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An Intervention on the Study Habits of First-Year University Students

Natália Moraes Góes
Universidade Estadual Paulista Júlio de Mesquita Filho (Brasil)
Deivid Alex dos Santos
Universidade Estadual do Paraná (Brasil)

Abstract

This article is grounded in Social Cognitive Theory, with particular emphasis on the construct of self-regulation, and sought to identify changes in the study habits of newly enrolled university students following their participation in a self-regulated learning intervention. This pre-exploratory study involved 40 undergraduate students enrolled in a Teacher Education program, who completed the self-reflective protocol "Who Are You as a Student?" both before and after the intervention. Guided by the principles of content analysis, the data were initially categorized, after which the responses were quantified and analyzed using the Statistical Package for the Social Sciences. Overall, the findings indicate that the students modified their study habits. After the intervention, they engaged in more in-depth reflection on their learning, reported increased use of learning strategies, and sought to compare their academic performance before and after the intervention. It is recommended that future studies develop interventions that emphasize planning strategies and attentional control.

Keywords: First-year students; Teacher Education; Study habits; Self-regulated learning.

Uma intervenção nos hábitos de estudo de estudantes universitários ingressantes

Resumo

Este artigo fundamenta-se na Teoria Social Cognitiva, em especial, no constructo da autorregulação, e objetivou identificar mudanças nos hábitos de estudo de estudantes recém-ingressantes na universidade após participarem

de uma intervenção sobre autorregulação da aprendizagem. A pesquisa, de caráter pré-exploratório, foi realizada com 40 estudantes de Pedagogia, que responderam ao protocolo autorreflexivo "Quem é você como estudante" antes e depois de participarem da intervenção. Seguindo os pressupostos da análise de conteúdo, primeiramente os dados foram categorizados. Após a categorização, as respostas foram quantificadas e analisadas no Statistical Package for the Social Sciences. Em síntese, os resultados revelaram que os estudantes modificaram seus hábitos de estudo. Após a intervenção, passaram a refletir mais sobre a aprendizagem, apontaram maior uso de estratégias de aprendizagem e buscaram estabelecer comparação do próprio desempenho nos momentos antes e depois da intervenção. Sugere-se que estudos futuros desenvolvam intervenções com o foco nas estratégias de planejamento e de controle da atenção.

Palavras-chave: Estudantes ingressantes. Pedagogia. Hábitos de estudo. Autorregulação da aprendizagem.

Una intervención sobre los hábitos de estudio de los estudiantes universitarios de nuevo ingreso

Resumen

Este artículo se basa en la Teoría Cognitiva Social, en particular en el constructo de autorregulación, y tuvo como objetivo identificar cambios en los hábitos de estudio de estudiantes universitarios de nuevo ingreso tras participar en una intervención sobre autorregulación del aprendizaje. La investigación preexploratoria se realizó con 40 estudiantes de Pedagogía, quienes respondieron al protocolo de autorreflexión «¿Quién eres como estudiante?" antes y después de participar en la intervención. Siguiendo los supuestos del análisis de contenido, los datos se categorizaron. Posteriormente, las respuestas se cuantificaron y analizaron mediante el Paquete Estadístico para las Ciencias Sociales (SPSS). En resumen, los resultados revelaron que los estudiantes modificaron sus hábitos de estudio. Tras la intervención, comenzaron a reflexionar más sobre el aprendizaje, indicaron un mayor uso de estrategias de aprendizaje y buscaron comparar su propio desempeño antes y después de la intervención. Se sugiere que futuros estudios desarrollen intervenciones centradas en estrategias de

planificación y control de la atención.

Palabras clave: Estudiantes de nuevo ingreso. Pedagogía. Hábitos de estudio, Autorregulación del aprendizaje.

Introduction

Entering higher education is often characterized by heightened expectations related to career development, intellectual growth, and the establishment of new social interactions and friendship networks. However, for many students, this transition may also be perceived as challenging, as higher education frequently requires attitudes and behaviors not previously demanded in basic education. In this context, students must respond to increasingly complex learning demands, reorganizing themselves behaviorally, affectively, and cognitively in order to meet these new expectations, while simultaneously learning to navigate the pedagogical and institutional structures of their academic programs (Martins & Fior, 2024; Paiva, Lages, Moreira, Azevedo, & Oliveira, 2024). Taken together, these challenges may render first-year students vulnerable and contribute to disruptions in their well-being and mental health (Cruz & Lopes, 2024; Martins & Fior, 2024).

Coping with the challenges that emerge upon entering higher education is not always successful, as evidenced by the high number of enrollment cancellations during the first year of undergraduate study (Cruz & Lopes, 2024; Lopes, 2019; Silva & Trindade, 2022). These data underscore the need for higher education institutions to implement initiatives that offer welcoming environments, support structures, and didactic-pedagogical assistance for first-year students at this stage of their academic trajectories (Martins & Fior, 2024; Silva & Trindade, 2022).

Research has shown promising results regarding students' adaptation to higher education when they engage with the theoretical framework of self-regulated learning and develop self-regulatory skills (Casale, Bettioli, Santos, Graciola, Pelissoni, Consoni, & Marcondes, 2023; Martins & Fior, 2024; Paiva, Lages, Moreira, Azevedo, & Oliveira, 2024; Silva & Trindade, 2022). This is because self-regulation promotes the development of socioemotional competencies and strengthens the teaching and learning process, thereby

mitigating the difficulties encountered by higher education students during their transition to university life (Zimmerman, 2000).

Self-regulated learning is defined as a self-directed process through which learners regulate cognitive, metacognitive, motivational, and behavioral variables to achieve a predetermined learning goal (Zimmerman, 1998, 2013). Self-regulated learners are typically active agents in their own learning process: they set goals, manage the time and effort required for learning, identify their strengths and weaknesses, regulate their emotions and motivations, persist in tasks even when difficulties arise, intentionally employ learning strategies, and reflect on their learning processes and outcomes (Góes & Boruchovitch, 2020; Seli & Dembo, 2020; Zimmerman, 2002).

Self-regulatory skills are not innate; rather, they can be nurtured and developed throughout the various stages of basic and higher education (Boruchovitch, 2014; Seli & Dembo, 2020; Silva & Trindade, 2022; Zimmerman & Schunk, 2011). Similarly, learning strategies can be explicitly taught across different educational contexts (Alliprandini, Santos, & Rufini, 2023; Boruchovitch, 1999; Góes & Boruchovitch, 2020). Given the importance of fostering self-regulated learning among newly enrolled university students—so that they may navigate the challenges inherent to the transition into higher education, including increased academic demands, a substantial volume of coursework and readings, and compressed timelines for completing assignments—and recognizing the value of students becoming more active, reflective, agentic, and capable of employing and expanding their repertoire of learning strategies, the present study aimed to identify changes in the study habits of first-year university students following their participation in a self-regulated learning intervention.

Methodology

The study employs a pre-experimental design, which involves comparing values obtained in a pretest with those collected in a posttest within a single experimental group. Research of this nature does not include a control group and does not require large samples (Patten & Newhart, 2018; Thyer, 2012).

Participants

The sample consisted of 40 students from two cohorts in a Teacher Education program. All participants were enrolled in the first semester of the program and attended evening classes. Of these students, 37 (92.5%) were women and 3 (7.5%) were men.

Data Collection Instruments

Self-reflective Protocol "Who Am I as a Student?"

This protocol was developed by Boruchovitch (2010) and is designed to identify students' learning strategies as well as their perceived strengths and weaknesses. It consists of two questions that ask students what they do when they need to study and learn specific content, and what strengths and weaknesses they recognize in themselves as learners.

Data Collection Procedures

Data collection began after the project was approved by the Research Ethics Committee for Studies Involving Human Subjects at the institution where the study was conducted. The project was approved under CAAE No. 77242024.1.0000.5231. Following approval, data were collected in two phases: on the first and on the last day of the course *Methodology of Scientific Work*. It is important to note that the self-regulated learning intervention was implemented as part of this course.

During the first administration of the instrument *Self-reflective Protocol "Who Am I as a Student?"* (pretest), students were asked to read and sign the Informed Consent Form (ICF). Before signing, they were informed about the objectives of the study, the voluntary nature of participation, and the potential benefits and risks associated with taking part in the research. After signing the ICF, the data collection instrument was distributed to the students.

In the posttest phase, *the Self-reflective Protocol "Who Am I as a Student?"* was administered again. The same procedures used in the pretest were followed in the posttest. The average time required to complete the

instrument was approximately 15 minutes.

The course *Methodology of Scientific Work* has a total workload of 30 hours, is mandatory for students in the Teacher Education program, and is offered during the first semester. Its objectives are to support students' adaptation to the university context, to foster awareness of their role in constructing academic knowledge, to identify and analyze different types of scientific work, and to familiarize students with the standards of academic writing. In accordance with these objectives, the course was structured to teach different modalities of academic work while integrating them with the theoretical foundations of self-regulated learning and learning strategies.

The course consisted of 17 in-person sessions, each lasting two hours. The content covered, as well as the structure adopted for the sessions, is presented in Table 1.

Table 1 – Pedagogical organization of the course *Methodology of Scientific Work*

Session	Content	Proposal
01	• Self-reflection on one's own learning.	• Administration of the pretest *Self-reflective Protocol "Who Am I as a Student?"*.
02	• Planning academic tasks.	• Viewing and group discussion of the video *Planning and Learning Strategies* (Professor Evely Boruchovitch, PhD). • Writing in the learning journal.
03	• Time management and academic procrastination.	• Self-reflective activity on time management. • Viewing of the video on the Pomodoro Technique. • Discussion of the text: Rosário, Pedro; Núñez, José; González-Pienda, Julio. *Você sabe como vencer a procrastinação, Gervásio?* In: Rosário, Pedro; Núñez, José; González-Pienda, Julio. *Cartas do Gervásio ao seu umbigo*. São Paulo: Almedina, 2012, pp. 44–49. • Writing in the learning journal.

Source: The Authors (2025)

Table 1 – Pedagogical organization of the course *Methodology of Scientific Work* (continuação)

Session	Content	Proposal
04	• Self-regulated learning: basic foundations.	• Discussion of the text: Rosário, Pedro; Núñez, José; González-Pienda, Julio. *Quem governa a sua aprendizagem? Você sabe como se distinguem os alunos que obtêm sucesso escolar.* In: Rosário, Pedro; Núñez, José; González-Pienda, Julio. Cartas do Gervásio ao seu umbigo. São Paulo: Almedina, 2012, pp. 56–63. • Writing in the learning journal.
05	• Goal setting.	• Discussion of the text: Rosário, Pedro; Núñez, José; González-Pienda, Julio. *Como você consegue ter uma disciplina tão organizada? Como você consegue se preparar para a prova com tanta intensidade?* In: Rosário, Pedro; Núñez, José; González-Pienda, Julio. *Cartas do Gervásio ao seu umbigo*. São Paulo: Almedina, 2012, pp. 75–82. • Activity: Self-reflective protocol for goal setting. • Writing in the learning journal.
06	• Strategies for preparing for exams and guidance on searching academic databases.	• Continuation of the previous session's discussion. • Practical session on searching academic databases. • Writing in the learning journal.
07	• Self-reflective activity on managing anxiety and emotions. • Strategies for emotion regulation.	• Discussion of the text: Rosário, Pedro; Núñez, José; González-Pienda, Julio. *Afinal, o que é isso de ansiedade diante de testes?* In: Rosário, Pedro; Núñez, José; González-Pienda, Julio. Cartas do Gervásio ao seu umbigo. São Paulo: Almedina, 2012, pp. 88–93. • Writing in the learning journal.
08	• Administration of the Reading Strategies Scale (Kophe Filho, 2001). • Reading and learning strategies.	• Discussion of the text: Góes, Natália Moraes; Boruchovitch, Evely. *Estratégias de aprendizagem: como promovê-las?* Petrópolis: Vozes, 2020. • Writing in the learning journal.

Source: The Authors (2025)

Table 1 – Pedagogical organization of the course *Methodology of Scientific Work* (continuação)

Session	Content	Proposal
09	• Common sense and scientific knowledge.	• Discussion of the text: Bock, Ana Mercês Bahia; Furtado, Odair; Teixeira, Maria de Lourdes Trassi. *A psicologia ou as psicologias*. In: Bock, Ana Mercês Bahia; Furtado, Odair; Teixeira, Maria de Lourdes Trassi. *Psicologias: uma introdução ao estudo de psicologia*. São Paulo: Saraiva, 2001, pp. 1–21. • Critical analysis of the film *Three Identical Strangers*. • Writing in the learning journal.
10	• Types of academic work: summary and annotated reading notes.	• Discussion of the text: Severino, Antônio Joaquim. *Metodologia do trabalho científico*. 23rd ed. São Paulo: Cortez, 2007 (Note: base text for sessions 13, 14, and 15). • Application of the underlining learning strategy to a text. • Preparation of an annotated reading record. • Writing in the learning journal.
11	• Standardization of academic work.	• Training session at the central library on academic writing standards. • Writing in the learning journal.
12	• Standardization of academic work.	• Training session at the central library on academic writing standards. • Writing in the learning journal.
13	• Types of academic work: scientific article.	• Analysis and discussion of a scientific article retrieved from one of the databases studied in the course. • Writing in the learning journal.
14	• Types of academic work: review and critical review.	• Preparation of a review. • Writing in the learning journal.
15	• Types of academic work: internship report and undergraduate thesis.	• Writing in the learning journal.

Source: The Authors (2025)

Table 1 – Pedagogical organization of the course *Methodology of Scientific Work* (continuação)

Session	Content	Proposal
16	• Lattes Curriculum.	• Creation of the Lattes Curriculum. • Writing in the learning journal.
17	• Self-reflection on one's own learning. • Course conclusion.	• Administration of the posttest *Self-reflective Protocol "Who Are You as a Student?"* • Self-assessment of learning.

Source: The Authors (2025)

Data Analysis Procedures

The data were obtained through the administration of the Self-Reflective Protocol "Who Are You as a Student?" during both the pretest and posttest phases. For the analysis of the responses, the data were first examined and coded in accordance with Bardin's (2016) guidelines, following the three fundamental stages of Content Analysis: (i) pre-analysis, which involved organizing the material and conducting an initial, exploratory reading of the responses; (ii) material exploration, during which the data were coded and categorized using Microsoft Excel; and (iii) treatment of the results, inference, and interpretation, a stage in which the categories were analyzed and validated by expert judges.

After reading all the material, keywords referring to students' use of learning strategies were identified. Based on these highlighted terms, categories were constructed following well-established classifications of learning strategies in both national and international literature (Boruchovitch, 1999; Góes & Boruchovitch, 2020; Pintrich, 2000). Once the categorization process was completed, three expert judges in the field, all holding doctoral degrees in Education, evaluated the categories, resulting in an 80% level of agreement between the proposed categories and those ultimately established.

Subsequently, the dataset generated from the categorized responses was analyzed using IBM SPSS software (version 23.0.0.0). To assess the normality of the data distribution, the Shapiro–Wilk test was applied, as it is the

most appropriate for small samples (Miot, 2017). The results indicated that the data did not follow a normal distribution. Given this non-normality, the Wilcoxon test—a nonparametric statistical method used to compare paired observations—was employed. This test was applied to identify changes in the data measured before and after the intervention, examining the differences between the two time points.

Results and discussion

Table 2 presents a comprehensive comparative analysis of the scores obtained before (pretest) and after (posttest) the implementation of the educational intervention program. The analysis includes both descriptive and inferential statistics for each of the categories created, allowing for a detailed understanding of the changes that occurred. It is essential to note that although the data distribution was non-normal, the small number of responses resulted in median values of zero, which limited the ability to visualize variations. For this reason, mean values were reported to provide a clearer representation of the observed changes.

Table 2 – Descriptive statistics (mean, standard deviation, and median) and values obtained for each category at the pretest and posttest phases

Categories	Mean		Standard Deviation		Median		p
	Pre	Post	Pre	Post	Pre	Post	
Rehearsal strategies	0,11	0,13	0,38	0,43	0,00	0,00	0,88
Elaboration strategies	0,11	0,10	0,37	0,35	0,00	0,00	0,71
Organization strategies	0,01	0,03	0,11	0,24	0,00	0,00	0,41
Planning strategies	0,07	0,11	0,29	0,35	0,00	0,00	0,14
Monitoring and regulation strategies	0,07	0,12	0,30	0,37	0,00	0,00	0,01*
Study-organization strategies	0,20	0,15	0,60	0,42	0,00	0,00	0,42
Absence of planning strategies	0,16	0,29	0,42	0,66	0,00	0,00	0,01*
Social-support strategies	0,03	0,02	0,20	0,15	0,00	0,00	0,41

Source: The Authors (2025)
Note: categories marked with asterisks (*) indicate statistical significance ($p < 0.05$).

Table 2 – Descriptive statistics (mean, standard deviation, and median) and values obtained for each category at the pretest and posttest phases.

Categories	Mean		Standard Deviation		Median		p
	Pre	Post	Pre	Post	Pre	Post	
Motivation to learn	0,07	0,05	0,31	0,28	0,00	0,00	0,44
Emotions in learning	0,06	0,08	0,28	0,40	0,00	0,00	0,38
Self-perceptions as a student	0,09	0,07	0,38	0,32	0,00	0,00	0,31
Time-management strategies	0,01	0,05	0,12	0,32	0,00	0,00	0,20
Absence of learning strategies	0,11	0,04	0,42	0,24	0,00	0,00	0,03*
Motivation-related problems	0,01	0,04	0,12	0,20	0,00	0,00	0,08

Source: The Authors (2025)
Note: categories marked with asterisks (*) indicate statistical significance ($p < 0.05$).

Table 2 reveals statistically significant differences in three main categories: "Monitoring and regulation strategies," "Absence of planning strategies," and "Absence of learning strategies." In the first category—"Monitoring and regulation strategies"—a modest yet statistically significant increase was observed ($p < 0.01$), with the mean rising from 0.07 in the pretest to 0.12 in the posttest. The category "Absence of planning strategies" also presented a statistically significant increase ($p < 0.01$), from 0.16 to 0.29 in the posttest. Conversely, a significant reduction was observed in the category "Absence of learning strategies" ($p < 0.03$), with the mean decreasing from 0.11 in the pretest to 0.04 in the posttest. No statistically significant differences were identified for the remaining categories.

The significant increase in monitoring and regulation strategies suggests that students began to reflect more deeply on their learning processes, adjusting their actions in accordance with academic demands. This finding is consistent with Zimmerman's (2002) propositions, which emphasize self-reflection as one of the core pillars of self-regulation, enabling students to identify their strengths and weaknesses throughout their learning trajectory.

Conversely, the increase in the absence of planning strategies may

be interpreted as an indication that students continue to face difficulties in organizing their academic activities, even after the intervention. This finding is concerning, given that planning is essential for effective time management and for mitigating procrastination—both of which are common challenges in higher education (Casale, Bettioli, Santos, Graciola, Pelissoni, Consoni, & Marcondes, 2023; Martins & Fior, 2024; Vieira & Góes, 2025).

However, it is plausible that the development of monitoring and regulation strategies enhanced participants' metacognitive awareness regarding their learning processes, leading to more critical, and potentially more stringent, self-assessments of their planning difficulties. Arvatz, Peretz, and Dori (2025) argue that self-reflection may initially heighten students' awareness of gaps in their own performance, which may partially explain the increase observed in this category.

One of the activities proposed during the intervention consisted of the development of a weekly study plan. This task required students to construct a well-defined and specific plan detailing the time available, the activities to be completed, the establishment of daily goals, and the strategies to achieve them. It is possible that this activity contributed to a more critical appraisal of their planning processes.

The reduction observed in the category "Absence of learning strategies" appears to indicate that participants began to adopt more effective study methods, such as reading techniques and the production of summaries, reinforcing the importance of structured and targeted interventions aimed at teaching learning strategies (Góes & Boruchovitch, 2020). This finding suggests that the course was effective in introducing and consolidating specific strategies, such as underlining texts and preparing annotated records, practices widely recommended for enhancing content retention (Santos & Alliprandini, 2024; Seli & Dembo, 2020).

However, the heterogeneity of the results across categories indicates that the impact of the intervention was uneven, with progress observed in certain dimensions of learning but also important gaps that warrant attention in future interventions, particularly in those categories and subcategories that displayed substantially lower means in the posttest.

In summary, the results presented in Table 2 highlight the effects of the

educational intervention based on self-regulated learning on the study habits of first-year higher education students, particularly through the observed increase in the use of learning strategies and the strengthening of monitoring and regulation processes, that is, self-regulatory skills. These findings corroborate existing literature that underscores the importance of developing self-regulatory abilities for successful academic adaptation (Boruchovitch, 2014; Martins & Fior, 2023, 2024; Zimmerman, 2000).

Table 3 details the subcategories derived from the categories showing significant differences

Category	Subcategory	Mean		Standard Deviation		Median		p value
		Pre	Poss	Pre	Post	Pre	Post	
Monitoring and regulation strategies	Performance comparison	0.00	0.25	0.00	0.54	0.00	0.00	0.008*
	Content comprehension	0.00	0.05	0.00	0.22	0.00	0.00	0.157
	Perceiving whether the strategy is effective	0.02	0.02	0.15	0.15	0.00	0.00	1.00
	Thinking critically	0.00	0.02	0.00	0.15	0.00	0.00	0.317
	Ease of learning	0.22	0.12	0.42	0.33	0.00	0.00	0.206
	Remembering	0.02	0.07	0.15	0.26	0.00	0.00	0.317
	Reviewing	0.02	0.05	0.15	0.31	0.00	0.00	0.655
	Self-reflection on content comprehension	0.00	0.27	0.00	0.55	0.00	0.00	0.005*
	Identifying distractors	0.00	0.05	0.00	0.22	0.00	0.00	‘0.157
Absence of planning strategies	Attention	0.62	030	0.70	0.60	0.50	0.00	0.030*
	Learning difficulty	0.10	0.02	0.30	0.15	0.00	0.00	0.18
	Achieving goals	0.05	0.05	0.22	0.22	0.00	0.00	1.00
	Noise	0.00	0.07	0.00	0.35	0.00	0.00	0.102
	Work	0.15	0.12	0.36	0.46	0.00	0.00	0,180
	Learning strategies	0.00	0.22	0.00	0.48	0.00	0.00	0.007*
	Procrastination	0.37	0.67	0.62	0.97	0.00	0.00	0.054*
	Lack of time management	0.12	0.32	0.33	0.69	0.00	0.00	0.070
	Failure to achieve goals	0.05	0.05	0.22	0.22	0.00	0.00	1.00
	Lack of planning	0.12	0.05	0.33	0.33	0.00	0.00	1.00

Source: The Authors (2025)
Note: subcategories marked with asterisks (*) indicate statistical significance ($p < 0.05$).

Table 3 details the subcategories derived from the categories showing significant differences

Category	Subcategory	Mean		Standard Deviation		Median		p value
		Pre	Poss	Pre	Post	Pre	Post	
Absence of learning strategies	Tendency to forget easily	0.05	0.00	0.31	0.00	0.00	0.00	0.317
	Lack of control	0.02	0.00	0.15	0.00	0.00	0.00	0.317
	Lack of attention	0.62	0.25	0.83	0.54	0.00	0.00	0.024*
	Lack of organization of the study environment	0.00	0.02	0.00	0.15	0.00	0.00	0.317
	Studying alone	0.00	0.02	0.00	0.15	0.00	0.00	0.317
	Difficulty expressing doubts	0.02	0.00	0.15	0.00	0.00	0.00	0.317
	Difficulty working in groups	0.07	0.25	0.35	0.15	0.00	0.00	0.414

Source: The Authors (2025)
Note: subcategories marked with asterisks (*) indicate statistical significance ($p < 0.05$).

Table 3 highlights the statistically significant variations identified across the different subcategories. In the subcategory "Performance comparison," a marked change was observed ($p < 0.008$), with the mean increasing from 0.00 in the pretest to 0.25 in the posttest, accompanied by a substantial rise in standard deviation (from 0.00 to 0.54). The subcategory "Self-reflection on content comprehension" exhibited one of the most notable transformations ($p < 0.005$), shifting from a mean of 0.00 to 0.27, with the standard deviation increasing to 0.55.

Regarding the subcategory "Attention," the results indicated a significant reduction ($p < 0.03$) in the mean, decreasing from 0.62 in the pretest to 0.30 in the posttest, with the standard deviation remaining relatively high (declining from 0.70 to 0.60). The subcategory "Learning strategies" showed a considerable increase ($p < 0.007$), rising from a mean of 0.00 to 0.22, with the standard deviation increasing from 0.00 to 0.48 in the posttest.

The subcategory "Procrastination" demonstrated a concerning trend ($p < 0.054$), with the mean increasing from 0.37 in the pretest to 0.67 in the posttest, accompanied by a rise in standard deviation (from 0.62 to 0.97).

Finally, the subcategory "Lack of attention" exhibited a statistically significant decrease ($p < 0.024$), with the mean declining from 0.62 in the pretest to 0.25 in the posttest.

The subcategories "Performance comparison" and "Self-reflection on content comprehension" stand out, as they appear to indicate that the intervention fostered a more critical, reflective, and self-directed stance among students. By expanding their strategies for comparing performance, students begin to demonstrate increased metacognition as well as a more accurate assessment of their learning progress, rather than focusing solely on final outcomes (Seli & Dembo, 2020).

This gradual improvement in self-regulatory capacity, observed in these two subcategories, may be attributed to the intervention's emphasis on metacognitive activities, particularly the maintenance of a learning journal. At the end of each class, students were encouraged to write in their journals about what they had learned and how the content could be applied both to themselves as learners and to their future roles as teachers. These reflective moments, incorporated throughout the course, may have stimulated deeper self-reflection regarding content comprehension.

The significant decrease in the subcategories "Attention" and "Lack of attention" reveals a contradiction in first-year students' responses. This discrepancy may be explained by social desirability bias, a phenomenon widely documented in psychological literature (Fronczyk & Witkowska, 2020; Mortel, 2008; Paulhus, 2017), in which respondents tend to provide socially acceptable answers rather than accurate accounts of their behavior. Additionally, cognitive dissonance (Colthirst-Reid, 2022) may have influenced the responses, as students may unconsciously downplay reports of "Lack of attention" in order to preserve a self-image consistent with their role as learners. Methodological research (Martins, Valentini, Bonfá-Araujo, Ferraz, Otoni, & Gonçalves, 2023) also indicates that response biases, such as acquiescence or the denial of negative traits, can distort results obtained from self-report instruments.

These findings may also indicate greater student engagement in tasks, as well as the need for complementary approaches to addressing distractions in interventions on self-regulated learning (Deng, Zhou, & Broadbent, 2024). Thus, it is recommended that future studies examine the issue of attention more

closely in order to determine whether the present findings stem solely from social desirability or whether interventions on self-regulated learning should place greater emphasis on strengthening students' attentional processes.

The increase in the mean score for the subcategory "Procrastination," although marginally significant, underscores the complexity of this behavior, which is often linked to emotional factors and self-management challenges (Alves, Soares, & Jardim, 2024). This finding is particularly relevant, as procrastination is one of the main obstacles faced by first-year students and can contribute to school dropout (Lindner, Zitzmann, Klusmann, & Zimmermann, 2023; Vieira & Góes, 2025). It is hypothesized that the intervention may not have been sufficiently intensive to address this behavior, indicating the need for additional strategies such as psychological support or mentoring programs (Martins & Fior, 2023, 2024; Morin-Huapaya, Yupanqui-Lorenzo, Tamayo, Acosta-Porzoliz, & Quispilaya-Capcha, 2023).

It is also important to consider another explanation for the increase in procrastination: students entering the program may initially exhibit higher levels of motivation and self-efficacy, given their success in passing a competitive entrance examination. Over the course of the semester, however, these beliefs may weaken as students face an increasing number of complex academic tasks, which may account for the rise in procrastination (Geara, Hauck Filho, & Teixeira, 2017).

The results also highlight the relevance of interventions that integrate cognitive and socioemotional aspects, such as anxiety regulation and motivation, which are critical factors for successful adaptation to higher education (Cruz & Lopes, 2024; Martins & Fior, 2024). Although no significant changes were observed in the categories "Motivation to learn" or "Emotions in learning," improvements in other subcategories suggest that the intervention contributed to a more supportive and reflective environment, as advocated by Silva and Trindade (2022).

In summary, the results presented and discussed above not only reinforce the effectiveness of courses designed to teach and promote self-regulated learning but also highlight the need for practical and dynamic interventions, particularly in the initial sessions. Such approaches enable a deeper exploration of each dimension of self-regulation and foster greater student motivation,

which may lead to a more comprehensive understanding of learning processes and more promising effects on students' study habits (Paiva, Lages, Moreira, Azevedo, & Oliveira, 2024).

Furthermore, it is necessary to examine the impact of ongoing actions throughout the semester, as well as the relationship between self-regulation and emotional indicators of learning (Morin-Huapaya, Yupanqui-Lorenzo, Tamayo, Acosta-Porzoliz, & Quispilaya-Capcha, 2023), given that the present study did not identify statistically significant differences in this subcategory, which is considered essential to the learning process.

Final Considerations

This study aimed to identify changes in the study habits of newly enrolled university students following their participation in a self-regulated learning intervention. The results indicate that this objective was achieved, as the effects of the intervention were observable across multiple dimensions according to students' self-reports.

The main findings revealed improvements in monitoring and regulation strategies, particularly in students' self-reflection on their learning processes, their comparison of performance across different moments of the semester, and their overall use of learning strategies. However, an increase was observed in students' perceived absence of planning strategies and in academic procrastination, and contradictory results emerged between attention and lack of attention.

Among the limitations of the study, the one-time nature of the intervention stands out, as it may not have been sufficient to consolidate lasting changes. Another limiting factor was the reliance on self-report data, which is susceptible to social desirability bias, particularly because students were invited to participate on the first day of the course and were informed of the study's objectives and methodology, which may have influenced their responses. Additionally, social desirability may have contributed to the contradictory results related to attention, as students may have downplayed negative behaviors to maintain a self-image aligned with that of a "good student." Conversely, it is also possible that, by the time of the posttest, students had developed

greater metacognitive awareness, resulting in more accurate reports of their self-regulatory skills.

For future research, it is recommended that longer and more diversified interventions be implemented, and that the sample be expanded to include students from other programs in order to examine the effectiveness of the approach across different academic contexts. Further studies focusing on attention-control strategies are also necessary, along with the development of additional initiatives aimed at strengthening planning strategies and reducing procrastination.

References

ALLIPRANDINI, Paula Miranda Zedu; SANTOS, Deivid Alex dos; RUFINI, Sueli Édi. **Autorregulação da aprendizagem e motivação em diferentes contextos educativos:** teoria, prática e intervenção. Londrina: Eduel, 2023.

ALVES, Paulo Roberto Soares da Silva; SOARES, Adriana Benevides; JARDIM, Maria Eduarda de Melo. Procrastination, time management and self-efficacy among university students**. Psico-USF**, v. 29, 2024.

ARVATZ, Avivit; PERETZ, Roee; DORI, Yehudit Judy. Self-regulated learning and reflection: A tool for teachers and students. **Metacognition and Learning**, v. 20, n. 1, 2025. DOI: https://doi.org/10.1007/s11409-025-09415-3.

BARDIN, Laurence. **Análise de conteúdo**. Lisboa: Edições 70, 2016. BORUCHOVITCH, Evely. Estratégias de aprendizagem e desempenho escolar: considerações para a prática educacional. **Psicologia Reflexão e Crítica**, v. 12, n. 2, p. 361-376, 1999.

BORUCHOVITCH, Evely. Autorregulação da aprendizagem: contribuições da psicologia educacional para a formação de professores. **Psicologia Escolar e Educacional**, v. 18, n. 3, p. 401-409, 2014. DOI: https://doi.org/10.1590/2175-3539/2014/0183759

BORUCHOVITCH, Evely. **Protocolo autorreflexivo "Quem sou eu como estudante".** (Manuscrito não publicação). Universidade Estadual de Campinas. Campinas, São Paulo, 2010.

CASALE, Karina Reche; BETTIOLI, Ana Luisa; SANTOS, Daniel Araújo dos; GRACIOLA, Marilda Aparecida Dantas; PELISSONI, Adriane Martins Soares; CONSONI, Juliana

Barbosa; MARCONDES, Fernanda Klein. Estratégias para promover a adaptação de alunos Ingressantes à Universidade, no ensino remoto emergencial: oficinas de autorregulação da aprendizagem e Plataforma Online Lt-kuraCloud. **Revista de Graduação USP**, v. 7, n. 1, p. 33-42, 2023. DOI: https://doi.org/10.11606/issn.2525-376X.v7i1p33-42.

COLTHIRST-REID, Mikayla. **Revisiting cognitive dissonance**: A closer look at the core assumptions of a classic theory (University of Western Ontario). 2022. Tese (Mestrado em Ciências) – Programa de Psicologia, University of Western Ontario, 2022.

CRUZ, José Ricardo Ribeiro; LOPES, Rosa Cristina Correia. Student Transition to higher education: a study on self-efficacy, stress, and psychological well-being. **Journal of Nursing Referência**, v. 6, n. 3, p. 1-7, 2024. DOI: https://doi.org/10.12707/RVI23.99.32553.

DENG, Liping; ZHOU, Yujie; BROADBENT, Jaclyn. Distraction, multitasking and self--regulation inside university classroom. **Education and Information Technologies**, v. 29, p. 23957-23979, 2024. DOI: https://doi.org/10.1007/s10639-024-12786-w.

FRONCZYK, Krzysztof; WITKOWSKA, Ewa. Social desirability dimensionality: One or two continua? **Current Issues in Personality Psychology**, v. 8, n. 3, p. 229-242, 2020. DOI: https://doi.org/10.5114/CIPP.2020.99946.

GEARA, Gabriela Ballardin; HAUCK FILHO, Nelson; TEIXEIRA, Marco Antonio Pereira. Construção da escala de motivos da procrastinação acadêmica. **Psico**, v. 48, n. 2, p. 140-151, 2017. DOI: https://doi.org/10.15448/1980-8623.2017.2.24635.

GÓES, Natália Moraes; BORUCHOVITCH, Evely. **Estratégias de aprendizagem**: como promovê-las? Petrópolis: Vozes, 2020.

KOPKE FILHO, Henrique. Repertório de estratégias de compreensão da leitura e conhecimento metacognitivo de professores de Língua Portuguesa. **Psicologia Escolar e Educacional**, v. 6, n. 1, p. 67-80, 2002.

LINDNER, Christoph; ZITZMANN, Steffen; KLUSMANN, Uta; ZIMMERMANN, Friederike. From procrastination to frustration: How delaying tasks can affect study satisfaction and dropout intentions over the course of university studies. **Learning and Individual Differences**, v. 108, 2023. DOI: https://doi.org/10.1016/j.lindif.2023.102373.

LOPES, Marina Isabel Lamas dos Santos. **Abandono escolar no ensino superior**: Levantamento das ocorrências no instituto politécnico de Bragança e análise dos fatores concorrentes. 2019. Dissertação (Mestrado em Educação) – Instituto Politécnico de Bragança, Escola Superior de Educação, 2019.

MARTINS, Gustavo Henrique; VALENTINI, Felipe; BONFÁ-ARAUJO, Bruno; FERRAZ, Adriana Satico; OTONI, Fernanda; GONÇALVES, André Pereira. Comparison of methods for controlling acquiescence bias in balanced and unbalanced scales. **Psico-USF**, v. 28, n. 4, p. 651-667, 2023. DOI: https://doi.org/10.1590/1413-82712023280401.

MARTINS, Maria José; FIOR, Camila Alves. Expectativas de universitários ingressantes sobre o ensino superior público. **Revista de Psicologia**, **Educação e Cultura**, v. 27, n. 1, p. 1-19, 2023. DOI: https://doi.org/10.58086/504a-pd65.

MARTINS, Maria José; FIOR, Camila Alves. Transição para o Ensino Superior: dificuldades vivenciadas por ingressantes no contexto de ensino remoto emergencial. **Revista de Educação PUC-Campinas**, v. 29, 2024. DOI: https://doi.org/10.24220/2318-0870v29a2024e9105.

MIOT, Hélio Amante. Avaliação da normalidade dos dados em estudos clínicos e experimentais. **Jornal Vascular Brasileiro**, v. 16, n. 2, p. 88-91, abr. 2017. DOI: https://doi.org/10.1590/1677-5449.041117.

MORIN-HUAPAYA, Julio Cesar; YUPANQUI-LORENZO, Daniel Edgardo; TAMAYO, María Julia Cómina; ACOSTA-PORZOLIZ, Renzo Pedro Eduardo; QUISPILAYA-CAPCHA, Kennedy Luigui. Role of procrastination as a mediator of self-efficacy and emotional state in academic situations. **Paidéia**, v. 33, 2023. DOI: https://doi.org/10.1590/1982-4327e3340.

MORTEL, Thea Van de. Faking it: Social desirability response bias in self-report research. **Australian Journal of Advanced Nursing**, v. 25, n. 4, p. 40-48, 2008.

PAIVA, Inês; LAGES, Ana Isabel; MOREIRA, Rita; AZEVEDO, Ângela; OLIVEIRA, Íris. Estudo preliminar de um programa de autorregulação para estudantes do ensino superior. **Revista Portuguesa de Investigação Educacional**, v. 28, p. 1-14, 2024. DOI: https://doi.org/10.34632/investigacaoeducacional.2024.16459.

PATTEN, Mildred; NEWHART, Michelle. Pre-experimental designs. In: PATTEN, Mildred; NEWHART, Michelle. **Understanding research methods**: An overview of

the essentials. 10. ed. New York: Routledge, 2018. p. 192–194. Disponível em: https://doi.org/10.4324/9781315213033

PAULHUS, Delroy. Socially desirable responding on self-reports. In: ZEIGLER-HILL, Virgil; Shackelford, Todd (Eds.), **Encyclopedia of personality and individual differences**, Springer, p. 1-6, 2017. DOI: https://doi.org/10.1007/978-3-319-28099-8_1349-1.

PINTRICH, Paul Richard. The role of goal orientation in self-regulated learning. In: BOEKAERTS, Monique; PINTRICH, Paul Richard; ZEIDNER, Moshe (org.). **Handbook of self-regulation**. New York: Academic Press, 2000.

SANTOS, Deivid Alex dos; ALLIPRANDINI, Paula Mariza Zedu. Intervenção em estratégias de aprendizagem: uma proposta de formação de professores em serviço. **Revista Portuguesa de Educação**, Braga, v. 37, n. 1, 2024. DOI: https://doi.org/10.21814/rpe.31405.

SELI, Helena; DEMBO, Myron. **Motivation and Learning Strategies for College Success**: A Focus on Self-Regulated Learning (6th ed.). Routledge, 2020.

SILVA, Cleyton Almeida; TRINDADE, Rosaria da Paixão. Práticas de autorregulação da aprendizagem aplicadas no combate à evasão no curso de engenharia de computação da UEFS. **Revista de Ensino de Engenharia**, v. 41, 2022.

THYER, Bruce. Pre-experimental group research designs. In: THYER, Bruce A. **Quasi-Experimental Research Designs**. New York: Oxford University Press, 2012.

VIEIRA, Gabriela; GÓES, Natália Moraes. Caracterização das estratégias de gerenciamento do tempo e da procrastinação acadêmica de estudantes de licenciatura. **Revista Educação & Formação**, Fortaleza, v. 10, 2025. Disponível em: https://revistas.uece.br/index.php/redufor/article/view/14963. Acesso em: 10 nov. 2025.

ZIMMERMAN, Barry Joseph. Academic studying and the development of personal skill: a self-regulated perspective. **Educational Psychologist**, v. 33, n. 2, p. 73-86, 1998.

ZIMMERMAN, Barry Joseph. **Attaining self-regulation**: A social cognitive perspective. In: BOEKAERTS, Monique; PINTRICH, Paul; ZEIDNER, Moshe (org.). Handbook of self-regulation. San Diego, CA: Academic Press, 2000.

ZIMMERMAN, Barry Joseph. Becoming a self-regulated learner: an overview. **Theory into practice**, v. 41, n. 2, p. 64-70, 2002.

ZIMMERMAN, Barry Joseph. From cognitive modeling to self-regulation: a social cognitive career path. **Educational Psychologist**, v. 48, n. 3, p. 135-147, 2013.

ZIMMERMAN, Barry Joseph; SCHUNK, Dale. **Handbook of self-regulation of learning and performance**. New York, NY: Taylor & Francis, 2011.

Prof. Natália Moraes Góes, PhD
São Paulo State University "Júlio de Mesquita Filho" (Marília – Brazil)
Research Group on Cognitivism and Education
Study and Research Group in Psychopedagogy
Research Group *Núcleo de Estudos em Teoria Social Cognitiva e Práticas Educativas – TSCPE*
Orcid id: https://orcid.org/0000-0003-2557-0934
E-mail: natalia.goes@unesp.br

Prof. Deivid Alex dos Santos, PhD
State University of Paraná (Campo Mourão – Brazil)
Research Group on Cognitivism and Education
Orcid id: https://orcid.org/0000-0002-2611-6947
E-mail: mensagemprodeivid@gmail.com

Translator's Name and E-mail
Nina Petek Fonseca
ninapetekwork@gmail.com

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