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Learning Self-Assessment: Perceptions of Students and Teachers

Auto-avaliação da Aprendizagem: Percepções de Alunos e Professores

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Resumo

O artigo surge como consequência da tese elaborada no âmbito do doutoramento. O objectivo central deste artigo pretende questionar a auto-avaliação enquanto instrumento dirigido para o desenvolvimento da metacognição e o aperfeiçoamento do processo de ensino e aprendizagem. Optou-se por um estudo de caso focado numa turma do 1º ano do ensino superior de uma universidade moçambicana, no contexto da disciplina de Matemática. Participaram um total de 40 alunos distribuídos em dois cursos (Gestão de Recursos Humanos e Marketing e Relações Públicas), e 10 professores. Foram utilizados no estudo instrumentos de recolha de dados, fichas de autoavaliação (preenchidas em dois momentos), momentos de observação (não-participante) e inquéritos por entrevista (semi-estruturada). Foram ainda analisados, alguns documentos normativos e académicos da instituição. Os resultados permitiram concluir que os alunos recorrem à autoavaliação da sua aprendizagem de uma maneira implícita e como reação ao conteúdo aprendido, mas, não como uma estratégia de aprendizagem intencional. Os alunos, recorrem a estratégias metacognitivas, sendo que o julgamento metacognitivo constituiu a modalidade mais utilizada. Verificou-se também o uso da decisão metacognitiva num pequeno número de alunos que chegaram a expressar algumas dinâmicas de carácter individual e particular consideradas necessárias para a aprendizagem. Não foram encontradas diferenças de género quanto ao uso da metacognição. De forma geral, verificou-se uma relação positiva significativa entre as estratégias metacognitivas e o desempenho académico, na medida em que os alunos, que usaram a metacognição na sua forma mais elaborada, apresentaram um melhor desempenho.

Palavra-chave: Autoavaliação, aprendizagem, ensino superior.

Abstract

The article arises as a consequence of a thesis developed within the ambit of a doctorate. The main objective of this paper is to question the use of self-evaluation as a tool for the development of metacognition and the improvement of the teaching and learning process. We opted for a case study focused on a class of first year undergraduates at a Mozambican university, in the context of the subject of Mathematics. A total of 40 students studying two courses (Human Resources Management, and Marketing and Public Relations), and 10 teachers participated in the study. Data collection instruments consisted of self-assessment forms (completed in sessions), non-participant observation and semi-structured interview surveys were used in the study. Also analyzed were some normative and academic documents of the institution. The results allow us to conclude that students resort to self-evaluation of their learning in an implicit manner and as a reaction to the content learned, but not as an intentional learning strategy. Students use metacognitive strategies, and metacognitive judgment was the most used modality. There was also the use of metacognitive decision in a small number of students who came to express some individual and particular dynamics considered necessary for learning. No gender differences were found regarding the use of metacognition. Overall, there was a significant positive relationship between metacognitive strategies and academic achievement, as students who used metacognition in its most elaborate form performed better.

Keywords: Self-assessment, learning, higher education.

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1. Introduction

The recent picture of research in educational sciences, strongly influenced by socio-constructivist ideas, of which the studies by Piaget, Bruner and Vgostsky stand out, place the student figure at the center of learning, and it is up to the teacher 'the most socially experienced educator' to assume the role of advisor and/or facilitator of the teaching process. However, in almost all higher education institutions, student expectations are the opposite. Students give the teacher full responsibility for ensuring effective learning. This is partly due to the influence of the previous academic stage of secondary education (Silva et al., 2004). The student leaves the "comfortable" situation in which the teacher takes full responsibility for the learning process and becomes co-responsible for it. It becomes pertinent, in this context, to understand what strategies teachers use to teach students to explore and put their knowledge into practice in order to ensure learning outcomes. This article, based on the involvement of 40 students and 10 teachers, in a 1st year undergraduate class of a Mozambican private university, focuses on the verification of self-assessment as an effective instrument for the development of metacognition and improvement of the teaching process of learning. In order to deepen the object of study, five specific objectives were defined in order to, a) identify metacognition in the performance of academic tasks (application exercises, tests and exams), b) understand which metacognitive strategies students use in the face of a learning activity. self-assessment, c) assess the relationship between the use of metacognitive strategies and students' academic performance, d) point out gender differences in the use of metacognition, and e) examine students' and teachers' perceptions of self-assessment activities. This research was developed under the Doctoral Program in Educational Sciences, between 2014-2018.

2. Methodology

The research focuses on a case study, as the method allows for the interaction and control of a considerable sample of participants, observing their practices and analyzing them in different scenarios involving: documentation, norms and pedagogical practices of the class and university concerned. The questions asked led the study, giving it a qualitative approach. Nevertheless, we used a quantitative basis, assuming the need for statistical treatment of some of our data. For this purpose we used the SPSS Computer Program (Statistical Package for Social Science, 24).

This study can be considered exploratory and descriptive, as it assumes a semi-deductive character that is limited to the interpretative paradigm and fits into the epistemology of

understanding, relying on the individual and specific aspect of the relationship between a subject and a object "whose existence is independent and affirmed in existential mutuality, therefore unique to each concrete situation" (Paszkiewitz, 1997, p. 2013).

Data collection was based on: self-assessment forms, interviews, discussion groups, document analysis and classroom observation. The use of the learning self-assessment form was based on the need to assess students' sensitivity to the role played by self-assessment in learning, but also to enable them to appreciate the strategies highlighted by teachers and students. The definition of metacognition was based on Lafortune, Jacob and Heber (2000), as well as Figari and Acchouche's perspective (2001). According to these authors, metacognition relates to the processes of cognition, for example: how to feel something about one's own thinking (metacognitive experience), thinking about one's thinking (metacognitive knowledge), to evaluate one's own thinking (metacognitive judgment), monitoring and regulation of thinking (metacognitive decision). Based on this assumption, the constructed self-assessment form integrates five levels of metacognition: a) descriptive thinking; b) metacognitive experience; c) cognitive knowledge; d) cognitive judgment; e) and metacognitive decision. The form evaluated the students' degree of understanding about the taught material that was subject to self-assessment, as well as the methodology of studies used and the different ways of using metacognition.

Regarding the adoption of the interview as a (semi-structured) study tool, Viegas (2007, p. 113) explains that "there are no questions imposed; on the contrary, the deponent is invited to discuss the theme based on his own information and interests. Although there is a basic scheme, it is not rigidly applied (like a straitjacket), but rather allows for transformations".

The interview guide is designed to follow different categories that seek to explore the meanings that students and teachers attribute to self-assessment in the learning process, especially the relationship between self-assessment and different learning strategies, as well as Self-Assessment's own contribution to learning.

The focus group option is based on the need to gather student self-assessment impressions. Flick (2005) states that the Focus Group method allows for in-depth analysis of a problem from a dialogical reading, crossing various opinions and points of view. Thus, a guide was drawn up for the working groups and wasstructured on four main axes: a) metacognitive strategies; b) relationship between metacognitive strategies and academic performance; c) gender differences in the use of metacognition; d) students' opinions on self-assessment activities.

Document analysis is also one of the important data collection techniques (Viegas, 2007). In the present study, the following were used to perform the analysis: the Faculty General Regulations, Faculty Guide, Assessments, Guidelines, Fail Grade Maps. These documents have helped to clarify some aspects of the research issues.

However, to record the observations, we used an observation register, which allowed us to note the situations that we considered important for our study: a) the climate in the classroom environment, b) relationship with the teacher, c) the feedback system used by the teacher, d) student interaction in carrying out the activities, e) the level of support. These elements, combined with our theoretical framework, were an important source of information.

The participants, in the specific case of this research, totaled a sample of 50 subjects, being composed of 40 1st year students from the Human Resources Management and Marketing and Public Relations courses, who entered the Faculty in the 2016/17 academic year, and 10 teachers who teach in these areas /courses. Of these, 15 students are female and 25 male. The average age of the subjects was 20 years.

The discipline of Mathematics was selected as a documentary part to deepen the metacognition and / or evaluation. In the courses in question, at the Faculty level, the subject of Mathematics is nuclear, obtains 10 FTE (sum of the 5 FTE of Mathematics I and II); It is part of the 43 subjects that make up the curriculum and is taught in the first and second semesters, respectively. The weekly workload four times per week, in which each effective class time/lesson lasts 50 minutes. According to Monteiro (2013), the subject mathematics, offers a great opportunity to follow up reasoning activities and to observe learning processes and skills.

The analysis of results was defined by listing the main categories and subcategories resulting from the methodological procedures already mentioned.

Table 1. Matrix of principal categories, sub-categories and research questions.

Category	Subcategory	Specific research questions
Auto-evaluation and metacognition	Metacognition modalities: - Descriptive thinking -Metacognitive experience; - Metacognitive knowledge; - Metacognitive judgement; - Metacognitive decisions. (Figari & Acchouche, 2001; Jacob & Héber, 2000). Perceptions of students and teacher in relation to self-evaluation	Do students use metacognition while performing academic tasks (exercises, tests and exams)? During an auto-evaluation activity. which metacognitive strategies do students use?
Metacognition	Study strategies; Planning of study time; Atmosphere and academic spaces; Self-regulation of learning.	What relation can be established between the use of metacognitive strategies and students' academic performance?
Metacognitive strategies and academic performance	Relation between metacognitive strategies and academic performance	Are there gender differences with respect to the use of metacognition?
Gender and metacognition	Relation between gender and metacognition	Are there gender differences with respect to the use of metacognition
Implications for self-evaluation in learning for the student and for the teacher	Implications for the quality of learning: - Changes in students' study practices – Changes in teachers' teaching practices	What are students' and teachers' perceptions of self-evaluation activities?

Source: Author

In this sense, for qualitative data, a coding was assigned to each subject (Ex: Subject 1…). The coded data were associated with the 5 dimensions of metacognition, according to the perspective of Figari and Acchouche (2001) and Lafortune, Jacob and Heber (2000). Individual interviews were fully transcribed and carefully analyzed. For the discussion groups, a symbol was also assigned to the texts relating them to the respective groups. With regard to quantitative data, we used the software program SPSS, version 24, using the Wilcoxon test to perform the paired samples. Subsequently, the program was used to define Spearman's correlation. Qualitative and quantitative data were thus combined as a means of confirming the main results of the research as well as to obtain greater breadth and depth.

3. Presentation and Discussion of Results

3.1 Self-assessment and metacognitive strategies

3.1.1. Student and teacher perceptions of self-evaluation

To answer this question, the self-evaluations of students and teachers were analyzed within a framework of the five dimensions of analysis, which determined the different ways of using metacognition. Examination of metacognition modalities, present in the first session and in the second session, were categorical to indicate the results of the self-evaluations carried out by the students. It was found that students, when faced with self-evaluation, resort to metacognition.

The most frequent metacognition modality was metacognitive judgment, with 47.5% of the students using this metacognition modality in the first session. In the second session, 57.5% of subjects use metacognitive judgment. Metacognitive knowledge was the second most used modality. In the first session, 37.5% used this modality, and in the second session, the percentage was 30%. Use of metacognitive decision corresponded to 5% of students for the first session and 12.5% in the second session of the self-evaluation activity. Therefore, statistically significant differences were found between the metacognition modalities used in session 1 and session 2, and there was a significant increase in the degree of use of metacognition modalities at session 2 (Wilcoxon test for paired samples, Z = -3.644, p = .002)

Table 2. Wilcoxon Test for paired samples

Metacognition modality in Self-evaulation 2– Metacognition modality in Self-evaluation 1	N	Average	Total of posts	Z
Negative posts	3a	8,50	25,50	-3,164**
Positive posts	17b20c	10,85	184,50	
Draws				
**p <.01 a. Metacognition modality in Self-evaluation 2 <Metacognition modality in Self-evaluation 1 b. Metacognition modality in Self-evaluation 2 > Metacognition modality in Self-evaluation 1 c. Metacognition modality in Self-evaluation 2 = Metacognition modality in Self-evaluation 1				

Source: Author

Thus, we can conclude that students use metacognition and demonstrate using it at its different levels. Some use metacognition in the first activity, others in the second and others in both activities. In the subcategory «descriptive thinking» the qualitative data analyzed in the light of the contents of the form for Subject 1, in the first and second activity, allow us to infer that, in the first moment, the Subject only describes the way the activity was performed, but does not analyze it nor detect the difficulties, although the Subject recognizes that they were present. We can thus say that Subject 1 did not use metacognition, but rather descriptive thinking, as it was limited to a mere description of the activities performed. In the second session, the Subject did not limit himself to describing tasks, but could also detect the difficulty found by stating that "I had difficulties in drawing the contour line", so we can say that he used metacognitive knowledge, because he recognized and detected the difficulty. On the other hand, Subject 13 at first recognized that he had several difficulties in the perception of matter, but could not explain precisely which difficulties were encountered. Thus we can say that he only used descriptive thinking, not metacognition. However, in the second activity, the latter can identify a cognitive competence by correctly applying the production variation formulas and knowing that the difficulties encountered were not of great importance, so we consider that he used metacognitive knowledge.

Therefore, in the subcategory «metacognitive experience», the analysis of student self-assessments was not found. However, the subcategory 'metacognitive knowledge' was reached in the first activity by Subject 6. This Subject did not limit himself in describing how the exercise went, but also revealed knowledge about his own cognitive functioning as he had many difficulties in solving the exercise because he did not understand the matter. At the same time, he revealed knowledge about what is needed to optimize learning: "I should have asked the teacher to explain it to me better" (metacognitive judgment). In the second activity, the same subject detects the difficulty in determining the domain of the function. We call this process metacognitive knowledge or metacognition itself, about the level of real knowledge, but there is no action orientation. The Subject detects the difficulty, however, does not present regulation of the behaviour considered necessary for the difficulty to be overcome.

In the category "metacognitive judgment" referring to the analysis of the evaluations performed, it was noted that the students have evaluations skills of the learning process, managing to propose some facilitating regulations of this same learning. Subject 32, in the first activity, demonstrated the following:

> "I feel the need to set new study goals, I must mainly improve my study techniques, I must also improve my reading performance" (metacognitive judgment).

In the second activity, he said:

> "I feel that I should devise new study techniques to improve my academic performance. I need to improve my way of studying the subjects." (metacognitive judgment).

Thus, we can conclude that all students used metacognition itself, not only because they revealed the impression or notion of knowledge about their learning, but, above all, because they were able to express knowledge about what is necessary to maximize their learning as well as make some necessary adjustments to learning strategies or procedures.

In the subcategory 'metacognitive decision', although most students undergoing self-evaluation did not explicitly disclose self-regulatory behaviors considered relevant for learning, some were more careful in their self-evaluations, reaching the metacognitive decision stage. According to the results presented by the subjects 12, 16, 37 and 40, we can consider that some students used metacognition at its highest level, as they demonstrated the capacity to regulate the behaviours that they performed, in order to overcome their difficulties and improve their learning strategies. Of those who arrived at the metacognitive decision at Session 2 of the self-assessment activity, two at first merely stated that they adjusted in one or another respect, but did not spell out the adjustments made following their metacognitive judgments, or detailed the

self-regulatory behaviors considered fundamental for the development of their learning process. In Session 2 of the activity, they proved to be more careful, even mentioning the adjustments made to overcome their difficulties.

We can say that students, in the first activity, used metacognitive judgment in that they used expressions that reveal the knowledge necessary to optimize learning,

> "I need to review again…"
> "I have to spend more time with …"

as well as possible adjustments that may be made. However, there are no self-regulatory behaviors, although the student proposes regulations

> "I must organize better…"
> "I must manage better…"

 According to Brown (1987), the metacognitive decision is related to the subject's understanding of the strategies to be used to perform a particular activity more effectively and, therefore, it is necessary to make appropriate interventions at the precise moments. In this regard, Donaciano (2011) states that the adjustments that the subject makes are conceived through the process of metacognitive judgment, the metacognitive decision will be the regulation, the realization and the modification, of behaviours necessary to optimize learning. Still in the sense of answering the first research question, students, when faced with a self-evaluation activity, resort to metacognition. Considering the type of metacognition experienced, it was also important to highlight the data obtained in the individual interviews with the teachers and in the discussion groups with the students. From the participants' testimonies, we found convergent opinions regarding self-assessment of learning. All stated that they resort to different learning forms or strategies, and self-evaluation appears implicitly or explicitly present. Some respondents self-evaluate after a given mathematical unit, others do it daily, and still others when they are about to perform the evaluations.

3.2 Metacognition

The second question was whether students use metacognition in the performance of academic tasks (application exercises, tests and exams). From the observations made in the math classes, we find that the application exercises are produced in groups (usually 5, making a total of 8 per class), with the support of their teacher in the technique of joint work.

> "Students can, in this modeling activity, work in groups, go through the exercises at home. They solve group activities even in the classroom, we always guide them to stay in groups

and discuss presenting possible ideas, and then find a way out. So the strategy is group study". (P.M).

"We usually study in groups. In the groups we solve the exercises and discuss the problems, we do the modeling, but each of us later, on a personal level, will exercise alone, if we have problems, we bring them the next day to
try to discuss in the classroom. The teacher takes care to explain to us. (Subject 9)

The fundamental technique is modeling, as we can see (usually this activity is done in groups). Similarly, working together is the method most used by students in solving exercises. According to Chahon (1999), Guimarães (2003), Mevarech and Kramarski (2003), modeling consists in accommodating the problem in mathematical symbolic language. To do this, they have to compare their results with those of their colleagues so that they may eventually reach a joint conclusion. This process enhances interaction between students. It is noted by the contents of the interviews that, within their study strategies, metacognition is present, since, through these strategies, students acquire knowledge, skills and attitudes that are necessary to optimize learning. In addition, they also make adjustments to their procedures, verifying a regulation of behaviors considered important for learning (Fonseca, 2012; Graveleck & Raphael, 1985).

As for the planning of the study time, this was a issue that stood out during the discussion groups. Some students mentioned that planning study time is challenging as they have many disciplines and the volume of content is also very large, making planning study time a difficult task.

"Planning study time according to tasks is not easy, because all teachers give a lot of work at the same time. It gets a little difficult for me because of the workload" (Subject 3).

"Our time is usually filled with academic activities. In the morning we are in class, in the afternoons we have been studying in different groups, usually most groups, if not all groups in our class, on Wednesdays we do not meet, others have debates in university pastoral groups, others are in various groups of extracurricular activities, so on Wednesdays it is lighter. Then we have the weekends where we often also reserve Saturdays for study, especially during test and exam weeks" (Subject 11).

From the perspective of Mwamwenda (2005), time is a crucial issue in teaching and can be divided into several types of time: i.e. allotted time, instructional time, attention time and academic time. In this context, we can mention that students manage their time by dividing it between allotted time and instruction time, as well as attention time. The academic time referred to here is at odds with the types of time that students mentioned. Students manage their time according to the activities, but do not consider the various time arrangements. Thus, it can be concluded, for this category, that time is a resource that, well managed and used, is not an obstacle to the learning process. The spaces and the academic environment were also contents that appeared in the speeches of the interviewees, in the discussion groups and in the

observations made. On this question, it was important to know if the spaces and the academic environment acted as a facilitator of learning or hindered learning. From the responses of students and teachers, we conclude that the academic environment and spaces act as facilitators of learning, since it is in libraries that academic information can be found. Likewise, the bright and airy classrooms, as well as computers connected to the Wi-Fi network, allow students easy access to research material. Students refer to scientific conferences, national and international congresses, as an element that increases the range and horizon of knowledge.

> "Here we have computers in the library, a photocopy centre to make copies, we don't have to go out of college to make copies of a book, we have internet although it's weak, but, it's our reality, from the classrooms, the courtyards and corridor, the whole environment facilitates learning, I think." (Subject 35)

> "…. The room provides a very good environment indeed, mutual respect, we try to pass this on to the students… that they also respect and value the opinions of other colleagues." (P.M).

From the observations we made in class, it was found that the teacher used different teaching aids that existed in the classroom. He used overhead projectors to project slides with the lesson contents, as well as whiteboards for exercises and a blackboard for important information. Also, activities were observed in discussion forums, where the teacher uses a Moodle platform, which allows students to have discussions and feedback. As to the question of self-regulation of learning, we were concerned whether learning strategies help the student to self-regulate. Based on Zimmerman (2002), which defines self-regulation of learning as a set of thoughts, feelings and actions that the individual is planning and adapting to their needs, it can be said that in the present study, learning strategies shape students' behavior and, consequently, help them in the self-regulation process.

> "In our study group, when the teacher gives work, we have as agreement of the group that every member the group should bring ideas about the subject under discussion, nobody will discuss a subject without first preparing. With that, we already regulate ourselves in this part, we have to present ourselves in the group with the material already read and understood so that we can discuss better, and in this way we learn and develop… Because, in the beginning, we spent a lot of individual time reading and understanding the contents and then discussed it afterwards. Therefore, in our study strategy we adapted to another behavior that made learning easier" (Subject 10).

3.3. Metacognitive Strategies and Academic Performance

We now present the relationship between the use of metacognitive strategies and academic performance, considering the third question that guided the research work. To answer this point, we were interested in testing for statistically significant differences in academic performance, depending on the metacognitive modalities used by students, as well as analyzing

students' perceptions of the relationship between metacognitive strategies and academic performance.

Table 3. Correlations between metacognition modalities and final grade in Mathematics

Average of grades in Mathematics	
Metacognition modalities in Self-evaluation 1	, 423**
Metacognition modalities in Self-evaluation 2	,446**
**p <.01	

Source: Author

NOTE: There is a significant positive association between the metacognition modalities used in Session 1 and the final grade for the discipline (ρ = .423, p <.01), when the more advanced the metacognition modalities used in Session 1 are, the higher the final grade in the discipline. There is also a significant positive association between the metacognition modalities used in Session 2 and the final grade for the discipline (ρ = .446, p <.01), and the more advanced the metacognition modalities used in Session 2, the higher the final grade in the discipline.

In the analysis of the content of the discussion groups, it was found that students stated that academic performance has a direct relationship with learning strategies, as these will determine student performance, as they will be reflected in academic achievement, as we can see in the excerpts:

> "The learning strategies we adopt are reflected in our grades, and our academic results. Our attitude or attitude towards study dictates to some extent our academic performance. If I adopt a passive stance where I make no effort, nor strive to improve the way I study, my result will also be as much as my effort or the strategy I use to achieve the goals. And if I study in an active way, I'm looking for help in solving the difficulties, I can overcome them. The result will enable academic success." (Subject 12).

> "I think so, because you can see in the classroom that there are groups that are more dedicated to solving exercises. When we arrive in the classroom to solve [the exercises], the level of difficulty they present is relatively lower on the level of difficulty of those who have not devoted themselves to their resolution… I think they have this awareness; we have persuaded them to adopt this method of group study so as to minimize the difficulties they will face." (PM)

3.4 Gender differences regarding the use of metacognition

In this question, we were interested in knowing the students' point of view on possible gender differences regarding the use of different forms of metacognition. To analyze the difference between male and female regarding the metacognition modalities used by students in session 1 and session 2, we performed the Mann-Whitney test for independent samples.

Table 4. Differences in metacognition modalities according to gender

	Masculine (n=25) Mdn	Feminine (n=15) Mdn	U
Metacognition modality in Self-evaluation 1	3	4	172
Metacognition modality in Self-evaluation 2	4	4	174

Source: Author

No statistically significant differences were found between students of either sex at any time (Session 1: U = 171,500, p = .626; Session 2: U = 173,500, p = .658). Although these data do not point to gender differences, some studies, such as the one developed by Lins, Araújo and Minervino (2011), point to the difference between male and female in the use of metacognitive strategies, based on self-perception of their performance. Studies have higher scores on female metacognitive strategies, particularly with regard to dysfunctional strategies, such as reading while studying, nervousness while taking a test, or studying while watching television. Male participants showed higher scores regarding functional strategies, such as: planning study time, choosing the most efficient study strategy, using the necessary regulations to optimize learning. However, all students, regardless of gender, use metacognition in some way.

> "I believe the difference is more in academic involvement than in the use of metacognition itself. Boys get more involved than girls. This can result from the various tasks that girls have to perform in relation to boys." (Subject 40)

> "If we are comparing boys and girls, I would say that boys have more advantages at this point, even if they get a girl pregnant, they are not going to be carrying the baby [sic], they are not going to breastfeed the baby, etc. Girls have less opportunities to get more involved in school than boys. They are assigned various responsibilities, in addition to being students, they have other responsibilities that young men do not have. Thus, I can conclude that the gender most involved in academic activities is the male gender, because they do nothing else but study." (Subject 9)

Students said that there are no differences regarding the use of metacognition in general, as each individual has their own learning strategies, regardless of whether they are female or male, so the use of metacognition is not dependent on gender but, yes, it depends on the skills or competences that the individual develops in order to facilitate their learning. Thus, we can conclude that there are no significant differences regarding the use of metacognition between boys and girls.

3.5 Implications of self-assessment on student and teacher learning

3.5.1 Changes in Study Practices

In the current scenario, the teacher and the student lack the skills to cope with the dynamics of a constantly changing society. On the other hand, having both partners, teacher - student, trusting in the learning process, it is indispensable to check which pedagogical practices influence the pedagogical process and what is its performance. From this perspective, the students responded to the changes in the study practices in the following terms:

"Self-evaluation brings changes in the way we study, considering that we students become more responsible for our learning process, we are no longer waiting for the teacher for everything, we take proactive attitudes towards the process." Subject 18)

"The student gets to know his or her weaknesses and strengths and then works on the weaknesses and enhances the strengths. It can also be said that self-assessment impels the student to be more independent, sort of more autonomous... so, I can say that through self-assessment the student will look for ways to improve his academic performance. He takes the initiative to detect his gaps in knowledge or difficulties and tries to overcome them by asking for the help of colleagues or the teacher and this is a change in the way we are facing the learning process... Because, before, we were waiting for the teacher, the whole study initiative came from the teacher, but not now." (Subject 27)

It is evident that by creating the opportunity for students to reflect on their own learning they promote metacognition and meta-learning. In this sense, self-assessment allows the student a new way of being in the learning process (enhances his or her taste for research into new learning strategies and new attitudes towards the learning process).

3.5. 2 Changes in teacher teaching practices

From the students' point of view, self-evaluation makes the teacher change or reformulate his teaching practices, and create more situations that lead the student himself to seek knowledge, the teacher being his guiding guide in the process.

"The teacher becomes an advisor, because the presence of the teacher is very important for the teaching and learning process. Even if the student assesses himself and is able to discover his difficulties and looks for solutions, the teacher is the person who guides him, drives him to raise his level of perception and knowledge. The teacher helps to shape perceptions and open horizons for the student, so the teacher's role should be the process advisor." (Subject 28).

"The teacher should make students use strategies to improve their study skills, which lead to good academic achievement. But he too must use the same strategy to assess his level or quality of work in order to improve the teaching process. How is he going to do it? I think he should simply apply self-assessment exercises to himself, so gradually we students and teachers get into the habit of using this technique. We are all involved in the change." (Subject 24).

Students find it extremely important for teachers to apply and teach them how to self-assess, as the strategy aims to enhance learning, especially by driving changes in study practices, allowing the student to become more participative and proactive, asking for solutions to their problems (Resnick and Resnick, 1991). As can be seen, self-assessment assists in implementing the learning-centered model, as it requires the teacher to be central to facilitating and organizing learning situations. It is for this reason that the teacher's opinion regarding the change in the teaching process derived from self-assessment focuses primarily on time-saving, in a context of having to teach numerous classes.

> "One of the reasons you notice this change is most easily related to maximizing time. In a class where all students self-assess, for example, when solving a problem, the student can accurately notice their difficulties and promptly present them to the teacher. This maximizes time and the teacher addresses the specific problem rather than having to re-explain the whole problem. This helps the process a lot" (P.M.)

Therefore, it is noted that, for the teacher to assimilate this "new" need into his/her skills profile, didactic-pedagogical training is an imperative. Teacher training is also essential given that a number of the teachers included in the study revealed some didactic-pedagogical difficulties, which constitutes a constraint to this type of teaching. Further, this deficit, when acknowledged by the academic management bodies, should be taken into account by the Faculty under study, in order to make efforts to remedy the situation.

> "The teacher should teach the student to self-evaluate. At the end of each thematic unit the teacher [should] apply a self-assessment exercise to make the student aware of what level of learning he or she is at. For example, if the teacher, at the end of each thematic unit, applied exercises that lead us to reflect on our learning, we would be better able to know what are the difficulties we have in this subject, so that we can take appropriate action, precautions, clearly, with the help of the teacher. But this is not true here in our college." (Subject 3)

Conclusions

The result of the self-assessment analyses showed that, in general, study participants use metacognition, that no one has been held hostage to only descriptive thinking, although some students in the first activity do not demonstrate its use. However, the use of metacognition (more expressive in the second activity) was marked at the moment when the subjects not only described their difficulties, but also demonstrated the ability to detect where such difficulty resided. In this activity aimed at the mode of metacognition, it is evident that the students do not only use the so-called descriptive thinking, because they did not simply describe how the activity takes place but also demonstrated the capacity to detect where the difficulties lay. Therefore, when students reflect on their learning, thus detecting their difficulties, they are using metacognition to a certain degree or type (which may be metacognitive experience, metacognitive knowledge, metacognitive judgment or metacognitive decision).

Further, at the study site level, self-evaluation is not a learning strategy known and applied by teachers and students in other subjects. Students revealed that they use self-assessment of their learning as a way of measuring what was learned in the classroom or in study groups. Students' self-assessment is part of a learning strategy, but they do not explicitly consider it as such,

because although they do perform self-evaluation, they do so implicitly as a mere outcome or measurement of a particular subject matter or content.

Even if self-assessment is done intrinsically, superficially or only as a means of measurement of the learned content, it can determine certain strategies that are necessary to optimize student and teacher learning by allowing them to reflect on their teaching strategies, methods and techniques.

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