education sciences

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The Impact of Learning Strategies and Future Orientation on Academic Success: The Moderating Role of Academic Self-Efficacy among Italian Undergraduate Students

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Received: 25 March 2020; Accepted: 6 May 2020; Published: 9 May 2020

Abstract: Promoting academic success among undergraduate students is crucial for tackling the need to foster employability competencies. Low levels of academic attainment in higher education, along with the increasing number of persons participating in tertiary education, represent crucial trends, which need to be studied in order to develop efficient retention practices. The current study aimed to investigate the relationship between relevant factors that can foster academic success: learning strategies, future orientation, and academic self-efficacy. To this purpose, a longitudinal study was performed on a sample of $N = 87$ undergraduate students from one of the largest Italian universities (63.4% males, 74.2% enrolled in the first year). Participants filled in an online questionnaire at two different time points, with a time lag of 12 months. Results of a moderated mediation model indicated that the relationship between learning strategies at Time 1 (T1) and Grade Point Average (GPA) at Time 2 (T2) was mediated by students' future orientation. Moreover, this association was moderated by T1 academic self-efficacy. These results suggest that learning strategies positively influence GPA through an enhanced future orientation, in particular when students report high or medium levels of self-efficacy. The current findings invite a thorough review of training interventions for improving academic achievement.

Keywords: undergraduate students; academic achievement success; self-efficacy; learning strategies; future orientation; Grade Point Average (GPA); employability

1. Introduction

Participation in tertiary education is nowadays increasing worldwide. In recent years, the number of undergraduates has increased considerably across EU countries, and further growth is expected in the near future. Empirical evidence from Eurostat [1] supports the association between tertiary education, on the one hand, and levels of employability and work-related wellbeing, on the other hand. Furthermore, these results suggest that the work role and current remuneration are higher among workers holding an academic degree. The increasing participation in tertiary education is partially due to the changing requirements of the current labor market, where specific and complex competencies are increasingly required. Eurostat data emphasize that the Italian context is characterized by increasing dropout levels among University students. These data indicate that only 20.6% of the adult population aged between 24 and 52 years old has attained a tertiary level education and above 10% of university students decide to drop out of their studies before graduating.

Therefore, the identification of factors that foster academic achievement is essential to avoid academic dropout and to favor higher levels of educational attainment among the adult population. Academic achievement is defined as performance outcomes indicating to what extent individuals have attained specific goals of activities in instructional environments, such as the academic setting [2]. Although there is extensive knowledge regarding academic achievement, the nomological network of this strategic outcome is far from being revealed. Accordingly, the main goal of the current study is to explore individual antecedents that could promote academic achievement, particularly in terms of Grade Point Average (GPA). To this purpose, this research is aimed at assessing the role of learning strategies, academic self-efficacy, and expectations (i.e., future orientation) in determining the levels of academic achievement among undergraduate students. We assumed that learning strategies could influence academic achievement (i.e., GPA) through the mediating role of future orientation. Moreover, students' academic self-efficacy is expected to boost the positive impact of academic self-efficacy on undergraduate students' GPA. This theoretical model is framed according to the self-regulated learning model [3] and the expectancy-value theory [4].

1.1. Learning Strategies and Academic Achievement

Learning strategies can be defined as "processes (or sequences of processes) that, when matched to the requirements of tasks, facilitate performance" [5] (p. 303). In academic settings, learning strategies are related to the processes enacted by students at different levels (i.e., cognitive, metacognitive, affective, and behavioral) that facilitate the achievement of learning tasks. For instance, Ullah and colleagues [6] showed that academic performance could be significantly enhanced through peer tutoring, which leads to higher results in comparison to traditional lecture-demonstration methods. Hence, a teaching strategy based on the constant interaction within groups of students supported by a peer playing the role of a tutor may support the students' learning and lead to the attainment of higher grades.

Yet there is compelling evidence from undergraduate research suggesting the positive impact of learning strategies on academic performance. In contrast, a clear distinction between different kinds of learning strategies is still missing. To date, several taxonomies have been adopted [7]. For instance, research evidence suggests that an effective learning strategy entails the adoption of assessment instruments aimed at identifying and tackling misconceptions as well as to develop better significant conceptual structures among students [8].

The current study focused on the categorization proposed by Donker and colleagues [9], which differentiates between three main categories of learning strategies: cognitive strategies, metacognitive strategies, and management strategies. Cognitive strategies refer to information processing for knowledge purposes and are strictly connected with learning tasks (i.e., rehearsal, elaboration, and organization). In contrast, metacognitive strategies involve processes of cognitive regulation (i.e., planning, monitoring, and evaluation) and are conceived as higher-order strategies. Furthermore, management strategies refer to the range of the approaches adopted by students to manage the learning context [9]. As already mentioned, learning strategies shape the quality of learning processes and are therefore the primary antecedent of attained academic achievement [10]. A recent meta-analysis conducted by Schneider and Preckel [2] revealed that learning strategies could have from a small to a large effect size on academic performance, according to the specific type of strategy implemented. On the other hand, a clear consensus toward the operationalization of academic achievement is far from being attained.

The most common measure of academic achievement among undergraduate students is represented by the number of exams taken, the number of college credits completed, and the "Grade Point Average"—also known as GPA [10]. GPA represents the mean of the grades of passed exams cumulated by students during their university paths. Although not without limitations in terms of reliability and validity, GPA is still the most used measure of academic achievement.

1.2. The Mediational Role of Future Orientation

Future orientation is defined as the conceptualization of a life domain in terms of time [11]. In the current study, this construct refers to the academic context. Therefore, it entails students' expectations about the outcomes deriving from the achievement of academic goals. Links between future expectations—here defined as future orientation—and academic achievement were strongly emphasized by recent research findings [12]. Empirical evidence suggests that future orientation may impact positively on academic achievement, through enhanced levels of investment in learning activities. Therefore, future orientation has shown to predict the extent of effort exerted on learning duties, which in turn results in better academic achievement [13]. Scholars argued that students characterized by a strong future orientation are prompted to value and to integrate the current experience to succeed and are more motivated to attain their goals, thus enabling them to perform better in academic duties [14].

As for academic achievement, future orientation has a direct relationship with learning strategies. Several theoretical models belonging to the self-regulated learning framework have been developed to delve deeper into the learning process [15–17]. These models share the assumption that learning must be conceived as a dynamic and iterative process involving cognitive, emotional, and behavioral functions, so that the individual is an active participant of his education [3]. In this sense, students' orientation toward the achievement of a specific academic goal and the learning strategies adopted can significantly impact on outcomes operating in different phases of the learning process, through a reciprocal relationship. Although these frameworks consider several characteristics of the learning process, most of them concur in articulating the learning process in three main phases. During the first phase, defined as the *preparatory phase*, the student evaluates the specific academic task and motivational factors involved: this step allows the activation of specific goals. The following stage, named the *performance phase*, is focused on task execution through different strategies. During this step, a constant monitoring activity allows the student to keep control over the learning process. Finally, during the *appraisal phase*, students evaluate learning outcomes through a critic reflection aimed at adjusting and adapting their strategies for upcoming performances [3]. Thus, future orientation and learning strategies are framed into different phases of the learning process. While the first plays a crucial role in the preparatory phase, learning strategies are implemented during the performance phase.

In other words, the theoretical framework underpinning the current study conceives self-expectations about one's academic future as antecedents of the quality and the quantity of the learning strategies adopted. In this regard, a student with few expectations about his academic future is more likely to take surface learning strategies, which are based on a mere memorization of contents. On the contrary, in-depth strategies (e.g., based on the careful elaboration of the materials) are more frequently adopted among undergraduate students with high expectations. As mentioned earlier, the phases based on the self-regulated learning framework are cyclical and dynamic. Consequently, variables intervening during the second and the third phase (i.e., performance and appraisal phases) are likely to influence the revision of strategies and factors occurring in the previous steps [18]. In line with prior results, the quality of the learning strategies adopted may influence individual future orientation [19]. A main aim of this paper, therefore, is to validate the cyclical nature of self-regulated learning models.

1.3. The Moderating Role of Academic Self-Efficacy

The traditional literature on self-efficacy relies on the contribution of Albert Bandura [20], who defined self-efficacy as the perception of individuals about their ability to organize and execute the actions required to achieve specific types of performance. In the educational setting, academic self-efficacy refers to students' perceived ability to perform academic tasks and attain educational goals. More specifically, it can be defined as "personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances" [21] (p. 203).

Self-efficacy is one of the most studied variables concerning academic success, as it represents one of the strongest predictors of academic achievement [22–24]. More recently, a noteworthy

literature review proposed by Schneider and Preckel [2] developed a ranking of 100 variables that are able to affect academic achievement, according to their effect size. These authors emphasize the role of performance self-efficacy—i.e., the perceived level of one's efficacy in carrying out a specific educational task—as the second most influential antecedent of academic achievement. Furthermore, academic self-efficacy, defined as a more general sense of one's ability in academic studies, was ranked 21st. Further empirical evidence suggests that academic self-efficacy acts as the primary antecedent of students' performance in comparison to other constructs traditionally included to explain the attainment of academic goals, such as anxiety, previous achievement, outcome expectation, and positive self-concept [25].

Overall, these findings corroborate the hypothesis of a strong relationship between self-efficacy beliefs and academic achievement. The authors provide a potential explanation of these results based on the reciprocal interaction between the two main factors: in particular, prior academic acknowledgments may boost self-efficacy, which in turn enhances following academic achievements. This explanation finds support in Bandura's social cognitive theory [20], defining individual self-efficacy as shaped by prior personal accomplishments. In other words, achieving good grades can boost students' self-efficacy which, in turn, enables them to obtain higher upcoming results. This reciprocal influence between self-efficacy and academic success translates into a virtuous cycle, resulting in a greater self-efficacy and GPA. Prior successes are not the only drive for boosting self-efficacy. According to the social cognitive theory, self-efficacy can be shaped by three sources of information: vicarious learning (e.g., observing the behaviors of others), socially persuasive communication (e.g., through positive reinforcements by other individuals), and emotional arousal. In the academic setting, recent evidence underlines the relevance of these sources of information in predicting academic self-efficacy, with a significant role played by past academic experiences [26].

The current goal is to assess GPA as a function of the interaction between academic self-efficacy and additional constructs. Drawing upon one of the most renowned motivational theories—the expectancy-value theory proposed by Vroom [4]—the current research assumes that future orientation can influence academic achievement through the interaction effect with academic self-efficacy. To the best of our knowledge, this study is the first attempt to explore the impact of the interaction between academic self-efficacy and future orientation on an objective measure of academic achievements, such as GPA. The expectancy-value theory [4] posits that the adoption of a specific behavior depends on individual motivation, which is determined by the product of three different factors: expectations, value, and instrumentality. Vroom defines motivation as the product of expectancy × instrumentality × valence and requires the alignment of all three components to foster motivation [27]. According to this perspective, expectations refer to the individual perception of the outcomes stemming from a given behavior. Valence entails the value attributed to a specific result and is affected by individual needs, goals, values, and preferences. Finally, instrumentality implies the perception that the outcomes of a specific behavior are causally linked to further valued outcomes [4].

Future orientation embraces the set of expectancies related to the achievement of academic tasks. Bandura [28] stated that self-efficacy and expectancies are related constructs, as the outcomes resulting from a given behavior are influenced by individual perceptions about the chance of adopting it. Consequently, it may be assumed that the achievement of high academic grades might be influenced not only by perceived academic self-efficacy or expectancies, but rather by the combination between these factors. As suggested by Landry [29], the attractivity of a specific goal and the perceived possibility of achievement may motivate students to put effort into academic activities.

Accordingly, we assume that the interaction between future orientations and academic self-efficacy at Time 1 (T1) can predict academic achievement among undergraduate students at Time 2 (T2). Based on the empirical evidence and the reasoning discussed, the current study was aimed at delving deeper into the role of future orientation in explaining the impact of learning strategies on academic achievement (i.e., GPA). In doing so, this study contributes to the current understanding of the role played by individual resources (i.e., learning strategies, future orientation, and academic self-

efficacy) in promoting students' academic success. To this purpose, the moderated mediation model depicted in Figure 1 was tested and the following study hypothesis was developed:

Hypothesis 1. *The positive impact of learning strategies at Time 1 on GPA at Time 2 is mediated by students' levels of T1 future orientation. Furthermore, the indirect effect of T1 learning strategies on T2 GPA through T1 future orientation depends on the degree of students' academic self-efficacy. Thus, T1 future orientation is expected to display a more substantial impact on T2 GPA among students reporting a higher level of self-efficacy in academic activities.*

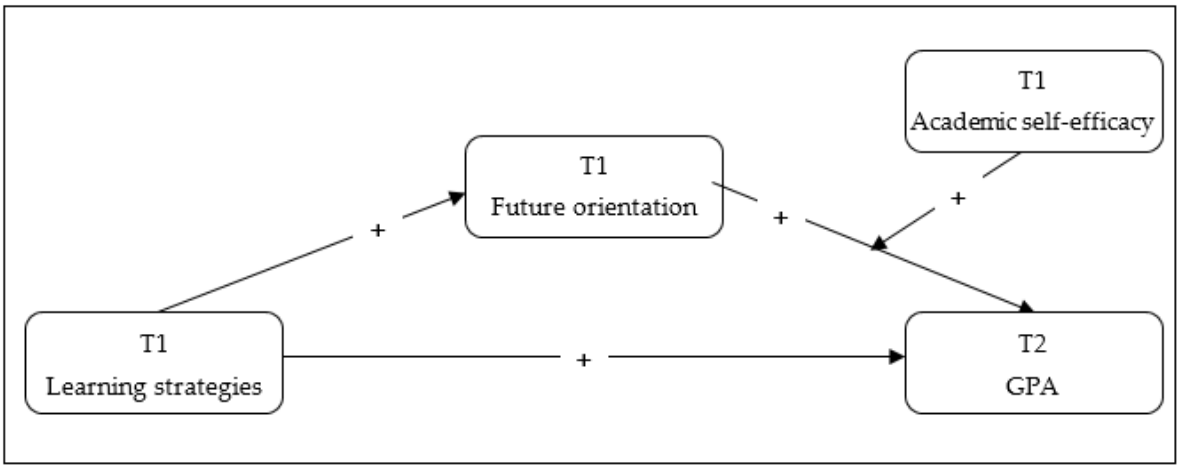

Figure 1. The hypothesized moderated mediation model.

2. Materials and Methods

The current study was part of a broader project aimed at evaluating the quality of teaching processes and outcomes in the international second cycle degree in Economics and Business from one of the largest Italian universities. Four members of the research group presented the general aims of the project to course coordinators, teaching staff, and students. Then, students were asked to provide their institutional email address and, one week later, received a message with a link that allowed them to fill in an online survey. The first page of the questionnaire summarized background information about the general purpose of the study and emphasized respondents' anonymity and data confidentiality. This page also included a statement regarding personal data processing, following the Italian Privacy Law (Law Decree DL-196/2003). The research obeyed the latest version of the Declaration of Helsinki [30] regarding ethical standards for research. This introduction also stated that participation in this study was voluntary, and participants had the opportunity to withdraw from the study at any stage. At T1, N = 93 students filled in the questionnaire, with a response rate of 46.5%. After 12 months, a total sample of N = 87 filled in the same survey for the second time (T2). At this point, the administrative division of the master's degree course provided researchers with the GPA of the participating students. The sample was mainly composed of males (63.4%), and most of them were enrolled in the first year of the course (74.2%).

2.1. Procedure

2.1.1. Measures

Undergraduate students' perceptions of the designated variables were assessed at T1, whereas the objective data concerning the GPA (i.e., the criterion variable of the hypothesized model) was collected at T2.

Learning strategies were assessed through the 18-item scale taken from the Questionario sui Processi Di Apprendimento (QPA), developed by Poláček [31]. Sample items are: "I order my notes

by subject and topics" and "I understand better the subject I'm studying if I draw concept maps". All items were scored on a 5-point frequency scale ranging from 1 (*almost never*) to 5 (*almost always*).

Future orientation was assessed through 5 items belonging to the corresponding subscale dimension from the Student Outcome Expectation Scale [29]. For the Italian version, a conventional translation and back-translation procedure [32] was performed by two Italian bilingual academics and one bilingual professional independently to ensure the equivalence of meaning and translation accuracy. Sample items are "If I work hard enough, I will get this degree" or "Getting my degree means I will be able to achieve my future goals". Each item was rated on a 5-point response scale ranging from 1 (*very weak*) to 5 (*very strong*).

Academic self-efficacy was assessed through the 8-item scale taken from the College Student Self-Efficacy Scale [29]. As for the assessment of future orientation, this scale was translated from English to Italian through a translation and back-translation procedure [32] performed by two Italian bilingual academics and one bilingual professional. Sample items are "I can do an excellent job on the problems and tasks assigned for the courses I am taking this semester" and "I can study when there are other interesting things to do". All items were scored on a 5-point Likert scale ranging from 1 (*very weak*) to 5 (*very strong*).

GPA was assessed through the mean of the objective grades cumulated by students on passed exams during the academic year. According to the Italian academic system, grades are given based on 30 points. The minimum passing grade is 18/30, whereas grades below 18 are insufficient and are not registered.

2.1.2. Strategy of Analysis

The hypotheses were tested through the PROCESS macro developed by Hayes [33] in SPSS (version 23) [34]. This macro adopts a bootstrapping method that provides reliable estimates of standard errors and generates an estimate of the hypothesized effects, including a 95% confidence interval. According to this statistical resampling method, the null hypothesis can be rejected when the confidence interval does not include zero. In particular, the moderated mediation model assumed by Hypothesis 1 was tested using Model 14. Accordingly, T1 learning strategies were positively related to T1 future orientation which, in turn, was expected to result in a higher T2 GPA among undergraduate students. Furthermore, T1 academic self-efficacy (i.e., the moderating variable) was supposed to amplify the positive impact of T1 future orientation (i.e., the mediating variable) on academic achievement, assessed here through T2 GPA (i.e., the criterion variable).

3. Results

3.1. Descriptive Results

The means, standard deviations, internal consistencies, and correlations among all the variables are represented in Table 1. The internal consistency of all the measures satisfied the criterion of 0.65 [35]. As expected, the criterion variable (i.e., T2 GPA) reported a significant relationship only with T1 academic self-efficacy ($r = 0.37$, $p = 0.000$). This result suggests that undergraduate students perceiving themselves as capable of performing efficiently academic activities also attain a higher GPA. Furthermore, learning strategies were positively associated with future orientation ($r = 0.30$, $p = 0.004$) and academic self-efficacy ($r = 0.41$, $p = 0.000$). Thus, students' confidence in their ability to manage study activities (i.e., learning strategies) is related to their expectations to reach professional rewards thanks to the attained university degree (i.e., future orientation) and their efficacy in managing their career (i.e., academic self-efficacy). Besides, students' orientation toward their professional future (i.e., future orientation) was positively related to the perceived levels of self-efficacy in carrying out academic tasks (i.e., academic self-efficacy), with $r = 0.21$, $p = 0.045$.

Table 1. Mean, standard deviation, and correlations among study variables ($N = 87$).

		Mean	*SD*	1	2	3	4
1.	T1 Learning strategies	3.38	0.56	(0.81)			
2.	T1 Future orientation	4.00	0.60	0.30**	(0.68)		
3.	T1 Academic self-efficacy	3.98	0.55	0.41***	0.21*	(0.74)	
4.	T2 GPA	25.83	2.31	0.02	−0.11	0.37***	-

Notes: Cronbach's alpha values are indicated in brackets. *$p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

3.2. Hypotheses Testing

Results of the moderated mediation model are reported in Table 2. As indicated, learning strategies at T1 showed a non-significant direct effect on GPA at T2: *b* standard error (SE) = −0.47 (0.47), $p = 0.316$, 95% CI (−1.41; 0.46). In contrast, T1 learning strategies were related to a higher future orientation, with *b* (SE) = 0.33 (0.11), $p = 0.004$, 95% CI (0.10; 0.55). Moreover, T2 GPA were predicted by future orientation, with *b* (SE) = 4.98 (2.44), $p = 0.041$, 95% CI (0.13; 9.84) and academic self-efficacy, with *b* (SE) = 7.91 (2.56), $p = 0.002$, 95% CI (2.81; 13.01). Overall, Table 1 shows that approximately 25% of the variance in GPA was accounted for by the predictors ($R^2 = 0.24$, $p = 0.001$).

Table 2. Results of moderated mediation analysis.

	T1 Future Orientation			T2 GPA		
	B	SE	Boot 95% CI	*b*	SE	Boot 95% CI
T1 Learning strategies	0.33 **	0.11	[0.10; 0.55]	−0.47	0.47	[−1.41; 0.46]
T1 Future orientation				4.98 *	2.44	[0.13; 9.84]
T1 Academic self-efficacy				7.91 **	2.56	[2.81; 13.01]
T1 Future orientation X T1 Academic self-efficacy				−1.49 *	0.63	[−2.75; −0.23]
Model Summary		$R^2 = 0.10$ **			$R^2 = 0.24$ ***	

The conditional indirect effect of Time 1 (T1) Learning strategies (X) on Time 2 (T2) Grade Point Average (GPA) (Y) through T1 future orientation (M) at different values of T1 academic self-efficacy (W).

	B	Boot SE	Boot 95% CI
Low Academic self-efficacy	−0.05	0.17	[−0.41; 0.28]
Medium Academic self-efficacy	−0.32 **	0.19	[−0.76; −0.03]
High Academic self-efficacy	−0.59 **	0.30	[−1.28; −0.13]

Notes: Low= 3.45, Medium= 4.00, High= 4.54; * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$. SE = Standard error; Boot 95% CI = 95% confidence interval using the bootstrap bias-corrected method using 5000 samples.

The interaction effect between T1 future orientation and T1 academic self-efficacy on T2 GPA was significant: *b* (SE) = −1.49 (0.63), $p = 0.021$, 95% CI (−2.75; −0.23). According to the conditional values displayed in the lower part of Table 2, the indirect relationship between T1 Learning strategies and T2 GPA through Future orientation was significant at medium (mean; $b = 0.19$, CI = (−0.75, −0.03)) and high (+1 *SD*; $b = -0.59$, CI = (−1.27, −0.13)) levels of academic self-efficacy. In contrast, this indirect association was not significant at low levels of this moderating variable (−1 *SD*; $b = -0.05$, CI = (−0.41, 0.28)). These results are depicted in Figure 2. Furthermore, the index of moderated mediation revealed a significant effect, with *b* (SE) = −50 (0.27), 95% CI (−1.8; −0.09). Overall, the obtained results provided support to Hypothesis 1.

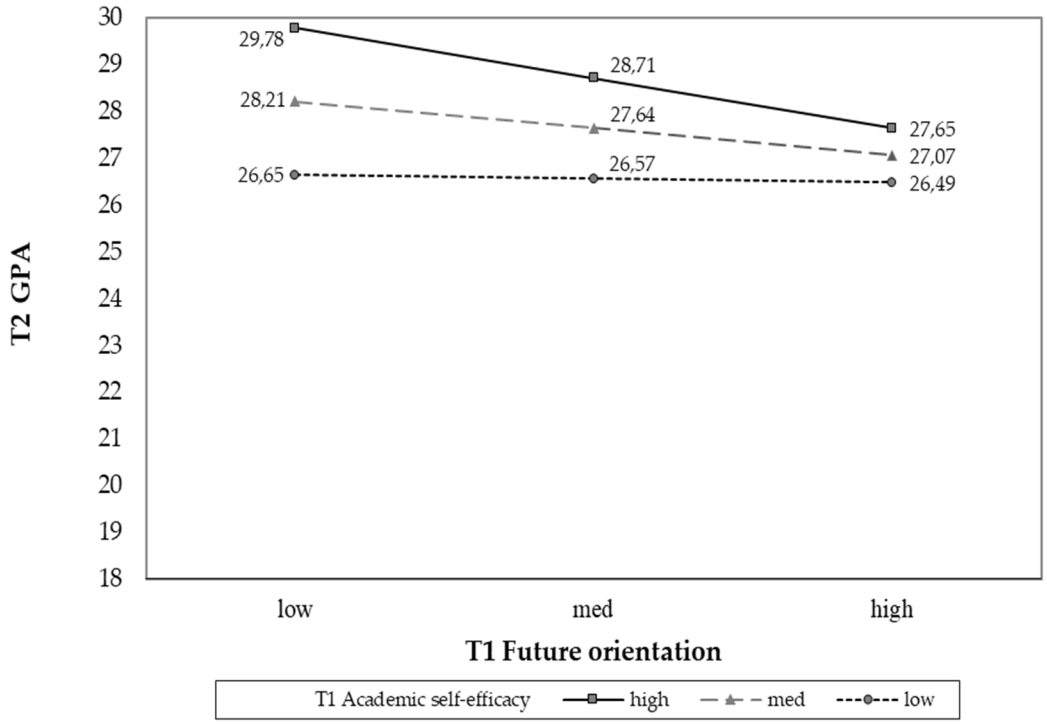

Figure 2. The impact of T1 future orientation on T2 GPA at different levels (−1 SD, Mean, +1 SD) of academic self-efficacy.

4. Discussion

The current findings suggest that learning strategies among undergraduate students are related to a greater future orientation, which may subsequently predict higher academic achievement, as assessed through students' GPA. This result agrees with previous findings suggesting that learning strategies, as well as academic future orientation, play an essential role in determining students' academic success [2]. This research contributed to the existing literature through the assessment of an objective measure of academic success, such as GPA. The current study sheds some light on the potential implications of fostering the strategies implemented by students in their learning activities. Furthermore, our results show that future orientation fully mediates the relationship between learning strategies and GPA. A possible explanation for this result is that the quality of learning strategies may influence students' expectations about their future. These expectations, in turn, drive them to attain satisfactory academic goals. In this sense, the current results corroborate the hypothesized cyclical and iterative relationship between variables associated with effective learning in self-regulated learning frameworks [3]. According to these frameworks, the learning process is dynamic and characterized by the interaction between psychosocial variables belonging to different phases (preparatory, performance, and appraisal): while learning strategies take place during the second phase, future orientation should be implemented during the first one. Hence, a variable belonging to a prior step could affect the subsequent stages. These models also assume that phases of self-regulated learning are cyclic and influence each other dynamically. For instance, students' appraisal after achieving a lousy grade can impact the strategies adopted in the following exams. Accordingly, results from our study confirm the cyclic nature of self-regulated learning models, showing that learning strategies can impact positively on students' expectations which, in turn, help them in achieving higher outcomes.

The obtained results also revealed the moderating effect of academic self-efficacy in the association between future orientation and GPA. According to our findings, academic self-efficacy plays a protective role in guaranteeing academic achievement (i.e., GPA) among students with few expectancies about their academic career (i.e., at low and medium levels of future orientation). In particular, students reporting a mean or high academic self-efficacy also display a greater GPA,

particularly when they are characterized by low and mean levels of future orientation. This evidence suggests that self-efficacy is a crucial resource for achieving great academic results, especially when students' expectancies about the future are low. Results from this study are in line with the expectancy-value theory [4], according to which the adoption of a given behavior is the result of the interaction of underlying motivational factors (future orientation) and individual perceptions (academic self-efficacy). In this regard, achieving good grades is the result of the interaction between the future expectations of students and their opinions about their ability to achieve academic success.

Despite notable results, the present study has a few significant limitations that should be acknowledged. First, the current study was based on a limited sample of students from a single degree program, thus limiting the generalizability of the obtained results. Although the present results supported the hypothesized causal and moderating relationships, future research should assess if this empirical evidence could be extended to other degree programs. A further limitation entails the assessment of a unidirectional relationship between the study variables. Nonetheless, the attainment of academic results could also impact positively on students' learning strategies, future orientation, and self-efficacy, thus suggesting the presence of a reciprocal relationship between these constructs. Accordingly, Diseth [36] indicated that academic achievement fosters students' self-efficacy and subsequent performance. Furthermore, this author emphasized the causal role of self-efficacy in predicting the enhancement of in-depth learning strategies among university students. Therefore, a reversed causal relationship among the construct considered in the current study represents one of the most exciting venues for future research. Finally, the present study considered an objective measure for the criterion variable (i.e., GPA), whereas the remaining variables were assessed through self-reporting instruments. In line with scholars' recommendations, the validity of self-reporting measures should be substantiated through the inclusion of objective measures of study behaviors [37,38]. On the other hand, the current study also investigated the buffering role of students' self-efficacy, which entails by definition individual beliefs in one's capabilities to exercise control over academic activities and results. Hence, using self-reporting measures is the most natural way to tap into this concept.

The current study was conducted with the primary goal of adding to knowledge about the factors that can predict the attainment of positive results during the academic path. In particular, this research was aimed at expanding the current understanding of the role played by personal resources (i.e., learning strategies, future orientation, and academic self-efficacy) emerged as crucial to adequate performance in the academic setting. The present findings have the virtue of overcoming the limitations of previous research in different ways. Most of these studies explored the antecedent of academic success on samples of high school and college students and employed broader definitions of self-efficacy, rather than focusing on self-efficacy beliefs referred specifically toward the academic domain [39,40]. Consequently, the obtained findings allow the drawing of relevant implications for both scientists and practitioners. On the one hand, they contribute to the overall understanding of the mechanisms underlying the learning process and the attainment of academic results among undergraduate students.

Following the self-regulated learning models, this study supported interaction between the different phases involved during the learning process. Additionally, the present findings highlighted the indirect impact of learning strategies on GPA through the enhancement of future orientation, indicating that the quality and the quantity of the strategies adopted by students can influence their expectancies about the future and, as a consequence, achieve academic goals. Furthermore, this study showed evidence of an interaction between academic self-efficacy and students' expectations. From this point of view, the adoption of expectancy theories allows the understanding of the intervening dynamic linking motivational factors to the achievement of academic goals. Hence, a further theoretical implication entails the opportunity to apply motivational theories in the understanding of learning processes [2].

The current study suggests relevant implications also from a practical perspective. First, our results substantiate the crucial role of learning strategies in fostering students' expectations about the future in academic settings that, in turn, support them in achieving higher results. Consequently,

academic settings should develop and implement training interventions aimed at providing students with efficient learning strategies as a first step to help them boost academic goals and results. In addition to learning strategies, academic self-efficacy also represents an essential individual resource in increasing the likelihood of a successful career among undergraduate students. Specifically, the obtained results emphasized the relevance of students' perceived ability to perform their academic tasks adequately. For instance, previous research investigated the impact of intervention programs aimed to foster students' self-efficacy through the combination of lectures, tutorials, and supervision consultation [41]. This intervention was based on teams of peers receiving constant face-to-face group supervision and advice within specific tutorials.

Furthermore, teachers assisted students' activities to maximize learning and to foster connections and support across teams. Additional evidence among college students highlighted the role of mentors and peer mentors in the earliest stage of students' experience to boost self-efficacy and reduce the dropout likelihood [42]. This intervention strategy involves the establishment of functional relationships with peers and tools aimed at a self-monitoring activity of one's successes and of the barriers to a successful educational experience. This mentoring initiative reported a positive impact on students' self-efficacy and confidence in their abilities which, in turn, is likely to ease the achievement of positive academic outcomes.

Because academic self-efficacy could be strategic among students characterized by a limited orientation toward their future success, academic contexts should provide suitable training opportunities among students reporting scant expectations concerning their future career [10].

Author Contributions: Conceptualization, A.P., D.G., and I.V.; methodology, G.M. and A.P.; formal analysis, G.M.; data curation, G.M.; writing—original draft preparation, G.M. and A.P.; writing—review and editing, D.G. and I.V.; supervision, D.G. and I.V. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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