

Insubordinate Practices in Mathematics Evaluation

Práticas Insubordinadas na Avaliação Matemática

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Abstract

This article reports a Conversation Session presented at ICOCIME 2, discussing actions undertaken by three PhD students of the Post-Graduate Program in Mathematics Teaching (PEMAT), of the Federal University of Rio de Janeiro. Innovative evaluation proposals differ from traditional models, both in terms of the assessment of students' performance, and in relation to the attitudes of the teachers responsible for the assignment of the grades. Commonly associated with tests, school assessments in mathematics are instruments with generally well-defined characteristics: individual, written, and time bounded. They are usually composed by single response questions and offer generic treatment to all students with the intention of being neutral. Usually applied at the end of a learning cycle, the tests are conceived in a positivist philosophy that attributes to this instrument a character of impartiality and justice. Insubordinate and creative proposals indicate the need to know the students involved in the process, in order to establish a meaningful teaching and learning relationship. In a critical and progressive perspective of the evaluation, it is necessary to consider democracy in the evaluating instrument to build bridges between teachers and students, avoiding the deviations of subjectivity and biases in the correction of the tests.

Keywords: Evaluation in Mathematics; Creative Insubordination; Alternative Evaluations.

Resumo

Este artigo relata uma Sessão de Conversa apresentada no ICOCIME 2, discutindo ações empreendidas por três doutorandos do Programa de Pós-graduação em Ensino de Matemática (PEMAT), da Universidade Federal do Rio de Janeiro. São propostas inovadoras de avaliação que se diferenciam dos modelos tradicionais, tanto no ponto de

vista da avaliação do desempenho dos estudantes, como em relação às atitudes dos professores responsáveis pela atribuição das notas. Comumente associadas a provas ou testes, as avaliações escolares em Matemática são instrumentos com características geralmente bem definidas: individuais, escritos e com tempo delimitado. São compostos, em geral, por questões de resposta única, e oferecem tratamento genérico a todos os alunos com a pretensão de serem neutros. Normalmente aplicadas no final de um ciclo de aprendizagem, as provas são concebidas em uma filosofia positivista que atribui a esse instrumento um caráter de imparcialidade e justiça. Propostas insubordinadas e criativas indicam a necessidade de conhecer os estudantes envolvidos no processo, a fim de estabelecer uma relação de ensino e aprendizagem significativa. Em uma perspectiva crítica e progressista da avaliação, é preciso considerar democracia no instrumento avaliador para construir pontes entre professores e alunos, evitando os desvios de subjetividade e os vieses na correção das provas.

Palavras-chave: Avaliação em Matemática; Insubordinação Criativa; Avaliações alternativas.

1. Insubordinate School Practices

The word insubordination is related to disobedience to a rule or to a superior, defiance of authority or refusal to obey orders. However, the creative insubordination advocated by D'Ambrosio and Lopes (2015, p. 3) "is legitimized by focusing on professional practices based on ethical grounds". These authors argue that teachers should question the mathematics that is presented at school, should support the uncertainty of Mathematics as a discipline and emphasize humankind by fighting, for example, discriminatory discourses about students. D'Ambrosio (2015, p. 3) states that "teachers are expected to follow rules blindly without worrying about the results of their actions in the education of children".

The first discussions about creative insubordination appeared in 1981, when

Morris et al. (1981) described an ethnographic study held at Chicago schools, involving 16 school principals. In this report, the authors defined acts of insubordination creatively as times when principals made decisions contrary to school district mandates. In general, the need to be disobedient was intended to dilute the dehumanizing effects of certain rules by protecting teachers' professional decisions, which were based on the best interests of their students. Disobedience has occurred to preserve ethical and moral principles, or to ensure pedagogical practices based on principles of social injustice. (D'Ambrosio & Lopes, 2015)

Lopes, D'Ambrosio and Corrêa (2016) give us an example of insubordinate classroom practice through the narrative of the teacher's pedagogical practices. In this article, Solange is a teacher who teaches in the 2nd year of elementary school at a private school in the state of São Paulo that developed a project for children to know the Declaration of the Rights of the Child.

We understand Solange's work with the children to understand the legislative language of this official document as an act of creative insubordination. She found a way to convert the complex language of the document into accessible and understandable language for those children who were just beginning to learn to read and write. It has helped to make sense to them of a text that

usually belongs to the adult world (Lopes, D'Ambrosio & Corrêa, 2016, p. 291).

The way Professor Solange leads her students to reflect the world promotes not only the learning of concepts and values, but also gives them the opportunity of an alternative reality by planning a responsible subversion.

She took an opportunity to develop in students the reflective tools needed for responsible citizenship. Students were able to learn that legislation alone is not sufficient to ensure children's well-being. Instead, solidarity actions are possible and important to intervene in reality. She seduced her students to imagine and create acts of insubordination to the social status quo. (Lopes, D'Ambrosio & Corrêa, 2016, p. 295)

The approach practiced by Professor Solange was insubordinate because it broke with the prescribed curriculum and highlighted the importance of problematization in early childhood education, challenging children to think about everyday situations that are beyond their reality but that require their decision making. On the other hand, the approach was creative in the way used to adapt and explore content with the students.

Lopes, D'Ambrosio and Corrêa (2016, p. 298) concludes that "Solange was subversively responsible when she allowed seven-year-olds to think, live and intervene in a different socioeconomic context from the one in which they live".

In this context, what would be an insubordinate assessment?

2. Insubordinate Assessment in Mathematics

Before answering this question, we need to think about the so-called traditional assessment. How do math teachers usually evaluate traditionally? Test. It is a written exam, individual and without consultation in most cases. The essential characteristics of this evaluation instrument are related to the fact that they are sporadic, intermittent and brief; absence of coexistence as an assessment requirement; the generic treatment it gives to all students; the claim to be neutral (Raphael, 1998). According to Vaz and Nasser (2019, p. 180), "the supposed objectivity of school evaluation, in which it would be possible to measure one's knowledge, is associated with a positivist philosophy in which neutrality and impartiality are its pillars."

Ortigão and Oliveira (2017) state that school evaluation is still an obstacle in the learning process. According to these authors, to break the evaluative conception that judges and labels, segregating students who do not follow an established standard, we need to

[...] move towards an assessment that guides students about their abilities, motivates them and provokes curiosity to learn, an assessment that is not only concerned with the mark as the final answer of the process, but which is concerned with the development process of each respecting the uniqueness of each individual. (Ortigão & Oliveira, 2017, p. 93)

Skovsmose and Alrø (2010) defend the existence of bureaucratic absolutism in the school environment. At school, "things are the way they are because of rules and norms" (Skovsmose & Alrø, 2010, p. 26). The Math teacher, for example, "is prevented from changing the fact that students have to do certain kinds of exercises and that the formulas they have to use are those written at the top of the page". For Vaz and Nasser (2019, p. 182), this absolutism is likely to act as a barrier to changes in evaluative

practices, because "if the teacher is prevented from modifying the rules related to the choice and use of exercises (...),he/she will find even greater difficulties in modifying conceptions related to evaluative practices". The standardization of evaluations

[...] incorporates cultural theses about what the subject is and what he should be, and who this subject is not. In this sense, they try to create ideas about the 'good student', the 'good teacher', the 'good pedagogical practices', the 'good school institution', strengthening binary behavior and exclusions. (Ortigão & Oliveira, 2017, p. 97)

Thus, we understand as insubordinate evaluation any evaluation that breaks, or tries to break, the bureaucratic absolutism present in the evaluations or questions the positivist conceptions that sustain the traditional evaluative model. We consider as an insubordinate evaluation the evaluation that is built on the autonomy of the teacher, assuming and redefining his/her role as mediator of learning.

D'Ambrosio and Lopes (2015, p. 10-11) believe that "we, mathematical educators, need to dare, in our production of knowledge, autonomously, from our worldviews, constituted by beliefs and conceptions acquired from our lives". However, the authors warn that one must "consider, in the processes of social interactions of the formative spaces, heterogeneity and diversity" (D'Ambrosio& Lopes, 2015, p. 11).

Motivated by these paradigm shifts, we chose as methodological procedure to present three experiments in mathematical evaluation, carried out by authors of this work, who in addition to doctoral students, act as mathematics teachers in basic education. These experiments were conducted in three institutions with different structures, systems and audiences and are configured in insubordinate evaluation practices because they break the current model in these institutions.

3. Scenarios for Investigation and Evaluation

Skovsmose (2000) argues that mathematics classes have a well-defined format, related to the *exercise paradigm*. The lesson begins by the teacher's presentation of the content, followed by examples and, finally, exercises. Usually using textbooks, students make a battery of exercises that commonly present unique responses. In Mathematics classes, there is usually no room for research, for discovery, for "What ... if?"

The disruption of this paradigm is proposed by Skovsmose (2000) through the use of investigative practices in the classroom. These practices would be developed in an environment called by the author as a *scenario for investigation*, an environment conducive to questions, where they (the questions) would be more important than the answers.

[...] a scenario for investigations one that invites students to ask questions and seek explanations. [...] when the students assume the process of exploration and explanation, the research scenario becomes a new learning environment. in the research setting, students are responsible for the process. (Skovsmose, 2000, p. 6).

For Skovsmose (2000), being a scenario for investigations a relational property, the same activity may be attractive to one group of students and may not be an invitation to another. However, an activity designed for a traditional class may not be appropriate for an investigative practice. Exercises where the goal is not to raise questions and reflections whose emphasis is solely on the application of formulas or a

specific mathematical algorithm in an invented situation, for example, may not be inviting to students.

The teacher can use exercises or scenarios for research. In addition, an activity can refer to pure math, semi-reality, or reality. In this sense, Skovsmose (2000) presents six learning environments:

Image 1 – Six learning environments


	Exercises	Scenarios for investigation
Reference to pure math	(1)	(2)
Semi-reality reference	(3)	(4)
Reality reference	(5)	(6)

Source: Skovsmose (2000).

Image 2 shows an activity presented by Vaz and Kistemann (2019), that can be characterized as suitable for a classroom research practice.

Image 2 – The activity of milkshake

The figure illustrates the price of a milkshake practiced in a fast food chain.



1) Show that prices are not commensurate with their respective capacities. Which is the cheapest in relative and absolute terms?

2) Why are these prices not proportional? What impacts on consumer decision-making can this disproportionate cause?

Source: Vaz & Kistemann (2019).

Note that this question invites to investigation. It raises mathematical and other questions that transcend the limits of mathematics. It is "a closed problem related to a real situation. It has an interdisciplinary bias relating financial mathematics to consumer law" (Vaz & Kistemann, 2019, p. 326)

Scenarios for research are a way to reconstruct math classes, breaking the traditional class model characterized by the exercise paradigm (Skovsmose, 2000; Vaz & Kistemann, 2019). Understanding that assessment, teaching and learning are inseparable components of education, the following question arises:

Would using traditional tests to evaluate students who learned in an investigative environment be consistent?

Probably not. Believing that there was no consistency in using traditional tests, teacher Rafael Vaz chose to use the reports built in the activities. This insubordinate and creative strategy to evaluate will be described below.

The professor used investigative activities, in order to build a Scenario for Investigation, to teach Spatial Geometry during a two-month period in a second-year high school class at the Federal Institute of Rio de Janeiro (IFRJ). The class was composed of about 20 students with a weekly meeting with 4 consecutive lessons. During about 5 meetings, the students were divided into groups of 4 to 5 people to develop research activities concerning evaluation. Using available internet cell phone, acrylic geometric solids, cardboard, and regular school supplies, students should search for information ranging from real pyramid size to area formulas and solids volume. The activities differ from the traditional exercises of Mathematics mainly by the investigative character. The following are examples of these activities developed in the classroom:

i) Reproduce in paperboard a miniature of an Egyptian pyramid (to choose). Indicate the name of the chosen pyramid as well as its original measurements. Indicate the scale used. Calculate the measurements of the replica (apothem of the base, lateral apothem and height).

ii) Using ruler and string, find out the radius of the acrylic sphere. Then calculate the volume of the sphere with the radius obtained. Fill the ball with water. Measure the ball's capacity using a Becker. Compare the two results obtained, describing the results and providing justifications for possible differences.

There was neither lecture, nor the development of formulas or techniques. The formulas were consolidated by students referring to Google, mediated by the teacher who circulated through the groups. The textbook was not used. All group work was delivered in reports. Each group delivered a single report. Activity 1 is illustrated below, in image 3.

Image 3 – Activity One



Source: The research.

In this issue, there was a problem to be solved: "How to build a cardboard pyramid at a certain height?" This is because the height of the triangular faces in the flat shape does not match the height of the pyramid. There was a lot of discussion among group members and later through students from different groups.

As stated earlier, applying a spot exam at the end of activities seemed to be inconsistent with the dynamics of the class. Thus, teacher Rafael Vaz chose to abolish

the test in this period, using only the reports of the experiments, produced in groups as the main instrument of evaluation.

Note that both the pedagogical approach and the assessment model were negotiated with the class prior to the start of classes. The result observed was an increase in attendance and participation. The interaction was greater than in previous periods, the students assumed the role of protagonists of their own learning. With more freedom, the classes became more dynamic.

The approach used by teacher Rafael Vaz is an example of insubordinate practice. The teacher broke the traditional math class model (exercise paradigm) and abolished the standard math assessment model by applying frequent and report-based assessment activities. All classes were evaluative. And all assessments have become valuable and insubordinate learning moments.

4. Cooperative Testing

Seeking to break with the paradigm of the overvaluation of a test as an evaluative, solitary, isolated and supposedly fair and impartial instrument, the teacher Fabio Menezes sought alternatives for the realization of his tests, considering the institutional obligation of at least one test by bimester.

His search was motivated by reflection on the world in the 21st century, a world where information systematized for centuries is often in the palm of your hand through smartphones and internet services. That is a world where knowledge is no longer a privilege of memorization, but of valuing the way we relate to it to the production of other knowledge as well, a world that we identify and also that allows us to become the source of information in collaboration with others.

Such motivation is aligned with the Social Theory of Learning (Wenger, 1998) which considers learning to be socially situated in the time and space in which it occurs. We extrapolate his analysis inside of communities of practice into a school learning collective. Considering a process, he calls *participation and reification* for meaning-making, we understand the acquisition of meaningful learning. Thus, intentionally, we understand that for the production of knowledge, we recognize the importance of what everyone says and not just what a person says.

The big challenge becomes: how to break this paradigm? According to the conception assumed, the answer to this question could not come from anywhere outside Professor Menezes's professional life. Therefore, the works of Cochran-Smith and Lytle (1999a; 1999b) were also preponderant for the creation of cooperative tests, because such activity was enabled through investigation within the professional context. Cochran-Smith and Lytle (1999a) argue that teachers consider research as their professional stance, arguing theoretically that the practice itself is a great and desirable exploratory moment. Their search found not only alternative ways of teaching, but also to evaluate, since, in this perspective, the authors also assume that

[...] the knowledge teachers need to teach well is generated when teachers treat their own classrooms and schools as sites for intentional investigation at the same time that they treat the knowledge and theory produced by others as generative material for interrogation and interpretation. (Cochran-Smith & Lytle, 1999b, p.250)

Thus, from the partnership between the teachers Fabio Menezes e Leo Akio (Menezes & Akio, 2019) and knowing that all teachers have to comply with institutional requirements, an alternative way for the application of tests has been suggested. The evaluative instrument occurs in two stages: individually in the first half of the time and in pairs, in the second, when students could debate about their answers. This was their first experience reported on an alternative aimed at peer interaction in search of solutions through cooperation, but still relying on the memorization of contents as the main appreciation of the learning structure.

On the other hand, Fabio Menezes acted as a member of the project of shared teaching - PDC (Giraldo, et al., 2017), where a teacher of Basic Education teaches with the professor of the academy in the initial formation of teachers in UFRJ. Together with the professor of the UFRJ, Victor Giraldo, he planned evaluations that contemplate the current world of advisory knowledge, in the same way that occurs when we access Google, for example. These evaluations brought the proposal of producing an advisory material that could be used during the tests. These advisory materials were given to the teacher to evaluate their depth and comprehensiveness, generating extra points for the students.

Inspired by these practices already carried out by other teachers and articulating with his own exploratory practices, the teacher Fabio Menezes decided that the instrument *test* in his school of Basic Education would occur in a cooperative way. His articulation consisted in bringing together three ideas: the division of time between answering individually and in pairs, producing a sufficiently deep and ample consultative material that provide the assessment needs and to allow students to choose from a certain number of questions those that they feel comfortable to respond. Briefly, the proposal takes place as follows:

- A test is offered as an institutional requirement of evaluation with at least ten questions;
- Students are allowed to choose at least half of the questions to be answered;
- It is allowed to consult the material that was produced;
- In the first half of the time each of the students makes his choices and tries to solve the questions they have chosen. In the second half, they can join in pairs and thus discuss their choices and answers along with their advisory materials.
- Each pair gives the teacher only one leaf of answers with the members' names and all their reference materials.

The assessment is proportional to the number of questions chosen. For example, if the test contains 10 questions and 5 of them are chosen, each question is valued at 2 points, and the entire thinking process described is analyzed. The material delivered and the questions chosen serve as self-evaluative clues for the teacher to re-plan his classes, since they show what contents and concepts were better learned and, consequently, better taught. And yet, each production of content is valued as extra points according to the combined with the class.

The test has lost its only individualistic character, the development to the present world is considered while the production and consultation of contents is encouraged, peer cooperation is undertaken. Likewise, the test becomes a self-evaluation and

investigation of the teacher's own practice, since the choices show which contents or concepts were best taught and learned for further reflection by the teacher.

In their work, Cochran-Smith and Lytle (1999b) conceptualizes the term research as a posture to describe the positions taken by teachers, and others who share their work in research communities, in relation to knowledge and its relationship to practice (pp. 288-289). In this perspective, our main insubordination with this practice was the reflection and experimentation about the tests and their purposes within the school teaching and learning system, since the aim is to transform teaching, learning, leadership, and education.

5. Individualized Testing

There is a very close relationship between knowledge and evaluation, in which the former must be the theoretical reference that gives meaning to the overall idea of the process when carrying out an evaluation (Méndez, 2002). Thus, teachers face a challenge of dismantling a scenario of emptying the value of the social production of knowledge, where the relationship between teaching and learning is presented in an abstract and valid way for all kinds of students, not taking into account their demands and realities. And, along with that, there is an idealized evaluation model, within an ideal classroom context for an ideal student and, therefore, an ideal, perfect assessment that fits into an imaginary in which both teaching and learning are dreamed. Therefore, Méndez (2002) emphasizes the importance of being critical in evaluating:

The evaluation, understood as a critical learning activity, is an integral and dynamic part of education, since it aims at such the acquisition, as the production and reproduction of knowledge. In any case, the conservative nature of educational evaluation should be taken into account. In first place, because it aims at a heritage that it wants to preserve - and education is a guarantee and seems to serve to certain ideologically conservative ends. (Méndez, 2002, p.50)

By breaking with the conservative nature of evaluation, the teacher finds himself in a situation of creative insubordination, where he can provide his students with a more democratic instrument of evaluation. And in this scenario, the teacher Daniel Lima decided to break with the unique test model for all the students in his class. This practice was motivated from the need to look to the future of the student learning, not just to the past. Luckesi (2011) highlights this issue of the act of evaluating as follows:

Differently, the act of evaluating is centered in the present and forward-looking. The educator who evaluates is interested in investigating the present performance of the learner, in view of his future that is expressed as the pursuit of his better learning and, consequently, performance. (Luckesi, 2011, p.183)

This insubordination process took place at SESC High School, a national school located in the city of Rio de Janeiro. It is configured as national, because it receives students from all states of the country and the Federal District. Besides, its pedagogical regime is based on the model of residence school, that is, all students live there. In addition, the classes are composed of fifteen students, which favors the pedagogical innovations within the classroom. Beginning in 2018, all new students undergo a diagnostic evaluation of Mathematics, where the objective is to identify what are the gaps and advances that each student arrives at school. In some cases, students come from very remote regions of the country, which enhances their gap in some subjects.

But in contrast, there are students who already have a great track record in learning in mathematics. Thus, the diagnostic assessment works with the look that Luckesi (2011) highlights about past, present and future.

In addition, this instrument allowed students to reflect on what they already had as learned, creating an interactive process between them and their teacher, allowing a joint look at its potentiality. This instrument consisted of fifteen multiple-choice items, with the following subjects: fractions, fraction operations, numeric expression, decimal operations, systems, equations, and powers. Image 4 shows the results.

After this result, the following analysis was performed:

Table 1: School performance distribution

Classification	Criterion	Quantity
Students who would have a hard time attending high school at school;	Students with grades up to 3.0	52 students
Students with average performance	Students with grades above 3.0 and up to 6.4	60 students
High performance students.	Students with grades above 6.5	50 students
Total:		162 students

Source: The research.

In analyzing these results, mathematics teachers realized that new students could present different situations of learning development. It is worth noting that the look was not only quantitative, but with other variables involved, such as income, parental education level, home school, reading habits. This is similar to the idea of analyzing the human development index (HDI), which has been a very important factor in its transparency and simplicity in transmitting its meaning to a broad and diverse audience, but also with its limitations (Soares & Jannuzzi, 2005). That is, the value of the grade that the student achieved at that time, served as an indicator that does not reveal the totality of student learning, but that according to Demo (2003), when a student reaches grade 5, for, this may mean that an educator who is concerned with student learning,

[...] that his learning process is "warm", there through the expectation at stake, perhaps stopped, without motivation, therefore urging to intervene in order to get the student to progress. On the other hand, grading 10 may mean that the student in question does not need care; It will be better to take care of others who need it most. Mark2, in turn, should mean red alert, suggesting to the teacher that this student is not able to properly elaborate his texts, does not know how to think, argue, substantiate, express himself with autonomy, and so on. (Demo, 2003, p. 7).

However, even with this initial data, teachers did not think of individual evaluations. This only came about when, during the school year, students who had good academic backgrounds finished the exams in just a few minutes, and those who struggled the most could not even start some questions. So, teacher Daniel Lima talked to his Mathematics team about the idea of customizing assessments. To make it easier for the students who were easier not to be discouraged by the tests and those who had the most difficulties, not to be more demotivated in learning.

After the group accepted, the teacher went to talk to the class about the idea of having personalized assessments. As an initial strategy, it brought some diagnostic evaluation data to the students, showing that even though they are in the same school,

they have different trajectories with regard to learning in mathematics. And one of the indicators would be the diagnostic evaluation. Along with this, he brought the video that deals with the "Privilege Race", where he shows how social, family, and economic dynamics can affect his history, and consequently, his school performance, particularly in mathematics.

Following this conversation, their class accepted the invitation to participate in a different assessment, which took place as follows:

- students took an online trigonometry test with seven questions right after the teaching content was finished;
- for each wrong question, there was a personalized feedback per student, guiding him to study specific trigonometry items;
- after this feedback, on a later date, a second stage of the evaluation was performed, but this time, students received tests according to the number of correct answers they gave at the online test;
- they were divided as follows: group 1 - better students- students who scored 6 or 7 questions; group 2 - middle students - those who scored between 3 and 5 questions and group 3 - students with more difficulties - those who answered up to 2 questions. This division was made from the quartiles of the results, that is, for each topic the amount of questions that separate the students can change, because it depends on their performance.

This kind of proposal presents itself in a disruptive, insubordinate manner, as it allows the student to receive feedback on his / her first moment, and guides the studies to a second moment. And in this second stage, students with more difficulties answer a test within their expectations, as well as students who feel more comfortable in that subject (Lima, 2019). By proposing individualized assessment models, the teacher can take a more global look at each student. On the other hand, the students were able to seek a beginning of self-management of studies, since they began to discuss about their difficulties in the subject, and were able to seek help from colleagues and from the teacher. And so, the concept of evaluation was re-meaning, moving from the individual for a moment to become part of the process of teaching and learning, laying the foundations for a democratic model of evaluation.

This type of evaluation tool is at the service of learning, which converges with the idea of Barlow (2006) that when the intention is to contribute to learning, it is not possible to treat evaluation problems and problems of didactics differently. This premise implies that, in his teaching practice, the teacher verifies and regulates the students' involvement, advances, setbacks, facilities and, above all, the indications of the origin of their difficulties.

Being at the service of learning is when an assessment is constituted as democratic. Demo (2003) brings some points, relating to a democratic evaluation model that makes this dialogue between the ideas of democratic evaluation and being at the service of learning:

- a) the appraisee must be able to react; there is no room for evaluation that humiliates, silences, immobilizes; The evaluation must be done in such a way that the subject can argue, and it follows that, by giving note or mention, one must always justify the reason in detail, especially in cases of poor performance; b) the appraiser must always be able to redo his work, as long

as there is time; it doesn't fit a final or fatal mark while on the way; if the task is to take care of the student's learning, it is evaluated so that he / she learns, not to have a mark; this will be inevitable in the end, but it is not the *raison d'être* of the evaluation; c) the appraised must be able to evaluate the appraiser, both by logic (to evaluate implies to be logically evaluated) and by democracy (democratic control is a central condition of the quality of the social relationship); it cannot be the only assessment, as if the student's assessment implied fatal judgment, and things must be taken serenely, in order to avoid both the flattering student and the revengeful one; d) the evaluation procedure must be clearly educational, aimed solely at guaranteeing the right to learn; it's part of the definition of teacher - he's only loyal professor and in fact if his students learn well; e) the authority of the argument must take precedence over the argument of authority; it follows that the teacher must respect the students' argued positions, should not link them to ideological and partisan preferences, must build unimpeded and civilized communication environments, foster effective participation, avoid contexts of mere reproduction, balance individual work with collective work. (Demo, 2003, p.5).

Therefore, when the teacher seeks to build an assessment instrument that goes beyond the model that remains only a verifier of past learning, he seeks to be insubordinate. Assessment can not only look at “numerical performance” - it needs to establish criteria to track student progress and when this happens horizontally, that is, with teacher-student dialogue, assessment takes on a democratic role, where the grade serves to aid understanding of student progress, not a determining factor in learning. So when teacher Daniel Lima took on this stance of breaking with the traditional model, he brought a more democratic and therefore more balanced model, because it sought to guide its students to learn more, regardless of their level of learning and to respect their current moment.

6. Final Considerations

Creative Insubordination can inspire the re-signification of evaluative practices as a pillar in the production of a more democratic way in the assessment, because according to Ortigão and Frangella (2015), Insubordination calls us to dialogue and not only the refusal to apply rules. Therefore, thinking about an evaluation that allows dialogue between teachers and students leads to a democratic process of insubordination. The reports presented in this paper point to this practice of dialogue among students, and between teachers and students.

On the other hand, creative insubordination in education is related to a practice that is both subversive and responsible, differentiated and aware of the need to bring about beneficial changes for teaching and learning. In this sense, the practices presented in this study offer examples that can guide future insubordinate evaluative practices.

In rethinking the evaluation process, we realize the need for diversification of assessment strategies and instruments so that reliable information on student production and development processes can be collected, while continuously enhancing communication between the agents, teachers and students involved in this process. (Benedito & Buriasco, 2019, p. 5)

According to Ortigão and Frangella (2015), teamwork is a significant factor for improving student performance. This fact is reported in the experiments of this study. The purpose of each educator used insubordination within the evaluation process as a goal. They placed the students as agents of their studies, all engaged in their tasks.

Respecting students' previous knowledge, the three teachers exposed the classes to situations that did not have immediate solutions and the teacher had a relevant role in helping students to develop self-confidence. These are not just elements related to innovative teaching, they are indispensable elements for an education for citizenship development.

The evaluative practices reported in this study are effectively practical in light of creative insubordination because they attempt to break a standard of evaluation that legitimizes inequalities. In this sense, we believe that we, teachers, have a professional, social and ethical obligation to seek more appropriate evaluative practices for individual differences. To respect differences is to promote equity.

Equity and equality are nouns that necessarily make up society's projects with humanistic nuances. To promote equality among the unequal, they must be treated positively (with more care, attention and resources) so that they are promoted to the level of equality. Thus, if the school is indifferent to differences and treats the unequal in the same way, the status quo of inequality and inequity will not be questioned. (Lopes & Carneiro, 2019, p. 4).

The reported experiences lead to the understanding that it is possible to have non-subordinate practices in the assessment process: the adoption of reports as assessment tools produced in an investigative classroom environment, an assessment built on the dialogue between class and teacher; the construction of an evaluative tool that can be used as a reference for the following classes, and still values each content production, within the democratic process of dialogue; individualized assessment models that seek to respect the moment each student is in this content are configured as examples of these practices.

Therefore, teachers can build instruments that are better suited to each class and at the moment they pass by putting into practice a more democratic and insubordinate model in the face of current standards. In the words of Lopes and Carneiro (2019, p.4), "mathematics teachers wishing to adopt the perspective of social justice should begin a mathematical education that meets the individualities of their students and the various contexts in which it occurs"

Now, we are thinking in other ideas of creative insubordination in Mathematics assessment. One of the objectives is to focus on unsubordinated evaluation proposals in Higher Education. Given the wide range of students' mathematical knowledge at the beginning of the undergraduate degree, there is a need to investigate innovative ideas for the assessment. In Calculus, for instance, many systems provide the same assessment tools to students of various courses with different backgrounds and motivations.

Concerning the idea that the use of differentiated evaluation methods represents, in a way, an insubordinate action of evaluation in Mathematics, we highlight the ideas of *test in phases* (Pires & Buriasco, 2017) and *test with consultation* (Forster, 2016). From a more insubordinate perspective, appears the proposal of formative assessment. Although not a recent idea (Perrenoud, 1999), actions related to formative assessment promote the disruption of the examination pedagogy (Luckesi, 1999) and even bureaucratic absolutism (Skovsmose & Alrø, 2010). After all, there is nothing more insubordinate than dreaming of having a school where students study to learn and not to

pass exams. In times of oppression of education, nothing can be more insubordinate than bringing about beneficial changes that the school needs.

7. References

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