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Bridging the Gap: Exploring Self-Regulated Learning and Academic Achievement in Moroccan Higher Education

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ABSTRACT

Self-regulated learning (SRL) has been consistently correlated with academic achievement across various educational contexts. Although its importance is widely acknowledged, there remains a notable gap in research on SRL and its predictive power concerning academic achievement within the Moroccan educational setting. This study investigates the relationship between SRL and academic achievement among Moroccan English as a Foreign Language (EFL) university students through a quantitative approach. A total of 403 students completed the Motivated Strategies for Learning Questionnaire, and the data were analyzed via multiple regression analysis. The results revealed a positive relationship, with SRL constructs emerging as significant predictors of academic achievement. The regression model explained 18% of the variance in academic achievement, indicating a moderate but noteworthy impact. The study further discusses practical strategies that educators can adopt to promote SRL, enhance autonomous learning, and equip students with the necessary skills for the complexities of the modern world.

Keywords: Academic achievement, autonomous learning, motivation, EFL students, self-regulated learning

INTRODUCTION

Self-regulated learning (SRL) is a pivotal indicator of student achievement and a central focus in education research. As students navigate increasingly complex learning environments, their ability to regulate their own learning has emerged as a critical factor in achieving academic success (Bloom, 2013). SRL is an umbrella term that encompasses various processes that enable students to take control of their own learning (Teng & Zhang, 2018; Zimmerman, 2015). It involves the systematic regulation of motivation, thoughts, and behaviors to achieve academic learning goals, emphasizing a proactive approach to learning rather than a passive response to teaching (Zimmerman, 2002). In general, self-regulated learners identify their goals and actively engage in their learning through goal setting, planning, monitoring, and implementing effective strategies to achieve their objectives (Losenno et al., 2020; Schunk, 2012). This concept of SRL includes not only metacognitive strategies but also self-regulation of motivation, the learning environment, and social support (Zimmerman et al., 1992).

From a social cognitive perspective, SRL is influenced by the reciprocal interaction between personal, behavioral, and environmental factors (Bandura, 1997). It is a cyclical process that involves three key phases, including forethought, performance, and self-reflection (Zimmerman & Schunk, 2011). During the forethought phase, students set goals and plan strategies to reach them. In the performance phase, they implement these strategies and monitor their effectiveness. Finally, in the self-reflection phase, students evaluate their performance and outcomes, making necessary adjustments for future learning.

Given the increasing emphasis on SRL in education, it is crucial to examine its relationship with academic achievement. Research suggests that students who effectively regulate their learning tend to perform better academically (Panadero, 2017; Zimmerman, 2002). Therefore, understanding how SRL influences academic achievement can provide valuable insights for educators, students, and policymakers in promoting effective learning strategies not only in Moroccan higher education but also in other countries with similar EFL educational contexts. This paper explores the relationship between SRL and academic achievement among Moroccan English as a foreign language university students and examines its predictive power for academic achievement.

LITERATURE REVIEW

SRL is a complex construct that integrates multiple theories rooted in motivation and self-regulation. Pintrich (2000, p. 453) defined SRL as an "active, constructive process whereby learners set goals for their learning and attempt to

monitor, regulate and control their cognition, motivation, and behavior, guided and constrained by their goals and contextual features in the environment". It is also regarded as a comprehensive framework that encompasses the motivational, emotional, metacognitive, cognitive, and behavioral dimensions of learning (Panadero, 2017).

Theoretical perspectives on SRL suggest that students play an active role in shaping their academic experiences. Teng and Zhang (2018) argued that SRL reflects students' responsibility for their own learning and their level of engagement in academic disciplines. Moreover, SRL seems to be informed by research on learning approaches, metacognition, self-theories, and regulation styles, suggesting that SRL is a trainable skill that can be developed over time (Zimmerman,1995; Pintrich, 2000; and Schunk, 2003). However, the conceptualization of SRL remains dynamic, as scholars contend that no single, universal definition exists owing to the evolving nature of self-regulation research (Boekaerts & Corno, 2005).

Importantly, SRL is deeply rooted in Bandura's (1986) social cognitive theory, which emphasizes the interaction between personal, behavioral, and environmental influences. Within this framework, self-regulation consists of three fundamental processes: self-observation, self-judgment, and self-reaction (Schunk, 2001; Zimmerman, 1989). Self-observation involves assessing one's learning strategies, self-judgment involves evaluating performance against pre-established goals, and self-reaction requires modifying or maintaining learning strategies on the basis of their effectiveness. Students' engagement in these processes enables them to refine their learning behaviors, develop adaptive strategies, and enhance their academic performance.

Motivation plays a fundamental role in SRL, as it directly influences students' willingness to take ownership of their learning process. Research has shown that both intrinsic and extrinsic motivation affect how students regulate their learning behaviors (Deci & Ryan, 1985). Intrinsic motivation, driven by personal interest and enjoyment, is associated with greater engagement and persistence, whereas extrinsic motivation, driven by external rewards such as grades or social approval, may be less effective in promoting deep learning.

Other key motivational factors in SRL include self-efficacy and task value. Self-efficacy, or a student's belief in their ability to succeed, is critical in shaping learning behaviors. Students with strong self-efficacy are more likely to set challenging goals, persist through difficulties, and adjust their learning strategies in response to obstacles (Bandura, 1997). Conversely, students with low self-efficacy often struggle with motivation and may be more likely to abandon tasks when facing academic challenges (Bandura, 1997). Similarly, task value plays a crucial role in SRL by influencing the effort and cognitive strategies that students apply to their studies. Task value refers to students' perceptions of the usefulness, relevance, and importance of a learning task (Eccles & Wigfield, 2002). When

students perceive a task as valuable, they are more likely to engage in self-regulatory behaviors such as goal setting, strategic planning, and effort regulation (Pintrich, 2000). However, students who view tasks as unimportant or irrelevant may experience lower motivation, leading to reduced engagement and weaker academic performance.

Research consistently demonstrates a strong relationship between SRL, motivation, and academic achievement (Schunk & Zimmerman, 1994; Zimmerman & Martinez-Pons, 1986). SRL has been found to be positively correlated with academic performance, as it enables students to take control of their learning and enhance their lifelong learning skills (Dignath & Veenman, 2021; Hadwin & Winne, 2012; Schunk, 2005). Amri (2024) further emphasized that SRL not only predicts academic achievement but also maintains a significant positive correlation with it. Moreover, motivational constructs such as task value and self-efficacy are positively correlated with academic achievement (Mete, 2021; Meng & Zhang, 2023; Omari et al., 2020). Similarly, goal orientation has a positive relationship with greater academic performance (Firdous & Riaz, 2023), suggesting that students with well-defined academic goals are more likely to engage in effective learning strategies.

SRL not only has a positive correlation with academic achievement but also functions as a significant predictor of student success. Research consistently highlights SRL constructs as key determinants of academic performance. Moghadari-Koosha et al. (2020) reported that, among SRL, motivation, and self-efficacy, SRL was the most significant predictor of academic achievement. Similarly, a meta-analysis by Jensen et al. (2019) confirmed SRL as the strongest predictor of academic achievement across 126 studies. In a more focused study, Mete (2021) investigated the effects of self-efficacy and task value on achievement approach goals among middle school students learning science. The findings indicated that both self-efficacy and task value significantly influenced students' mastery and performance approach goals, which in turn affected their academic achievement.

Despite extensive research on SRL, limited evidence exists on its predictive role in various educational settings, including the Moroccan context. While several studies in the Moroccan context have addressed specific components of SRL, such as learning strategies (El Aouri & Zerhouni, 2017; Nadif, 2025), few have examined SRL as an integrated construct in relation to academic achievement, which leaves a gap in understanding how SRL influences academic achievement. This study aims to address this gap by examining the relationship between SRL and academic achievement and exploring whether SRL predicts academic achievement among Moroccan English as a foreign language university students.

Based on the objectives stated above, this study is guided by the following research questions:

1. What is the general profile of Moroccan EFL students' SRL and motivational orientations?
2. What is the relationship among SRL, motivation and academic achievement among Moroccan EFL university students?
3. Do SRL and motivation constructs predict academic achievement?

RESEARCH METHOD

This study employed a quantitative approach to objectively measure variables and conduct rigorous statistical analysis of the predictive relationships between SRL constructs and academic achievement. Data were collected via a self-report questionnaire, which was administered online via Goole forms and distributed to participants through WhatsApp groups. The questionnaire was structured into two sections. The first section collected demographic data, including participants' gender, age, current class year, and self-reported final grade from the previous semester, which served as indicators of academic achievement. The second section assessed SRL and motivational constructs via the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich et al. (1993). The MSLQ, a widely validated tool for evaluating students' SRL strategies and motivational orientations, was adapted and adopted for this study.

In this study, the MSLQ measures eight subscales, including intrinsic goal orientation, extrinsic goal orientation, task value, self-efficacy, elaboration, organization, metacognitive self-regulation, and time and study management. It employs a rating scale that allows participants to evaluate the extent to which they engage in specific learning strategies and adopt certain motivational behaviors. Higher scores on the scale reflect more frequent use of the strategies or a stronger endorsement of the motivational beliefs assessed. The participants rated each statement on the basis of how accurately it reflected their typical learning behaviors and experiences, using a five-point Likert scale ranging from 1 (not at all true of me) to 5 (very true of me).

To ensure reliability, the questionnaire was piloted with a convenience sample of 30 EFL students from the target population prior to data collection, which confirmed internal consistency. Consistent with the original validation by Pintrich et al. (1993), the Cronbach's alpha coefficients ranged from .66 to .85 for the motivational subscales and from .50 to .85 for the SRL strategies subscales, indicating acceptable reliability.

Participants

The study was conducted at three Moroccan universities, including Sultan Moulay Slimane University, Cadi Ayyad University, and Mohammed V

University. These universities were chosen because, as public higher education institutions, they are easily accessible, have large enrollments in English departments, and are located in different regions of the country. Sultan Moulay Slimane University in Beni Mellal is located in the center of Morocco; Cadi Ayyad University in Marrakech is located in southwestern Morocco; and Mohammed V University in Rabat is located on the northwestern Atlantic coast of Morocco. They also offer undergraduate and postgraduate degrees in English studies. The three universities are primarily teaching oriented but also support academic research in the humanities and social sciences.

Individual invitations to participate in the study were sent to 2,019 English-speaking Moroccan students via WhatsApp groups of EFL students at the three institutions. However, only 409 responses were received (20.2% response rate). After data screening, six responses were excluded because academic achievement data were missing, resulting in a final sample of 403 participants. This sample comprised 219 females (54.3%) and 184 males (45.7%). All participants were undergraduate students studying at different levels. For example, 62 participants (15.4%) were in their first year, 139 (34.5%) were in their second year, and 202 (50.1%) were in their third year. Their ages were distributed as follows: 36 participants (8.9%) were between 17 and 19 years old, 180 participants (44.7%) were between 20 and 22 years old, and 187 participants (46.4%) were older than 22 years old.

Data analysis

Aligned with the quantitative research approach, the data analysis was guided by the study's research questions and objectives. The data were analyzed via the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were used to summarize the questionnaire results, whereas multiple linear regression was used to examine predictive relationships between variables, utilizing correlation coefficients, model summaries, and analysis of variance (ANOVA). Prior to regression analysis, the assumptions of multiple regression were tested and confirmed to ensure validity. The analysis evaluated the strength of the relationship between SRL constructs and academic achievement (Research Question 1) and assessed the predictive power of these constructs for academic achievement (Research Question 2).

RESULTS

Description of students' SRL, motivation and academic achievement

Table 1 summarizes students' perceptions of SRL variables on the basis of the MSLQ by Pintrich et al. (1993). The motivational variables include intrinsic goal

orientation (IGO), extrinsic goal orientation (EGO), task value (TV), and self-efficacy (SE). The SRL strategies evaluated include elaboration (ELB), organization (ORG), metacognitive self-regulation (MSR), and time and study environment (TSDY).

The mean scores for the motivational variables were as follows: IGO (M=3.67; SD= 0.73), EGO (M= 3.65; SD= 0.92), TV (M=3.76; SD= 0.74), and SE (M= 3.75; SD= 0.74). For the SRL strategies, the mean scores were 3.73 (SD= 0.75) for ELB, 3.81 (SD= 0.78) for ORG, 3.80 (SD= 0.79) for MSR, and 3.72 (SD= 0.84) for TSDY. These results indicate that Moroccan EFL university students exhibit moderate to high motivation and a consistent application of SRL strategies.

Table 1
The mean values of the variables

Variable	M	SD
IGO	3.67	0.73
EGO	3.65	0.92
TV	3.76	0.74
SE	3.75	0.74
ELB	3.73	0.75
ORG	3.81	0.78
MSR	3.80	0.79
TSDY	3.72	0.84

Relationship between SRL and academic achievement

To address the second question, Pearson correlation coefficients (r) were calculated for each variable, following Cohen's (1988) guidelines for interpretation:

- r = .10 to .29: low correlation,
- r = .30 to .49: moderate correlation,
- r = .50 to 1.0: high correlation

Table 2 shows that all SRL constructs are positively correlated with academic achievement, ranging from low to moderate levels of correlation, with p values below .05.

Among the SRL strategies that correlated positively with academic achievement, ELB demonstrated a moderate positive correlation ($r = .31$ $p < .01$). On the other hand, MSR ($r = .26$), TSDY ($r = .24$), and ORG ($r = .19$) exhibited low positive correlations with academic achievement ($p < .01$).

With respect to the correlations between motivational orientation and academic achievement, EGO ($r = .23$), TV ($r = .22$), and IGO ($r = .16$) were weakly positively correlated ($p < .01$). Notably, SE demonstrated a moderate positive correlation ($r = .31$, $p < .01$), which represents the strongest relationship with academic achievement among the motivational constructs.

Table 2
Pearson's correlation coefficients

	IGO	EGO	TV	SE	ELB	ORG	MSR	TSDY	A.ACH
IGO	1								
EGO	.23**	1							
TV	.46**	.26**	1						
SE	.47**	.27**	.54**	1					
ELB	.41**	.31**	.47**	.47**	1				
ORG	.44**	.31**	.52**	.49**	.65**	1			
MSR	.43**	.22**	.41**	.49**	.53**	.54**	1		
TSDY	.36**	.24**	.34**	.38**	.37**	.47**	.45**	1	
A.ACH	.16**	.23**	.22**	.31**	.31**	.19**	.26**	.24**	1

** Correlation is significant at the 0.01 level (2-tailed).
*   Correlation is significant at the 0.05 level (2-tailed).

Predicting academic achievement through SRL constructs

To address the third research question, multiple linear regression analysis was conducted to determine whether SRL strategies (ELB, ORG, MSR and TSDY) and motivational constructs (IGO, EGO, TV and SE) collectively predict academic achievement.

The ANOVA results demonstrate that the regression model significantly predicts academic achievement ($F = 9.69$), with a p value less than .05, confirming the model's overall statistical significance. Specifically, the significance level ($p = .00$) indicates a highly significant predictive relationship between the set of predictors (SRL and motivation constructs) and academic achievement.

The model summary table reveals a moderate positive correlation ($R = .42$) between the set of predictors and academic achievement. The coefficient of

determination ($R^2 = .18$) indicates that these predictors (ELB, ORG, MSR, TSDY, IGO, EGO, TV, and SE) collectively account for 18% of the variance in Moroccan students' academic achievements. This suggests that 18% of the changes in academic achievement can be linked to these factors. Although this represents a modest effect size, it accounts for a significant portion of the overall variation in academic achievement.

Table 3
ANOVA of the predictors of academic achievement

Model	Sum of Square	df	Mean Square	F	Sig.
Regression	221.36	9	24.56	9.69	.00
Residual	997.12	393	2.53		
Total	1218.41	402			

a. Dependent variable: Academic achievement
b. Predictors: (Constant), Time and study environment, Amotivation, Extrinsic goal orientation, Intrinsic goal orientation, Elaboration, Task value, Metacognitive self-regulation, Self-efficacy, Organization

Table 4
Model summary of regression for predictors of academic achievement

Model	R	R Square	Std. Error of the Estimate	R Square Change	F Change	df	Sig. F Change
1	0.42	0.18	1.59	0.18	9.69	393	0.00

a. Predictors: (Constant), Time and study environment, Amotivation, Extrinsic goal orientation, Intrinsic goal orientation, Elaboration, Task value, Metacognitive self-regulation, Self-efficacy, Organization
b. Dependent variable: Academic achievement

DISCUSSION AND CONCLUSIONS

The findings of this study are consistent with existing research highlighting the significant role of SRL in academic achievement (Dignath & Veenman, 2021; Schunk & Zimmerman, 1994; Zimmerman & Martinez-Pons, 1986). Moroccan students' mean scores for motivational constructs such as IGO, TV, and SE and SRL strategies such as ELB, MSR, and ORG indicate a moderate level of engagement and a relatively consistent use of strategies known to enhance academic performance. These results align with the conclusions of Dignath and

Veenman (2021) and Hadwin and Winne (2012), who emphasized SRL's pivotal role in promoting lifelong learning and academic achievement.

The moderate levels of self-regulatory skills observed among Moroccan students may be shaped by contextual factors, including the educational environment, instructional methodologies, and broader societal attitudes toward learning. Such influences suggest that although students demonstrate foundational SRL competencies, there remains room for growth and development.

These findings highlight the importance of integrating interventions that strengthen motivation and the use of SRL strategies, thereby enhancing academic achievement and lifelong learning skills. Furthermore, the study highlights the need for educational institutions to explicitly introduce and support SRL strategies and motivational constructs, which empowers students to independently manage their learning.

The Pearson correlation analysis revealed that SRL strategies and motivational constructs are positively correlated with academic achievement, although with varying degrees of strength. For example, ELB ($r = .31$) and SE ($r = .31$) demonstrated moderate positive correlations with academic achievement, which is consistent with the findings of Schunk and Zimmerman (1994) and Amri (2024), who emphasized the significant influence of self-belief and cognitive strategies on academic achievement. These findings echo the conclusions of Meng and Zhang (2023), Mete (2021) and Omari et al. (2020), all of whom reported significant positive relationships between SE and academic achievement. The motivational construct of TV ($r = .22$) further supports Meng and Zhang's (2023) findings, which emphasized the need for students to perceive learning activities as meaningful. Similarly, the positive correlation between TSDY ($r = .24$) suggests the critical role of environmental regulation in effective SRL, supporting the view that managing one's study context is essential for academic achievement.

In general, these findings emphasize the dual importance of promoting strong self-belief and enhancing structured cognitive strategies in higher education. They highlight the need for educational interventions that address both psychological components such as motivation and SE and practical elements such as TSDY. Such comprehensive approaches can significantly enhance student performance and promote more effective and autonomous learning behaviors.

Multiple linear regression analysis revealed that SRL constructs collectively serve as significant predictors of academic achievement. The model's F value of 9.69 and the highly significant p value ($p < .001$) strongly support this finding. SRL constructs accounted for 18% of the variation in academic achievement. Although modest, this is a statistically significant effect, which confirms their importance as predictors of academic achievement. These findings are in line with the conclusions of Zimmerman and Martinez-Pons (1986), Amri (2024), Schunk (2005) and Firdous and Riaz (2023), who emphasized the predictive power of SRL in academic achievement.

In conclusion, the study endorses a positive predictive relationship between SRL strategies, motivational orientations and academic achievement. This highlights the important roles of SRL and motivation in academic achievement. These findings suggest that universities should adopt systemic measures to integrate SRL strategies into curricula, offer teacher training to support the development of these skills, and enhance learning environments that promote autonomy. Such interventions can enhance student self-regulation, improve academic outcomes, and cultivate lifelong learning habits, which ultimately contributes to the growth of more engaged and effective learners.

IMPLICATIONS

The implications of this study for Moroccan EFL university education are multifaceted. First, the findings emphasize the importance of integrating SRL strategies into instructional practices. Since SRL constructs have been shown to significantly predict academic achievement among Moroccan EFL students, educators are encouraged to design curricula that explicitly promote skills such as goal setting, strategic planning, self-monitoring, and self-reflection.

Educators play a significant role in enhancing self-regulatory skills among students. Therefore, the results of this study highlight an urgent need for comprehensive professional development programs that equip teachers with effective methods to support SRL strategies. The integration of SRL skills into the curriculum of schools can create more engaging and supportive learning environments that directly contribute to improved student outcomes. At the policy level, the demonstrated predictive power of SRL suggests that educational authorities in Morocco should prioritize curricular reforms and policies that promote autonomous learning from an early age, which enhances higher academic achievement and prepares students for the demands of the modern workforce.

However, this study has certain limitations. First, it was conducted at only three universities, which may not fully represent all Moroccan universities. Additionally, because a convenience sample of students who chose to participate was used, the results cannot be generalized to all Moroccan students. Moreover, demographic variables such as sex, age and current class year were reported for descriptive purposes only and were not included in the analysis. Therefore, their influence on SRL was not examined. Further studies could address these limitations by incorporating these variables in the analysis to explore whether they make any differences among students.

Finally, this study sets the stage for further research in Morocco. Future studies should examine how SRL shapes not only academic performance but also other specific skills, such as speaking, writing and reading. Studies should also examine the long-term effects of interventions that help develop these skills among

students. This research will deepen our understanding of SRL in Moroccan higher education and guide strategies to support students in different learning environments.

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