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Self-Regulated Learning and its Relation to Achievement Motivation among University Students in the Context of Online Learning After the COVID-19

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Abstract

This study aims to understand the nature of the relationship between self-regulated learning and academic achievement motivation in the context of distance learning due to the COVID-19 pandemic among university students. The contemporary approach to the learning process is based on self-organization and the extent to which university students can stimulate their motivation to increase their knowledge, control the educational tasks they face, and deal with them in creative ways and ideas. We adopted a descriptive-analytical approach to conduct this study on a sample of (205) male and female second-year bachelor's students from the Social Sciences Department with all its specializations. They were selected using a systematic random sampling method, where they were administered the Self-Regulated Learning Scale (2020) and the Academic Achievement Motivation Scale by Al-Musharrafieh (2012). After using the necessary statistical methods to process the data, the results revealed a statistically significant relationship between self-regulated learning and academic achievement motivation among the sample individuals, with significant statistical differences in the average ranks of self-regulated learning among the specializations of the Social Sciences Department, and no significant differences in terms of academic achievement motivation scores.

Keywords: Academic achievement motivation, COVID-19, online learning, self-Regulated learning, University students

ملخص

تهدف هذه الدراسة إلى معرفة طبيعة العلاقة بين التعلم المنظم ذاتيا ودافعية الانجاز الأكاديمي في ظل التعلم عن بعد جراء جائحة كوفيد19لدى الطالب الجامعي، لأن التوجه المعاصر لعملية التعلم قائم على التنظيم الذاتي ومدى قدرة الطالب الجامعي على استثارة دافعيته لزيادة معارفه، ومساعدته على التحكم في المهمات التعليمية التي تواجهه والتعامل معها بطرق وأفكار إبداعية، وقد اعتمدنا المنهج الوصفي التحليلي لإجراء هذه الدراسة على عينة قوامها (205) طالبا وطالبة من مستوى الثانية ليسانس من قسم العلوم الاجتماعية بجميع تخصصاته وقد تم اختيارهم بطريقة عشوائية طبقية، حيث طبق عليهم مقياسي التعلم المنظم ذاتيا لمديد (2020)، ومقياس دافعية الإنجاز الأكاديمي للمشرفي (2012)، وبعد استخدام الأساليب الاحصائية اللازمة لمعالجة البيانات توصلت النتائج إلى وجود علاقة ارتباطية ذات دلالة إحصائية بين التعلم المنظم ذاتيا ودافعية الإنجاز الأكاديمي لدى أفراد العينة، مع وجود فروق ذات دلالة إحصائية بين متوسطات الرتب في التعلم المنظم ذاتيا لتخصصات قسم العلوم الاجتماعية، وعدم وجود فروق فيما يخص درجات دافعية الإنجاز الأكاديمي.

الكلمات المفتاحية: دافعية الإنجاز الأكاديمي، كوفيد19، التعلم عبر الأنترنيت، التعلم المنظم ذاتيا. طلبة الجامعة.

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Introduction

Students are often considered the backbone of a nation's future; hence, contemporary societies invest significant efforts in nurturing this vital demographic academically. Addressing educational challenges becomes crucial to equip them for a prosperous academic journey, reflecting the broader societal belief in their potential as the cornerstone of future societal advancement.

The onset of the COVID-19 pandemic in 2019 introduced unprecedented global shifts, propelling a sudden shift to remote learning due to the necessary social distancing measures aimed at curbing virus transmission. This shift not only altered life's natural course but also imbued it with new complexities and challenges. Consequently, a philosophical and practical pivot towards online education emerged as the pragmatic alternative, prompting a reevaluation of educational strategies. In response, there was an imperative for educators and researchers to refine learning methodologies that fostered a sense of responsibility among students. Self-regulated learning, which emphasizes learning through active engagement and self-direction, became increasingly pertinent.

This educational approach advocates for learners to take charge of their learning processes, enhancing flexibility and efficacy in knowledge acquisition and application. Psychologists have long recognized that human behavior is goal-oriented, with academic achievement motivation being a critical driver that propels individuals towards specific educational objectives. This type of motivation acts as an intrinsic catalyst that not only directs behavior but also sustains it, aiming at academic excellence. The relationship between self-regulated learning and academic achievement motivation thus becomes a focal point of this study, underscoring its significance across educational, psychological, and social domains.

The responsibility for learning at the university level is substantial, as students' progress and success largely depend on their commitment to enhancing and evolving their knowledge and skills. The demanding nature of university education loads students with numerous academic responsibilities that necessitate a strong sense of motivation. Effective and self-regulated educational experiences significantly boost students' performance efficacy, which in turn, escalates their motivation for higher achievement, as illustrated by Chapman et al. (2023).

Motivation, an intrinsic force that steers students' behavior towards their academic goals, has been observed to facilitate quicker and more efficient learning responses in students who possess robust achievement motivation, compared to their less motivated peers. This observation is supported by studies such as those conducted by Abu Al-Ala (2003). The focus on achievement motivation stems from its pivotal role in several realms, notably in educational and academic contexts. As Otman (2010) emphasized, achievement motivation is essential not only for directing student behavior but also for enhancing their perception and interpretation of situations and behaviors.

Achievement motivation, as Khalifa (2012) discussed, is a core element in students' drive towards goal accomplishment, reinforced through their successes and the goals they attain. Typically, academic achievement motivation encompasses a desire to excel, overcome challenging tasks, strive for success, engage in competition, exhibit perseverance, and nurture ambition. These traits are particularly crucial for university students in the face of unique challenges introduced by the COVID-19 pandemic in Algeria, which necessitated the shift to

remote learning platforms. This transition required students to self-regulate their learning and independently access knowledge from various sources while adhering to social distancing norms to mitigate virus transmission.

The importance of self-regulated learning and academic achievement motivation for university students becomes evident from the above. These factors are crucial in nurturing curiosity, responsibility, and a sense of challenge towards self-research and effective discovery. They contribute to enhancing the student's motivation and academic ambitions to achieve goals, improve learning performance, and ensure the continuity of electronic academic learning after the COVID-19 pandemic period. The field study was conducted at Djillali Bounaama University during the academic year. This study aims to uncover the relationship between self-regulated learning and academic achievement motivation, as well as to identify differences among academic specializations for second-year undergraduate students in the Social Sciences department at the University of Khemis Miliana.

Based on this, the research problem is defined by the following research questions:

- What is the relationship between self-regulated learning and academic achievement motivation among second-year undergraduate students in the Department of Social Sciences at Khemis Miliana University?
- How can we explain the differences in self-regulated learning according to academic specialization among second-year bachelor's students in the Department of Social Sciences at Djillali Bounaama University?
- How can differences in academic achievement motivation be explained according to academic specialization among second-year undergraduate students in the Department of Social Sciences at Djillali Bounaama University?

Literature Review

Previous Studies

Rahmoun's study (2021) aimed to identify the level of self-regulated learning in a sample of first-year Master's students at Khemis Miliana University during the COVID-19 pandemic. The results showed a high level of self-regulated learning among the research sample individuals.

Laazali and Ayesh's study (2021) investigated the contribution of achievement motivation and self-regulated learning strategies as independent variables in improving student academic performance. The results indicated that both achievement motivation and self-regulated learning strategies contribute to academic performance among Khemis Miliana University students.

Anagra's study (2022) sought to identify self-regulated learning strategies in a sample of students at Abdelhamid Ibn Badis University (Algeria). The findings revealed that their common learning strategy was rehearsal and memorization. There was no significant effect of gender and academic year on self-regulated learning strategies among the research sample individuals.

Rafea and Al-Aqoun's study (2023) aimed to uncover the relationship between self-regulated learning strategies in the light of the Pintrich model and achievement motivation among second-year Master's students in Educational Psychology and Clinical Psychology at Blida University. The results indicated a statistically significant relationship between self-regulated learning strategies based on the Pintrich model and achievement motivation among the sample individuals.

Saadawi and Krish's study (2024) attempted to assess the level of use of self-regulated learning strategies among Blida University students. The results showed a high level of use of

strategies (goal setting and planning, rehearsal and memorization, seeking social assistance) and a moderate level of use of the strategy of maintaining records and monitoring. There were statistically significant differences in the use of strategies (maintaining records and monitoring, rehearsal and memorization, and seeking social assistance).

Upon reviewing the previous studies that addressed the topic of our current research, it is evident that they mainly focused on assessing the level and self-regulated learning strategies of university students. However, Rafea and Al-Aqoun's (2023) study partially aligns with our research topic. Furthermore, most of the studies coincided with our study in their reliance on a descriptive approach and using questionnaires as a data collection tool. Our study, on the other hand, stands out in its overall goal of uncovering the relationship between self-regulated learning and achievement motivation in the context of online learning as a strategy influenced by the impact of the COVID-19 pandemic.

Self-Regulated Learning

As delineated by Al-Qudah (2005), self-regulated learning is defined as "the process by which a student teaches himself relying on his personal skills and readiness through engaging in various educational activities" (p. 255). This concept refers to the way a student learns by utilizing their self-capabilities, and talents, and stimulating their motivation to learn, Ahmed (2007) supported this concept by explaining how self-regulated learning ensures deliberate planning, strategic application, and behavioral adjustment to facilitate effective learning.

Self-regulated learning refers to the capability of second-year undergraduate students in the Department of Social Sciences at Khemis Miliana University to self-direct their learning through effective planning, organization, and time management. It also includes their ability to reassess and modify their decisions during various learning scenarios to accomplish their educational objectives. This construct is quantitatively assessed using the total scores from the Self-Regulated Learning Scale developed by Madid (2020).

Academic Achievement Motivation

According to Beni Younes (2021), academic achievement motivation is "the ongoing desire to strive for success, accomplish difficult tasks, overcome obstacles efficiently, with the least possible time and effort, and with the highest level of performance"(p.14), This motivation is characterized as a robust, general state of motivation that compels a learner to concentrate on and immerse in educational activities. It is evident in the learner's enthusiasm for absorbing new knowledge, their sustained active engagement in specific tasks, and perseverance until learning objectives are achieved. This drive prompts individuals to adeptly navigate challenges and continually enhance their educational outcomes, leading to increased effort and time dedicated to learning activities, as highlighted by Al-Qani (2020).

In operational terms, academic achievement motivation for second-year undergraduates at the Department of Social Sciences at Khemis Miliana University is gauged by their capability to effectively fulfill their academic responsibilities and activities in alignment with their aspirations. It also measures their success in achieving set educational goals which subsequently enhances their academic performance and cognitive skills. This is quantitatively measured through the total scores obtained on the Academic Achievement Motivation Scale devised by Al-Mushrafi (2012).

Online Learning

It is a method of learning that relies on information and communication technology, requiring a computer device and its multimedia with internet connectivity, providing an interactive environment that helps the learner receive information most effectively, in the least amount of time, and with the least effort (Ray, 2020).

Methodology

The choice of the study method is closely related to the nature of the subject and the content of the phenomenon under study. Since our goal through our study is to identify the nature of the relationship between self-regulated learning and achievement motivation in university students in the context of online learning and the post-COVID-19 period, the researchers adopted the descriptive-analytical method aimed at describing phenomena, analyzing the collected data, and providing appropriate interpretations of those phenomena.

Participants

The researchers conducted a preliminary study at Jalil Bou Nama Khemis Miliana University, Faculty of Human and Social Sciences. A random sample of 45 second-year undergraduate students from the Department of Social Sciences was selected to define and control the size of the study population and the type of sample, in addition to verifying the psychometric properties of the scales and predicting potential difficulties that could pose obstacles to the main study.

The original population size was determined to be 431 students from Jalil Bou Nama Khemis Miliana University, Department of Social Sciences, second-year undergraduate level, distributed across the three specializations as shown in Table One:

Table 1. *Distribution of the study population by specializations*

Specialization	Number	Percentage
Sociology	242	56.15%
Guidance and Counseling	119	27.61%
Philosophy	70	16.24%
Total	431	100%

Table One indicates that the distribution of the study community according to the number of individuals is unequal, as the Sociology specialization includes the largest number compared to the Counseling, Guidance, and Philosophy specializations.

Given the nature of the study and the content, as well as the results of the preliminary study, the researchers adopted the stratified random sampling method. This method involves dividing the original population into strata or categories based on a specific characteristic such as gender, education level, or educational specialization.

If the elements of the population are heterogeneous, the population is divided into strata, and then a simple random sample from each stratum is taken in proportion to the stratum's size in the population, by applying the following formula: Stratified sample = (Sample size / Population size) * Sample size. (Al-Najjar, 2010). After setting and determining the original

research population and the type of sample used, and by applying the stratified random sampling law, the main study sample was determined as follows:

- Sociology specialization was estimated at 115 students, Guidance and Counseling at 57 students, and Philosophy at 33 students.

Research Instruments

The researchers relied on two tools in their study, the Self-Regulated Learning Scale and the Academic Achievement Motivation Scale:

Self-Regulated Learning Scale

Designed by Madid (2020), the researcher developed the scale after reviewing numerous related studies and research on self-regulated learning. The scale consists of thirty-two positive statements distributed across four dimensions, each containing eight statements: Planning dimension (items 1-8), Monitoring dimension (items 9-16), Control dimension (items 17-24), and Reaction and Reflection dimension (items 25-32). The scale offers five response alternatives: strongly agree, agree, unsure, disagree, and strongly disagree.

Psychometric Properties of the Self-Regulated Learning Scale in the Current Study

Validity

The validity was calculated using discriminant validity (extremity comparison validity), and the following procedures were followed to calculate this type:

- Calculate the total score for each individual.
- Arrange the total scores obtained by the sample of 45 individuals in descending order from highest to lowest.
- Depending on the total score, divide them into two extreme groups, namely the top 27% and the bottom 27%, making each group consist of 12 individuals while excluding the middle 46% due to the small sample size. Initially, the researchers verified the conditions and assumptions for applying the "t-test" for two independent samples.

After confirming that the data were not normally distributed as indicated in Appendix (4), they calculated the Mann-Whitney U-test (a non-parametric alternative to the "t-test") for two independent samples as shown in the following table:

Table 2. *Statistical indicators for extremity comparison to verify the scale's validity*

	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance Level
Upper Group	12	18.50	222	0.000	Significant at 0.01
Lower Group	12	6.50	78		
Total	24				

Table Two shows that the mean rank for the upper group was 18.50, and for the lower group, it was 6.50; the sum of ranks for the upper group was 222, and for the lower group, 78. The Mann-Whitney U value was 0.000, significant at 0.01, indicating significant differences between the mean ranks of the upper and lower groups. This demonstrates that the scale can

discriminate between the two groups, which is an indicator of validity. Validity was also calculated through internal consistency, calculated by correlation coefficients between the dimensions of the scale and the total score, as shown in the following table:

Table 3. *Correlation coefficients between dimensions and the total scale score*

Dimensions	Planning	Monitoring	Control	Reaction and Reflection	Total Score
Planning	/	*0.32	**0.60	**0.45	**0.74
Monitoring		/	**0.43	**0.36	**0.68
Control			/	**0.60	**0.86
Reaction and Reflection				/	**0.80
Total Score					/

*Significant at 0.01

**Significant at 0.05

Table Three indicates that the correlation coefficients between the dimensions of the scale and the total score ranged between 0.68 to 0.86, all significant at 0.01, and between the dimensions themselves ranged from 0.32 to 0.60, all significant at 0.01 and 0.05. This indicates that the dimensions of the scale are consistent with each other and with the total score, which is an indicator of validity.

Reliability

The Reliability of the scale was calculated using Cronbach's alpha for internal consistency, as we sought to ascertain the consistency of the items measuring self-regulated learning. Since there were more than two alternatives, Cronbach's alpha equation was applied, yielding a value of 0.76 for all items of the scale, indicating an acceptable level of internal consistency and therefore a high-reliability coefficient for the scale.

Academic Achievement Motivation Scale

Designed by Al-Mushrafi (2012), the scale was developed after reviewing numerous Arabic and foreign scales and studies. Through these scales, the designer encapsulated all aspects related to this concept, selecting the most common ones based on previous research and studies to define the concept and its resulting dimensions. The scale consists of thirty-two statements distributed across four dimensions: Academic Ambition (items 1-8), Goal Orientation (items 9-16), Achievement Orientation (items 17-24), and Cognitive Motivation (items 25-32). The scale offers three response alternatives: always, sometimes, rarely.

Psychometric Properties of the Academic Achievement Motivation Scale in the Current Study

Validity

We calculated the validity using discriminant validity (extremity comparison validity). The researchers followed these procedures:

- Calculated the total score for each individual.

- Ordered the total scores obtained by the 45 individuals in descending order from highest to lowest.
- Based on the total scores, the sample was divided into two extreme groups—27% in the upper third and 27% in the lower third, thus forming groups of 12 individuals each. The middle 46% were excluded due to the small sample size. Initially, the researchers verified the conditions and assumptions for applying the "t-test" for two independent samples.

After confirming that the data were not normally distributed as indicated by Appendix (4), they calculated the Mann-Whitney U test (a non-parametric alternative to the "t-test") for two independent samples as illustrated in the following table:

Table 4. *Statistical indicators for extremity comparison to verify the validity of the scale*

Groups	N	Mean Ranks	Sum of Ranks	Mann-Whitney U	Significance Level
Upper Group	12	18.50	222	0.000	Significant at 0.01
Lower Group	12	6.50	78		
Total	24				

Table Four demonstrates that the mean rank for the upper group was 18.50 and for the lower group 6.50; the sum of ranks for the upper group was 222 and for the lower group 78. The Mann-Whitney U value was 0.000, significant at 0.01, indicating significant statistical differences between the mean ranks of the upper and lower groups. This demonstrates the scale's capability to discriminate between the groups, which is an indicator of validity. Additionally, we calculated the validity of the scale through internal consistency. This was done by calculating correlation coefficients between the dimensions of the scale and the total score, as shown in the following table:

Table 5. *Correlation coefficients between dimensions and the total scale score.*

Dimensions	Academic Ambition	Goal Orientation	Achievement Orientation	Cognitive Motivation
Total Score	**0.75	**0.66	**0.71	**0.54

Significant at 0.01**

Table Five shows that the correlation coefficients between the dimensions of the scale and the total score ranged from 0.54 to 0.75, all significant at 0.01, indicating that the dimensions of the scale are consistent with each other and with the total score, which is an indicator of validity.

Reliability

We calculated the reliability of the scale using Cronbach's alpha for internal consistency, as we wanted to determine how consistently the items measure academic achievement motivation. Since there were more than two alternatives, Cronbach's alpha was applied, and its value for all items of the scale was 0.68, indicating an acceptable level of internal consistency, thus the scale enjoys a high reliability coefficient.

Results

Presentation, Analysis, and Interpretation of Results Related to the First Hypothesis

To verify the first hypothesis, which states that there is a statistically significant relationship between self-regulated learning and academic achievement motivation among second-year undergraduate students in the Department of Social Sciences at Khemis Miliana University, the researchers ensured the conditions and assumptions for applying Pearson's correlation coefficient. After confirming that the data were normally distributed and also the linearity of the relationship (via a scatter plot) as shown in Figure One:

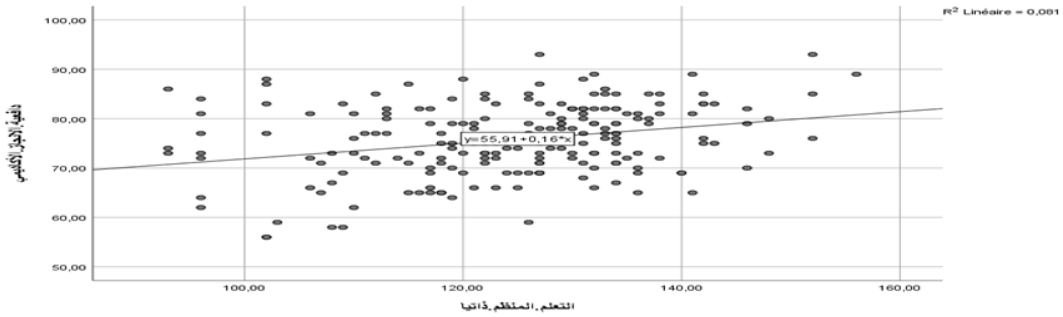

Figure 1. Scatter plot

Figure One reveals that the points form a cloud and approximate a straight line, indicating a linear relationship between the variables. Pearson's correlation coefficient was calculated as follows:

Table 6: *Pearson correlation coefficient values between self-regulated learning and academic achievement motivation for second-year undergraduate students in the Department of Social Sciences*

	Pearson Correlation Coefficient	Significance	Coefficient of Determination
Self-Regulated Learning	0.28	Significant at 0.01	0.08
Academic Achievement Motivation			

Through the data analysis, Table Six demonstrates that the Pearson correlation coefficient observed between self-regulated learning and academic achievement motivation is 0.28, which is statistically significant at the 0.01 level. This correlation denotes a positive but weak relationship between the two variables. It suggests that as self-regulated learning increases, there is a corresponding mild increase in academic achievement motivation among second-year undergraduate students from the Department of Social Sciences at Khemis Miliana University.

The coefficient of determination denoted as $R\,2R2$, is 0.08, indicating that approximately 8% of the variance in academic achievement motivation can be accounted for by variations in self-regulated learning. This implies that self-regulated learning, while a contributing factor, does not solely predict academic achievement motivation; 92% of the variance remains explained by other variables not included in this study. Such variables could include external factors like family support, personal interest, peer influence, or even the psychological well-being of the students.

The findings underscore the crucial roles that self-regulated learning and academic achievement motivation play in the academic lives of university students. As outlined by Al-Qubrusli (2017), self-regulated learning fosters a sense of motivation, perseverance, and confidence in students. It equips them with various strategies to navigate through their academic endeavors effectively, thereby setting the stage for achieving their educational goals. The global health crisis, notably the COVID-19 pandemic, introduced significant disruptions to traditional educational practices, necessitating a swift pivot to remote learning modalities. This abrupt transition has highlighted the importance of self-regulated learning as students found themselves in a largely self-directed learning environment. The capacity to adapt and manage their learning independently has become more crucial than ever in maintaining academic continuity and effectiveness during such unprecedented times.

Students who excel in self-regulated learning typically display high levels of academic achievement motivation. They actively engage in educational tasks, demonstrating persistence and a robust sense of responsibility. Such students are not only adept at using diverse and effective learning methods but also possess a comprehensive array of cognitive and metacognitive strategies which enhance their ability to organize and regulate their learning processes. They exhibit intrinsic motivation and autonomy, engaging in metacognitive activities that reflect a deep engagement with their learning material.

By extending these findings into the context of a global pandemic and the shift to online learning environments, this research contributes new insights into how external crises can influence educational psychology and student behavior. This exploration enhances our understanding of the interplay between self-regulated learning and academic motivation in a changing educational landscape, providing valuable implications for educators, policymakers, and researchers in adapting strategies to foster educational resilience and success amidst challenges.

Presentation, Analysis, and Interpretation of Results Related to the Second Hypothesis

To verify the second sub-hypothesis, which states that there are statistically significant differences in self-regulated learning scores among second-year undergraduate students in the Department of Social Sciences at Jalil Bou Nama University in Khemis Miliana due to their field of study, the researchers checked the assumptions for One Way ANOVA. After confirming that the data were not normally distributed—as the scores in the three groups were normally distributed, and the homogeneity of variance condition was not met as indicated by Figure One, they proceeded with the Kruskal-Wallis Test as detailed in the following table:

Table 7. *Kruskal-Wallis test for the significance of differences between the three specializations in self-regulated learning*

Specialization	N	Mean Rank	Kruskal-Wallis	Significance Level
Sociology	115	91.84	9.38	0.009
Guidance and Counseling	57	118.83		
Philosophy	33	114.53		
Total	205			

Table Seven reveals that the mean rank for Sociology was 91.84, for Guidance and Counseling 118.83, and for Philosophy 114.53. The Kruskal-Wallis value was 9.38, significant at 0.05, indicating that there are statistically significant differences in self-regulated learning scores between the three specializations in the Department of Social Sciences among second-year undergraduate students. To pinpoint the source of these differences, the researchers used posthoc comparisons through the Mann-Whitney U test for pairwise comparisons between each group as detailed in the following tables:

Table 8. *Mann-Whitney U test for the significance of differences between ranks in sociology and guidance and counseling in self-regulated learning*

Specialization	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance Level
Sociology	115	78.98	9082.50	2412.50	0.005
Guidance and Counseling	57	101.68	5795.50		
Total	172				

Table Eight shows that the average rank for the Sociology major was calculated at 78.98, while the average rank for the Guidance and Counseling major was higher at 101.68. The total ranks for Sociology were calculated at 9082.50, and for Guidance and Counseling, it was 5795.50. The Mann-Whitney U test yielded a value of 2412.50, which is statistically significant at the 0.05 level. This indicates that there are significant statistical differences between the average ranks of the two majors concerning self-regulated learning, favoring the Guidance and Counseling major.

Comparison between Sociology and Philosophy Majors

Table 9. *Mann-Whitney U test for significance of differences between rank averages in Self-regulated learning for sociology and philosophy*

Specialization	N	Average Rank	Total Ranks	Mann-Whitney U	Significance Level
Sociology	115	70.87	8149.50	1479.50	0.054
Philosophy	33	87.17	2876.50		
Total	148				

Table Nine indicates that the average rank for the Sociology major was 70.87, while the Philosophy major was slightly higher at 87.17. The total ranks for Sociology were 8149.50 and for Philosophy were 2876.50. The Mann-Whitney U test value was 1479.50, which is not statistically significant at the 0.05 level, indicating that there are no significant statistical differences between the average ranks of the two majors in self-regulated learning.

Comparison among Sociology, Guidance and Counseling, and Philosophy Majors

Table 10. *Mann-Whitney U test for significance of differences between rank averages in self-regulated learning (guidance and counseling vs. philosophy)*

Specialization	N	Average Rank	Total Ranks	Mann-Whitney U	Significance Level
Guidance and Counseling	57	46.16	2631	903	0.75
Philosophy	33	44.36	1464		
Total	90				

Table 10 shows that the average rank for the Guidance and Counseling major was 46.16, while for Philosophy it was slightly lower at 44.36. The total ranks for Guidance and Counseling were 2631, and for Philosophy, 1464. The Mann-Whitney U test value was 903, which is not statistically significant at the 0.05 level. This suggests no significant differences in self-regulated learning averages between these two specializations. These findings could be explained by the students' acquisition of autonomy in learning, and their ability to organize and reconstruct new knowledge connected with prior knowledge, facilitated by the university environment, thus contributing to more stable cognitive structures among the students. This enhances self-regulated learning strategies, as suggested by Rashwan (2005). The maturity and acquired cognitive and social skills of second-year undergraduate students, ranging in age from 18 to 21 years, likely contribute to their organized thinking and responsibility in addressing social and scientific issues within their academic environments.

Differences in self-regulated learning between specializations may also be attributed to the variability in information processing techniques and the mastery of learning strategies, which vary by specialization and prior professional experience of the faculty, particularly in Guidance and Counseling, where most faculty members have practical experience as a school and career counselors. Moreover, the use of various learning strategies and mastery according to different educational situations requires appropriate selection, as suggested by Purdie et al. (1996), which found 14 distinct self-regulated learning strategies among Australian and Japanese students, including self-correction, recall methods, seeking help, and structured review. Husseinen (2010) also noted that some learning strategies are versatile and applicable to several types of tasks and situations, which helps improve educational content and individual cognitive skills. Similarly.

Presentation and Analysis of Results Related to the Third Hypothesis

To verify the sub-hypothesis stating that there are statistically significant differences in creative motivation scores among second-year master's students in the Faculty of Social Sciences at Jalil Bou Nama University in Khemis Miliana due to their field of study, the researchers checked the assumptions for One-Way ANOVA. After confirming that the data were normally distributed and also verifying the homogeneity condition as indicated by Figure One, they conducted a One-Way ANOVA as shown in the following table:

Table 11. *One-way ANOVA test showing the significance of differences between the three specializations concerning academic motivation*

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F Value	Significance (α=0.05)
Between Groups	58.55	2	29.28	0.56	Not significant
Within Groups	10526.75	202	52.11		
Total	10585.30	204			

Table 11 indicates that the F value was calculated as 0.56, which is not statistically significant, indicating no significant differences in academic motivation scores among second-year undergraduate students in the Department of Social Sciences at Khemis Miliana University due to their field of study. This finding suggests a uniformity in the level of academic achievement motivation across different specializations within the department. Such uniformity could be attributed to a shared awareness and collective drive among students towards achieving their personal and academic goals. These students are characterized by a high level of ambition and a robust sense of responsibility, which are essential in their efforts to improve academic performance and succeed in their future careers This general attitude towards achievement is likely influenced by early socialization methods that nurture motivation for achievement from childhood, persisting into later stages of life, as discussed by McClelland.

Moreover, the attitudes of students and their shared moral and religious values, which emphasize mastery of work and perseverance, play a crucial role in sustaining their motivation towards academic achievements. These values are reinforced by the moral preparation provided by professors, who reward the efforts of students, thereby encouraging a continued commitment to academic excellence. Additionally, the cognitive and social developmental stages of most students, who are in late adolescence (aged between 18 to 21 years), contribute to this phenomenon. This developmental stage is marked by a peak in competitive spirit and a robust desire for knowledge and understanding, which Khalifa (2012) refers to as cognitive motivation. This motivation drives students to efficiently complete their academic tasks. The satisfaction of students with their academic major might also be reflected in these findings. During the orientation process into the social sciences specializations in their second year, most student desires are met, facilitating the alignment of their perceptions with their future aspirations, whether these involve continuing their academic path or transitioning towards a professional life that aligns with their needs and interests.

The alignment of content, goals, and future perspectives within the social sciences specializations contributes to a uniform level of academic achievement motivation among students. Additionally, the fact that most of these students come from a general arts background in secondary education, with similar transition rates to university education, further supports this uniformity.

Discussion

The present research depicts that self-regulated learning and academic achievement motivation are interdependent constructs among the second-year Social Sciences students of Khemis Miliana University. This suggests that there exist both ways of interaction among the variables of self-regulated learning and academic achievement motivation whereby an increase

or decrease in one affects the other. These findings are quite in agreement with the previous ones, which had similar aims and addressed the same or closely related issues like those of Rafea and Al-Agoun (2023) and Boudali (2018), which reported a relationship between self-regulated learning strategies and motivation to achieve among university students. It is however important to appreciate that the extent to which factor yields simple results, is however significant and goes beyond the other because it is beneficial in strengthening students' performance in academics as researched and shown by Laazali and Ayesh (2021).

Furthermore, the results of this study indicated that there was a variance in self-regulated learning among the majors of the Social Sciences Department in the research sample. These findings are consistent with the results of the study conducted by Madid (2020), who found differences in self-regulated learning among university students. In contrast to this situation, the findings of Rahmoun (2021), who studied self-regulated learning among university students, did not find any differences among students. The result of our study indicates that students did not adopt a learning strategy or learn to regulate self-learning that was consistent across majors and experience levels. Comparative analyses revealed that the Guidance and Counseling major achieved the best results across the various comparisons conducted. The nature of the educational content of this major begins around the second year, including the range of teaching methods and strategies used that lead to these differences.

According to the results of the study, the research sample did not show any statistically significant differences in self-regulated learning between the different specializations in the Department of Social Sciences. The results of the current study are consistent with the study of Al-Kafawen (2019), which indicated that there were no statistically significant differences in achievement motivation among second-level students at Al-Hussein Bin Talal University.

Despite the large number of studies that addressed the variables of self-regulated learning and academic achievement motivation among university students, we did not find studies that addressed the differences in these variables according to the academic specialization of students according to our field of knowledge. This gave our study a distinctive character by examining the differences between academic specializations and the selected research sample, which was determined based on the students' need to adapt to the new specialization they pursued. Therefore, our study sheds light on the gap between social science specializations in these variables to address it by integrating self-regulated learning strategies and developing programs to enhance achievement motivation within university courses, especially in light of the spread of e-learning as a widespread trend by all countries of the world.

Conclusion

The current research work aimed to analyze and interpret the nature of the relationship between self-regulated learning and academic achievement motivation among students at Khamis Mushait University. This is aimed at highlighting the role of these variables and their positive impact on the university education process by deepening the understanding of cognitive performance, motivation, and behavior. It seeks to enhance the efficiency of university students, develop their higher abilities, encourage them to organize their learning to achieve comprehensive quality in the education process and address the changes brought about by the COVID-19 pandemic and its implications that have necessitated a shift towards online

learning. The results of our current study indicate a significant statistical correlation between self-regulated learning and academic achievement motivation among the sample individuals, with significant statistical differences in the average ranks of self-regulated learning among the specializations of the Social Sciences Department (Sociology, Counseling and Guidance, Philosophy), and no significant statistical differences in terms of academic achievement motivation scores.

Recommendations

In light of the findings of the current study, the researchers propose the following recommendations:

- Encourage curriculum and teaching methods specialists to include self-regulated learning strategies and skills within the university curriculum and content, especially under the framework of e-learning.
- Organize training sessions and educational forums for university professors to teach using self-regulated learning strategies, particularly in the context of e-learning following the COVID-19 pandemic which has necessitated the adoption of distance education systems by universities.
- Develop training programs specifically for university students based on self-regulated learning skills and strategies to enhance the level of academic achievement motivation.

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Declaration of AI Refined

This research paper has undergone language correction using AI-powered tools (Grammarly) to address grammatical, spelling, and language errors. It is acknowledged that the use of such tools may introduce standardized patterns typical of AI-generated content. Consequently, a certain percentage of content may reflect AI-generated language structures. Yet, the intellectual content and the analysis remain entirely the author's work.

Statement of Absence of Conflict of Interest

The author(s) mentioned above hereby solemnly declare that they are not and shall not be in any situation that could give rise to a conflict of interest in what concerns the findings and recommendations contained in this academic article.

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