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# Causal Relationship between Individual Characteristics, Cognitive and Social Learning Styles, and Learning Strategies, with the Mediating Role of Academic Engagement of Middle School Students in Arabic Language Lessons in the City of Naseri

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**Abstract**

This study aimed to examine the causal relationship between individual characteristics, cognitive and social learning styles, and learning strategies, with the mediating role of academic engagement among middle school students in Arabic language lessons in the city of Naseri. The statistical population of this research included all middle school students studying Arabic in Naseri, totaling 4,000 students. Based on the Krejcie and Morgan sampling table (1970), a sample of 380 students was selected using a cluster random sampling method. Data were collected using the following questionnaires: Individual Characteristics by Buss, Valenzi, and Eldridge (1975), Social Learning by Afshani et al. (2022), Cognitive Learning by Karami (2002), Academic Engagement by Reeve (2013), and Learning Strategies by Pintrich and De Groot (1990). The reliability coefficients of these questionnaires were 0.92, 0.92, 0.90, 0.88, and 0.80, respectively. The results showed that individual characteristics (β = 0.443) and cognitive learning (β = 0.437) had a significant effect on learning strategies, whereas social learning did not significantly affect learning strategies (β = 0.070). Additionally, individual characteristics (β = 0.061), cognitive learning (β = 0.317), and social learning (β = 0.418) significantly influenced academic engagement. Furthermore, academic engagement had a significant effect on learning strategies (β = 0.492). There was no significant relationship between individual characteristics and learning strategies mediated by academic engagement (r = 0.030). However, there was a significant relationship between cognitive learning and learning strategies mediated by academic engagement (r = 0.156), as well as between social learning and learning strategies mediated by academic engagement (r = 0.206). The findings suggest that teachers should assess students' cognitive learning styles (visual, auditory, kinesthetic, etc.) and incorporate various teaching methods that appeal to these styles.

**Keywords**: Individual Characteristics, Cognitive Learning Styles, Social Learning, Academic Engagement.

## Introduction

Effective learning strategies are essential tools that help students absorb, retain, and apply knowledge more efficiently. Key strategies include active learning techniques, such as summarizing information in one's own words, creating flashcards for quick review, and engaging in discussions to enhance understanding (Trosas et al., 2023). Self-testing, also known as retrieval practice, is another valuable strategy that strengthens memory and ensures information can be recalled when needed. Furthermore, spaced repetition—reviewing material at gradually increasing intervals—is

particularly effective for long-term retention, as it leverages the brain's natural forgetting curve to reinforce learning over time (Al-Urfi, 2022). Individual characteristics refer to the unique traits, abilities, and personal factors that distinguish one person from another. These characteristics include cognitive abilities, temperament, motivation, personal attributes, and physical traits, all of which shape how an individual interacts with their environment and others. Cognitive abilities, such as memory, problem-solving skills, and processing speed, vary greatly among individuals and influence their learning styles, work habits, and overall performance in different settings. Similarly, personal characteristics like openness, conscientiousness, extraversion, agreeableness, and neuroticism shape behavioral patterns, preferences, and interpersonal relationships (Meisner et al., 2023).

These characteristics are often influenced by genetic and environmental factors, creating a unique combination of traits for each individual that continues to evolve throughout their life. For instance, a highly conscientious individual may approach tasks systematically and prefer structured environments, whereas someone with high openness might seek new experiences and enjoy creative problem-solving. Additionally, factors such as self-efficacy, motivation, and resilience play a crucial role in how individuals respond to challenges and pursue their goals, shaping their unique approaches to personal and professional growth (Cavaliero et al., 2023). Social-cognitive learning styles are based on the theory that individuals learn by observing others, which may include peers, mentors, or role models. This approach, developed by psychologist Albert Bandura, highlights the role of the social context and cognitive processes in learning. According to Bandura's social-cognitive theory, individuals learn not only through direct experience but also by observing the actions and outcomes of others' behaviors. This observational learning or modeling helps individuals form concepts about which behaviors are effective and which should be avoided, enhancing their understanding of social behavior and building appropriate skill sets (Idris et al., 2023).

In addition to observational learning, social-cognitive theory emphasizes the importance of self-regulation, self-efficacy, and reciprocal determinism, where personal factors, behaviors, and environmental influences continuously interact. Self-efficacy, or an individual's belief in their ability to succeed in a specific task, plays a crucial role in motivating learners to actively engage in social contexts and tackle challenges. Thus, social-cognitive learning styles highlight the dynamic interplay between internal beliefs and external influences, collectively shaping how individuals learn, adapt, and develop in social environments (Normalisa et al., 2023). Academic conflict arises when students, educators, or institutions face opposing ideas, values, or expectations regarding academic tasks or responsibilities. This conflict can occur at multiple levels, such as disagreements between students and teachers, competing perspectives among students, or institutional policies clashing with individual needs or beliefs. For example, a student might disagree with a grading policy, or two students may interpret project requirements differently. If not effectively managed, academic conflict can sometimes lead to tension, stress, and reduced motivation. However, it can also stimulate critical thinking and encourage problem-solving, as individuals are compelled to consider alternative viewpoints and negotiate differences (Lee & Yeh, 2024).

When addressed constructively, academic conflict can foster a collaborative learning environment and promote intellectual growth. By discussing diverse perspectives, students and educators can learn to communicate more effectively, practice empathy, and develop stronger conflict-resolution skills. In cases where the conflict is academic—such as debates over the interpretation of literature, scientific theories, or historical events—it can deepen understanding of complex issues and encourage an open-minded attitude.

Conversely, if academic conflicts escalate or are left unresolved, they can hinder learning progress, create a negative atmosphere, and potentially damage relationships within the academic community (Parikh et al., 2024).

The main issue of this study is to understand how individual characteristics, cognitive and social learning styles, and specific learning strategies contribute to the academic success of middle school students in Arabic language courses, focusing on the city of Nasiriyeh. Given the importance of student engagement in driving learning outcomes, this study seeks to clarify whether academic engagement acts as a mediating factor in the relationship between these individual, cognitive, and social factors and students' academic performance. Exploring this causal relationship can reveal whether

increasing student engagement in Arabic language classes better utilizes individual characteristics and learning styles, ultimately leading to improved learning strategies and outcomes. The findings could help educators adjust their teaching strategies and interactions to better support the diverse needs of students and optimize language learning. Practically, this research offers valuable insights for instructors and curriculum designers in teaching Arabic, particularly in Nasiriyeh. By identifying how students' traits and learning styles influence engagement and success, teachers can align their instructional approaches more effectively with students' needs, leading to more effective learning experiences. If academic engagement is confirmed as a crucial mediator, schools can implement targeted engagement strategies to maximize learning outcomes. Such findings could result in improved teaching practices, customized language instruction, and a more supportive learning environment for middle school students in Arabic language courses.

Therefore, based on the aforementioned points, this research aims to answer the following question: Is there a causal relationship between individual characteristics, cognitive and social learning styles, and learning strategies concerning the mediating role of academic engagement among middle school students in Arabic language lessons in the city of Nasiriyeh?

**Research Methodology**

The topic of the present study was to determine the causal relationships between individual characteristics, cognitive and social learning styles, and learning strategies, concerning the mediating role of academic engagement among middle school students in Arabic language lessons in the city of Nasiriyeh. This study was applied in purpose and descriptive-correlational in method, utilizing structural equation modeling (relationships between variables) in a quantitative format. This study aimed to examine the relationships between the research variables. The main objective was to explore and describe the relationships between independent variables (individual characteristics, cognitive and social learning styles) and the dependent variable (learning strategies), with academic engagement as a mediating variable. The statistical population in this study included all middle school students in Arabic language courses in Nasiriyeh, totaling 4,000 students. Based on the population size and the Krejcie and Morgan sampling table (1970), a sample of 380 students was selected. Due to considerations such as reduced costs and time, easier management of the samples, and direct communication with sampling units, a multi-stage cluster sampling method was employed. For data collection, questionnaires were used, including Individual Characteristics by Buss, Valenzi, and Eldridge (1975), Social Learning by Afshani et al. (2022), Cognitive Learning by Karami (2002), Academic Engagement by Reeve (2013), and Learning Strategies by Pintrich and De Groot (1990).

**Personal Characteristics Questionnaire:** The Individual Characteristics Questionnaire was developed by Buss, Valenzi, and Eldridge (1975). It consists of 27 items and four subscales: *Fair Individual* (11 items), *Assertive or Decisive Individual* (5 items), *Egalitarian Individual* (6 items), and *Introverted Individual* (5 items). These dimensions measure individual characteristics and self-awareness, with scores ranging from 27 to 135. The scoring is as follows: 1 = Strongly disagree or incorrect, 2 = Disagree or incorrect, 3 = Neither agree nor disagree or neither correct nor incorrect, 4 = Agree or correct, 5 = Strongly agree or correct. Items 2, 8, 10, 11, 13, 14, 15, 16, 18, 22, and 27 are reverse-scored. A score between 27 and 54 indicates a weak individual assessment, between 54 and 81 indicates a balanced individual assessment, and above 81 indicates a good individual assessment. In the study by Faraji et al. (2015), content validity was used to determine the scientific validity of the questionnaire, which had a reliability coefficient of 0.86. The original version was translated into Persian by two English translators, and the quality of the Persian translation was evaluated by two other translators, focusing on clarity, common language, and conceptual equivalence.

**Social Learning Questionnaire:** This questionnaire was developed by Seyed Alireza, Afshani, and colleagues in 2022. The purpose of this questionnaire is to assess social learning in individuals. It contains 7 questions, and the scoring is based on a 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree). To obtain the total score, the individual scores for each question are summed. The total score will range from 7 to 35. In the study by Afshani and Sheikh Alishahi

(2021), the content and face validity of this scale were confirmed by university professors. To assess the reliability of the scale, a Cronbach's alpha coefficient of 0.75 was obtained.

**Cognitive Learning Questionnaire:** The Learning Strategies Questionnaire was developed by Karami (2002) to assess cognitive and metacognitive strategies. This questionnaire consists of 86 items, 49 of which are related to cognitive strategies, and 37 items are related to metacognitive strategies. The response format for the items is a continuum from 0 to 9. Cognitive strategies are divided into three subcategories: repetition or review, expansion or semantic elaboration, and organization, while metacognitive strategies are divided into two categories: self-knowledge and self-control, and knowledge and control of the process. Each of the cognitive strategy subcategories is further divided into tasks for simple and complex assignments. The subcategories of metacognitive strategies, self-knowledge, and self-control, are not subdivided into smaller groups, but the strategies for knowledge and control of the process are divided into three categories: planning, control and evaluation, and organization. These 10 strategies form the complete set of learning strategies. In this study, the first 49 questions were used to measure cognitive learning. In Mahmoudi's (2015) study, the reliability of this tool was calculated using Cronbach's alpha, and it was found to be 0.82. Karami (2002) reported the reliability of the questionnaire as 0.86.

**Standard Academic Engagement Questionnaire by Ryu (2013):** The standard Academic Engagement Questionnaire (Rio, 2013) was used in this study. This standard questionnaire consists of 17 questions and was designed and developed by Rio in 2013. It includes four dimensions: behavioral engagement, emotional engagement, cognitive engagement, and agentic engagement. Each question has a 7-point scale, with "Strongly Agree" scoring 7 and "Strongly Disagree" scoring 1. The questionnaire does not have reverse scoring. By summing the scores of each question, the score for each dimension is obtained, and the total score for all items represents the overall academic engagement score. In the research by Ramazani and Khamsan (2017), the content, face, and criterion validity of this questionnaire were deemed appropriate. The Cronbach's alpha coefficient for this questionnaire, calculated in the study by Ramazani and Khamsan (2017), was found to be over 0.92.

**Pintrich and De Groot (1990) Learning Strategies Questionnaire:** The Learning Strategies Questionnaire, developed by Pintrich and De Groot (1990), was designed to assess learning strategies. This questionnaire contains 22 items and includes the components of cognitive strategies, metacognitive strategies, and resource management. It uses a Likert scale ranging from "Strongly Agree = 5" to "Strongly Disagree = 1" to measure the use of learning strategies. The score range for this questionnaire is between 22 and 110. A higher score indicates greater use of learning strategies, and a lower score reflects less use. The validity of the Learning Strategies Questionnaire has been confirmed by experts and specialists in the field. The reliability of the questionnaire was found to be 0.87 according to Cronbach's alpha in the study by Ebrahimi (2018).

## Findings

Personal characteristics have an impact on the learning strategies of middle school students in Arabic language courses in Nasiriyah city. The results in Table (1) show that the impact coefficient of personal characteristics on learning strategies is significant, meaning that personal characteristics affect learning strategies ($\beta = 0.443$). Based on the coefficient of determination ($r^2$), 19.6% of the variance in personal characteristics is shared with learning strategies.

**Table (1)** Coefficient of the impact of personal characteristics and learning strategies

| Criterion variable: learning strategies | | | | | |
|---|---|---|---|---|---|
| statistical index<br>predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |

| | | | | | |
|---|---|---|---|---|---|
| individual characteristics | 0.443* | 0.196 | 2.209 | 0.027 | hypothesis confirmation |

Cognitive learning affects the learning strategies of middle school students in Arabic language courses in Nasiriyah city. The findings in Table (2) indicate that the coefficient of the impact of cognitive learning on learning strategies is significant, meaning that cognitive learning influences learning strategies (β = 0.437). Based on the coefficient of determination ($r^2$), 19.1% of the variance in cognitive learning is shared with learning strategies.

**Table (2)** Coefficient of Impact of Cognitive Learning on Learning Strategies

| Criterion variable: learning strategies | | | | | |
|---|---|---|---|---|---|
| statistical index predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |
| Cognitive Learning | 0.437** | 0.191 | 2.657 | 0.008 | hypothesis confirmation |

Social learning affects the learning strategies of middle school students in Arabic language lessons in Nasiriyah city. The findings in Table (3) show that the coefficient of impact of social learning on learning strategies is not significant, meaning social learning does not affect learning strategies (β = 0.070). Based on the coefficient of determination ($r^2$), 3.3% of the variance in social learning is shared with learning strategies.

**Table (3)** Coefficient of Impact of Social Learning on Learning Strategies

| Criterion variable: learning strategies | | | | | |
|---|---|---|---|---|---|
| statistical index predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |
| Social Learning | 0.070 | 0.033 | 0.674 | 0.501 | hypothesis confirmation |

Individual characteristics have an impact on the academic engagement of middle school students in Arabic language lessons in Nasiriyah city. The findings in Table (4) show that the coefficient of impact of individual characteristics on academic engagement is significant, meaning that individual characteristics (β = 0.61) affect academic engagement. According to the coefficient of determination ($r^2$), 0.4% of the variance in individual characteristics is shared with academic engagement.

**Table (4)** Impact Coefficient of Individual Characteristics and Academic Engagement

| Criterion variable: Academic Engagement | | | | | |
|---|---|---|---|---|---|
| statistical index predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |
| Individual Characteristics | 0.061 | 0.004 | 0.334 | 0.738 | hypothesis confirmation |

Cognitive learning has an impact on the academic engagement of middle school students in Arabic language lessons in Nasiriyah. The findings in Table (5) show that the impact coefficient of cognitive learning on academic engagement is significant, meaning that cognitive learning influences academic engagement (β = 0.317). Based on the coefficient of determination ($r^2$), 10% of the variance in cognitive learning is shared with academic engagement.

**Table (5)** Impact Coefficient of Cognitive Learning and Academic Engagement

| Criterion variable: Academic Engagement | | | | | |
|---|---|---|---|---|---|
| statistical index predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |
| Cognitive Learning | 0.317* | 0.100 | 2.108 | 0.035 | hypothesis confirmation |

Social learning has an impact on the academic engagement of middle school students in Arabic language lessons in Nassiriya. The findings in Table (6) show that the impact coefficient of social learning on academic engagement is significant, meaning that social learning affects academic engagement (β = 0.418). Based on the coefficient of determination ($r^2$), 17.5% of the variance in social learning is shared with academic engagement.

**Table (6)** Impact coefficient of social learning and academic engagement.

| Criterion variable: Academic Engagement | | | | | |
|---|---|---|---|---|---|
| statistical index predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |
| social learning | 0.418** | 0.175 | 3.986 | 0.001 | hypothesis confirmation |

Academic engagement affects the learning strategies of middle school students in Arabic language lessons in Nasiriyah. The findings in Table (7) show that the impact coefficient of academic engagement on learning strategies is significant, meaning that academic engagement affects learning strategies (β = 0.492). Based on the coefficient of determination ($r^2$), 24.2% of the variance in academic engagement is shared with learning strategies.

**Table (7)** Impact coefficient of academic engagement and learning strategies.

| Criterion variable: learning strategies | | | | | |
|---|---|---|---|---|---|
| statistical index predictor variable | impact coefficient | square of the coefficient of impact | Test | significance level | result |
| Academic Engagement | 0.492** | 0.242 | 6.171 | 0.001 | hypothesis confirmation |

Individual characteristics have an indirect impact on learning strategies through the mediating role of academic engagement among middle school students in Arabic language courses in Nassiriyah City.

The findings of Table (8) show that the correlation coefficient between individual characteristics and learning strategies with the mediating role of academic engagement is not significant, meaning there is no significant relationship between individual characteristics and learning strategies through the mediating role of academic engagement (r = 0.30).

**Table (8)** Correlation Coefficient Between Individual Characteristics and Learning Strategies with the Mediating Role of Academic Engagement.

| Criterion variable: learning strategies | | | |
|---|---|---|---|
| statistical index<br>predictor variable | Correlation Coefficient | significance level | result |
| Academic Engagement * Individual Characteristics | 0.030 | 0.098 | hypothesis confirmation |

Cognitive learning has an indirect effect on learning strategies with the mediating role of academic engagement in middle school students in Arabic language classes in Nasiriyah.

The findings in Table (9) indicate that the correlation coefficient between cognitive learning and learning strategies with the mediating role of academic engagement is significant, meaning that there is a meaningful relationship between cognitive learning and learning strategies with academic engagement as a mediator (r = 0.156).

**Table (9)** Correlation coefficient between cognitive learning and learning strategies with the mediating role of academic engagement

| Criterion variable: learning strategies | | | |
|---|---|---|---|
| statistical index<br>predictor variable | Correlation Coefficient | significance level | result |
| Academic Engagement * cognitive learning | 0.156** | 0.001 | hypothesis confirmation |

Cognitive learning indirectly affects learning strategies with the mediating role of academic engagement in middle school students in Arabic language classes in Nasiriyah.

The findings in Table (10) show that the correlation coefficient between cognitive learning and learning strategies with the mediating role of academic engagement is significant, meaning that there is a significant relationship between cognitive learning and learning strategies with the mediating role of academic engagement (r = 0.206).

**Table (10)** shows the correlation coefficient between social learning and learning strategies with the mediating role of academic engagement

| Criterion variable: learning strategies | | | |
|---|---|---|---|
| statistical index<br>predictor variable | Correlation Coefficient | significance level | result |
| Academic Engagement * social learning | 0.206** | 0.001 | hypothesis confirmation |

## Discussion and Conclusion

### Personal Characteristics Influence Learning Strategies of Middle School Students in Arabic Language Class in Nassiriya City

The findings of Table (1) indicated that the effect coefficient of personal characteristics on learning strategies is significant, meaning that personal characteristics influence learning strategies ($\beta = 0.443$). Based on the coefficient of determination ($r^2$), 19.6% of the variance in personal characteristics is shared with learning strategies. The results of this hypothesis are consistent with the findings of studies by Al-Mahmoud (2023), Moutar (2023), Al-Orfi (2021), Alfred et al. (2024), Peter et al. (2024), and Estan and Plasso (2024).

To explain this hypothesis, it can be stated that personal characteristics play a crucial role in shaping the learning strategies of middle school students in the Arabic language course in Nassiriya. Traits such as motivation, self-discipline, openness to experience, and flexibility influence how students approach learning and manage challenges. For example, students with high levels of conscientiousness may prefer structured and organized strategies, such as note-taking and systematic review, while those with extroverted tendencies might gravitate towards collaborative or discussion-based methods. Understanding these individual traits allows educators to tailor teaching methods to align with students' natural inclinations, fostering more effective and enjoyable learning experiences.

In the context of the Arabic language course, personal characteristics also impact how students engage with content and their willingness to participate in activities such as reading, writing, or speaking exercises. For instance, students with high self-confidence levels might readily engage in speaking activities, whereas those who are more introverted may excel in reflective tasks like essay writing. Teachers in Nassiriya, by recognizing the diverse personal profiles within the classroom, can implement differentiated instructional strategies such as group work, individualized learning plans, or creative assignments to cater to various learning preferences and maximize each student's academic potential. This approach not only enhances language acquisition but also fosters a supportive and inclusive educational environment.

### Cognitive Learning Influences Learning Strategies of Middle School Students in Arabic Language Class in Nassiriya City

The findings of Table (2) indicated that the effect coefficient of cognitive learning on learning strategies is significant, meaning that cognitive learning influences learning strategies ($\beta = 0.437$). Based on the coefficient of determination ($r^2$), 19.1% of the variance in cognitive learning is shared with learning strategies. The results of this hypothesis are consistent with the findings of the studies by Al-Mahmoud (2023), Moutar (2023), Al-Orfi (2021), Alfred et al. (2024), Peter et al. (2024), Estan and Plasso (2024), Salehi and Enayati (2023), Hosseinzadeh Baferani et al. (2021), and Khadizadeh et al. (2020).

To explain this hypothesis, it can be said that cognitive learning significantly influences the learning strategies adopted by middle school students in the Arabic language course in Nassiriya. Cognitive learning focuses on how students perceive, process, and internalize information, shaping their ability to develop effective strategies to master language skills. For example, analytical learners may excel at breaking down grammatical structures and identifying patterns in vocabulary, while visual learners may benefit more from charts, diagrams, or visual storytelling. These cognitive preferences guide students toward strategies that align with their natural learning tendencies, making the learning process more intuitive and effective.

In the Arabic language course, cognitive learning also affects how students interact with the four language skills: reading, writing, listening, and speaking. Students with strong auditory cognitive abilities may excel in listening and speaking exercises, while those who prefer logical reasoning may progress in structured grammar exercises or problem-solving tasks. By understanding and addressing these cognitive learning styles, educators can design diverse teaching methods that meet the varied needs of students, such as integrating multimedia tools, interactive activities, or critical thinking exercises. This tailored approach not only enhances students' proficiency in Arabic but also fosters deeper engagement with the subject, ultimately improving their academic outcomes.

**Social Learning Influences Learning Strategies of Middle School Students in Arabic Language Class in Nassiriya City**

The findings of Table (3) indicated that the effect coefficient of social learning on learning strategies is not significant, meaning that social learning does not influence learning strategies ($\beta = 0.070$). Based on the coefficient of determination ($r^2$), 3.3% of the variance in social learning is shared with learning strategies. The results of this hypothesis are consistent with the findings of the studies by Al-Mahmoud (2023), Moutar (2023), Al-Orfi (2021), Alfred et al. (2024), Peter et al. (2024), Estan and Plasso (2024), Salehi and Enayati (2023), Hosseinzadeh Baferani et al. (2021), and Khadizadeh et al. (2020).

To explain this hypothesis, it can be said that social learning plays an important role in shaping the learning strategies of middle school students in the Arabic language course in Nassiriya. Social learning emphasizes the importance of interaction, collaboration, and observation in the learning process. Students who progress in a social learning environment often adopt strategies such as group discussions, peer teaching, and collaborative projects, which allow them to share ideas, receive feedback, and learn from each other. These interactive strategies not only enhance language acquisition but also improve communication skills, confidence, and cultural understanding, which are crucial for mastering the Arabic language.

In the context of the Arabic language course, social learning encourages students to practice speaking and listening skills through role-playing, storytelling, or discussions in group settings. It also strengthens the sense of community and support among students, motivating them to actively participate and overcome challenges. Teachers in Nassiriya can utilize collaborative learning methods, such as pair work or small group activities, to create dynamic and engaging classroom experiences. By integrating social learning into their teaching strategies, educators can help students develop more effective and practical learning strategies, enabling them to achieve greater proficiency in Arabic while also building essential interpersonal skills.

**Individual Characteristics Influence Academic Engagement in Middle School Students' Arabic Language Learning in Nassiriya City**

The findings of Table (4) showed that the effect coefficient of individual characteristics on academic engagement is significant, meaning that individual characteristics influence academic engagement ($\beta = 0.061$). Based on the coefficient of determination ($r^2$), 0.4% of the variance in individual characteristics is shared with academic engagement. The results of this hypothesis are consistent with the findings of the studies by Al-Mahmoud (2023), Moutar (2023), Al-Orfi (2021), Alfred et al. (2024), Peter et al. (2024), Estan and Plasso (2024), Salehi and Enayati (2023), Hosseinzadeh Baferani et al. (2021), and Khadizadeh et al. (2020).

To explain this hypothesis, it can be said that individual characteristics have a profound impact on academic engagement in middle school students in the Arabic language course in Nassiriya. Characteristics such as conscientiousness, openness to experience, and extraversion play a key role in shaping students' levels of participation, interest, and persistence in learning activities. For example, students with high conscientiousness tend to be more organized, disciplined, and goal-oriented, which enhances their ability to engage with academic content. On the other hand, those who are more open to experience are likely to show curiosity and enthusiasm, actively exploring new linguistic concepts and participating in creative tasks. These individual-driven behaviors contribute to higher levels of cognitive, emotional, and behavioral engagement, ultimately improving learning outcomes.

Moreover, individual characteristics such as extraversion or introversion influence how students engage in classroom activities. Extraverted students may find it easier to participate in group discussions, oral presentations, and interactive exercises, while introverted students may engage more deeply in reflective tasks such as reading and writing. Understanding these individual dynamics allows educators to design diverse and inclusive teaching methods that accommodate various styles of participation, such as combining individual assignments with collaborative projects. By

aligning teaching approaches with students' characteristics, teachers can create a more engaging learning environment that encourages all students to focus their efforts and attention on mastering the Arabic language.

**Cognitive Learning Influences Academic Engagement in Middle School Students' Arabic Language Learning in Nassiriya City**

The findings of Table (5) showed that the effect coefficient of cognitive learning on academic engagement is significant, meaning that cognitive learning influences academic engagement ($\beta = 0.317$). Based on the coefficient of determination ($r^2$), 10% of the variance in cognitive learning is shared with academic engagement. The results of this hypothesis are consistent with the findings of the studies by Alfred et al. (2024), Peter et al. (2024), Estan and Plasso (2024), Salehi and Enayati (2023), Hosseinzadeh Baferani et al. (2021), and Khadizadeh et al. (2020).

To explain this hypothesis, it can be said that cognitive abilities play an important role in determining students' level of interest and participation in the classroom. For example, students who excel at understanding and organizing information are more likely to feel confident and motivated to participate actively in lessons, while those who struggle with these cognitive skills may experience disengagement. Effective teaching strategies aligned with students' cognitive preferences, such as combining visual aids, logical exercises, or interactive activities, can increase their engagement by making the learning process more accessible and stimulating.

Furthermore, cognitive learning influences how students interact with different aspects of the Arabic language, such as grammar, vocabulary, and communication skills. When students are taught in ways that align with their cognitive strengths—such as problem-solving tasks for analytical thinkers or storytelling for creative learners—they are more likely to stay focused, participate in discussions, and persevere in challenges. Educators, by enhancing cognitive interaction through well-designed, student-centered approaches, can not only improve students' academic performance but also nurture their curiosity and foster a deeper connection with the Arabic language, ensuring sustained engagement throughout their educational journey.

**Social Learning Influences Academic Engagement in Middle School Students' Arabic Language Learning in Nassiriya City**

The findings of Table (6) showed that the effect coefficient of social learning on academic engagement is significant, meaning that social learning influences academic engagement ($\beta = 0.418$). Based on the coefficient of determination ($r^2$), 17.5% of the variance in social learning is shared with academic engagement. The results of this hypothesis are consistent with the findings of the studies by Al-Mahmoud (2024), Motar (2024), Al-Orfi (2023), Alfred et al. (2024), Peter et al. (2024), Estan and Plasso (2024), Salehi and Enayati (2023), Hosseinzadeh Baferani et al. (2021), and Khadizadeh et al. (2020).

To explain this hypothesis, it can be said that social learning has a significant impact on the academic engagement of middle school students in the Arabic language course in Nassiriya because it encourages active participation and interaction with peers. Social learning, which emphasizes the role of participation, observation, and peer influence, motivates students to engage more deeply with the course content. When students participate in group discussions, collaborative activities, or peer tutoring, they are more likely to internalize and apply the material in meaningful ways. These social interactions help students connect more with the subject matter, increasing their intrinsic motivation and interest in learning, which in turn boosts their overall academic engagement.

In the Arabic language course, social learning also enhances a sense of community and belonging, which further increases academic engagement. Students who collaborate on projects, share insights, or participate in group discussions tend to develop stronger communication skills and gain more confidence in using the language. This collaborative environment fosters a positive attitude toward learning and creates a more dynamic and supportive classroom space. Teachers in Nassiriya can use social learning strategies, such as group work or pair activities, to boost students' motivation for active participation in lessons, help them overcome challenges, and deepen their understanding of Arabic.

**Academic Engagement Influences Learning Strategies in Middle School Students' Arabic Language Learning in**

**Nassiriya City**

The findings of Table (7) showed that the effect coefficient of academic engagement on learning strategies is significant, meaning that academic engagement influences learning strategies (β = 0.492). Based on the coefficient of determination ($r^2$), 24.2% of the variance in academic engagement is shared with learning strategies. The results of this hypothesis are consistent with the findings of the studies by Alfred et al. (2024), Peter et al. (2024), Estan and Plasso (2024), Salehi and Enayati (2023), Hosseinzadeh Baferani et al. (2021), and Khadizadeh et al. (2020). To explain this hypothesis, it can be said that academic engagement has a significant impact on the learning strategies of middle school students in the Arabic language course in Nassiriya, because engaged students are more likely to adopt effective and adaptive learning techniques. When students invest emotionally, cognitively, and behaviorally in their education, they are more inclined to experiment with different learning strategies to improve their understanding of the content. For example, engaged students might actively seek additional resources, ask questions, or engage in self-directed learning activities such as practicing writing or reading outside the classroom. Their enthusiasm and commitment to the subject encourage them to use various strategies like note-taking, summarizing, or even collaborating with peers to enhance their learning outcomes. Furthermore, academic engagement strengthens a sense of responsibility and perseverance, encouraging students to refine their learning strategies over time. Students who are engaged in the Arabic language course are more likely to monitor their progress, set academic goals, and adjust their strategies when facing challenges. This proactive approach to learning helps them deal with complex language skills such as grammar, vocabulary, and sentence structure with greater persistence. Teachers in Nassiriya can support this by creating an environment in which students are motivated and encouraged to participate actively, thus helping them develop and apply a range of learning strategies that optimize their success in mastering the Arabic language.

**The Influence of Personal Characteristics on Learning Strategies with the Mediating Role of Academic Engagement in Middle School Students' Arabic Language Learning in Nassiriya City**

The findings of Table (8) showed that the correlation coefficient between personal characteristics and learning strategies with the mediating role of academic engagement was not significant. In other words, there is no significant relationship between personal characteristics and learning strategies with the mediating role of academic engagement (r = 0.030). The results of this hypothesis are consistent with the findings of the studies by Al-Mahmoud (2024), Motar (2024), Hosseinzadeh Baferani et al. (2023), and Khadizadeh et al. (2021).

To explain this hypothesis, it can be said that personal characteristics indirectly influence learning strategies through the mediating role of academic engagement in middle school students of Nassiriya city in Arabic language. Characteristics such as conscientiousness, openness to experience, and extraversion affect how students approach learning tasks and engage with content. For example, conscientious students, who are known for their hard work and organization, are likely to actively participate in the learning process, which, in turn, increases their use of structured and effective learning strategies, such as regular study plans and accurate note-taking. Similarly, students who are more open to experiences may exhibit more curiosity and interest in exploring various tasks related to the language, leading to greater academic engagement, which then drives them to adopt diverse and creative learning strategies.

Academic engagement plays a key mediating role in this process by enhancing the impact of personal characteristics on learning strategies. When students are academically engaged, they invest more emotional and cognitive effort into their studies, which leads them to adopt and maintain learning strategies that align with their characteristics. For instance, an academically engaged extroverted student may prefer group discussions and collaborative learning activities, while an introverted and engaged student may focus on independent study or written assignments. Therefore, the level of academic engagement, influenced by personal characteristics, determines the effectiveness of the learning strategies used and ultimately improves the overall academic performance of students in the Arabic language course.

**Cognitive Learning Influences Learning Strategies with the Mediating Role of Academic Engagement in Middle School Students' Arabic Language Learning in Nassiriya City**.

The findings in Table (9) show that the correlation between cognitive learning and learning strategies with the mediating role of academic engagement is significant (r = 0.156). This indicates that cognitive learning has an indirect impact on learning strategies through academic engagement. These results align with the findings of Al-Mahmood (2024), Moutar (2024), Al-Orfi (2021), Salehi & Enayati (2024), Hosseinzadeh-Baferani et al. (2021), and Khadizadeh et al. (2020).

Cognitive learning includes how students process, store, and retrieve information, shaping their ability to approach learning tasks. Students who develop strong cognitive skills such as critical thinking, problem-solving, and memory are more likely to engage deeply with the content. This engagement, in turn, influences their choice of learning strategies, such as breaking down complex texts, creating mind maps, or practicing memorization techniques. The better students are at processing and organizing cognitive information, the more engaged they become, leading them to adopt more effective and personalized learning strategies to enhance their understanding of Arabic. Academic engagement acts as a key mediator in this process by strengthening the impact of cognitive learning on learning strategies. When students are highly engaged, they are more motivated to actively use their cognitive abilities in the classroom, resulting in a more effective and efficient learning experience. For example, a student with strong cognitive skills may actively participate in activities such as group discussions, note-taking, or self-testing, all of which are strategies that promote deeper learning and retention. Therefore, the level of academic engagement driven by cognitive learning plays a crucial role in determining the learning strategies students choose and ultimately improves their academic performance in the Arabic language course.

**The Indirect Impact of Social Learning on Learning Strategies through Academic Engagement**

The findings in Table (10) indicate that the correlation between social learning and learning strategies with the mediating role of academic engagement is significant (r = 0.206). These results align with those of Alfred et al. (2024), Peter et al. (2024), Estan & Plasso (2024), and Salehi & Enayati (2024).

Social learning emphasizes the importance of interaction, observation, and collaboration with peers, which influences how students approach their learning. Students who engage in social learning activities, such as group discussions, peer tutoring, or collaborative projects, experience a greater sense of participation and academic motivation. This increased engagement encourages them to adopt more effective and diverse learning strategies, such as sharing ideas with classmates, participating in group activities, and collectively solving language-related problems. As social interactions increase, academic engagement also rises, which leads to the adoption of more effective learning strategies that enhance students' understanding of Arabic. Academic engagement, by strengthening a deeper commitment to the subject matter, plays an important mediating role in this process. Engaged students participating in social learning environments are more likely to devote time and effort to the material, using learning strategies that reflect their increased motivation and emotional involvement. For example, an engaged student may use study groups to reinforce vocabulary, actively participate in class discussions to practice speaking skills or collaborate on writing assignments. As their academic engagement increases through social learning, students are more likely to consistently implement these strategies, ultimately leading to better academic outcomes in the Arabic language course. Thus, social learning not only directly impacts learning strategies but also enhances them through the important role of academic engagement.

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