies that favor learning. This condition of the teacher paying attention on himself and how he acts when he teaches and when he evaluates, demands a process of metacognitive management, which considers the procedures that the teacher carries out within its educational activity, always based on a reflexive process that considers the knowledge as an active element in the production of evaluative strategies that the teacher uses, mainly because it is a way of self-regulation understanding as a way of

understanding the effectiveness of educational activities, among which the evaluation, that the teacher develops in the university ( POZO; ECHEVERRÍA 2009).

The educational practice and its proposal of a theoretically grounded or naive evaluative practice, are structured in an epistemological model and propose a daily classroom that manages the actions of the subjects of the teaching and learning process. When changes occur in this practice, a need for adjustments of the same is necessary. At first it can happen ingenuously, but the process of changes will require the teacher's answers to adjust to reality. The evaluation practice can be a obstacle to definitive changes, since the students from the beginning of the process ask the teacher about how they will be evaluated. They have previous experiences that start to be destabilized. Proposing and experiencing changes is not easy. It is invading the new that still does not promise it will be efficient.

However, as Behrens (2003, 27) suggests:

Crisis and resistance are part of this transposition process: on the one hand they provoke a discomfort in the scientific community, overthrowing some pillars of support of thoughts, concepts and actions, and on the other, it instigates scientists and intellectuals to review their theories and seek a profound renewal of its conceptions [...] the overcoming of a scientific paradigm does not invalidate it, it does not make it wrong or null, but it shows that its presuppositions and determinants no longer correspond to the new historical requirements. The transition to a new paradigm is neither abrupt nor radical. It is a process that is growing, building and legitimizing itself. In fact, the new paradigm incorporates some significant references of the old paradigm and that still meet the historical longings of the time. In this process of transition, scientists begin to challenge the assumptions of the old paradigm although in announcing a new world, they are still based on more utopian than concrete foundations [...] the formation of a new paradigm occurs in the insides of the previous one. And this, in turn, will never disappear completely.

## **PARADIGMS IN SCIENCE AND ITS INFLUENCE IN EDUCATIONAL PRACTICE**

Before we begin our reflection on the paradigms of science, analyzing the main epistemological currents that present repercussions in the educational practices until the present time, we consider interesting to clarify to the readers the concept of paradigm that we defend.

In this text, the concept of paradigm is understood as the one conceived by Edgar Morin (2004), for whom there is a basic linguistic, logical and ideological nuclear notion that determines the course of all theories and discourses. Morin (2004) employs paradigm as a very strong kind of relationship, which controls all discourses, including the logic of these discourses, so that we obey, even without knowing, this paradigm, with power of separation, conjunction, simplification, of sovereign legislation. In this sense, the paradigm, besides



controlling theories, controls, at the same time, the bureaucratic technical organization of society.

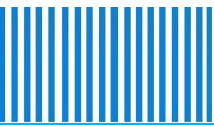
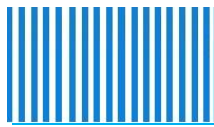
However, in defending complex epistemology, Morin contrasts with the existence of what he calls the "epistemological Lord", which irreducibly and irremediably controls all knowledge, defending a plurality of instances, each with uncertainties, and therefore incapable of being true or false. In his own words:

In other words: even the most singular conditions, the most localized, the most particular, the most historical of the emergence of an idea, of a theory, are not proof of its truthfulness -of course- nor of its falsity. In other words, there is a principle of uncertainty at the bottom of the truth. It is the problem of epistemology; it is the problem of dialectics; It is the problem of the truth. (MORIN, 2004, p.19)

From this logic, Lima and Grillo (2008) affirm that, even though it is not clear to the teacher, the way in which teaching is developed is supported by explicit or implicit conceptions about knowledge, teacher and student. Behrens (2003, p.14) presents the historical organization of the pedagogical process by saying that there are two dimensions:

A dimension based on the Newtonian-Cartesian paradigm, which characterized a fragmented and conservative teaching, whose central focus is the reproduction of knowledge. [...] The other dimension, characterized as innovative, has as its central axis the production of knowledge. Designated as an emerging paradigm, it has been based on the holistic view, proposing a science that overcomes fragmentation in search of the whole and that contemplates the connections, context and interrelations of the systems that integrate the planet. The significant challenge in this paradigmatic passage is the attempt to approximate the subject and the object, in a process that recovers emotion and intuition allied to reason. When investigating innovative assumptions and trends, we present the proposition of a methodology based on a pedagogical project of the teacher that seeks to produce the knowledge of the students and the teacher [...] with the concern of forming a sensitive, intuitive citizen, happy, and competent to contribute to the reconstruction of society.

In the perspective of a practice focused on the production of knowledge, as seen previously in the Behrens excerpt, the teaching practice must be aligned with the historical moment in which we live, called "knowledge society", marked by profound transformations in the productive, social, economic and political. Thus, to accompany such changes, Carpin; Behrens; Torres (2014, p.5) defend that educational practice, based on the paradigm of complexity, also called emergent, holistic and innovative, needs to take into account "a dialogic teaching that promotes dynamic and non-fragmented educational action through structuring a curriculum that merges ethics, science and society "in which teachers propose educational activities in which students relate, with criticality, theoretical knowledge with practice. In this sense, from a critical, creative and transformative view, the educational practice can overcome the mechanized and linear form that marks the traditional paradigm, whose practice, as we saw earlier, was mechanized and linear.



However, the author states that "the transition to a new paradigm is neither abrupt nor radical. It is a process that is growing, building and legitimizing itself" (BEHRENS, 2003, p.27). Based on these assumptions, we can understand how and why procedural changes happen, because when the actions generated in a paradigm begin to solve no more situations that it must manage, then one begins to look for ways to organize changes that bring improvement and provide the achievement of goals desired.

The existence of the paradigm of modern science (Cartesian-Newtonian) that controls knowledge and our vision of reality has generated a crisis in the educational environment, considering, as Moraes (1997) states, that teaches students not to question, not to express divergent thinking, to be sure of things and to accept authority passively, which can have damaging consequences for the formation of new generations.

Although the university continues to be influenced by a system of examinations in which "the tests assume a central role determining the student's behavior, privileging the memory and the capacity to express what has been accumulated" (MORAES, 1997, 52), we notice, in the process of developing collaborative action research, some experiences that try to move away from such a closed, fragmented and authoritarian model. When the teacher committed to his / her teaching practice begins to find learning problems in his / her discipline, he begins to try alternatives in order to find more satisfactory solutions that can contribute to minimize students' disapproval, repetition and demotivation. In this process they find some isolated answers and most of the time without a theoretical foundation of these changes. It is in this search context that he begins his journey as a reflective teacher of his own teaching. It is a process of self-evaluation of the practice itself. Moments of reflection to find answers to the problems that you experience.

In an attempt to think of how to help her students in a curricular component that she considers difficult, the teacher Angelica<sup>2</sup> seeks to produce a reflection on her educational action, which finds place and meanings at the moment when in the conversation it reveals a preoccupation with learning of the students, reason that mobilizes it to create a proposal condition of aid to its students. In this sense, it is the practice and the evaluation that makes this the mobilizing element of self-assessment and reflection shared with the collective in the circle of conversation that the teacher reveals the construction of an educational paradigm that consolidates in the ways of thinking this teaching to ensure the learning of its students. In an excerpt from her reports, the teacher tells us:

*The 409 is a problematic discipline in chemistry. In making the proposal of the first unit I made the following change: students, in addition to the deficiencies of*

<sup>2</sup> In compliance with what the Ethics Committee recommends in research involving humans, we use fictitious names to preserve the identity of the study's collaborators.

*Chemistry they have, do not know how to study. I set out to see if I can help them change the format they study. (Angelica, report of the conversation wheel 2017).*

The teacher begins to worry about developing students' study skills. The report shows an attitude of the teacher to make efforts to analyze the way students study in order to promote modifications, what she calls the format of the study, because they believe that students do not do it in an appropriate way to the contexts of a discipline which is problematic. The evaluation is transversal in the practice of the teacher, who uses it in the service of the learning of its students when proposing a change that aims to (re)organize the paths they covered in order obtain learning in Chemistry. This implies a teacher dimension of designing assessment as a process and not just as data collection for learning verification and grade. What is wanted to achieve with the change proposed by the teacher is the result of an evaluation process that originates in the pedagogical perspective, which, as Luckesi (1995) argues, becomes useful and necessary for teachers and learners to seek the best construction of themselves and consequently the best way of being in life, as of in the university as of in the learning of Chemistry.

It is in the attempt to create a condition of educational practice and evaluation, that the teacher Angélica develops a reflexive process that considers, as Behrens (2003) recommends, it moves from one process to another in a procedural way, since the paradigm changes are built historically and collectively. However, it is important to emphasize that in the movement of collaborative action research the dialogue with the peers favors the explanation of the collaborative processes of each one that emerge from the own modes of thinking and of favoring a paradigm shift. In this context, the inquiries that the teacher makes to himself reverberate in the collective and return so that he himself finds senses and actions in the changes he proposes to achieve new results. This implies in the recognition that the participating teachers are revealing ways and means to make the lesson and the evaluation happen in the university, for which the concern becomes an element that favors the self-assessment that the teacher makes of itself, generating a context that searches for understanding of their ways of doing, although in them it is possible to highlight a more Cartesian paradigm of learning and educational practice. In this reflexive movement, in another passage of her pondering during the round of conversation, Professor Angélica considers that

*What if we do not worry? Before the DEXA (Department of Exact Sciences) offered two classes: the freshman class and the repeater class. It makes me think that we need to change in some way. What's important: to give my contribution here. My proposal is this: At least for the first unit. I already have some ideas for the second unit. But they are not so well worked out. (Angelica, report of the conversation wheel 2017).*

When she affirms that what is important is to give her contribution, the teacher shows concern about the students' learning, taking into account the contexts of high repetition and withdrawal. It is, however, explicit that Angelica has a representation of the student and that



works with such representation. She still cannot get rid of the traditional role of the authoritarian teacher, she still cannot relax: she gives the rules. Rules that it authoritatively imposes, and which are not built by the collective. This has to do with the representations that the teacher has built throughout her trajectory in the university. She brings up situations with which she lived in university teaching, such as having different chemistry classes offered by DEXA. It is evident the concern to take advantage of strategies of the making of teaching in the university that generate learning and that allow the students the permanence in the course. The emphasis on the importance and necessity of the student's mastery of Chemistry is taken as a motivation to make the educational practice happen differently, mixed by the concern with the permanence of the students in the course. The attitude change appears as a paradigm of self-awareness and teacher making, which reveals the processes of reflexivity that the teacher begins to construct about her ways of teaching and consequently evaluating her students. Added to this is the introduction of a conception that it is through evaluation in its formative function and not only using the classificatory verification that the student reveals and constructs learning in Chemistry

Despite a Cartesian paradigm of evaluation, which conceives it as a classification and as an instrument of power, Professor Angelica develops a self-assessment process, in which knowledge of herself and the recognition of her difficulties and the authoritarian way of developing educational practices makes it produce a reflexivity that moves it to want, although it does not know how, to promote changes in its evaluative paradigms, in front of the teaching of Chemistry in the university.

When she tells us: *I find myself very forceful, very incisive, very authoritarian. I do not know if I change this, I miss it, I do not lose the way. I think the group has a lot to help me*, then she can self-evaluate. She recognizes her authoritarianism. This is a moment of fundamental reflection, in the words of Almeida (2011, 82), "encountering their truths, their knowledge and reality, characterized by their practice with a certain group of students." It is important to notice that these self-evaluations serve to reorient the teaching and learning process. The recognition and perception that her way of acting in teaching is overwhelming and authoritarian suggests that the teacher becomes aware of these characterizations and seeks to produce senses that she herself acknowledges are not relevant and adequate to achieve expected results. In this reflexive process, and because she is part of a group of university teachers, she seeks to share her difficulties as a way of becoming understood by the peers and from this receive help so that she can establish other ways of doing her teaching, especially in regards of how she evaluates herself and her students. This is not easy and demands that the teacher be sensitive to the dialogue and the construction of motivations that begin in the recognition of difficulties and limitations that she faces. This is the condition that the teacher puts herself, of being in recognition of her difficulties, but prone to building new paths in her professional trajectory with the support of the colleagues participating in the research.

Professor Angelica's recognition of her overwhelming attitude toward assessing, as well as the need for help from fellow teachers participating in collaborative action research, is supported by a training paradigm that has always focused on rationality. From praise of reason and criticism of emotion. We learn to think with our heads and not with our hearts.

Therefore, we understand and defend that the evaluation as a process constitutive of organization and reorganization of the paths that are traversed to promote learning in the university, transcends the mere notion of gauging knowledge, because it has a close relation with the ways of teaching and learning that the teacher manages in the classroom, producing a set of actions in their educational practice, which considers the act of evaluating how to cross the practice. In this dimension, the evaluation process constitutes the organizational dynamic of implicit theories (POZO Y ECHEVERRÍA 2009) that brings together the values and principles of reflection in the action of doing and applying school tasks. In this context, rationality has given way to the operative modes of thinking, also emotionally. Man is no longer a subject of reason, now he is also prone to being the subject of emotion. He recognizes himself forcefully, incisively, but also a subject who needs help, who is afraid of making mistakes if he changes his way, but who recognizes the need to change to inaugurate not only a new way of evaluating students but, above all, develop educational practices that are emancipatory and allow learners to learn.

This reflective scenario opens space for the teacher Angélica to create conditions for dialogue, through which she begins to listen to the students, approaching them. This implies the recognition of the establishment of weights that it uses as a way of portraying a dialogical environment with these subjects. In a passage in which she reports one of her evaluative practices, the teacher thus represents the dialogue she had with her students in a Chemistry class:

*What am I doing here today? I was discussing the answer a student had given me. Then I asked again: what did you say? We realize that the answer the student gave was a group answer. Everything went on in this class, everyone spoke. That was the initial agreement. The initial agreement was that they (the students) would have to talk, would have to tell me: what do I want right now? Discuss the atomic structure until guiding them. Because it is very connected to physics. (Angelica, report of the conversation wheel 2017).*

Here the teacher shows a possibility to evaluate learning in another way, with the use of another instrument. She evaluates the responses and participation of the subjects, considering that the collective, the group of students should be considered. When a student speaks, she speaks for the group and this means that Angelica is concerned not with the perspective of a subject alone, but with what the group of students reflects and suggests. The dialogical perspective inaugurates in the teacher's practice a way of understanding learning and its evaluation that moves to another stage, consolidating itself in a more flexible way, since its main objective is that they learn about the atomic structure and can make use of it. Under

these conditions, we see a perspective of thinking as a process evaluation, just as learning is. The orality enters as one of the possibilities of constructing formative paths, in which the learning of Chemistry is a more motivational reality for the students, soon for the teacher as well.

The teacher experiences new learning strategies so that students express what they have learned. As stated by Pozo (2009, p. 200), the teacher is understood

As a strategic subject who makes decisions from his theories and beliefs before, during and after interaction with students. The content of teachers' ideas thus becomes the priority of study for understanding and improving classroom activity.

In seeking to anchor its evaluative modes in a dialogical perspective with its students, the teacher organizes her classes in a more flexible dynamic, whereby the strategies come to figure in their repertoire and in their beliefs about ways of learning that are more functional, taking into account the contexts in which he develops his classes. In this sense, the teacher uses an evaluation process marked by the interrelationships with the students. It is the dialogue, the coexistence, the observation, the reading of the reality and the student's necessity, elements that come to be considered by the teacher in order to develop their learning in the chemistry. This is added to the values and ideas that the teacher has to make his class happen in an anchorage of the representations that builds for himself the best way to achieve results in his classes. In this respect, the teacher is motivated to achieve her educational goals, which is why she changes her attitude from the relationships she establishes with her students, before, during and after the development of each activity. In another section of her report, she focuses on the educational practice in the evaluation process, saying that

*The goal is not the grade. The goal is the ball spinning on the wheel. It's the discussion. And the teacher as mediator of the learning process. Why do I need to give this rule? Because it is vital for the thing to happen. If I put in this language, with students from the beginning of the semester, what happens? Languages must be different. (Angelica, report of the conversation wheel 2017).*

We note, through Angelica's narrative, how much the teacher wants to change the systematics of learning assessment. She targets the evaluation as: *it is the ball spinning on the wheel*. However, there is a contradiction in their perspective. *If the goal is not the grade*, as the teacher previously expressed *that the test is worth 4, the lab work is worth 4. Once corrected I ask a series of questions. I divide the class into trios. I do an oral test why does she insists so much on focusing on the instruments, oral test, laboratory work, written test? Perhaps, and we believe it to be the best explanation, this has to do with the idea that the notes revealed by the evaluation instruments are indicative that the learning happened to the content. It is still possible to think about the possibility that the focus on the note and the instruments is related to the motivation of the students in the university, which in some contexts, is focused more on*

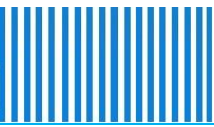
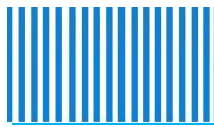
the achievement of a good grade than on learning. It is common to see evaluative situations in which the great goal of the student is to get a good grade and learning would be as a consequence of that. If you have taken a good grade, it is a sign that you have learned the content. This conception is still quite present in the evaluative contexts of the university, in the discursive polarization of both students and teachers. In Angelica's case, we see a fluctuation in the evaluative perspectives, which transits in different modes of understanding. She reveals preoccupations with the learning of chemistry, with the knowledge and production of knowledge on the part of the students, but also, she is concerned with the evaluation instruments and with the results that the students must achieve in them. Therefore, the emphasis on the instruments and weights of each evaluation, but without disregarding that in the context of their evaluation practice, learning is desired and present. However, the idea of learning regulation that seems to be effective in teacher authority and in its ability to plan, design, apply and validate evaluation tools is always implicit.

Almeida (2011) helps us understand this situation. Analyzing Angelica's reflective perspective in her narrative, it is explicit that the notes serve to show the student his position in the hierarchical scale of excellence, instead of helping him to understand what he has learned, his advances, difficulties, what is still lacking to learn, that is, to identify the constructed knowledge and modes of reasoning of each student so that it could help him to progress towards the objectives (ALMEIDA, 2011, p.85).

In this sense, evaluation is seen as an instrument of continuous regulation of pedagogical action, in order for the teacher to know the obstacles encountered by the students in the learning process. And this view disturbs and makes the teacher have the false sense that the assessment in which he believes values learning. In fact, student learning is the object of teacher motivation, which seeks in its authoritarian way of being able to get students to learn. The learning metric in this context is the grade. And regulation means getting a good grade. If students do not or do not dedicate themselves to studying, as they should, the strategy of intimidating and raising the score as a way to attract students to the responsibility for the study arises. This attitude, which we see in the teacher's report, has contributed little to the learning of the students, but has motivated her to realize that the main objective is the learning of her students and that in order to achieve this, she will have to conceive an evaluation beyond the simple notion of gauging learning.

## SELF-EVALUATION AND REFLECTIVITY IN THE CONTEXT OF COLLABORATIVE ACTION RESEARCH

The insertion of the teacher in the context of action-collaborative research, especially at times when the collective talks about the educational and evaluative practices that each one develops in the university, constitutes a space of reflection that each one generates for itself,



understanding the way one evaluates and feels in relation to the other (the peers themselves and the students) in a condition to be able to self-evaluate and, with this, (re) signify their teaching practices in the university. The sharing and exchange of pedagogical experiences lead the participants to create an environment that welcomes the singularities of each one and potentiates them in the dimension of the collective, thus generating new singularities that are effective in the new operative modes of teaching and of evaluating, that each one does in the context of their work at university.

It is learning with the other, with the practice of the other, but at the intersection with their own practice, with their own way of conceiving university teaching as a perennial space of formation and construction of new possibilities of teaching. From this perspective, the community provokes and promotes reflections that lead each one to develop a self-evaluation process that implies, in the context of the research, a professional condition of (re) constructing educational and evaluation practices that emerge from the necessity and viability of developing professionally in the context of the daily dynamics of making university teaching a reflective and therefore innovative practice.

We conceive of self-assessment as an element of human action essential for cognitive dynamics and social interaction. It could not be absent from the daily life of individuals and their social life, so in the social interaction of university teachers, who by action-collaborative research are inserted in a self-assessment dynamic to do what Angelica also does in her context of action in the university when she says that *I always try to reflect on my pedagogical practice and what I can do to improve it*. The reflection on the practice means the self-evaluation of its educational actions, which, when analyzed by the teacher, allow a reconfiguration of the same, a restructuring that allows improvements, once, they are built in the ideology the teacher has of himself and his practice, as a way of favoring student learning. The expected result is always one that reveals a practice that is better than another previously developed, and therefore generates learning for students.

Our understanding of self-assessment, which is not an instrument of data collection, but a cognitive dynamic that produces data to assess actions in human daily life, generates in the context of action-collaborative research, the condition of production of actions that (re) signify our practices. Hence the understanding that the research impacts on the operative modes that the teacher Angélica develops to reflect on her practice in teaching in chemistry, self-evaluating in her trajectory with a perspective to change the practices and to make them closer to the educational perspective that considers the teaching focused on learning. Thus, in one of his narrative excerpts, the teacher reports that

*I always try to reflect on my pedagogical practice and what I can do to improve and then I agree with the colleague that we should always have the teaching focused on learning, that is why I came here to learn from you what I've been doing for some time, in a way as an engineer, because I think the engineer is a technician, and see*



*if I can put it in a more ... let's say, pedagogical way, to get closer to this area of education. (Angelica, report of the conversation wheel 2017).*

Believing that teaching should be based on the perspective of ensuring that learning happens, is a way of producing self-assessment of oneself and its practice, when recognizing herself as an engineer that is in the university teaching staff. From this condition, Angelica reinforces the idea that she is in the action-collaborative research, through which she has the opportunity to reflect the teaching and learn from the experience of the other, is a way to generate a self-assessment and to be able to continue doing what she has been doing for some time, that is, teaching chemistry at university. The difference is that upon participating in the collaborative action research, the teacher considers that she will be able to bring to the debate with the peers her concerns about the teaching practice that he / she develops at the university. The pedagogical format she wants to understand in the experiences shared by the group is the gateway to Angelica to think about the ways in which she has taught in Chemistry and how this teaching has generated learning in students. It is the self-reassuring recognition that makes of itself in the context of its teaching activity, that the teacher thinks about the place of the reflection and the exchange of experiences between her and the other professors participating in the research. Therefore, the concept of self-evaluation that the teacher develops goes beyond the comprehension that some teachers use in the classroom, only to generate data collection about the performance of the students or even about their own performances in the educational practice.

The use of what is called self-evaluation in the context of the classroom sometimes fulfills the function of a collection instrument, which has been used in a timely manner and most of the time does not add much to the learning process. Overcoming this use in the learning process will be possible when one understands the meaning of the value judgments that the student and teacher make of what is happening not for the summative function of evaluation but for the formative function of the learning and teaching process. This perspective suggests that the teacher has the condition to promote significant modifications that indicate that they can continue or work on learning gaps

Taking the reflective trajectory that the teacher has done in the context of collaborative action research, it is possible to identify moments in which her practice indicates a treatment of self-assessment as an instrument of data collection that only serves so that Angelica can know if the students are or not learning chemistry. From this she comes to understand that the learning is directly related to the educational practices that she develops, that also have to consider the strategies that she uses in order to promote the classes and consequently the evaluations of the students. In this context, the self-assessment is no longer a mere condition of data collection, with an end in itself, and it means a process of self-regulation that the teacher makes of himself, considering that the evaluation practices involve more complex processes that demand an intrinsic relationship between teaching and learning.

Thus, we understand that in any classroom activity for the student to learn the information that is being presented, the self-assessment is acting by helping the work memory, short and long duration, guiding the effectiveness of learning. For these reasons, self-assessment should be understood and inserted in the process of formative evaluation of the pedagogical practice that is done and remakes with the other, which in this context is the student. Installing the student's speech allows him to exchange his knowledge, his doubts/questions with the teacher and colleagues, essential to emerge motivation and commitment of his learning process. The student "feels heard" and this listening promotes improvement of teaching and learning. Guides the teacher about what might be best for the group. And this action must be guided by a teacher's perspective of aligning thought and action in order to be aware of the paths that must be followed, thus, ways that enable student learning. It is an action that is done and changes in the evaluative action of understanding how the subjects learn with the teaching practice. Thus, to evaluate implies to become aware and to generate a process of self-evaluation, which is a daily action of the thought and action of the actions of oneself.

Kenski, (1988) explains that

the act of evaluating in everyday life is given permanently by the immediate unit of thought and action. In this unit the person needs to be always ready to identify what the 'true', the 'correct' for him, options that will tell you the best direction to follow, and what to do. Often this choice does not correspond to an in-depth, real knowledge of what the option refers to. (KENSKI 1988, p.131).

The evaluative process that the individual performs in all moments of his daily life is done on the basis of provisional judgments, opinions that pass from relationships with himself and with others, allow for decisions that are essential for each moment. This does not happen dissociated from his intellectual capacity, his senses, feelings, abilities, ideologies and ideas. It is social relationships and your personal posture. "The day-to-day of the classroom is not separated from the everyday life of each of the individuals that are related there" (KENSKI 1988, p.132). This means that teachers and students evaluate at all times everyone and everything. It is necessarily these actions that guide decision making, establish individual and group relationships. The context of the classroom is one of the stages of these actions. And it is worth emphasizing that in the classroom relations there are always two basic positions that take place and that are not always convergent: that of the teacher and the student. "... judgments, positive or negative, can fall into different attitudes and are limited, in extreme terms, in an attitude of permanent attention to the changes that take place in the behavior of the person being evaluated" (KENSKI 1988, p.134). It is observed in the collaboration and positive participation until all acts of resistance and opposition.

The teacher makes judgments that will guide the way his relationship with the students, such as awards, punishment, praises, depending on how the actions are consistent with expectations for the teaching and learning process. Some decisions are made in frustrated or assertive expectations. (KENSKI, 1988).

The evaluative practice is taking place during the process of classroom interaction in the dynamics of self-assessment. Decisions emerge that are directly linked to the content, production of knowledge by the student, among other causes. In these relationships between teacher and student, learning is going on whether or not the desired learning is achieved. When this occurs with the teacher who has theoretical clarity of what is happening, he will make decisions in the teaching and learning process by experiencing the practice of theory.

When this dynamic involving knowledge construction has the conscious and critical participation of the students it is observed that they construct meaning in what they learn. The teacher changes from being the only evaluator of everything he and students experience to integrate into what is called formative evaluation that can promote self-regulation of teaching and learning. All are partners in the process of learning, teaching and necessarily evaluation. The focus is complex and focuses on the degree and difficulty of learning emerged in the process of self-assessment of everyone, how knowledge is taught and learned, learning strategies and their academic tasks, resources used, clarity of the objectives, guiding the actions of each one. The result is that the group reorganizes itself according to the needs identified by the whole group.

Self-assessment can be the mainspring for effective and meaningful change and the construction of innovative teaching that transforms relationships, values the dynamics of implicit and explicit learning, and allows the development of the critical capacity of what is internal and external.

Self-assessment goes beyond the students' responses in structured reports informing their opinion of what happens in class. It is understood as a deeper reflection, the encounter of the individual with the object of knowledge in a process of analysis identifying the changes occurred during the relationships, the student is placed as subject of his learning and the teacher as subject of his teaching.

For the teacher this moment of deep reflection of their reality allows to emerge their desires, their objectives, their successes, their truths, their knowledge. These are moments of disorganization and reorganization of thoughts and actions. If they are at the level of critical awareness they have the strength to reorient or not the direction of learning and teaching. It is "a critical process of teaching aiming at a transformative education, the emphasis of evaluation will be on the relationships effected in the daily contact with knowledge" (KENSKI 1988, 141).

## CONSIDERATIONS

Teacher Angélica expresses her fear of changing, of making herself more flexible, of "losing her way." In fact, change becomes very difficult, both for students and for teachers. Formed in a paradigm in which the teacher dictates the rules, gives the grade, reprovos, demands that the students repeat the content that had been "studied", it becomes very difficult to change the representations and, consequently, the attitudes. In Pozo's conception (2009, p. 200), the representations of teachers, although many are not aware, guide their practices: "There are undoubtedly others that we are not aware of and that nonetheless influence what we do: implicit theories."

However, our experience in collaborative action research has allowed us to perceive that teaching practices are (re) signified when teachers narrate them, and from them emerge the context of their educational work in the classroom. Therefore, the context presents itself not only as a background of educational actions, but as an element of problematization of the practice, which is intended by the different ways of the teacher to develop his teaching and, consequently, to evaluate it in the light of new paradigms that emerge as mobilizing mechanisms of change of the practice itself. This is the moment and function of self-assessment. Moment in which the teacher Angélica develops reflections on her ways of doing and evaluating the students in the teaching of Chemistry, creating a dialogical condition with the peers, as well as with other authors and actors of teaching in Chemistry, as a way of modifying and searching new results for the evaluation process that he has developed in his teaching activities.

There is a moment when the paradigmatic crisis of evaluative work emerges as a problematizing element of teaching practice, which is woven and reflected in the collective. But it is from the crisis and the recognition of this that teacher Angélica starts to understand new ways of teaching in the context of educational practices of teaching chemistry, for which the problematization arises in the paradigm of learning and the way in which we evaluate it. This paradigmatic crisis begins to be unveiled and the creativity of the teacher Angelica begins to insert a new conception of learning and how to evaluate it that transcends the notion of evaluative check. Dialogue with peers, reflection in groups and exchange of experiences allows (re) configure their educational and evaluative practice. In this context, we see a modification of the learning paradigms and their evaluation, through which this teacher and the other colleagues begin to develop new conceptions and perspectives on the act of evaluating in the university. After all, as Angelica herself expresses, evaluation is a process, "it is the ball spinning in the wheel."

Thus, the study evidenced the importance of the self-assessment process in the context of the formative function of the evaluation that presents itself as a space of reflection that the teacher develops in search of understanding and to accomplish the best evaluation paths that

he uses in his educational practice. The participation of the teacher in the collaborative action research enabled her to approach and consequently knowledge with the educational practices of other participating teachers, giving her the opportunity to socialize, analyze and perceive the way she does the evaluation in Chemistry and how this way was still rooted in a traditional conception of learning that considers much more the classificatory verification to give grades, than the process and its nature.

Being in a group that discusses its evaluative practices, seeks to understand the implications of its assessments in the students' learning process, is open to dialogues with peers and to carry out studies on the subject, has made Angelica enter a formative movement action-collaborative research, seen as a space of dialogic formation, in which learning is done with the effective participation of the other, especially through observation and analysis of the practice itself.

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