Article

Academic Performance of Excellence: The Impact of Self-Regulated Learning and Academic Time Management Planning

Abílio Afonso Lourenço * and **Maria Olímpia Paiva**

Institute of Education, University of Minho, Largo do Paço, 4710-057 Braga, Portugal; olimpiapaiva0212@gmail.com
* Correspondence: privadoxy@gmail.com

Abstract: The Program for International Student Assessment highlights the persistent lack of commitment and motivation among students worldwide in their school activities, which are resulting in decreased proficiency levels in reading, mathematics, and science. The magnitude of this phenomenon, with its clear social implications, suggests that we are facing a concerning quest for immediate answers and results. This research focuses on the impact of the relationships between self-regulated learning processes and the planning of time management that is dedicated to school activities on student performance, specifically in the subjects of the Mother Tongue and Mathematics. The instruments used for analysis included the Inventory of Self-Regulated Learning Processes, the Inventory of Time Management Planning, a personal data sheet, and a school data sheet. The sample in this study consisted of 688 students from primary schools in northern Portugal. The results reveal that self-regulated learning has a positive influence on how students plan time management, both in the short and long term. Additionally, a positive and statistically significant relationship is observed between short-term and long-term time management planning and students' academic performance. This study provides an in-depth perspective on the dynamics between these elements, shedding light on the crucial nuances that shape students' academic journeys.

1. Introduction

In a constantly evolving current context, one of the main concerns of educational research focuses on the dynamics associated with improving academic performance (AP), with a particular emphasis on the active role of the student in cognitive, behavioral, and motivational dimensions [1]. Information from the European Commission clearly highlights the fact that the Portuguese educational system, although not unique in this matter, exhibits noticeable weaknesses regarding academic performance [2].

In the domain of self-regulated learning (SRL), research has focused on how students proactively take control of their learning, guiding and regulating their cognition, motivation, and behavior towards previously established goals [3]. Simultaneously, this approach fosters the development of an educational culture aimed at promoting SRL as a fundamental goal in the psychopedagogical projects of schools [4].

Students engaged in SRL employ cognitive and metacognitive processes before, during, and after the learning process [5] while aiming to monitor their cognition, motivation, learning environment, and behavior [6]. This trend suggests that the student demonstrates conscious agency in their learning process, which is reflected in the confirmation of the concrete nature of thinking and an awareness of the instrumentality of learning tasks, thus guiding them towards a more profound approach [7].

Previous research has indicated that students instructed in SRL strategies, such as goal setting, information seeking, and help seeking, engage more deeply in school tasks and demonstrate higher academic performance [8,9]. A strategy to enhance academic success involves the application, in the classroom context, of metacognitive approaches (e.g., goal setting and knowledge activation), motivational approaches (such as self-efficacy perception and task value activation), and behavioral approaches (including time and effort planning and seeking assistance). Through these practices, students become more actively involved in the learning process, taking on the stance of active agents and assessing the effectiveness of their study methods [10].

Similarly, the way students organize their time to carry out school activities is widely recognized as a crucial element for educational success, as emphasized in various studies [11,12]. Consecutive reports from the Organization for Economic Cooperation and Development [13] indicate that, in many countries, this issue is considered by a significant portion of social and educational stakeholders as a fundamental component for success in learning, not only in the school environment but also in various individual life contexts.

The academic time management planning (ATMP) of students, and, more broadly, SRL, do not appear as isolated factors of concern in the school context. On the contrary, they form part of a comprehensive concept that encompasses various other elements, such as the responsibility and motivation of stakeholders, the characteristics and composition of the class group, the psychosociological climate of the school, the personality and pedagogical approach of the involved teachers, the curriculum and school practices, the very nature of school life, and family support [14].

Although the relationship between AP and study methods, as assessed with multidimensional scales, may not always be significant and may decrease with academic progression, students with higher cognitive competence demonstrate greater SRL abilities. These students use more learning strategies to regulate their behavior and modify their environment, thereby effectively planning their time in academic activities [14]. As a result of this effort, they become more proficient and consequently achieve better academic outcomes. SRL strategies, including dedicated time management planning for academic activities, should serve as a guiding thread in school activities.

In this context, there arises an urgent need to identify variables that contribute to defining a comprehensive framework in which ATMP fits into school activities, given that it is a crucial element in explaining students' academic performance [12]. Given the multitude of variables influencing the organization of school time management, this study aims to analyze the extent to which the way that students outline ATMP in their school tasks, both in the short and long term, can be influenced by processes associated with SRL. The study also seeks to understand how these constructs impact students' AP, considering the subjects of mother tongue and mathematics, which are considered central in the curriculum for students in basic education (7th, 8th, and 9th grades) in Portugal.

The constructs under study are as follows:

(1) Self-regulated learning (SRL)

Reflecting on research conducted over the last three decades on SRL, it can be inferred that it is a fundamental construct in learning processes that demonstrates clear implications for AP [15–17]. SRL refers to the process by which students systematically activate and maintain cognitions, emotions, and behaviors that are oriented towards achieving predefined goals [14,18], thus assuming a crucial role in understanding the educational landscape.

The initial investigations into self-regulation processes in educational contexts focused on analyzing cognitive strategies, such as monitoring and time management, and their impacts on learning [17]. These studies indicated the need to deepen the understanding of the behavioral dimension through exploring motivational and self-regulation processes in relation to learning and academic success [19]. Applying the framework of self-regulation to educational processes highlighted the procedural dynamics of learning and expanded the explanatory discussion of performance discrepancies achieved by individuals as a means to drive academic success.

However, given its comprehensiveness, this concept could encompass virtually all procedural variables of learning. The process of self-regulation involves the mastery and management of a set of elements that prove essential for high-quality learning and, presumably, for academic mastery by students [4].

In a more recent period, research on this topic has focused on motivational variables such as goal setting, causal attributions, self-efficacy, instrumentality, volition, ATMP, and procrastination, with the latter being understood as the act of postponing academic tasks [14,20–22].

(2) Academic Time Management Planning (ATMP)

Research on study skills includes ATMP by students as one of the essential aspects of learning strategies, and together with SRL it should provide guidance in academic activities [23]. In this context, as highlighted by [24], it is crucial to understand students and to adopt distinct approaches and strategies that correspond to their needs, aiming to assist them in organizing their studies and ATMP for all school activities. The authors also mention that the differentiation between students with academic failure versus success is associated with variables such as the structure of academic time, confidence in skills with perceptions of self-efficacy, linking performance to effort, study methods, task concentration, information selection, self-control in assessment situations, perseverance, and the use of structured personal notes.

In light of the analysis by [25], ATMP has been conceived as a purpose-driven process that involves assessing the use of time, goal setting, planning, monitoring, and prioritizing tasks to achieve predefined objectives. More specifically, the authors outline steps to facilitate ATMP, including diagnosing time use, developing strategies to deal with difficulties, setting goals and objectives, and implementing and evaluating changes. As a result of these efforts, students become more competent and, consequently, achieve better academic outcomes.

In the realm of the intervention under analysis, Ref. [26] proposes that students with notable AP tend to set goals, calculate the time needed for task completion, and adopt a rigorous study routine. Additionally, they have the habit of systematically assessing the progress made in the learning process, thus mitigating the impact of procrastination on their school activities.

Although the relationship between AP and study methods, as assessed by multidimensional scales, may not always show significance and may decrease with educational progression [18,27], students with higher cognitive competence demonstrate greater SRL abilities. These students implement more strategies to adjust their behavior and adapt to the environment while managing their time more efficiently in academic activities than do other students. As a consequence of these efforts, they achieve higher proficiency and, consequently, obtain superior academic results [28,29].

(3) Academic Performance (AP)

AP should be understood to be a complex system that defines the competence a student develops throughout their educational journey, thus reflecting the academic knowledge acquired during that period [30]. Generally, this competence is assessed quantitatively through routine tasks, tests, and exams in which students demonstrate, through their responses, what they have learned during classes [31].

Furthermore, in the literature it is common to use specific tests to quantify this performance, although this approach does not overlook the importance of qualitative aspects, such as social and interpersonal issues, which play crucial roles in the manifestation of AP [32].

Within this perspective, AP can be shaped by elements associated with the environment as well as those related to the individual, being equally influenced by the interaction between these domains [33], and it is intrinsically linked to effective SRL [14].

Thus, by recognizing that students are influenced, act, modify environments, and live in society, the school must understand these interactions, adopting goal-oriented approaches to students and aiming to promote more effective AP. Students' goals and motivations are

personal and can be influenced by future perspectives, family connections, and interactions with teachers and school peers, which also exerts an impact on their AP [34].

2. Materials and Methods

2.1. Study Hypotheses

Examining the scientific products of recent years, the relevance attributed to how ATMP is considered in school activities becomes evident, with this construct highlighted as a crucial pillar in educational success [11,35]. It is worth noting that the way in which students manage their time stands as an essential condition for the effective implementation of SRL strategies.

Therefore, the absence of explanatory models prompts the development of a proposal to investigate in a more in-depth manner all aspects covered by the variables under study. This represents the primary challenge to be addressed in this research that is aiming for a deeper understanding of the architecture of the processes involved in ATMP.

Upon examining the results of various empirical studies, it becomes possible to infer that the constructs under analysis maintain relationships among themselves and have a predictive effect on students' AP. The results show that AP is directly influenced by ATMP dedicated to school activities 22], as well as by SRL strategies implemented during school activities [4].

In this context, positive and significant associations are expected to be found between SRL and short- and long-term ATMP, in addition to the expectation of finding that short-term ATMP positively influences long-term ATMP. Similarly, both short- and long-term ATMP are expected to have a positive impact on students' AP.

2.2. Participants

The sampling process was non-probabilistic (convenience sampling), which is a technique referred to by [36] as suitable for being used when there are no specific criteria for including someone in the sample. Each element of the population can be a participant and is eligible to be part of the sample. Its advantages include being a quick, cost-effective, easily collected method with fewer rules. However, a limitation is that there is no guarantee that the samples are unbiased.

This study included 688 students from the 3rd Cycle of Basic Education (CBE; 7th, 8th, 9th grades) in public schools in Portugal, of which 355 (51.6%) were female. Among them, 277 (40.3%) students were attending the 7th grade, 193 (28%) students were attending the 8th grade, and 218 (31.7%) students were attending the 9th grade. Student ages ranged from 12 to 17 years (Mean = 13.8; SD = 1.175).

Regarding school assessments, the average obtained in Portuguese subject grades was 3.01 (SD = 0.856), and in mathematics, it was 2.83 (SD = 0.963).

2.3. Instruments

Self-Regulated Learning—To examine students' self-regulatory processes, the Self-Regulated Learning Processes Inventory (SRLPI; [37]) was employed. This instrument comprises a total of nine items distributed across three dimensions, each with three items: planning (α= 0.84; e.g., "I elaborate a plan before starting a task. I think about what I am going to do and what is necessary to complete it"); execution (α = 0.78; e.g., "During classes or in my home study, I reflect on specific aspects of my behavior to change and achieve my goals") and evaluation (α = 0.85; e.g., "When I receive a grade, I reflect on specific aspects that I need to adjust to improve"). Teacher responses were assessed on a five-point Likert scale, ranging from 1 (never) to 5 (always).

The SRLPI's main goal is to assess students' SRL processes, taking into account their individual characteristics and learning contexts. The concept of self-regulation is polysemic, and there is no simple and direct definition that encompasses the complexity of its nature. For the student, it involves mastering and managing a set of factors that are key elements in achieving high-quality learning and, predictably, academic success [37].

Academic Time Management Planning—the Time Management Planning Inventory (TMPI; [38]) was used, which is a psychometric scale that allows the examination of how students manage their academic time, what their attitude is towards this management, and how they plan their school periods, both in the short and long term.

This questionnaire can be used as an assessment tool for students' opinions and attitudes regarding some aspects associated with short-term time management (α = 0.89; e.g., "I make a daily list of tasks I need to perform") and long-term time management (α = 0.83; e.g., "I organize my study according to the test schedule"). The TMPI consists of 12 items distributed across two dimensions, with six items for each short-term and long-term dimension. Individuals respond by indicating to what extent the statement in question is true for themselves. Thus, time management planning in the school context can be assessed by summing the scores on the respective subscales. A five-point Likert scale was used to rate the responses, ranging from 1 (never) to 5 (always).

Academic Performance—the assessment of students' academic performance was based on the grades obtained in the subjects of the native language (Portuguese) and mathematics. These subjects were chosen because they are mandatory in the Portuguese school curriculum, have higher failure rates than other subjects [13], and are assessed in a national exam in the 9th year. In the context of basic education in Portugal, grades are distributed as follows: one and two (insufficient); three (sufficient); four (good); and five (very good).

2.4. Procedures

After obtaining authorization from the school administrators for questionnaire administration, they were distributed accordingly. In most schools, the questionnaires were left with administrative staff and later collected. In other cases, the questionnaire was administered in the presence of the researcher, and students were instructed to respond honestly without omitting any items. This study was conducted according to [39] and to the ethical guidelines of the American Psychological Association (APA). All students expressed their willingness to participate in the research and contributed voluntarily, and conventional ethical and professional procedures, including the confidentiality of responses, were ensured.

2.5. Data Analysis

Structural Equation Modeling (SEM) was employed to validate the predictive analysis of the relationships between the variables being studied using SPSS/AMOS25 software [40]. The overall fit of the model represents the degree to which the established model fits the covariance matrix of the data, and the assessment of the robustness of the SEM results was based on two criteria: the overall fit of the model and the significance of the calculated regression coefficients. Prior to analysis, all cases with missing values were excluded from the analysis. Moderately atypical values were retained as the sample's descriptive statistics remained appropriate. Modification indices were avoided to prevent making the model overly complex.

In the preliminary descriptive analysis of the data, maximum criteria for skewness (<2) and kurtosis (<7) were adopted as an approach for demonstrating normality [41]. The model's adequacy was assessed using popular fit indices, such as the Chi-square (χ^2) test, Chi-square/degrees of freedom (χ^2/df), the Goodness-of-Fit Index (GFI $\geq$ 0.90), the Adjusted Goodness-of-Fit Index (AGFI $\geq$ 0.90), the Comparative Fit Index (CFI $\geq$ 0.95; [42]), the Tucker–Lewis index (TLI $\geq$ 0.95; [43]), the Root Mean Square Error of Approximation (RMSEA < 0.05; [44]), and the Critical N (CN > 200; [45]) value, with the latter indicating that the sample size is adequate.

To assess the reliability of each scale's dimensions, Cronbach's alpha coefficient with a confidence interval (CI) (>0.70; [46]) was used. This reliability-testing technique can provide a single estimate of reliability based on just one administration of the test. The association between study variables was tested using the Pearson coefficient, which measures the

direction and degree of the linear relationship between two quantitative variables; in other words, it is a measure of the shared variance between two variables. Thus, it is assumed that values below 0.200 indicate very low association, values 0.200–0.399 indicate low association, values 0.400–0.699 indicate moderate association, values 0.700–0.899 indicate high association, and values 0.900–1 indicate very high association [43].

3. Results

Table 1 presents descriptive data (mean, standard deviation, skewness, kurtosis) for the variables considered in the SEM following the criteria of [43]. In the sample, none of the variables display values close to these criteria, justifying the need to estimate the model fit.

Table 1. Descriptive statistics of variables included in the model.

Variable	Min.	Max.	Mean	SD	Skewness	Kurtosis
Planning (SRL)	3	15	11.33	2.755	−0.830	0.854
Execution (SRL)	3	15	10.83	3.016	−0.628	0.074
Evaluation (SRL)	3	15	10.94	3.134	−1.036	0.754
atmp8lt	6	30	3.89	1.330	−0.925	−0.399
atmp18st	1	5	2.67	1.399	0.286	−1.158
atmp17lt	1	5	3.15	1.170	−0.197	−0.649
atmp12lt	1	5	4.03	1.155	−1.211	0.700
atmp1st	1	5	2.53	1.326	0.376	−0.967
atmp3st	1	5	2.77	1.312	0.163	−1.031
atmp9st	1	5	2.47	1.383	0.504	−1.021
atmp15st	1	5	3.11	1.282	−0.248	−0.934
atmp11st	1	5	2.61	1.276	0.338	−0.883
atmp10lt	1	5	3.38	1.274	−0.360	−0.874
atmp7lt	1	5	4.07	1.158	−1.282	0.894
atmp4lt	1	5	3.71	1.247	−0.808	−0.335
Academic Performance	2	10	5.84	1.673	0.615	0.048

Legend: atmp—academic time management planning; st—short-time; lt—long-time; SD—standard deviation.

Regarding the obtained values for the global fit indices of the proposed SEM, they proved to be robust [$\chi^2(100) = 159.971$; $p = 0.000$; $\chi^2/\text{gl} = 1.592$; GFI = 0.970; AGFI = 0.960; TLI = 0.984; CFI = 0.986; RMSEA = 0.029 (90% CI: 0.020–0.038); and CN (0.05/537–0.01/587)], validating the hypothesis that the proposed model reflects the relationships between the variables present in our empirical matrix.

Upon examining Figure 1 and Table 2, the confirmation of the hypotheses that guided the specifications is evident, and all of them were positive and statistically significant. Thus, it was observed that students with higher levels of SRL tended to plan more for the short-term (H1; $\beta = 0.46$; $p < 0.001$) and long-term (H2; $\beta = 0.48$; $p < 0.001$) time management of their school activities. Additionally, it was noted that those who planned more for the short term also tended to do so for the long term (H3; $\beta = 0.36$; $p < 0.001$). From Figure 1, it can also be inferred that the AP is positively influenced by both students who plan their school tasks in the short term (H4; $\beta = 0.21$; $p < 0.001$) and those who do so in the long term (H5; $\beta = 0.29$; $p < 0.001$).

Table 2. Results of the hypothesized covariance structure for the sample.

Hypotheses			UEV	SEV	EE	*p*
short-term planning	←	self-regulation	0.240	0.464	0.025	***
long-term planning	←	self-regulation	0.222	0.485	0.024	***
long-term planning	←	short-term planning	0.322	0.363	0.040	***
atmp11st	←	short-term planning	0.870	0.709	0.046	***
atmp15st	←	short-term planning	0.864	0.700	0.046	***
atmp4lt	←	long-term planning	1.000			
atmp7lt	←	long-term planning	0.873	0.694	0.051	***

Table 2. *Cont.*

	Hypotheses		UEV	SEV	EE	*p*
atmp10lt	←	long-term planning	0.892	0.644	0.057	***
atmp9st	←	short-term planning	1.001	0.752	0.049	***
atmp3st	←	short-term planning	1.005	0.796	0.046	***
atmp1st	←	short-term planning	1.000			
atmp12lt	←	long-term planning	0.941	0.750	0.051	***
atmp17lt	←	long-term planning	0.726	0.571	0.052	***
atmp18st	←	short-term planning	1.047	0.777	0.049	***
atmp8lt	←	long-term planning	0.894	0.619	0.059	***
execution	←	self-regulation	1.036	0.690	0.070	***
evaluation	←	self-regulation	1.133	0.726	0.074	***
planning	←	self-regulation	1.000			
academic performance	←	short-term planning	0.340	0.211	0.079	***
academic performance	←	long-term planning	0.519	0.285	0.092	***

Legend: atmp—academic time management planning; st—short-time; lt—long-time; UEV—Unstandardized Estimated Values; SEV—Standardized Estimated Values; EE—Estimated Errors; Significance Level (*p*); ***—*p* < 0.001.
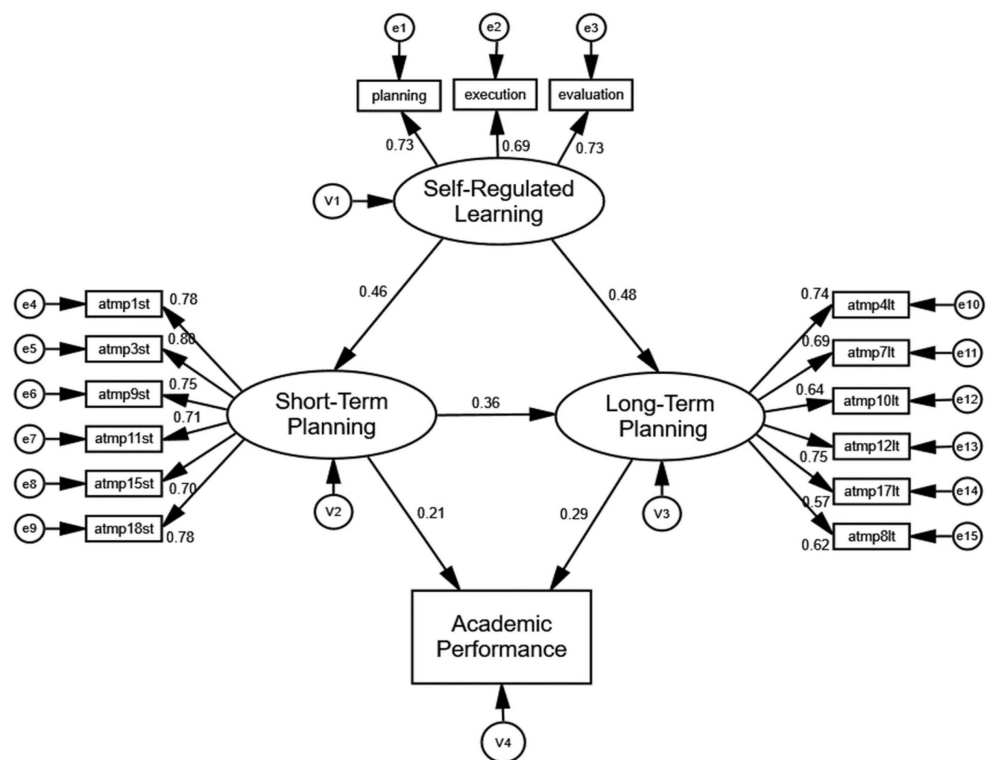

Figure 1. Pictorial specification of the causal model with standardized values.

4. Discussion

This research sought to investigate how SRL processes can influence students' ATMP in their school activities, both in the short and long term, and how these variables impact their AP. The scarcity of literature attempting to establish relationships between these constructs is evident, and investigations employing SEM methodology are limited. Therefore, considering the educational implications of this research, the aim is to broaden the analysis of relationships between the study variables using this analytical method, which considers all direct and indirect effects simultaneously. In this context, by examining the relationships between the considered variables, the study data confirmed the hypotheses proposed in the model.

Regarding hypotheses H1 and H2, it is evident that students who exhibit higher SRL plan their school tasks more comprehensively, both in the short and long term, corroborating the hypotheses outlined in the model. By demonstrating higher levels of self-regulatory processes, they are more inclined to perform effective planning, both in the short and long term, revealing a holistic approach to ATMP in school activities. This tendency can be explained in light of the understanding of SRL and ATMP, as indicated by some authors [14,22].

From the analysis of the results with the most value with regard to SRL, students mention that most of the time they develop a plan before starting a task, they look for a quiet and focused place to study, and when they receive a less favorable assessment they think about concrete measures to improve. However, they consider it of little importance to stick to the study schedule they have set, and when they do not, they reflect on the reason for this behavior, drawing conclusions for later assessment of their study time. This finding suggests that SRL strategies, including attitudes of ATMP, should play a guiding role in academic activities, as mentioned by [24].

In this context, ATMP proves to be crucial for the organization and effectiveness of school activities, encompassing the assessment of time use, goal setting, planning, and task prioritization [25]. Students who adopt ATMP can calculate the time needed for tasks, set clear goals, and systematically evaluate progress, thus reducing procrastination in school activities [26].

For the improvement of SRL skills, it is imperative that teachers reflect on the teaching and learning process, considering learning as a personal experience in which the student must engage actively, autonomously, in an informed way, and with dedication [29]. To achieve this goal, it is crucial to build learning environments that foster the underlying processes of SRL and ATMP in school activities, where both students and teachers understand the complementarity of their roles and implement realistic models of SRL.

In this context, the primary role of teachers will be to assist students in taking responsibility for their own learning process, understanding simultaneously that only truly self-regulated teachers and educators involved in daily classroom activities can induce self-regulatory strategies in their students [24]. Thus, the combination of SRL and ATMP empowers students to plan comprehensively, ensuring effective time management both in the short and long term, resulting in superior AP.

Similarly, when analyzing students' perceptions of ATMP in the two dimensions that make up the construct, it can be inferred that the way students plan and manage time in their short-term school activities has a positive impact on ATMP in the long term, thus confirming hypothesis H3.

Analysis of the results obtained in this study shows that students express that, in short-term ATMP, they attribute more value to creating a daily work schedule and setting daily goals. However, they undervalue the effort required to organize their study schedule daily. Regarding long-term ATMP, students recognize the importance of their daily actions for the future and have clarity about the grades they aim to achieve in the next school period. However, they do not attribute as much importance to resisting temptations that may interfere with their academic activities. Considering both dimensions, it is observed that students who engage in more effective short-term planning tend to do the same in the long term.

The ability of self-regulated students to plan for the long term, which is derived from their short-term planning, can be explained by their capacity to establish enduring goals, systematically assess progress, and adopt a consistent study routine, as emphasized by [26]. These students can maintain a long-term perspective regarding their educational objectives, contributing to consistent planning over time, which can be explained by the similarly weighted values obtained in the model influenced by SRL processes.

Effectively, this pattern reflects these students' inclination towards effective time management, incorporating a holistic approach to their engagement with school activities [24]. The analysis of results emphasizes the importance of SRL strategies, especially ATMP, in

guiding academic activities. The ability for self-direction, coupled with efficient time planning, enhances academic performance, fostering an environment conducive to educational development and the achievement of academic goals.

Regarding AP, it is confirmed to be directly and positively influenced by both short-term (H4) and long-term (H5) ATMP in school activities. This result aligns with the research of [25], thus defining ATMP as a purpose-driven process encompassing time-use assessment, goal setting, planning, monitoring, and task prioritization to achieve proposed objectives. Specifically, the authors outline steps to aid in time management planning, including time-usage evaluation, developing strategies to address challenges, goal setting, and the implementation and evaluation of changes. As a result of these efforts, students become more competent, consequently achieving better academic outcomes.

In this regard, [17] emphasizes that ATMP is intrinsically linked to SRL, involving students' ability to set goals, establish priorities, and implement effective strategies to meet deadlines and academic objectives. The skill of balancing time across various tasks and disciplines is crucial in fostering more effective learning and enabling higher AP. In this sense, it becomes relevant to understand students and adopt diverse approaches and strategies to meet their needs, aiming to assist them in organizing their studies and planning school time management. The distinction between successful and unsuccessful students is correlated with variables such as the structure of the academic schedule, study methods, and the connection between performance and effort [24]).

Following this course of action, Ref. [26] suggest that students with more notable AP tend to set goals, calculate the time required for task execution, and maintain a meticulous short- and long-term study routine. Moreover, they frequently assess progress in the learning process, thus reducing the impact of procrastination on their school activities. The authors contribute to the discussion by emphasizing that time planning goes beyond mere study hours, encompassing the quality and depth of engagement in school activities. Conscious planning enables students to dedicate themselves not only to meeting deadlines but also to a profound understanding of content, promoting more meaningful learning.

Efficient time management by students in their school activities, which is associated with SRL processes, represents a key element in optimizing AP. Various studies underline the crucial importance of time planning for educational success, in which the relationship between SRL and ATMP is evident [17,25,26]. A conscious and strategic approach to time management not only contributes to the effective achievement of academic goals but also acts as a moderating variable, strengthening students' ability to actively guide their own learning process.

In this context, the research by [22] emphasizes the importance of SRL in goal setting, planning, and self-regulation, which are fundamental elements for achieving academic success. Thus, by fostering and encouraging effective SRL processes, students not only enhance their academic performance but also develop skills that are crucial for their long-term academic success [47,48]. This holistic approach, which is grounded in the contributions of these authors, underscores the significance of self-directed learning for the academic and personal flourishing of students.

In this way, it becomes imperative to identify the variables contributing to the framework of intelligibility in which SRL develops, as it is an explanatory construct for students' AP. The acknowledgment of this reality stems from the fact that students with self-regulatory skills are those who possess knowledge of learning strategies and apply them appropriately. These students reflect on their own learning process and have strategies to monitor, control, and intervene in their behavior for the sake of learning [47]. In other words, they are aware of their thoughts and use cognitive strategies to achieve learning objectives.

On the other hand, according to [4], ATMP, when considered as a moderating variable between SRL and AP, has the ability to anticipate the type of behavior from both teachers and students. This means that any student behavior related to ATMP during school tasks can be a consequence of observing how the teacher plans and manages their time in the

classroom. The authors emphasize that this finding highlights the importance of teachers paying attention to their performance in the classroom and demonstrating control over their activities in front of students. They should also provide feedback to draw students' attention to tasks and internalize the importance of time management in school activities.

The presented results highlight the contribution of SRL and ATMP to students' academic success, challenging teachers and educators to deeply reflect on students' beliefs regarding learning. These findings have significant implications for research in the field of education, as they demonstrate that the variables under investigation not only precede and determine study behaviors but also point to the importance of promoting self-regulatory stimuli both in the classroom and during personal study at home. Recognizing that the reasons students engage in learning directly influence the quality of their outcomes, the results of this study underscore the need for a more holistic and proactive approach in the educational process. Acknowledging the complexity of the learning process underscores the importance of viewing the student as an active protagonist in constructing their own knowledge, thus reinforcing the relevance of this study for advancing educational research [14].

Limitations and Future Research

Despite presenting interesting results and significant contributions, the implications arising from this study should be examined with due care, taking into account certain limitations. It is acknowledged that the proposed model incorporates theoretically relevant variables for explaining students' AP, making it crucial for future studies to expand the sample while adopting a multilevel approach. Additionally, all data were obtained through self-report questionnaires, which may not be sufficient to capture real-time responses in teaching and learning contexts. In this regard, future studies should explore AP using qualitative methodologies such as using interviews or focus groups and examining students with continuous success over time and repeated failure over time to compare potential differences.

From the results, it is also noticeable that the model shows a considerable unexplained variance in students' AP, suggesting the possible existence of other predictive variables that are crucial for its enhancement. These variables would need to be incorporated into future investigations. Despite this study being conducted with a substantially robust sample (N = 688), it is not intended for this contribution to be generalized to the entire population of the 3rd CBE, as its main objective is to provide insights into the implications of the analyzed constructs across different grade levels. Above all, the aim is to encourage further research into this issue.

5. Conclusions

Upon systematically examining successive PISA reports [13]), the pressing need to explore predictive variables for academic success becomes evident. From the literature review in the educational field, the importance of studying factors that can enhance students' engagement levels in school, particularly in cognitive, behavioral, and emotional dimensions, is apparent. Assigning value to tasks or to self-regulation methods so as to learn and examine how students plan time management in their school activities poses significant challenges to be addressed, as they have direct implications for how students engage in the teaching and learning process. A student who values proposed school tasks, commits to self-regulatory strategies in their learning process, and plans a proper and intelligent time management approach for school activities is undoubtedly moving towards academic excellence [48].

Despite the relatively recent recognition of the importance attributed to ATMP in carrying out school activities, research conclusions in this field highlight a significant impact on understanding our students' behavior with regard to how they organize their daily lives [23]. If teachers and educators possess knowledge in this specific area and promote and utilize it in their pedagogical practice, then it will result in an improvement in

the quality of time management dedicated to various school tasks [4]. Thus, all participants in the educational process can intervene appropriately and timely in any dysfunctions that may arise, establishing, among other strategies, objectives that are specific, realistic, and assessable, with which students can identify and which they can fulfil [12].

In conclusion, it can be asserted that schools have the capacity and responsibility to play a significant role in promoting the improvement of their students' education. Only a profound understanding of the elements that influence and regulate learning, particularly self-regulatory processes and how students plan and manage time in school activities, can contribute to enhancing the quality of learning and the development of autonomous, self-regulated, and proficient students.

References

1. Alliprandini, P.M.Z.; dos Santos, D.A.; Rufini, S.É. *Autorregulação da Aprendizagem e da Motivação em Diferentes Contextos Educativos: Teoria, Aprendizagem e Intervenção*; EDUEL: Londrina, Brazil, 2023.
2. European Commision. Digital Education Action Plan (2021–2027): Resetting Education and Training for the Digital Age; EUDigitalEducation: 2018. Available online: https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en (accessed on 2 February 2024).
3. Zimmerman, B.J.; Schunk, D. Self-regulated learning and performance: An introduction and an overview. In *Handbook of Self-Regulation of Learning and Performance*; Zimmerman, B.J., Schunk, D., Eds.; Routledge: New York, NY, USA, 2011; pp. 1–15.
4. Lourenço, A.A.; Paiva, M.O.A. Variáveis preditivas do rendimento escolar. In *Atas dos Dias da Investigação na UFP Research Days Proceedings*; eBook; Gabinete de Relações Internacionais e Apoio ao Desenvolvimento Institucional: Porto, Portugal, 2017; pp. 602–618. ISBN 978-989-643-144-0.
5. Arcoverde, A.R.R.; Boruchovitch, E.; Góes, N.M. Programa de intervenção em autorregulação da aprendizagem: Impacto no conhecimento e nas percepções de estudantes de licenciatura. *Rev. Educ.* **2022**, *27*, 1–15. [CrossRef]
6. Silva, C.; Veiga, F.H.; Silva, E.; Ribas, A. Retenção Escolar: Será o envolvimento dos alunos na escola um bom preditor. In *Atas do III Congresso Internacional Envolvimento dos Alunos na Escola: Perspetivas da Psicologia e Educação—Inclusão e Diversidade*; Veiga, F.H., Carvalho, C., Raposo, S., Pereira, A., Marinha, F., Faria, L., Oliveira, Í., Melo, M., Piedade, J., García, Ó., et al., Eds.; Universidade de Lisboa, Instituto de Educação: Lisboa, Portugal, 2019; pp. 13–23.
7. Figueira, A.I.; Duarte, A.M. Concepções de aprendizagem em estudantes portugueses do primeiro ciclo do Ensino Básico. *Psicologia* **2019**, *30*, e180164. [CrossRef]
8. Costa, E.R.D.; Assis, M.P.D.; Teixeira, I.V. Estratégias de autorregulação da aprendizagem e formação de professores: Revisão sistemática do período 2014–2019. *Pro-Posições* **2022**, *33*, e20200070. [CrossRef]
9. Pereira, C.N. Desenvolvimento Socioemocional Pós-pandemia: O Caso de uma IPSS Direcionada à Camada Infantojuvenil. *Rev. Interacções* **2023**, *19*, 1–18.
10. Valle, J.W.; Connor, D.J. *Rethinking Disability: A Disability Studies Approach to Inclusive Practices*, 2nd ed.; Routledge: New York, NY, USA, 2019.
11. Froehlich, D.E.; Beausaert, S.; Segers, M. Aging and the motivation to stay employable. *J. Manag. Psychol.* **2016**, *31*, 756–770. [CrossRef]

12. Lemos, T.L.; Santos, F.A.L.; Oliveira, T.M.; Lima, W.P.; Félix, T.L.L.; Oliveira, T.L.; Souza, J.G.; Neto, I.C.P. Hábitos de estudo de acadêmicos de fisioterapia em ensino remoto. *Res. Soc. Dev.* **2022**, *11*, e59111125433. [CrossRef]

13. OCDE. Report of the Programme for International Student Assessment (PISA 2023), Paris. 2023. Available online: https://eco.sapo.pt/2023/12/05/pisa-o-estado-da-educacao-em-cinco-graficos/ (accessed on 31 January 2024).

14. Lourenço, A.A.; Paiva, M.O.A. Autorregulação da aprendizagem uma perspetiva holística. *Ciências Cognição* **2016**, *21*, 3–51. Available online: https://www.cienciasecognicao.org/revista/index.php/cec/article/view/1037 (accessed on 4 February 2024).

15. Bandura, A. Social cognitive theory in cultural context. *Appl. Psychol.* **2002**, *51*, 269–290. [CrossRef]

16. Boekaerts, M.; Corno, L. Self-Regulation in Classroom: A Perspective on Assessment and Intervention. *Appl. Psychol.* **2005**, *54*, 199–231. [CrossRef]

17. Zimmerman, B.J. Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *Am. Educ. Res. J.* **2008**, *45*, 166–183. [CrossRef]

18. Zimmerman, B.J. Becoming a Self-Regulated Learner: An Overview. *Theory Into Pract.* **2002**, *41*, 64–70. [CrossRef]

19. Schunk, D.H.; Zimmerman, B.J. *Motivation and Self-Regulated Learning. Theory, Research and Applications*; Lawrence Erlbaum: New York, NY, USA, 2008.

20. Paiva, M.O.A.; Lourenço, A.A. A influência da aprendizagem autorregulada na mestria escolar. *Estud. Pesqui. Psicol.* **2012**, *12*, 501–520. [CrossRef]

21. Paiva, M.O.A.; Lourenço, A.A. Abordagens à aprendizagem: A dinâmica para o sucesso académico. *Rev. CES Psicol.* **2015**, *8*, 47–75.

22. Wolters, C.A.; Brady, A.C. College Students' Time Management: A Self-Regulated Learning Perspective. *Educ. Psychol. Rev.* **2021**, *33*, 1319–1351. [CrossRef]

23. Umerenkova, A.G.; Flores, J.G. El papel de la procrastinación académica como factor de la deserción Universitária. *Rev. Complut. Educ.* **2017**, *28*, 307–324. Available online: https://repositorio.unbosque.edu.co/bitstream/handle/20.500.12495/1719/Umerenkova%20A.G.,%20Flores%20J.G._2017.pdf?sequence=1&isAllowed=y (accessed on 4 February 2024). [CrossRef]

24. Lourenço, A.A.; Nogueira, C.M.L. Perceções sobre as abordagens à aprendizagem: Estudo de variáveis psicológicas. *Educ. Filos.* **2014**, *28*, 323–372. [CrossRef]

25. Marcilio, F.C.P.; Blando, A.; Rocha, R.Z.; Dias, A.C.G. Guia de Técnicas para a Gestão do Tempo de Estudos: Relato da Construção. *Psicol. Ciência Profissão* **2021**, *41*, e218325. [CrossRef]

26. Thibodeaux, J.; Deutsch, A.; Kitsantas, A.; Winsler, A. First-Year College Students' Time Use. *J. Adv. Acad.* **2017**, *28*, 5–27. Available online: https://doiorg.libproxy.cortland.edu/10.1177/1932202X16676860 (accessed on 13 February 2024). [CrossRef]

27. Almeida, L.S.; Canelas, C.; Rosário, P.; Núñez, J.C.; González-Pienda, J. Métodos de Estudo e Rendimento Escolar: Estudo com Alunos do Secundário. *Rev. Educ.* **2005**, *13*, 63–74.

28. Ganda, D.R.; Boruchovitch, E. A autorregulação da aprendizagem: Principais conceitos e modelos teóricos. *Psicol. Educ.* **2018**, *46*, 71–80.

29. Paiva, M.O.A.; Lourenço, A.A. Rendimento Académico: Influência do Autoconceito e do Ambiente de Sala de Aula. *Psicol. Teor. Pesqui.* **2011**, *27*, 393–402. [CrossRef]

30. Liangruenrom, N.; Craike, M.; Biddle, S.J.H.; Suttikasem, K.; Pedisic, Z. Correlates of physical activity and sedentary behaviour in the Thai population: A systematic review. *BMC Public Health* **2019**, *2*, 414. [CrossRef] [PubMed]

31. Manyanga, T.; Pelletier, C.; Prince, S.A.; Lee, E.-Y.; Sluggett, L.; Lang, J.J. A Comparison of Meeting Physical Activity and Screen Time Recommendations between Canadian Youth Living in Rural and Urban Communities: A Nationally Representative Cross-Sectional Analysis. *Int. J. Environ. Res.* **2022**, *19*, 4394. [CrossRef]

32. Chen, B.; Waters, C.N.; Compier, T.; Uijtdewilligen, L.; Petrunoff, N.A.; Lim, Y.W.; van Dam, R.; Müller-Riemenschneider, F. Understanding physical activity and sedentary behaviour among preschool-aged children in Singapore: A mixed-methods approach. *BMJ Open* **2020**, *10*. [CrossRef] [PubMed]

33. Fernandes, G.N.A.; Lemos, S.M.A. Motivação para aprender no ensino fundamental e a associação com aspectos individuais e contextuais. *CoDAS* **2020**, *32*. [CrossRef] [PubMed]

34. Ribeiro, F. Motivação e aprendizagem no contexto escolar. *Profforma* **2021**, *1*, 1–5. Available online: https://cefopna.edu.pt/revista/revista_03/pdf_03/es_05_03.pdf (accessed on 9 February 2024).

35. Peetsma, T.; Van der Veen, I. Relations between the development of future time perspective in three life domains, investment in learning, and academic achievement. *Learn. Instr.* **2011**, *21*, 481–494. [CrossRef]

36. Lohr, S.L. *Sampling: Design and Analysis*; Chapman and Hall/CRC: Boca Raton, FL, USA, 2022.

37. Rosário, P.; Lourenço, A.; Paiva, M.O.; Núñez, J.C.; González-Pienda, J.; Valle, A. *Avaliação Psicológica. Instrumentos Validados para a População Portuguesa. Inventário de Processos de Auto-Regulação da Aprendizagem (IPAA)*; Gonçalves, M.M., Simões, M.R., Almeida, L.S., e Machado, C., Eds.; Quarteto: Coimbra, Portugal, 2010; pp. 159–174.

38. Lourenço, A.A. Processos Auto-Regulatórios em Alunos do 3.º Ciclo do Ensino Básico: Contributo da Auto-Eficácia e da Instrumentalidade. Ph.D. Thesis, Instituto de Educação e Psicologia da Universidade do Minho, Braga, Portugal, 2008.

39. Declaration of Helsinki. Ethical principles for medical research involving human subjects. *JAMA* **2013**, *310*, 2191–2194. [CrossRef] [PubMed]

40. Arbuckle, J.L. Amos 27.0 User's Guide. Available online: https://www.ibm.com/docs/en/SSLVMB_27.0.0/pdf/en/IBM_SPSS_Statistics_Core_System_User_Guide.pdf (accessed on 7 May 2024).

41. Finney, S.; DiStefano, C. Non-normal and categorical data in structural equation models. In *A Second Course in Structural Equation Modeling*; Hancock, G., Mueller, R., Eds.; Information Age: Charlotte, NC, USA, 2013; pp. 439–492.

42. Hu, L.T.; Bentler, P.M. Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Equ. Model. Multidiscip. J.* **1999**, *6*, 1–55. [CrossRef]

43. Hair, J.F.; Babin, B.J.; Anderson, R.E.; Black, W.C. *Multivariate Data Analysis*, 8th ed.; Cengage Learning: Andover, UK, 2019; ISBN 9781473756540.

44. Byrne, B. *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*; Routledge: New York, NY, USA, 2016.

45. Hoelter, J.W. The analysis of covariance structures: Goodness-of-fit indices. *Sociol. Methods Res.* **1983**, *11*, 325–344. [CrossRef]

46. Streiner, D.L. Being inconsistent about consistency: When coefficient alpha does and doesn't matter. *J. Personal. Assess.* **2003**, *80*, 217–222. [CrossRef]

47. Schunk, D.H.; Zimmerman, B.J. *Self-Regulation of Learning and Performance: Issues and Educational Applications*; Taylor & Francis: Abingdon, UK, 2023.

48. Zimmerman, B.J. Dimensions of academic self-regulation: A conceptual framework for education. In *Self-Regulation of Learning and Performance*; Schunk, D.H., Zimmerman, B.J., Eds.; Routledge: New York, NY, USA, 2023; pp. 3–21.