

Learning Strategies and Their Relationship to Learning Motivation among Fourth-Year Middle School Students: A Field Study in the City of Tiaret

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Abstract

This study aimed to investigate the nature of the relationship between learning strategies and learning motivation among fourth-year middle school students. It also sought to identify the relative hierarchy of learning strategies utilized by students, as well as to examine gender-based differences in both learning strategy usage and the level of learning motivation. The study was conducted on a sample of 80 male and female fourth-year middle school students in the city of Tiaret during the 2025/2026 academic year, selected via a simple random sampling method. A descriptive-correlational research design was adopted due to its appropriateness for the nature of the topic.

For data collection, two instruments were employed: the Learning Strategies Scale and the Learning Motivation Scale. Following statistical processing and data analysis, the results demonstrated a statistically significant correlational relationship between learning strategies and learning motivation among fourth-year middle school students. The findings also revealed a significant variation in the ranking of learning strategies employed by the sample members. Furthermore, no statistically significant differences were found between males and females regarding the use of learning strategies, whereas statistically significant gender differences were identified in the level of learning motivation.

Keywords: Learning Strategies, Learning Motivation, Fourth-Year Middle School Students, Gender Differences.

Introduction

Learning is considered one of the foundational processes underlying the cognitive and behavioral development of the individual, enabling them to acquire new knowledge and skills that facilitate adaptation to various life situations and coping with encountered problems. Learning refers to the process through which an individual acquires new patterns of behavior or modifies existing behavior as a result of experience or practice, thereby enabling them to satisfy their needs and achieve their goals. Furthermore, learning is closely linked to the presence of a motive that drives the individual to exert effort and engage in activity to reach a specific objective; effective learning is only achieved when the learner possesses motives that direct their behavior toward attaining a specific goal and satisfying a particular need, prompting them to employ various modes of mental and behavioral activity to overcome difficulties on the path to desired learning (Mohammad Sulayman, 2008, p. 19).

The educational process has received widespread attention from researchers in the fields of education and educational psychology, where focus has centered on investigating the factors

influencing learning effectiveness and quality, aiming to improve educational outcomes and achieve the desired pedagogical return. Among these factors are learning strategies, which are considered major topics addressed by numerous researchers through study and analysis due to their pivotal role in directing learner activity and organizing cognitive efforts during learning. Learning strategies refer to a set of procedures and methods consciously and intentionally employed by the learner to process, organize, and retrieve information, thereby contributing to the enhancement and efficiency of the learning process.

In the same context, learning motivation occupies a prominent position in the field of education as one of the essential factors influencing the level of the learner's engagement in and persistence with learning activities. Researchers have examined the factors contributing to stimulating and sustaining learner motivation due to its role in directing behavior toward learning and achieving desired educational objectives. Both learning strategies and learning motivation represent fundamental pillars that contribute to the development of the learner's knowledge, skills, and capacities, while helping them apply acquired experiences to diverse educational situations and solve potential problems.

Accordingly, achieving effective learning does not depend solely on the learner possessing cognitive capacities; it is also linked to their proficiency in utilizing learning strategies appropriate to their abilities and inclinations, alongside the level of motivation that stimulates them to engage in and sustain the learning process. Selecting appropriate strategies and employing them correctly contribute to fostering the learner's motivation toward learning, making them an active agent in constructing knowledge and developing capabilities, which positively reflects on learning quality and outcomes.

Statement of the Problem

The educational process has received significant attention within the fields of educational psychology and educational sciences due to its vital importance in building the learner's personality and developing cognitive and skill capacities. Researchers have sought to understand the factors affecting learning effectiveness and outcome improvement, revealing that the success of the educational process relies not only on the learner's mental capacities, but is also influenced by a set of psychological and cognitive factors that guide learner behavior and organize activity during learning. Among these factors is learning motivation, considered one of the most prominent psychological variables affecting the educational process, as it represents the internal force driving the learner to engage in learning activities and exert effort and perseverance to achieve intended educational goals.

Many psychologists have studied learning motivation; Henry Murray referred to the concept of the need for achievement as a fundamental motive stimulating the individual to strive for excellence and attain high levels of performance by overcoming difficulties and confronting challenges associated with educational tasks (Al-Fadil Muhsin, 1991, p. 203). This motive is regarded as a crucial factor guiding learner behavior toward effective learning, as a high level of motivation renders the learner more capable of perseverance and effort investment when facing educational difficulties.

In contrast, modern educational literature has focused on studying learning strategies as cognitive factors playing an important role in improving learning quality and organizing learner activity

during knowledge acquisition. Learning strategies refer to a set of procedures and methods consciously and intentionally used by the learner to process, organize, and retrieve information in a way that facilitates better comprehension of course material and more effective academic results. Numerous studies have confirmed that a learner's possession of effective learning strategies contributes to improving academic achievement, reduces examination-related anxiety, and assists in time management and efficient cognitive effort allocation (Muhammad Mizyan, 2003, p. 107).

Building upon the importance of these two variables in the educational process, numerous studies have sought to investigate the relationship between learning strategies and learning motivation. In this framework, the study by Al-Sheikh and Anwar Abdel Rahim (1993) concluded that there is a significant correlational relationship between learning and study skills and the components of learning motivation, demonstrating that these variables significantly contribute to explaining the variance in students' academic achievement. Similarly, the study by Marzouq Abdel Hamid (1993) indicated a statistically significant positive correlation between academic performance and self-directed learning strategies, alongside the correlation of these strategies with motivational components such as self-efficacy and intrinsic value.

Furthermore, the study by Ezzat Abdel Hamid (1999) showed a positive impact of both motivation and learning strategies on university students' academic achievement, while revealing gender differences in certain motivational components and learning strategy usage. In the same vein, Amal Ben Youssef's study (2007) found a positive correlational relationship between learning strategies and learning motivation among high school students, whereas no statistically significant gender differences appeared in learning strategy usage or learning motivation levels.

On the other hand, Aicha Bouzid's study (2010) demonstrated a positive correlational relationship between intrinsic motivation and cognitive and metacognitive learning strategies among university students, while a negative relationship emerged between amotivation and learning strategies, indicating that low motivation levels may impair the learner's employment of effective learning strategies. Additionally, Leila Boubekri's study (2011) concluded that a relationship exists between learning strategies and academic achievement levels, alongside a variation in the employment of these strategies among students.

Despite the plurality of studies addressing the relationship between learning strategies and learning motivation, their findings have exhibited a degree of variance, particularly regarding the nature of gender differences and the level of learning strategy utilization among learners across various educational stages. Moreover, most of these studies focused on advanced educational stages such as secondary or university levels, whereas research addressing this relationship among middle school students remains relatively limited, despite the critical importance of this stage in shaping learning patterns and developing achievement motivation.

From this standpoint, the need arises to investigate the relationship between learning strategies and learning motivation among fourth-year middle school students, as this represents a pivotal educational transitional stage preceding secondary education, during which numerous attitudes and motives associated with learning are formed. Accordingly, the current study seeks to uncover the nature of this relationship, in addition to identifying gender differences in learning strategy usage and learning motivation levels.

Based on the foregoing, the research problem can be formulated through the following main question:

General Research Question: Is there a statistically significant correlational relationship between learning strategies and learning motivation among fourth-year middle school students?

Sub-Questions:

1. Is there a variation in the ranking of learning strategy utilization among fourth-year middle school students?
2. Are there statistically significant differences between males and females in the use of learning strategies among fourth-year middle school students?
3. Are there statistically significant differences between males and females in the level of learning motivation among fourth-year middle school students?

Objectives of the Study

This study aims to achieve the following:

1. Uncover the nature of the relationship between learning strategies and learning motivation among fourth-year middle school students.
2. Identify the ranking of the most frequently utilized learning strategies among fourth-year middle school students.
3. Investigate gender differences in learning strategy usage.
4. Identify gender differences in learning motivation levels.
5. Contribute to understanding the nature of the relationship between learning strategies and learning motivation to help guide educational practices toward improving student learning.

Significance of the Study

This study gains significant importance at both theoretical and practical levels, given that learning strategies and learning motivation constitute essential factors in enhancing student learning quality and elevating academic achievement levels. The significance of the study can be clarified through the following dimensions:

1. **Educational Significance:** This study assists in providing scientific recommendations for educators and teachers on how to guide students toward employing effective learning strategies and stimulating their learning motivation, thereby contributing to improved educational process quality and better learning outcomes. It also aids in developing students' abilities to organize learning activity and manage time and efforts more effectively.
2. **Psychological Significance:** The study reveals the relationship between learning strategies and learning motivation, allowing an understanding of how motivation affects learner behavior and educational choices, and how learning strategies can support intrinsic motivation, thereby enhancing academic achievement and performance capacity.
3. **Cognitive Significance:** The study provides precise information regarding the types of learning strategies most frequently used by fourth-year middle school students, gender differences in their use, and the level of learning motivation among learners. This contributes to constructing educational programs based on learner characteristics and needs, thereby fostering self-regulated learning and problem-solving capacities in educational settings.

4. **Scientific and Research Significance:** This study constitutes a scientific addition to the educational library by focusing on the middle school stage, which has not received sufficient attention in previous studies compared to secondary or university stages. The study also enables the comparison of findings with prior research and the identification of research gaps concerning the relationship between learning strategies and learning motivation, enriching academic knowledge in this field.
5. **Practical Significance:** The study's findings can be employed to establish educational and guidance strategies assisting students in choosing optimal learning methods and approaches according to their motivations and capacities; they can also be utilized in designing psychological and educational support programs to stimulate learning and achieve academic excellence.

Operational Definitions

- **Learning Strategies:** Operationally defined as a set of intellectual mechanisms or performances undertaken by the learner to render the learning process easier, faster, and more effective in alignment with their capacities, attitudes, and inclinations. These render the learner self-regulated and capable of applying what they have learned to novel situations. Such strategies include: memorization and recall strategy, rehearsal or recitation, association, classification, summarization, organization, elaboration/construction, and human resource and material source management strategy. Operationally, it refers to the scores obtained on the Learning Strategies Scale.
- **Learning Motivation:** Operationally defined as the internal force driving the learner to desire studying and approach it with vigor to attain higher academic achievement. Operationally, it refers to the score obtained by the learner based on their responses to the items of the Learning Motivation Scale.
- **Fourth-Year Middle School Students:** Learners aged between 14 and 16 years who are enrolled in the final grade of the middle school educational cycle.

Methodological Procedures:

1. Research Methodology:

Selecting a methodology that aligns with the nature of the research problem under investigation is of paramount importance, as the researcher relies upon it to accomplish the study. Since the present research investigates the relationship between learning strategies and learning motivation, the descriptive method was deemed appropriate for this topic. The descriptive approach is a type of research design that examines contemporary natural, educational, social, economic, and political phenomena, studying their changes and degrees of correlation with other phenomena (Ezzat Attawi, 2007, p. 172).

2. Scope of the Study: The study was conducted in a middle school located in the province of Tiaret during the 2025/2026 academic year.

3. Pilot Study:

A questionnaire was utilized in this study to measure learning strategies among fourth-year middle school students. The questionnaire was submitted to a panel of jurors comprising professors from the Department of Psychology and Educational Sciences for validation. Their overall feedback was as follows:

- Most items accurately measure what they are intended to assess, and the phrasing is appropriate.
- Certain items exhibited repetition, necessitating their consolidation.
- Regarding the five-point response scale originally proposed (*always, often, sometimes, rarely, never*), the overlapping meanings made comprehension difficult for the students; consequently, the scale was reduced to three alternatives: (*always, sometimes, rarely*).
- Table (1) illustrates the dimensions and number of items comprising the Learning Strategies Scale

Dimensions	Item Numbers	Number of Items
Memorization and Recall	1, 2, 5, 21	4
Planning	4, 9, 22, 25, 38	5
Management	12, 15, 28, 40	4
Organization	6, 10, 33, 37, 8	5
Elaboration / Construction	3, 24, 27, 32, 36	5
Monitoring	14, 19, 13, 30	4
Self-Regulation	18, 20, 34, 29	4
Self-Evaluation	7, 16, 39, 41	4
Time and Space Work Organization	23, 31, 35	3
Human Resource and Material Source Management within the Educational Institution	11, 17, 26	3
Total	—	41 Items

• **Pilot Study:**

The pilot sample consisted of 27 students. The Learning Strategies Scale was administered to them on February 2, 2025. After approximately one month, the questionnaire was re-administered to the same sample members on February 29, 2025, in order to calculate the psychometric properties of the scale.

3. Study Sample: The study sample consisted of 80 students from Cheikhawi Ammar Middle School in the province of Tiaret. **Table (2):** Distribution of the Sample Members from the Original Population:

Original Population	Males	Females	Total
80	Count	Percentage (%)	Count
	41	51%	39

The sample was selected from a single middle school using a simple random sampling method, comprising a total of 80 students.

4. Study Instruments:

Two instruments were relied upon in this study:

- **First Questionnaire:** Used to measure learning motivation; it is a standardized, ready-made questionnaire consisting of 36 items, characterized by a reliability coefficient of 0.72 using the split-half method, where the partial correlation coefficient was 0.94, then adjusted using the Spearman-Brown formula to yield a total correlation coefficient of 0.96, indicating that the test possesses a high degree of reliability. As for validity, when calculated via extreme groups comparison, the calculated T-value reached 44.48 at a degree of freedom of 18, signifying a strong correlation and confirming the validity of the test.
- **Second Questionnaire:** The modified questionnaire measuring learning strategies, consisting of 41 items, after being validated by a jury of 9 professors from the Department of Psychology and Educational Sciences. Following the pilot study, the validity and reliability of the questionnaire were calculated.

Statistical Methods: The study results were analyzed using the Statistical Package for the Social Sciences (SPSS, version PEARSON 18), which applied the following statistical techniques: Arithmetic mean, standard deviation, Pearson correlation coefficient, Cronbach's alpha reliability coefficient, and percentages.

Presentation, Interpretation, and Discussion of Hypothesis Results:

1. Presentation, Interpretation, and Discussion of the First Hypothesis Results:

- **Hypothesis Statement:** There are differences (variations) in the ranking of learning strategy utilization among fourth-year middle school students. To verify this hypothesis, the Friedman test was employed. This test relies on ranking the observations rather than utilizing the raw observed values themselves; consequently, the Friedman test is based on the ranking of arithmetic means and standard deviations, and is utilized for related samples (Boubekri, 2011, p. 243). This is illustrated by the following table:
- **Table (3):** Ranking of Learning Strategies Utilization among Sample Members

Strategy	Observed Frequency	Expected Frequency	Significance Percentage / Difference
Planning	902	666.7	235.3
Elaboration / Construction	854	666.7	187.3
Organization	784	666.7	117.3
Self-Regulation	691	666.7	24.3
Self-Evaluation	674	666.7	7.3
Monitoring	668	666.7	1.3
Management	648	666.7	-18.7
Memorization and Recall	623	666.7	-43.7
Time and Space Work Organization	470	666.7	-196.7
Human Resource and Material Source Management	353	666.7	-313.7

- The table above illustrates the existence of a variation in the utilization of learning strategies, where the first rank and most frequently used strategy is **Planning**, representing 13.33%, whereas the least used strategy is **Human Resource and Material Source Management** at

5.24%, which confirms the presence of a disparity in the ranking of learning strategies utilization.

- These findings reflect a clear variance in the employment of learning strategies among students, as they tend to focus on strategies associated with organization and planning, while their usage of resource management strategies declines. As shown in the following table after calculating the Chi-square (χ^2) test:

• **Table (4):** Chi-Square (χ^2) Test Results

Sample Size (N)	80
Chi-Square (χ^2 / Khi-deux)	366.29
Degrees of Freedom (ddl)	9
Asymptotic Significance Level	0.000

- The Friedman Chi-square (χ^2) value reached 366.29 with 9 degrees of freedom and a significance level of 0.000, which is far below the adopted significance threshold of 0.05, conclusively confirming the acceptance of the hypothesis regarding the presence of a statistically significant disparity.
- The planning strategy ranked first at 13.33% (observed frequency of 902), followed by elaboration/construction at 12.63%, and organization at 11.62%. In contrast, human resource and material source management ranked last at 5.24% (observed frequency of 353), preceded by time and space work organization at 6.97%.
- These results can be interpreted in light of the sensitivity of the academic stakes (the factor of the Middle School Education Certificate exam - BEM). The top ranking of planning and construction strategies reflects cognitive maturity linked to the learner's awareness of the sensitivity of the evaluative stage represented by an official decisive examination. The fourth-year middle school student resorts to planning as a defensive and organizational strategy to divide lengthy syllabi and manage time effectively to cope with examination-induced pressure.
- Furthermore, regarding the student's internal cognitive structuring versus external resources, the high proportion of strategies such as planning, construction, and organization reflects the learner's reliance on internal cognitive processes (such as linking new knowledge to prior knowledge and reformulating concepts). Meanwhile, the low utilization of human resource management strategies (seeking help from peers, counselors, and teachers) is attributed to educational isolation during study, feelings of shyness, the desire for individual autonomy characteristic of adolescence, or the lack of adequate guidance and counseling to benefit from available institutional resources.
- The regression of the memorization and recall strategy to a relatively late rank (ranking eighth at 9.25%) is considered a positive indicator; it demonstrates that the student no longer relies on superficial rehearsal and repetition, but rather moves toward deeper comprehension, construction, and cognitive organization.

- This finding aligns with the study by Boubekri (2011), which indicated a diversity in learning strategy utilization, whereas it differs from the study by Ben Youssef (2007), whose results concluded the absence of diversity in learning strategy usage.
- **Table (5):** Percentages of Learning Strategy Utilization among the Research Sample

Strategy	Percentage (%)
Memorization and Recall	9.25%
Planning	13.33%
Management	9.62%
Organization	11.62%
Elaboration / Construction	12.63%
Monitoring	9.89%
Self-Regulation	10.21%
Self-Evaluation	9.99%
Time and Space Work Organization	6.97%
Human Resource and Material Source Management	5.24%
Total	approx 100\%

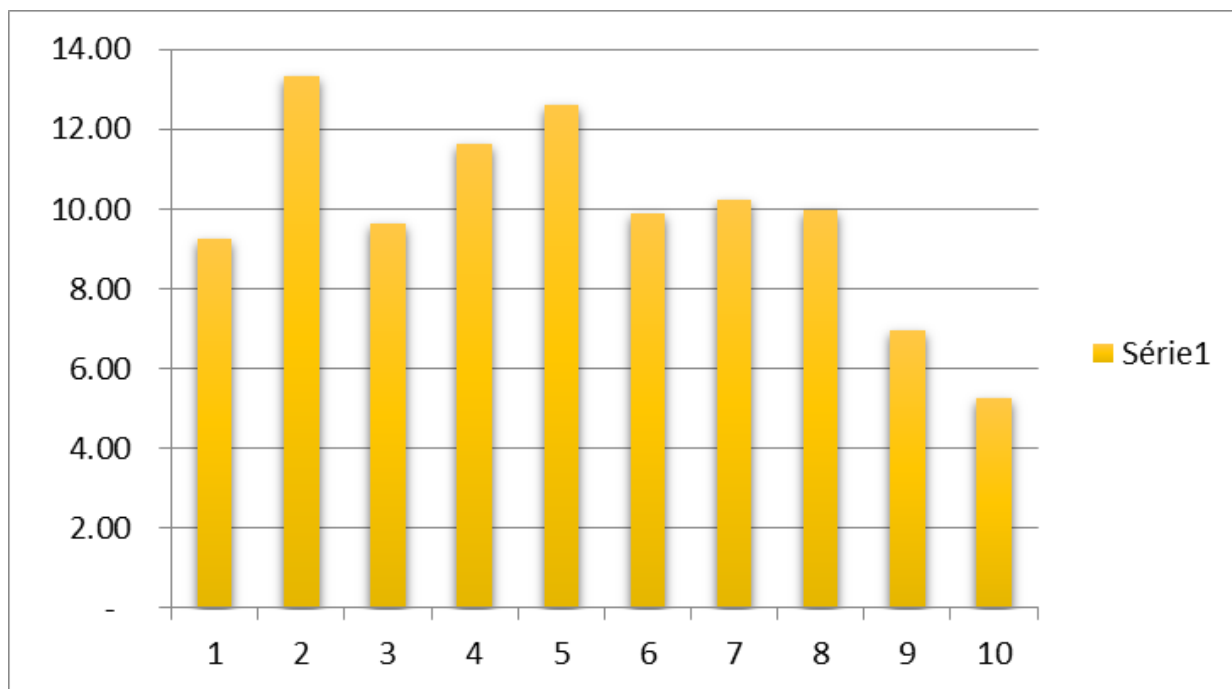


Figure 01: Frequency Distribution of Learning Strategies Utilization

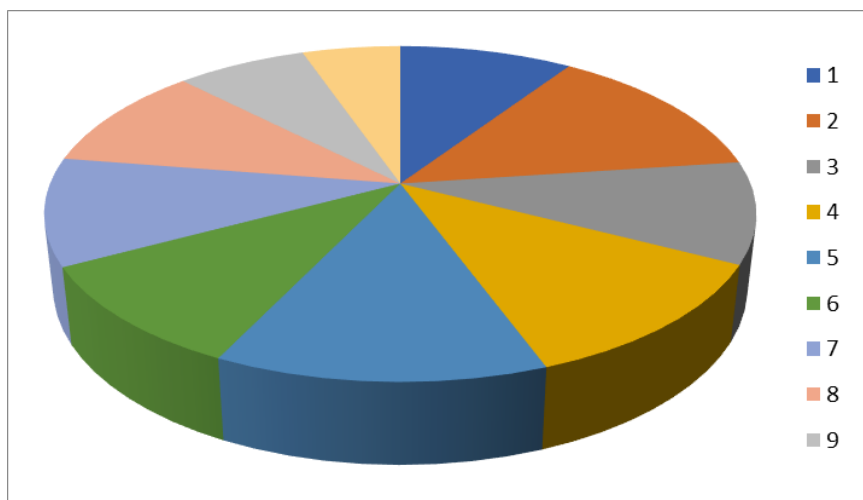


Table (6): Results of the T-Test for Gender Differences in the Utilization of Learning Strategies and Their Dimensions

Variables	Gender	N	Standard Deviation	Mean	df	Sig.	T-Value	Significance Level
Learning Strategies (Total)	Males	41	1.646	83.20	78	0.423	0.806	Not significant at alpha = 0.005
	Females	39	1.370	83.36				
Memorization and Recall	Males	41	1.723	7.59	78	0.101	1.66	Not significant at alpha = 0.005
	Females	39	1.449	8.28				
Planning	Males	41	1.935	11.39	78	0.929	0.090	Not significant at alpha = 0.005
	Females	39	2.573	11.44				
Management	Males	41	1.546	8.24	78	0.970	0.038	Not significant at alpha = 0.005
	Females	39	1.564	8.23				
Organization	Males	41	2.092	9.78	78	0.507	0.46	Not significant at alpha = 0.005
	Females	39	1.869	10.08				
Elaboration / Construction	Males	41	2.203	10.44	78	0.098	1.67	Not significant at alpha = 0.005
	Females	39	2.019	11.23				
Monitoring	Males	41	2.083	8.37	78	0.583	0.55	Not significant at alpha = 0.005
	Females	39	1.955	8.62				
Self-Regulation	Males	41	1.724	8.68	78	0.611	0.51	Not significant at alpha = 0.005
	Females	39	1.576	8.87				
Self-Evaluation	Males	41	1.955	8.32	78	0.247	1.16	Not significant at alpha = 0.005
	Females	39	1.459	8.77				
Time and Space Work Organization	Males	41	1.60	6.02	78	0.624	0.49	Not significant at alpha = 0.005
	Females	39	1.631	5.85				
	Males	41	1.236	4.236	78	0.008		

Human Resource and Material Source Management	Females	39	0.942	4.82			- 2.733	Not significant at $\alpha = 0.005$ (Statistically significant at 0.01)
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The results showed that the T-value for the total score of learning strategies reached 0.806 with a significance level of 0.423. Since the Sig. value ($0.423 > 0.05$), the result is statistically non-significant, which implies the rejection of the hypothesis and the establishment of no fundamental differences between males and females in the employment of learning strategies (where the arithmetic mean for males was 83.20 and for females 83.36).

Upon examining the sub-dimensions (memorization, planning, management, organization, etc.), a close convergence in arithmetic means between the genders is observed, leading to the rejection of the hypothesis and confirming the similarity of cognitive behavior between genders at this stage.

This can be explained by the fact that both genders are subjected to the exact same educational conditions and receive identical educational programs and curricula, resulting in a similarity in adopted learning methods. Furthermore, the awareness of students (both males and females) regarding the importance of academic success drives them to employ convergent learning strategies. During adolescence (14–16 years old), concrete and formal operational thinking develops in a convergent manner across both genders, making the mental mechanisms and methods adopted to comprehend scientific grades and organize content cognitively similar. Therefore, we find both parties striving to achieve success using learning strategies to make learning easier, faster, and more effective.

The findings of this study agree with Ben Youssef's study (2007), which concluded in its results that there are no gender differences in the utilization of learning strategies across all dimensions. Conversely, these findings disagree with the studies of Ezzat Abdel Hamid (1999) and Leila Boubekri (2011), which maintained that gender differences exist in learning strategy utilization. This discrepancy can be attributed to variations in the educational environments investigated (university versus middle school) and changes in familial and educational cultures that currently encourage both males and females equally.

3- Presentation, Interpretation, and Discussion of the Third Hypothesis Results:

- **Hypothesis Statement:** There are statistically significant differences between genders in the level of learning motivation.

Table (07): Results of the T-Test for Gender Differences in Learning Motivation Levels

Gender	Sample (N)	Arithmetic Mean	Standard Deviation	T-Value	Degrees of Freedom (df)	Statistical Significance (Sig.)	Significance Level (α)
Males	41	128.55	13.24	3.45	78	0.001	0.05
Females	39	139.29	14.59				

The T-value for the gender difference in learning motivation reached 3.45 at a significance level of 0.001 and 78 degrees of freedom. Since $0.001 < 0.05$, the differences are statistically significant in

favor of females; the arithmetic mean for females was 139.29 (with a standard deviation of 14.59), compared to a mean of 128.55 for males (with a standard deviation of 13.24).

Interpretation and Discussion: The differences favoring females in learning motivation are attributed to higher levels of ambition and a strong desire for self-actualization. For them, school and academic achievement represent the primary pathway and domain for demonstrating capacities and attaining socially extended excellence. This contributes to elevating achievement motivation and daily perseverance in completing assignments, which positively reflects on enhancing their internal and external motivation toward studying. In contrast, males in this age group (adolescence) tend more toward external activities, recreational aspects, and early consideration of material gain or vocational and athletic orientations outside the school walls, leading to a dispersion of their motivation and a reduction in the emotional focus dedicated exclusively to academic achievement. Additionally, females typically exhibit a higher degree of diligence, behavioral discipline, commitment to school instructions, and direct responsiveness to familial and scholastic reinforcement compared to males, which was clearly manifested in their elevated scores on the learning motivation scale.

Conversely, the lower motivation of males may stem from some individuals' tendency to focus prematurely on material aspects or adopt negative perceptions regarding the utility of education. These findings agreed with the study by Fatima Cissepan (2011), which found a statistically significant difference in learning motivation favoring females, whereas they disagreed with the studies by Amal Ben Youssef (2007) and Mohamed Mohamed Ali Mustafa (1998).

The integrated findings of this study reveal an important psycho-educational truth: males and females possess and apply the exact same cognitive and methodological tools (learning strategies), but the emotional and psychological driver (motivation) operates at a higher intensity among females. This requires educators and psychological counselors not to focus solely on "how to learn" (the cognitive aspect), but to place paramount importance on "why we learn" (the motivational aspect), especially among male students at this critical transitional stage through targeted guidance programs that enhance their appreciation of education and achievement motivation.

General Conclusion:

This study, which aimed to investigate the nature of the relationship between learning strategies and learning motivation among fourth-year middle school students in the city of Tiaret, concludes that there is a close, statistically significant positive correlation between the two variables. It was demonstrated that a student's possession of organized and systematic mental mechanisms necessarily elevates their level of enthusiasm and engagement in academic activity. This was clearly manifested in the planning strategy ranking first at (13.33%) as a defensive and organizational mechanism to cope with the pressure of the Middle School Education Certificate (BEM) exams. Furthermore, the results revealed a striking differentiation in the psychological structure of learners according to the gender variable; while the study showed no fundamental differences between males and females in how learning strategies are utilized (indicating a unity of curricula and cognitive capacities in the Algerian educational environment), it proved the existence of statistically significant differences in motivation levels favoring females. Psychologically, this is attributed to the high ceiling of academic ambition among girls and their desire for self-actualization and social distinction through education, contrasted with a relative dispersion in male motivation potentially

imposed by early vocational aspirations outside school. Consequently, this necessitates activating the role of school psychological guidance to focus on "introducing students to how to learn" and training them in "resource management" strategies to ensure the quality of educational outcomes and their balance across genders.

Accordingly, learning strategies and learning motivation represent two complementary elements in achieving effective learning, and they cannot be separated when explaining learner behavior and academic success. Therefore, improving learning quality requires fostering students' learning strategies alongside reinforcing their motivation toward learning through a stimulating educational environment.

Recommendations and Suggestions:

In light of the findings reached, the following recommendations can be proposed:

- Integrating explicit training on cognitive and metacognitive learning strategies within daily classroom practices, moving beyond a sole restriction to official examination periods.
- Guiding teachers toward diversifying motivational methods and activities to reduce student distraction (especially adolescent males) and raise their motivation levels.
- Encouraging students to activate human and material resource management strategies and foster a culture of seeking academic assistance and peer collaboration.
- Having school guidance and counseling practitioners design targeted guidance and awareness programs aimed at modifying negative attitudes and raising the ceiling of academic ambition.
- Intensifying proactive awareness sessions for educational teams and final-grade students regarding how to select strategies and their appropriate timing of use to mitigate examination anxiety.
- Reinforcing a culture of "learning for mastery and quality" rather than relying entirely on rote memorization or quantitative grade-based achievement.
- Conducting quasi-experimental research to design training and applied programs aimed at improving study habits and elevating motivation levels among middle school students.

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