Academic Delay of Gratification and Its Relation with Learning Self-Regulation Strategies

Abstract

Context and Objective: Academic delay of gratification refers to individuals' ability to self-regulate and is one aspect of the self-regulation of learning, that is, of the set of thoughts, feelings and actions an individual produces to achieve the desired academic objectives. The objective in this study was to analyze the academic delay of gratification, verifying its relation with the learning self-regulation strategies.

Method: Descriptive and quantitative survey research. The sample consisted of 133 Accounting students from the Federal University of Minas Gerais (UFMG).

Results and Contributions: After the development of Kruskal-Wallis and Spearman correlation tests, it was verified that female students made greater use of the learning strategies, while students who do not have a paid job while studying were more prone to academic delay of gratification. At the same time, it was concluded that, overall, the academic delay of gratification is positively correlated with the learning strategies, specifically the metacognitive and cognitive (rehearsal, elaboration and organization) strategies and the management of time and the study environment. Through this study, we intend to contribute to the analysis of the self-regulated attitudes Accounting students develop and, at bottom, provide important information to improve the teaching-learning process.

Key words: Academic delay of gratification, Learning strategies, Accounting.

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1. Introduction

The teaching-learning process is characterized by the involvement of the elements: student, teacher, content and institution. Using pedagogical and didactic techniques, the teacher has the role of teaching the content and students need to develop their own techniques to learn it (Silva & Oliveira, 2010). In this sense, throughout their academic experience, the students make use of strategies to regulate their learning.

According to Pintrich (1999), learning regulation can refer to student cognition when solving a problem, and may also be related to aspects such as time management and the learning environment. During the course, to stay focused on their academic goals, the student should make some choices, such as going out with friends or studying for an exam in order to get a good grade. This preferred choice characterizes the academic delay of gratification (Bembenutty & Karabenick, 2004).

Bembenutty and Karabenick (2004) state that the delay of gratification refers to the preference for a greater reward, distant in time, in relation to a smaller reward now available. According to the authors, in academic terms, the delay corresponds to the students' postponement of available opportunities to pursue academic goals that are temporarily remote, but more valuable.

Academic delay of gratification is an individual ability to regulate and is an aspect of the self-regulation of learning, that is, the set of thoughts, feelings, and actions generated by someone to achieve the desired academic goals (Bembenutty & Karabenick, 2004). According to Zimmerman and Schunk (1989), self-regulated individuals are persistent, strategic and able to evaluate their performance, which is not the case with those who are hardly self-regulated.

In this perspective, the self-regulated student develops the learning strategies, which include cognition, metacognition and resource management. Through cognition, he understands how information is processed and encoded and establishes ways of memorizing content. In metacognition, he plans, monitors and self-regulates his performance. And through resource management, he manages and controls the physical and social environment and the resources available (Testa, 2006).

Considering the significant number of international studies carried out in this area (Mischel, Shoda & Peake, 1988, Bembenutty & Karabenick, 1998; Bembenutty, 1999 and Bembenutty, 2007; Avci, 2013; Stolarski, Ledzińska, & Matthews, 2013; Milfont & Schwarzenthal, 2014; Watson e Milfont, 2017), few Brazilian studies have focused on the academic delay of gratification with regard to the learning self-regulation procedures, such as Testa and Freitas (2005), Pavesi and Alilprandini (2016) and Aguiar and Silva (2017). Thus, in line with the above, we have the following research question: what is the relationship between the academic delay of gratification and the strategies of learning self-regulation?

Thus, this study aims to analyze the academic delay of gratification, verifying its relation with the learning self-regulation strategies. To do so, it will be necessary to: evaluate how the students' academic gratification is delayed; identify the learning strategies adopted by the students; verify the relationship between the academic delay of gratification and the learning strategies used.

The relevance of this study is initially justified by the still perceptible lack of research evidencing empirical results and its implications in the Brazilian teaching and learning process (Silva, Leal, Pereira & Oliveira, 2015). The study contributes to the analysis of the self-regulated attitudes developed by Accounting students, which permits the evaluation of their learning strategies. Bandura (1997) and Zimmerman (2000) point out that the most successful students use appropriate learning strategies and maintain a high level of motivation and self-regulation during skill acquisition, which can explain individual differences among students. These constructs are linked and are essential for decision taking and successful human development (Watson & Milfont, 2017).

Self-regulated learning strategies impact the learning outcomes, helping students to acquire and retain knowledge in a structured and methodological way. Being able to appropriately manage the time and environment of the study, as well as having the ability to give up daily distractions in pursuit of an academic goal, can be a central element for effective learning, as emphasized by Testa and Freitas (2005). Thus, as described by Watson and Milfont (2017), the delay of the gratification tasks measures the search for future objectives, in line with the academic context of an undergraduate course, in which students spend some years of their lives in search of mainly long-term objectives. In that sense, it is important to verify the students' use of these mechanisms, as this analysis can support educators and teaching institutions' actions in the attempt to improve the teaching and learning cycle.

2. Theoretical Framework

2.1 Social Cognitive Theory and Action Control Theory

In distinct settings, scholars have investigated the mechanisms involved in the learning process. In this study, two theories were especially important for the construction of arguments. Initially, we have the Social Cognitive Theory, designed by Albert Bandura, who considers the agency's perspective for self-development, adaptation and change (Bandura, 1986). This means that the individual can intentionally influence his own path and circumstances. In this perspective, people are self-organized, proactive, self-regulating and self-reflective, and can contribute to and influence events around them.

The Social Cognitive Theory is a consolidated theoretical foundation in the field of social learning and constitutes an explanatory framework for human action and development (Bandura, 1986; Azzi, 2010).

According to Bandura (1986), the first characteristic of human agency is intentionality and, in this approach, intentions are formed by the plans and action strategies that will permit its accomplishment. The second characteristic relates to the temporal extension of the agency from the anticipation, that is, the prediction of the probable results of one's actions in order to guide the efforts in advance. Being cognitively represented in the present, imagined futures serve as guides to current behavior and also function as motivators. Cognitive theory considers that agents are self-regulators and not just planners and predictors, as individuals are agents of action and self-investigators of their functioning. In this way, through functional self-awareness, people reflect on their self-efficacy, as well as on the integrity of their thoughts and actions, making adjustments when they deem this necessary. This personal agency occurs in a social context and suffers socio-structural influences (Bandura, 1986).

In this perspective, the individual has the possibility to develop his ability to control the nature and quality of his lives. People are seen as active agents who exert some influence in their own motivation and action (Bandura, 2009). The individual, in this context, has a self-referential system that enables him to act intentionally towards specific goals, to plan his actions and to anticipate possible outcomes (Bandura, 2009).

Perceived self-efficacy plays a central role in Social Cognitive Theory, being an important construct of the latter, which is related to the beliefs of someone in his potential to organize and perform actions necessary to produce certain achievements (Bandura, 1997). In this conjuncture, the learning mechanisms addressed in this research are self-regulating mechanisms individuals use for the purpose of understanding information, monitoring their performance and learning, monitoring and managing the physical and social environment, as well as available resources.

Another theoretical contribution related to this research refers to the considerations of the Action Control Theory, which deals with the individual aspects and the capacity to regulate emotions, cognitions, behaviors and self-regulating strategies, so that success can be achieved in the actions planned (Branco, Peixoto & Alvim, 2013). In addition, the delay in gratification would be a consequence of the students' successful use of volitional control strategies (Kuhl, 1985; Snow *et al.*, 1996). In addition, Kuhl (1985) points out that, when individuals experience internal or external distraction of enacted intentions, there are several strategies that will help them remain focused on the task, including selective attention and control of coding, motivation, emotion, environment, and information being processed.

The Action Control Theory explains how the personal styles of action control - orientation to action and state - exert influence on the regulation of human actions. The primordial component of the theory is intention, that is, an objective that guides the individual towards the attainment of his goals. In this theory, the mediating role of volitional control between the initial intention and the concrete action is also emphasized, considering elements that understand the subject's present mode of action and the planning for future actions (Kuhl, 1985; Branco, Peixoto & Alvim, 2013).

Kuhl (1985) and Branco, Peixoto and Alvim (2013) note that the orientation towards action is characterized by conscious decision making, by the use of self-regulating strategies consistent with the activity itself and by the emotional profile adapted to situations of failure. The presence of these elements permits a more effective resumption of the course of action. The student with a strong action orientation is active in the educational process and the criticality in self-assessment makes it possible to more clearly plan future actions for different objectives. In this type of orientation, the teacher is the mediator of learning. Hence, the action-oriented individuals starts the actions effectively to achieve the goals and remain more focused until the activity is concluded.

On the other hand, state-orientation denotes the tendency to reduce persistence in the face of failure in the academic environment. In this orientation, distractions easily divert attention from the activity and the resumption of decision making is slower for these individuals and the use of self-regulation strategies is predominantly disorganized.

The two theoretical frameworks previously mentioned supported the analyses of this study. The use of learning strategies can be related to the individual's willingness to delay the academic gratification, and in this context, understanding the following key concepts is paramount: self-regulation of learning and academic delay of gratification.

2.2 Self-regulation of learning and academic delay of gratification

Self-regulation of learning relates to the strategies students use to regulate their cognition in order to control their learning (Pintrich, 1999). It refers, therefore, to the "thoughts, feelings and actions generated by someone to achieve the academic goals" (Zimmerman, 1988, p. 73).

Pintrich and DeGroot (1990) emphasize the existence of three components of self-regulation of learning that are particularly important for academic performance: the student's metacognitive strategies, control and effort management in academic activities and the cognitive strategies students use to understand and memorize the content studied. These strategies can be divided into three groups: cognitive strategies, metacognitive strategies and learning resource management. This classification was established by McKeachie, Pintrich, Lin and Smith (1986) and will be adopted in this study, as it has the advantage of being clear and concise (Filcher & Miller, 2000).

Cognitive strategies are essential to understand how information is processed in the learning environment. With regard to the metacognitive strategies, they allow the student to plan, monitor and self-regulate their performance. No less important, learning resource management strategies are strategies used to organize and control the physical and social environment as well as the resources available. The latter are subdivided into four groups: management of time and the study environment, effort, learning and help seeking (Pintrich, Sminth, Duncan & McKeachie, 1991).

In a survey of learning self-regulation strategies, Zimmerman and Martinez-Pons (1986) identified fifteen categories of strategies students used during class, homework, and while studying. These include strategies of self-evaluation, structuring of the environment and memorization.

In addition, the process of self-regulation is closely linked to the academic delay of gratification, or delay in academic gratification, as some authors call it. For Mischel (1996), the delay in gratification is a component of the self-regulation system.

The academic delay of gratification is related to students' postponement of opportunities, which were immediately available to respond to impulses, in favor of pursuing important academic rewards or goals that are more remote in time but also more valuable (Bembenutty & Karabenick, 1998). This delay in gratification is an integral part of the self-regulation process, which can be considered as a manageable but not always conscious activity, in which cognitive operations and motivational determinants get organized to accomplish some goals.

One of the issues pertaining to self-regulation of learning relates to the student's ability to remain focused on an objective, taking care that learning-related activities and tasks are not impaired by non-learning activities. Thus, the academic delay of gratification is basically related to the student's choice between an immediate gratification and an apparently better later gratification (Bembenutty and Karabenick, 2004).

Testa (2006) argues that a successful student needs to resist the temptations that immediate gratification brings to enhance the likelihood of reaching more distant and presumably more important goals.

It is noted, therefore, that the delay of gratification is a process distinct from procrastination, characterized as a behavior common to people, especially when related to daily tasks (Enumo & Kerbauy, 1999). Procrastinating consists of postponing the onset, development or termination of an activity (Ferrari, Johnson & Mccown, 1995), which can directly and negatively affect the performance of the individual at work, in school, relationships, and at home. The delay of gratification, by contrast, is related to the postponement of opportunities, a process of choice that, when applied, can favor academic success.

2.3 Background studies

As far as empirical research on the research theme is concerned, the studies of Mischel, Shoda and Peake (1988), Bembenutty and Karabenick (1998), Bembenutty (1999), Bembenutty (2007), Avci (2013) and Watson and Milfont (2017) can be cited internationally. The first investigated a series of experiments that analyzed the behavior of preschool children in postponing gratifications and, a decade later, analyzed 95 of these children, already adolescents. The authors concluded that children who chose to delay gratification when preschoolers years later were academically and socially more competent than those who preferred immediate gratification.

Bembenutty and Karabenick (1998) examined the intent of 369 psychology students to delay gratification in academic settings. Therefore, they developed the Academic Delay of Gratification Scale (ADOGS), which contained items to identify the respondents' proneness to delay gratification. The results indicated a large network of associations between the delay of gratification and the use of learning strategies, especially in relation to the management of time, study environment and effort. They concluded that students who postponed gratification also tended to exercise control over other aspects of their learning environment. Bembenutty (1999) analyzed the behavior of 102 university students enrolled in mathematics courses in relation to the delay of gratifications, also through the application of ADOGS. Based on the results, it could be inferred that the delay of gratification and its motivational determinants differ according to two main orientations: towards tasks and towards performance.

In Bembenutty's study (2007), 364 college students enrolled in introductory courses in psychology at a public university were examined in order to ascertain whether ethnic and gender differences influenced the gratification delay behavior. The conclusion was that female students from ethnic minorities are more willing to delay gratification than white males. Their grades were lower though, which can be explained by their low level of self-confidence in performing the tasks.

Avci (2013) carried out a study of 508 university students to investigate the relations among self-regulation, future time perspectives and the delay of gratification in the academic field. According to the research results, the students set distant goals for themselves and goals with their current actions, valuing actions that allowed them to reach their goals and overcome the problems caused by environmental distractions that prevented them from achieving those goals more easily.

Watson and Milfont (2017) analyzed a sample of 345 graduate students through an autoregressive cross-lag analysis and their results showed a two-way relationship between self-control and gratification delay, i.e. self-regulation predicted change in gratification delay and vice-versa.

In the context of Brazilian studies, Testa and Freitas (2005) aimed to identify the profile of undergraduate students in Administration in relation to the delay of gratification in academic situations and in relation to self-regulation of time and learning environment. To do so, they conducted an exploratory-descriptive survey of 292 undergraduate students in Business Administration and three other courses from two universities in Porto Alegre. The authors found that self-regulation may be high in some aspects and low in others, reflecting different abilities of individuals.

Pavesi and Alilprandini (2016) investigated the self-regulated learning profile of distance learning students from three higher education institutions of different knowledge areas in Brazil. The findings were that there was a high level of student self-regulation in relation to goal setting and structuring of the environment, and a moderate level of self-regulation in relation to task strategies, time management, self-assessment and help seeking.

In a comparative analysis of the Accounting students' in face-to-face and distance education courses regarding the use of self-regulated strategies in learning, Aguiar and Silva (2017) concluded that the strategies the accounting students used most were goal setting and planning and memorization.

3. Method

3.1 Definition of research characteristics, sample and data source

This research is characterized as a survey, as a questionnaire was used for support. In addition, regarding the objectives, it is a descriptive study in which the behavior and the relationship between the variables of learning strategies and the academic delay of gratification are evidenced. It presents a quantitative approach, using statistical tests such as descriptive statistics and correlation (Beuren, 2008), using secondary and primary sources to meet the general objective of analyzing the academic delay of gratification, verifying its relation with the strategies for self-regulation of learning.

The non-probabilistic sample consisted of 133 undergraduate students from the Accounting course, enrolled in the Faculty of Economic Sciences (FACE) of the Federal University of Minas Gerais (UFMG), which ranked first in the classification of the *Ranking Universitário Folha* (RUF) in the year 2015, in which each of the 40 undergraduate courses with the largest number of new students in Brazil are evaluated. In the sample selection process, we took into account accessibility criteria.

3.2 Data Collection

To verify the relationship between the learning self-regulation mechanisms and the academic delay of gratification, a questionnaire was applied to the sample students. The respondents had access to the printed questionnaire, applied in person by the researchers with the consent of the professors of the disciplines, in six classes of the course. The choice of the disciplines was based on criteria of accessibility and/or availability of teachers to assist in the research, considering classes of different course periods, involving students of the first years, intermediate and final period. Therefore, the non-probabilistic characteristics of the research sample are highlighted. Data were collected during May and June 2017.

The instrument used consisted of three parts: (i) general information about the participant, including information about gender, age, marital status, practice of some activity concomitant with the course, whether paid or not, among others; (ii) scale to identify learning strategies: cognitive strategies, metacognitive strategies and resource management. In this study, part two of the MSLQ (Motivated Strategies for Learning Questionnaire) was used, previously developed by the National Center for Research to Improve Postsecondary Teaching and Learning of the University of Michigan, adopted in the main research on the subject, which had undergone validations in several countries and areas of knowledge (Chen, 2002); and (iii) scale to evaluate the academic delay of gratification, using ADOGS (Academic Delay of Gratification Scale), developed and validated by Bembenutty and Karabenick (1998). Regarding this last scale, although it has been developed almost two decades ago, its assertions are general and timeless and can be used in different times and contexts. The scales analyzed in this study were translated by the authors and verified by two full-time doctoral professors at UFMG, all knowledgeable in the English language so that possible translation errors were avoided.

In the scale of learning strategies, part two of the MSQL, fifty statements were presented to the students, who should evaluate the extent to which the statement was true about himself, on a scale ranging from 1 (not true about me) to 7 (very true about me). The higher the score marked by the student, the greater the adoption of the type of strategy proposed. For example, in the following assertion: "When I study for my classes, I practice saying the material to myself," the respondent should indicate the degree of truthfulness of the statement when applied to his real life. The proxy used for the analysis of the learning strategies consisted of the total score obtained by the student in the scale in question - part two of the MSQL.

The ADOGS scale, on the other hand, provided students with ten choices that had two alternative courses of action (A and B). The student should score on a scale from 1 to 4, in which: (1) would certainly choose A, (2) would probably choose A, (3) would probably choose B, and (4) would certainly choose B. The higher the student's score, the greater the propensity to use the academic delay of gratification. For example, in view of the assertions: "(A) Going to a party the night before a test in this course and study only if you have time, OR (B) Studying first and going to the party only if you have time," the student should indicate which of the two he would choose and, moreover, the degree of propensity to choose when the situation was applied to his real life. The proxy used to analyze the academic delay of gratification was the student's total score on the ADOGS.

Finally, the research was carried out with the participants' consent, after due clarification: participation would be voluntary and the students could cancel or interrupt their participation at any time without penalty or impact on their situation in the course or grades; the respondent's anonymity would be guaranteed, so that there would be no risk of individual data being identified; and the analysis of the results would be made and disclosed in aggregate form.

In addition, the questionnaire was only applied after the completion of a pre-test at the Federal University of Minas Gerais (UFMG), in which 20 students from the Master's course in Controllership and Accounting completed the research instrument and suggested modifications that were incorporated into the final version. On average, it took 30 minutes for the students to complete the questionnaires, and all questionnaires were used, except for those obtained in the pre-test.

3.3 Data Analysis Techniques

Based on the tools listed in the previous topic, analyses were performed based on descriptive statistics, reliability analysis of the scales (Cronbach's alpha), Kruskal-Wallis test and Spearman's correlation, in order to find the behavior and the relationship between the learning self-regulation instruments the Accounting students used and the academic delay of gratification in this context.

Descriptive statistics are used to describe and characterize the sample, through the analysis of the frequency and dispersion of variables (Maroco, 2010). Thus, through this technique, the characteristics of the study sample can be evidenced. According to Hair Jr, Black, Babin, Anderson and Tatham (2009: 126), this refers to "an assessment of the degree of consistency between multiple measures of a variable". It is a test in which the consistency of an individual's responses is measured at two points in time to ensure that the responses are not very varied and that a measure taken at any time is reliable (Hair Jr *et al.*, 2009). Still according to the authors, Cronbach's alpha stands out as a widely used coefficient to measure reliability. This coefficient varies from 0 to 1, with values from 0.60 to 0.70 being considered the lower limit of acceptability. Thus, the reliability of the scales that measure learning strategies and the extension of academic gratification can be tested.

The Kruskal-Wallis test is used "to test whether two or more samples come from the same population or from different populations, or if the samples come from populations with the same distribution" (Maroco, 2010, p. 227). In this way, one can verify if there is a difference among the characteristics of the respondents and the adopted learning strategies or the academic delay of gratification choices in the populations under analysis. It should be noted that the term population refers to a set of individuals who possess a certain characteristic within the study sample here, such as the set of individuals who perform some kind of paid activity.

The Spearman correlation test is characterized as a measure of non-parametric association between two at least ordinal variables, so that it is not necessary to take into account the distribution assumptions of the variables (Maroco, 2010). This coefficient measures the intensity and sense of the association between two variables, and can vary from -1 to 1. The closer the coefficient is to the extreme values (-1 and 1), the greater the association or relationship between the variables. The sign shows the sense of this relationship, which can be negative or positive. Thus, the relation of the learning strategies with the academic delay of gratification can be evaluated.

4. Analysis of Results

4.1 Profile of respondents

Based on the data obtained through the questionnaires, it was verified that, among the respondents, 42.9% are female and 57.1% male. In the studies by Bembenutty and Karabenick (1998) and Bembemutty (1999) on the subject of the delay of gratification, there was a predominance of female students, representing about 60% of the sample.

Table 1 summarizes the respondents' profile.

Table 1
Respondents' profile

Identification		Frequency	%
Gender	Female	57	42.9%
	Male	76	57.1%
	Not informed	0	0.0%
	Total	**133**	**100.0%**
Civil Status	Single	112	84.2%
	Married/Fixed Partner	21	15.8%
	Divorced	0	0.0%
	Total	**133**	**100.0%**
Type of Teaching Institution where secondary education was taken	Public	78	58.6%
	Private	55	41.4%
	Not informed	0	0.0%
	Total	**133**	**100.0%**
Paid Job	Yes	116	87.2%
	No	17	12.8%
	Total	**133**	**100.0%**

Source: elaborated by the authors.

Regarding the marital status, 84.2% of the students analyzed are single, while 15.8% are married or live with a fixed partner. Of the unmarried students, 86.6% engaged in some type of paid job. In addition, 58.6% of the respondents took most of the high school in public schools and 87.2% had some type of paid activity (scientific initiation project with scholarship, internship, employment, etc.). When carrying out a similar analysis segregating by gender, 78.9% of the women are single, 59.6% attended high school in public school and 84.2% are engaged in paid activity. As for men, 88.2% are unmarried, 57.9% attended high school in public schools and 89.5% are engaged in paid work. These are, therefore, similar profiles.

4.2 Scale analysis

The scales used in the study were the second part of the MSQL (Motivated Strategies for Learning Questionnaire), which identifies learning strategies (cognitive, metacognitive and resource management) and ADOGS (Academic Delay of Gratification Scale), which assesses the academic delay of gratification.

To verify the reliability of these scales, Crohnbach's Alpha test was run in SPSS statistical software. For the MSQL scale, an alpha of 0.857 was obtained while, for ADOGS, the alpha was 0.749. As shown above, the acceptability threshold ranges from 0.60 to 0.70. This means that the scales used in the study have acceptable degrees of reliability.

The scale of learning strategies originated from the translation of the statements that made up the second part of MSQL. These statements were segregated and classified according to Pintrich *et al.* (1991). The classifications obtained were: cognitive strategies - subdivided into rehearsal, elaboration, organization and critical thinking; metacognitive strategies; and resource management strategies - subdivided into management of time and the study environment, effort, learning and help seeking. In this scale, students should assess how strongly the statement was true about themselves, on a scale ranging from 1 (not true about me) to 7 (very true about me). The higher the total score obtained in the scale, the greater the adoption of the learning strategies. Table 2 shows the classifications and results of the application of this scale for each statement in the instrument.

Table 2

Application results of Motivated Strategies for Learning Questionnaire - MSQL

		Mean	Standard Deviation	Frequency (%)						
				1	2	3	4	5	6	7
Rehearsal	8. When I study for my classes, I practice saying the material to myself.	**4.56**	1.868	7	10	14	12	21	16	20
	15. When studying for my classes, I read my class notes and the course readings over and over again.	**4.44**	1.936	11	9	13	15	16	19	17
	28. I memorize key words to remind me of important concepts in this class.	**5.23**	1.531	2	5	7	12	22	31	21
	41. I make lists of important items for each course and memorize the lists.	3.53	1.857	18	17	17	15	14	14	5
Cognition / **Elaboration**	31. I try to relate ideas in one subject to those in other courses whenever possible.	**5.12**	1.697	2	8	9	13	16	26	26
	22. When I study for a class, I pull together information from different sources, such as lectures, readings and discussions.	3.05	1.894	28	20	16	16	7	5	8
	33. When reading for class, I try to relate the content to what I already know.	**5.52**	1.433	1	4	4	10	21	31	29
	36. When I study for a course, I write brief summaries of the main ideas from the readings and my class notes.	**4.86**	1.955	8	7	12	10	17	18	28
	38. I try to understand the content of the class by making connections between the readings and the professor's presentation in class.	**4.95**	1.639	4	6	10	12	26	23	19
	50. I try to apply ideas from course readings in other activities, such as lectures and discussions.	3.98	1.794	10	15	15	20	17	13	10
Organization	1. When I study the readings for my classes, I outline the content to help me organize my thoughts.	**4.41**	2.004	11	8	17	14	14	15	21
	11. When I study for my classes, I go through my class notes and try to find the most important ideas.	**4.95**	1.860	8	4	11	11	16	28	22
	18. I make simple diagrams or tables to help me organize the course content.	3.59	2.016	20	17	17	10	14	10	11
	32. When I study for a course, I go over my class notes and make an outline of important concepts.	**4.95**	1.821	6	8	7	13	20	22	24
Critical Thinking	7. I often find myself questioning things I hear or read in my classes to decide if I find them convincing.	**4.61**	1.546	4	6	11	24	26	16	13
	16. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.	3.93	1.548	7	13	17	25	21	13	4
	20. I treat the course content as a starting point and try to develop my own ideas about it.	3.77	1.718	11	15	18	20	19	10	7
	35. I try to relate ideas of my own with what I am learning in my classes.	**4.93**	1.528	1	5	17	14	20	26	17
	40. Whenever I read or hear an assertion or conclusion in class, I think about possible alternatives.	**4.02**	1.758	10	13	13	20	21	16	7

		Mean	Standard Deviation	Frequency (%)						
				1	2	3	4	5	6	7
Metacognition	2. During class time, I often miss important points because I'm thinking of other things.	**5.04**	1.725	4	7	7	16	23	14	29
	5. When reading for my classes, I make up questions to help focus my reading.	3.80	1.858	12	18	17	16	16	11	10
	10. When I become confused about something I'm reading in class, I go back and try to figure it out.	**5.27**	1.513	3	2	9	12	19	34	21
	13. If the class readings are difficult to understand, I change the way I read the content.	**4.27**	1.693	6	12	14	20	21	17	10
	23. Before I study new course content, I skim it to see how it is organized.	3.35	1.896	20	21	15	14	13	9	8
	24. I ask myself questions to make sure I understand the material I have been studying in the classroom.	**4.04**	1.856	10	17	11	20	18	12	12
	25. I try to change the way I study in order to fit the course requirements and the professor's teaching style.	**4.19**	1.693	6	13	16	22	19	15	9
	26. I often read texts for my classes but find out that I didn't understand what it was all about.	**4.37**	1.971	13	6	16	15	16	16	18
	30. I try to think through a text to decide what I am supposed to learn from it rather than just reading it over when studying for my classes.	3.83	1.773	14	14	8	25	20	14	5
	45. When studying for my courses I try to determine which concepts I don't understand well.	**5.49**	1.363	2	1	5	17	17	31	27
	47. When I study for class, I set goals for myself in order to direct my activities in each study period.	**4.20**	1.811	10	11	14	18	21	15	11
	48. If I get confused taking notes in class, I make sure I sort it out afterwards.	**4.49**	1.752	6	10	13	17	20	21	13

		Mean	Standard Deviation	Frequency (%)						
				1	2	3	4	5	6	7
Resource Management / Time and Study Environment	4. I usually study in a place where I can concentrate on my class work.	**5.29**	1.604	2	7	5	12	19	29	26
	12. I make good use of my study time for my classes.	3.68	1.555	11	13	22	24	17	11	2
	21. I find it hard to stick to a study schedule.	**4.14**	1.841	10	13	13	20	18	14	12
	34. I have a regular place set aside for studying.	**4.23**	1.996	13	13	10	12	20	17	15
	39. I make sure I keep up with the weekly readings and assignments for the courses.	3.14	1.754	20	22	23	10	10	11	4
	42. I attend class regularly.	**5.88**	1.552	2	4	3	7	9	26	49
	46. I often find that I don't spend very much time on my classes because of other activities.	3.84	2.236	26	8	13	10	12	14	17
	49. I rarely find time to review my notes or readings before an exam.	3.88	1.927	16	13	11	23	15	10	12
Effort	6. I often feel so lazy or bored when I study for my classes that I quit before I finish what I planned to do.	**4.48**	1.964	7	14	14	12	17	14	22
	17. I work hard to do well in my classes, even if I don't like what we are doing.	**4.53**	1.612	4	7	16	19	27	13	14
	29. When course work is difficult, I give up or only study the easy parts.	3.07	1.684	20	23	23	14	11	4	5
	43. Even when course materials are dull and uninteresting, I manage to keep working until I finish.	**4.04**	1.815	11	14	10	27	14	14	10
Learning	3. When studying for my classes, I often try to explain the material to a classmate or a friend.	3.77	1.905	17	13	14	17	19	11	9
	14. I try to study with other students from my class to complete the course assignments.	3.65	2.178	26	14	10	11	11	15	13
	19. When studying for my classes, I often set aside time to discuss the content with a group of students from the class.	2.65	1.763	37	20	18	5	9	10	1
Help Seeking	9. Even if I have trouble learning the content in my classes, I try to do the work on my own, without help from anyone.	**4.52**	1.881	7	13	11	14	20	16	19
	27. I ask the professor to clarify concepts I didn't understand well.	**4.50**	1.828	10	4	17	10	23	24	12
	30. I try to think through a text to decide what I am supposed to learn from it rather than just reading it over when studying for my classes.	3.83	1.773	14	14	8	25	20	14	5
	44. I try to identify students in class whom I can ask for help if necessary.	**4.79**	1.981	9	11	5	10	17	23	23

Source: Pintrich *et al.* (1991).

In general, concerning the "rehearsal" strategies in the cognition category, three of the four statements listed showed a greater trend to adopt this type of strategy (average score superior to 4 points/higher frequency of scores superior to 4). As a result, on average, the respondents tend to rehearse content, read and reread study notes, and learn keywords to memorize important concepts. Regarding the "elaboration" strategies, four of the six statements listed showed a stronger trend to use this strategy, which means that the students try to relate the contents of different disciplines; content taught with the knowledge they already had; draw up summaries and try to establish links between the readings and the teacher's presentation.

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For the subcategory "organization", three of the four statements listed showed a stronger trend to adopt this type of strategy (average score superior to 4 points/higher frequency of scores higher than 4). Therefore, the students, in an attempt to organize thinking, on average, they tend to outline the content, to create notes and to reread notes. For "critical thinking", three of the five statements presented showed a stronger trend to adopt this strategy. The respondents ask questions about the contents, seeking to identify possible relationships with personal ideas.

In the category "metacognition", nine of the twelve statements showed a greater predisposition to adopt this type of strategy. Thus, if the students find it difficult to understand a particular subject, they try to change the study method, be it by elaborating questions, reading texts differently, listing doubts and seeking solutions.

Considering the resource management strategies, in the subcategory "time and study environment", four of the eight statements listed showed a trend to adopt this type of strategy, but a balance was found among the respondents as, similarly, four assertions did not show a trend to adopt this type of strategy. There was no consensus on the issue of time regulation and the choice of the best study environment. For the subcategory "effort", three of the four statements indicated the adoption of this strategy. The students try to make efforts to carry out the activities, but when they encounter difficulties, they do not finish them.

Regarding "learning", there were no trends in the use of this strategy, so students were not inclined to share knowledge and hold discussions with colleagues. Finally, the "help seeking" strategy is aligned with the results of the learning management strategy, as it was observed that the students do not seek help other than from the teacher.

In summary, it was verified that the self-regulated students develop the learning strategies in order to understand the information; establish ways of memorizing content; planning and monitoring their performance. Therefore, these results corroborate the study by Testa (2006). In addition, they are aligned with Social Cognitive Theory (Bandura, 1986), in the sense that the individual can intentionally influence his own path and circumstances; and the Action Control Theory, which deals with the individual aspects and the capacity to regulate emotions, cognitions, behaviors and self-regulating strategies to achieve success in the actions planned (Branco, Peixoto & Alvim, 2013).

The academic delay of gratification scale originated from the translation of the ten choices between two alternative courses of action that made up the ADOGS scale, developed by Bembenutty and Karabenick (1998). In it, the student should choose from a scale numbered 1 to 4, in which: (1) would certainly choose A, (2) would probably choose A, (3) would probably choose B, and (4) would certainly choose B. The higher the total score obtained on the scale, the greater the propensity to delay academic gratification. Table 3 presents the results of the application of this scale for each choice in the instrument.

Table 3

Application results of Academic Delay of Gratification Scale – ADOGS

Academic Delay of Gratification Scale - ADOGS	Mean	Standard Deviation	Frequency (%)			
			1	2	3	4
1. (A) Going to a concert or favorite sports event and studying less for this course, although this may mean getting a lower grade on a test you'll have tomorrow, OR (B) Staying at home and studying to increase your chances of getting a higher grade.	**2.60**	0.95	13	35	32	20
2. (A) Spending more time with your friends and studying as much as you can a short time before the class, OR (B) Studying a little every day for a test in this course and spend less time with your friends.	2.19	0.99	30	32	28	10
3. (A) Losing several classes to accept an invitation for a very interesting trip, OR (B) Postponing the trip until the end of the course.	**2.53**	1.15	27	20	27	26
4. (A) Going to a party the night before a test in this course and studying only if you have time, OR (B) Studying first and going to the party only if you have time.	**3.12**	0.81	2	20	41	37
5. (A) Spending most of your time studying only the interesting course content, even if this may mean you will not get such a good grade, OR (B) Studying the entire content to increase your chances of doing well in the course.	**2.90**	0.87	6	25	42	27
6. (A) Skipping class when the weather is good to enjoy it and trying to get someone's notes later, OR (B) Participating in class to make sure you won't lose anything, despite knowing that the weather outside is good.	**2.97**	0.93	8	20	39	33
7. (A) Going out with your friends to have fun and trying to finish the task when you get home later that night, OR (B) Staying in the library to make sure you'll finish a course task you're expected to hand in the next day.	**2.74**	0.96	11	28	36	25
8. (A) Studying for this course in a place with many pleasant distractions, OR (B) Studying in a place where there are less distractions to enhance the probability of you learning the content.	**3.41**	0.77	3	8	34	55
9. (A) Going out right after class to do something you like even if this means you may not understand the content for the test, OR (B) Staying in after class to ask the professor for explanations about the content of the test you haven't understood.	**2.26**	0.94	24	37	29	10
10. (A) Choosing a professor for this course who is funny even if (s)he doesn't do a good job explaining the content, OR (B) Choosing a professor for this course who is not that funny but who does a good job explaining the content.	**3.35**	0.79	3	11	35	51

Source: elaborated by the authors.

Overall, it was noticed that among the ten alternatives, nine showed the students' trend towards decisions that lead to the academic delay of gratification (average scores above 2.25 points/higher frequency of scores higher than 2).

The choice that did not exceed the average of 2.25 presented an average of 2.19, which is considered close to the minimal value listed for a trend towards delay. Thus, it is observed that, on average, the respondents tend to postpone available opportunities in favor of pursuing academic goals that are temporarily remote, but more valuable. This result corroborates the findings of the creators of the scale, Bembenutty and Karabenick (1998), and the Action control theory, where even amidst diverse distractions, individuals find strategies that will help them remain focused on their activity, including environment, motivation and selective attention, as illustrated by the average of 3.41 in question number eight.

4.3 Analysis of sample distribution

The Kruskal-Wallis test permits verifying if there is a difference between the characteristics of the respondents and the adopted learning strategies or the academic delay of gratification choices. Initially, the Kruskal-Wallis test was carried out using SPSS between the variables gender, marital status, type of institution to attend high school, performance of some kind of paid or unpaid activity concomitant with the course, and the variables total score on the learning strategy questionnaire and total score on the academic delay of gratification scale.

Next, the statistical significance of the results was evaluated and it was verified that there is evidence of significant differences between the learning strategies adopted and the gender of the respondents. Considering a level of significance of 0.05%, female students, with a significance of 0.01 and an average score of 76.89, tended to develop more learning strategies than male students, as displayed in Table 4.

This result is in line with the findings of Bembenutty (2007), who analyzed whether ethnic and gender differences influenced the behavior of extending bonuses. The author found that female students of ethnic minorities are more willing to postpone gratification than white males. It should be pointed out that, in this study, only the gender variable was investigated, while issued related to ethnic origin were not included in the analysis.

Table 4

Result of Kruskal-Wallis test for learning strategies and gender

Kruskal-Wallis		Classification		
Learning Strategies x Gender		FEM	N	Mean classification*
Chi-Square	6,567	0	76	59.59
df	1	1	57	76.89
Sig.	0.01	Total	133	

Legend: *Mean position of the group regarding all observations according to the Kruskal-Wallis test.

Source: elaborated by the authors.

In addition, evidence of significant differences was found between the academic delay of gratification choices and the accomplishment of some kind of paid activity concomitant with with the course, as evidenced in Table 5.

Table 5

Result of Kruskal-Wallis test for delay of gratification and paid job

Kruskal-Wallis		Classification		
Delay x Paid Job		Paid Job	N	Mean classification*
Chi-Square	4.016	0	17	84.44
df	1	1	116	64.44
Sig.	0.04	Total	133	

Legend: *Mean position of the group regarding all observations according to the Kruskal-Wallis test.

Source: elaborated by the authors.

Considering a significance level of 0.05%, the students who do not perform some kind of paid activity concomitant with the course, with a significance of 0.04 and an average score of 84.44, are more prone to the academic delay of gratification than students who perform some type of paid activity.

4.4 Analysis of the correlation between learning strategies and the academic delay of gratification

In order to evaluate the possible relationship between students' learning strategies in undergraduate Accounting courses and the academic delay of gratification, each respondent's scale scores were added up. In the scale of learning strategies, consisting of fifty assertions, the student could get a score between 50 and 350 points. In the delay of gratification scale, composed of ten alternatives, the student could reach a score between 10 and 40 points. The higher the score, the greater the adoption of learning strategies and the probability of using the academic delay of gratification.

Thus, through the Spearman correlation test, carried out in SPSS, a positive and statistically significant correlation (0.407) was observed between the learning strategies and the academic delay of gratification, as presented in Table 6. Thus, these variables are related so that the adoption of learning strategies increases the likelihood of students adopting the delay, that is, postponing available opportunities in favor of pursuing academic goals that are remote in time but more valuable.

Table 6

Spearman correlation between strategies and delay

	LS	ADG
LS	1.00	
ADG	**0.407****	1.00

Source: elaborated by the authors.

The results evidenced in Table 6 demonstrate that, in fact, Cognitive theory applies in the context of the accounting students, and it has been observed that people are self-organized and self-regulating, being able to contribute and also influence the events around them. In addition, the study also verified that the positive correlation found between the use of learning strategies and the academic delay of gratification reveals that individuals may have the ability to regulate their emotions, cognitions, behaviors and self-regulation strategies in order to achieve success in the actions they plan. When they prefer to study first and only go to a party if they have time left, for example, they exemplify this competence and autonomy. Thus, the premises of the Action control theory were also confirmed, which guided the investigations in this study, materializing that even amidst diverse distractions, there are strategies that will help individuals to remain focused on their activity.

These findings corroborate those of Bembenutty and Karabenick (1998), a study that developed the Academic Delay of Gratification Scale (ADOGS), which contained items to identify respondents' proneness to delay gratification, and whose results indicated an association between the academic delay of gratification (ADG) and the use of learning strategies (LS).

Given that there was a positive and statistically significant association between the learning strategies and the delay of gratification, we aimed to identify which types of learning strategies most correlate with the academic delay of gratification. Therefore, the classification of the types of strategies adopted by Pintrich *et al*. (1991) was adopted: cognitive strategies (COG) - subdivided into rehearsal (REH), elaboration (ELA), organization (ORG) and critical thinking (THIN); metacognitive strategies (META); and resource management strategies (MANA) - subdivided into management of time and the study environment (TIM), effort (EFF), learning (LEA) and help seeking (HEL). These classifications were considered as new variables, whose scores were obtained by adding up the students' scores in each question related to each type of strategy.

After the definition of these new variables and their respective scores, the Spearman correlation test between the variables and the academic delay of gratification were again performed. It was verified that there are positive and statistically significant relationships between the delay and the learning strategies of metacognition, cognition and resource management, in this order of intensity, as presented in Table 7.

Table 7

Spearman Correlation between strategy categories and delay

	COG	META	MANA	ADG
COG	1.000			
META	0.630**			
MANA	0.344**	0.543**		
ADG	**0.342****	**0.418****	**0.213***	1.000

Source: elaborated by the authors.

The analysis of the subdivisions among these types of strategies showed that the subdivisions of cognitive rehearsal, elaboration and organization are positive and significantly related with the delay, in this order of intensity. What the subdivisions of the resource management strategies are concerned, only the management of time and study environment revealed a (positive) significant association with the academic delay of gratification. These results are displayed in detail in Table 8.

Table 8

Spearman Correlation between strategy subcategories and delay

	REH	ELA	ORG	THIN	META	TIM	EFF	LEA	HEL	ADG
REH	1.000									
ELA	0.487**									
ORG	0.495**	0.568**								
THIN	0.227**	0.607**	0.314**							
META	0.403**	0.523**	0.555**	0.445**						
TIM	0.187*	0.286**	0.215*	0.256**	0.381**					
EFF	0.062	0.134	0.152	-0.029	0.256**	0.229**				
LEA	0.079	0.051	0.173*	0.155	0.288**	0.003	0.103			
HEL	0.177*	0.190*	0.297**	0.185*	0.376**	0.192*	0.170			
ADG	**0.319****	**0.334****	**0.253****	0.165	**0.418****	**0.207***	0.144	0.073	0.129	1.000

Source: elaborated by the authors.

Thus, it is inferred that, among the types of learning strategies, the strategies related to cognition (rehearsal, elaboration and organization) and to the management of the time and study environment are those that are more related to the extension. In this way, the adoption of these strategies is in line with the students' propensity to extend academic gratification.

Again, the results are in line with the findings of Bembenutty and Karabenick (1998), who also identified time management as one of the types of learning strategies most associated with overtime. In summary, the research results demonstrate that respondents tend to postpone available opportunities in pursuit of academic goals that are temporarily remote, but more valuable.

5. Final Considerations

This study sought to verify the relationship between the academic delay of gratification and the learning strategies, involving the students of the Accounting course at the Federal University of Minas Gerais. Student activities require a range of self-regulating efforts and mechanisms to succeed in the various tasks performed in this course. In the case of a higher-education course, students are constantly engaged in tasks such as group work, classes, assessments, lectures or research activities.

As reinforced by Lemos (2016), learning strategies are seen as facilitators in this process and concern efforts or any activities students undertaken in a conscious manner, in order to strengthen the processes of information acquisition, transformation, storage and use.

The academic delay of gratification is an individual ability to regulate and is an aspect of self-regulation of learning. Therefore, the self-regulated student moves toward the learning strategies, which include cognition, metacognition and resource management.

The results of this study corroborate previous research, such as Bembenutty and Karabenick (1998) and also Bembenutty (2007). A first finding of this research refers to the fact that female students use more of the learning strategies when compared to male students and are therefore more likely to delay their academic gratification. Similarly, students who do not engage in some kind of paid activity concomitant with the course tend to make choices more characteristic of the academic delay of gratification than students who perform some type of paid activity.

Regarding the relationship between the learning strategies and the academic delay of gratification, a positive and significant correlation was observed between both, so that the adoption of these strategies increases the probability of academic delay of gratification. More specifically, metacognitive strategies were more strongly and positively correlated with the academic delay of gratification. As for the cognitive and resource management strategies, among the first only essay, elaboration and organization, were shown to be significant and positively associated with the delay; in relation to the second, only time management correlated positively with the academic delay of gratification.

Given this situation, it is important that students use learning strategies not only during classes, but also involving their entire social context, through both cognitive and metacognitive techniques as well as through resource management, developing their autonomy and regulating the learning.

As contributions, it is expected that this study will generate positive impacts for educational institutions, teachers and students. Recognizing possible difficulties in the students' self-regulation process, the members of the institution have the opportunity to identify maladaptive cognitions, seeking alternatives to help the students to cope with situations of discomfort in the university. Teachers, in turn, may have access to information that is important to improve the course's teaching process as, by knowing the profile of their students, they can stimulate them to develop strategies for the self-regulation of learning, as well as to prioritize rewards over a longer period of time, as the deferment of gratifications is a controllable, though not always conscious, activity. Students, with the help of teachers and educational institutions, can visualize improvements in the teaching-learning process, which may positively impact their academic performance.

In addition, in the social sphere, especially in the psychological field, the study findings reinforce the ideas that the individual can influence his own path and the circumstances, in an intentional way; being able to regulate the emotions, cognitions, behaviors and self-regulating strategies to be successful in the planned actions. Thus, we have demonstrated that the delay in gratification is a consequence of the successful use of volitional control strategies, that is, individuals are able to evaluate situations and control their wills, giving up impulsive decision making; as well as tending to exert control over other aspects of their learning environment.

For accounting professionals, the study appoints that, to be successful, it is necessary to be resistant to the temptations immediate gratification brings, so that the probability of reaching more distant and presumably more important goals is increased. The results show that 87.2% of the students analyzed perform some type of paid activity, a fact that deserves attention, as this expressive percentage suggests that the students seek some income, either to complement the family income or even to maintain themselves at the university. This feature is also linked to the fact that the course is offered at night, allowing the opportunity to work during the day and study at night. This reality makes research on the subject more important.

As limitations of this study, it should be emphasized that the results found do not go beyond the sample surveyed. In addition, the limitations of the data collection instrument itself, which may present errors or biases, are highlighted. That is, because the questionnaire was composed of scales that involve self-reporting, this does not guarantee an exact correspondence between the actual behavior and the verbalized behavior, for some reasons: a) the reported behavior differs from the actual behavior because covert events are not legitimately recognized; b) the reported behavior is not the real but the socially desirable behavior, considering influences from the individual's history of reinforcement; and c) the participant does not fully understand the items that make up the instrument used, resulting in different meanings for participant and researcher (Kohlsdorf and Costa Júnior, 2009). In order to try to minimize the discrepancy between the data obtained from the self-report and the actual behavior, all the necessary clarification was provided in the questionnaire itself, and contact with the research was available in order to solve any kind of doubt.

For future investigations, we propose verifying if these relations are confirmed in different samples. For example, we suggest investigating higher education institutions (HEI) with lower rankings than UFMG in the *Ranking Universitário Folha* (RUF), in order to compare the results found in higher ranked and worse ranked HEI. We also propose that more in-depth qualitative analyses be carried out in order to contribute to aspects of the causes and other relevant factors that may interfere in the relations between the use of learning strategies and the academic delay of gratification.

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