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Examining the relationship between thinking styles and self-efficacy in learning with students' performance in history, with the mediating role of goal orientation and autonomous motivation.

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Abstract

This study aims to examine the causal relationship between thinking styles and self-efficacy in learning with the academic performance of secondary school students in history, with the mediating role of goal orientation and autonomous motivation in the city of Babel, Iraq. The statistical population of the study included all history students in the cities of Babel/Hilla, totaling 3,500 individuals. Based on the sample size table by Krejcie and Morgan (1970), a sample of 346 students was randomly selected through cluster sampling. To collect data, the following questionnaires were used: the Jinks and Morgan (1999) Learning Self-Efficacy Questionnaire, the Elliot and McGregor (2001) Goal Orientation Questionnaire, the Ryan and Connell (1989) Self-Determined Motivation Questionnaire, Sternberg's (1997) Thinking Styles Questionnaire, and students' history scores to assess performance. The reliability of the questionnaires was found to be 0.90, 0.82, 0.86, and 0.80, respectively. Results showed that there was a significant relationship between the following thinking styles: legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, internal, external, and free-thinking with goal orientation (r = 0.076, -0.104, 0.237, -0.237, 0.099, -0.178, -0.374, -0.363, 0.125, 0.323, 0.233, 0.551). Additionally, learning self-efficacy had an impact on goal orientation (β = 0.670). Based on the coefficient of determination (R^2), 44.9% of the variance in learning self-efficacy was shared with goal orientation. Furthermore, there was a significant relationship between the thinking styles and autonomous motivation (r = -0.016, 0.029, -0.047, 0.083, -0.533, 0.241, -0.143, -0.216, 0.672, 0.083, 0.035, 0.083, 0.026), and learning self-efficacy had an effect on autonomous motivation (β = 0.510). The findings showed a significant relationship between executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, free-thinking, and conservative thinking styles with performance in history (r = -0.373, 0.175, -0.437, 0.311, -0.279, 0.091, -0.655, 0.088, 0.036, 0.305). The relationship between legislative, internal, and external thinking styles with performance in history was not significant. Also, learning self-efficacy did not affect performance in history (β = 0.115). Goal orientation influenced performance in history (β = 0.512), and autonomous motivation also had an effect on performance in history (β = 0.333). The findings revealed that the relationship between thinking styles (executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, free-thinking, conservative) and performance in history was mediated by goal orientation (r = 0.039, -0.053, 0.121, -0.121, -0.050, -0.091, -0.191, -0.185, 0.064, 0.165, 0.119, 0.281). Also, the relationship between thinking styles (executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, free-thinking, conservative) and performance in history was mediated by autonomous motivation (r = -0.005, 0.009, -0.009, -0.027, -0.176, 0.080, -0.047, -0.071, 0.222, 0.027, 0.012, 0.027, -0.008). There was a significant relationship between learning self-efficacy and

performance in history with goal orientation as a mediator (r = 0.342), and between learning self-efficacy and performance in history with autonomous motivation as a mediator (r = 0.168).

Keywords: Thinking styles, learning self-efficacy, student performance, goal orientation, autonomous motivation.

Introduction

Academic performance is of great importance for every student. A student's performance refers to their achievements and outcomes in various educational settings. This includes factors such as grades, test scores, levels of participation, and overall engagement in learning activities. Multiple factors influence student performance, including individual abilities, motivation, socio-economic background, the quality of education, the school environment, and support systems. High-performing students typically demonstrate a strong grasp of the subject, critical thinking skills, effective study habits, and consistent academic progress. In contrast, low-performing students may struggle with understanding concepts, lack motivation, show poor attendance or behavior, and achieve lower grades (Al-Bariki et al., 2021).

Assessing and understanding student performance is crucial for several reasons. First, it provides valuable insights into the effectiveness of teaching methods, curriculum design, and educational policies. By identifying strengths and weaknesses among students, educators can adjust their instruction to meet individual learning needs and enhance academic growth. Additionally, student performance data plays a vital role in evaluating the overall quality of educational institutions and informing administrative decision-making processes. Furthermore, monitoring student performance over time allows educators to track progress, intervene early when students are at risk of falling behind, and provide targeted support to facilitate success. Ultimately, fostering high levels of student performance is essential for preparing individuals to excel in academic, professional, and personal activities, contributing to social progress and well-being (Ni et al., 2024).

One characteristic of a successful student is a desirable thinking styles. Thinking styles refer to the unique ways in which individuals process information, solve problems, make decisions, and understand the world around them. These styles can vary widely among individuals and are influenced by factors such as personality traits, cultural background, education, and life experiences. Some common thinking styles include analytical thinking, which involves breaking down complex issues into smaller components for better understanding; creative thinking, which involves generating new ideas and solutions; and critical thinking, which involves evaluating arguments and evidence to make reasoned judgments. Other styles include holistic thinking, which focuses on the interconnectedness of ideas and systems, and divergent thinking, which involves exploring multiple viewpoints and possibilities (Jiang et al., 2024). Goal orientation refers to an individual's motivation and fundamental approach to achieving goals. It includes two main types: mastery orientation and performance orientation. Mastery-oriented individuals are driven by a desire to develop competence and mastery of tasks. They focus on learning, improvement, and understanding, rather than comparing themselves to others or seeking external validation. In contrast, performance-oriented individuals are motivated by a desire to demonstrate their abilities relative to others and to receive favorable judgments. They may prioritize performing better than others or avoiding failure to maintain a positive self-image or gain recognition (Khatoun et al., 2024).

Autonomous Motivation refers to intrinsic motivation and self-determination that individuals feel when pursuing goals or engaging in activities. It involves a sense of personal volition and alignment with one's values, interests, and aspirations. Autonomous motivation arises from within the individual, rather than being imposed by external factors such as rewards, punishments, or social expectations. Individuals with autonomous motivation are driven by a genuine interest in the activity itself, the desire for personal growth, or the pleasure and satisfaction derived from the process of engagement. This form of motivation is characterized by feelings of autonomy, competence, and relatedness, in which individuals feel empowered to make choices, have confidence in their ability to succeed, and experience a sense of connection and belonging with others (Benker et al., 2023).

Exploring the relationship between thinking styles and learning self-efficacy with students' performance in history, with the mediating roles of goal orientation and autonomous motivation, is crucial for understanding and improving educational outcomes. By uncovering these interconnected factors, educators can identify learning barriers and implement interventions to effectively support students. Understanding how different thinking styles and levels of self-efficacy influence goal orientation and autonomous motivation provides insights into students' cognitive and motivational processes. This knowledge enables educators to create a learning environment that fosters mastery orientation, intrinsic motivation, and a growth mindset. Ultimately, by nurturing these factors, educators can cultivate academic success, critical thinking skills, and a lifelong passion for learning in history and beyond. The lack of diverse thinking styles and learning self-efficacy among students in history can have significant implications for their performance, often influenced by goal orientation and autonomous motivation. When students are not exposed to diverse thinking styles and do not believe in their learning abilities, they may struggle to adapt to various challenges and engage effectively in the learning process. This can lead to a fixed mindset focused on performance outcomes rather than growth and intrinsic mastery. As a result, students may experience decreased autonomous motivation by relying on external rewards or avoiding tasks deemed difficult. Consequently, their goal orientation may shift toward seeking validation or avoiding failure rather than pursuing learning for its own sake. Over time, this pattern perpetuates a cycle of underachievement, limiting students' potential for personal and academic growth in history. Al-Azim (2023), in his master's thesis, explored the relationship between self-efficacy and thinking, with academic ethics as a mediator among Iraqi students. The results showed a direct and significant relationship between self-efficacy and thinking among students at the University of Baghdad. It was also found that self-efficacy and academic ethics are significantly related. Al-Saad (2023), in his master's thesis, examined the relationship between academic performance and learning self-efficacy with the mediating role of academic enthusiasm. The results indicated a positive and significant relationship between academic performance and learning self-efficacy with academic enthusiasm as a mediator. Based on the above, this research aims to answer the following question: Is there a causal relationship between thinking styles and learning self-efficacy with student performance in history, with the mediating roles of goal orientation and autonomous motivation?

Research Methodology

The subject of the present study is to investigate the relationship between thinking styles and learning self-efficacy with student performance in history, with the mediating roles of goal orientation and autonomous motivation. The study is applied in terms of its purpose and descriptive-correlational in terms of its method, using structural equation modeling (causal relationships between variables) quantitatively. This study aimed to examine the relationships between the research variables. The main goal of the research is to investigate and describe the relationship between the independent variables (thinking styles and learning self-efficacy) and the dependent variable (student performance in history), and the mediating variables (goal orientation and autonomous motivation). In this research, data collection tools included the Learning Self-Efficacy Questionnaire by Ginseng and Morgan (1999), the Goal Orientation Questionnaire by Elliot and McGregor (2001), the Self-Determined Motivation Questionnaire by Ryan and Connell (1989), and the Thinking Styles Questionnaire by Sternberg (1997). The target population of this study consisted of all high school students studying history in the city of Babylon/Hilla, totaling 3500 students. To determine the sample size, the Krejcie and Morgan sampling table (1970) was used. A sample of 346 students was selected from the history students to reduce costs and time, manage samples more easily, and ensure direct access to the sample units.

In this study, both descriptive (mean, standard deviation, skewness, and kurtosis) and inferential statistics were used for data analysis. After extracting the questionnaire data, descriptive methods were applied to examine the demographic characteristics of the studied variables. Then, to answer the research questions, inferential statistics were employed. The statistical methods used in this study include frequency and percentage frequency for descriptive statistics, and for inferential statistics, the Amos software was used to analyze the effect size of the variables.

Findings

Thinking styles have an impact on the goal orientation of secondary school students in history.

The findings in Table (1) show that the correlation coefficient between thinking styles (legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, analytic, internal, external, and liberal) and goal orientation is significant. That is, there is a significant relationship between the legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, analytic, internal, external, and liberal thinking styles and goal orientation, with correlation coefficients of (0.076, -0.104, 0.237, -0.237, 0.099, -0.178, -0.374, -0.363, 0.125, 0.323, 0.233, 0.551 = r). Based on the coefficient of determination (R^2), the variance shared between thinking styles (legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, analytic, internal, external, and liberal) and goal orientation is 30.4%, 5.4%, 10.4%, 1.6%, 13.2%, 14%, 3.2%, 1%, 5.6%, 5.6%, 1.1%, and 0.6%, respectively. The relationship between the conservative thinking style and goal orientation is not significant.

Table (1) Correlation Coefficients Between Thinking Styles and Goal Orientation

statistical indicator / criterion variable	criterion variable: goal orientation				
	correlation coefficient	square of the correlation coefficient	Test	level of significance	result
legislative	0.551**	0.304	8.351	0.001	hypothesis validation
Executive	0.233**	0.054	15.571	0.001	hypothesis validation
judicial	0.323**	0.104	3.655	0.001	hypothesis validation
monarchy	0.125**	0.016	8.417	0.001	hypothesis validation
hierarchical	0.363**	0.132	24.032	0.001	hypothesis validation
oligarchy	-0.374**	0.140	-24.705	0.001	hypothesis validation
anarchy	-0.178**	0.032	-11.9850	0.001	hypothesis validation
overall	-0.099**	0.010	-6.704	0.001	hypothesis validation
detailed	-0.237**	0.056	-15.867	0.001	hypothesis validation
internal	0.237**	0.056	15.884	0.001	hypothesis validation
external	-0.104**	0.011	-6.998	0.001	hypothesis validation
freedom-loving	0.076**	0.006	5.158	0.001	hypothesis validation
conservative	0.012	0.001	0.800	0.424	hypothesis

					invalidation

Self-
efficacy in Learning Affects Goal Orientation in Secondary School Students in History.

The findings in Table (2) show that the effect coefficient of self-efficacy in learning on goal orientation is significant, meaning that self-efficacy in learning affects goal orientation (β = 0.670). Based on the coefficient of determination (R^2), 44.9% of the variance in self-efficacy in learning is shared with goal orientation.

Table (2) Effect Coefficient of Self-Efficacy in Learning and Goal Orientation
Thinking Styles Affect Autonomous Motivation in Secondary School Students in History.

statistical indicator / criterion variable	criterion variable: goal orientation				
	effect coefficient	square of the effect coefficient	Test	level of significance	result
Self-efficacy in Learning	0.670**	0.449	42.356	0.001	hypothesis validation

The findings in Table (3) show that the correlation coefficients between thinking styles—legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, internal, external, libertarian, and conservative—and autonomous motivation are significant. This means that there is a significant relationship between thinking styles (legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, internal, external, libertarian, conservative) and autonomous motivation (r = -0.16, 0.29, -0.47, 0.83, -0.53, 0.24, -0.14, -0.21, 0.67, 0.08, 0.35, 0.08, -0.26).

Based on the coefficient of determination (R^2), 0.1%, 0.7%, 0.1%, 0.7%, 45.2%, 4.7%, 2%, 58.8%, 28.4%, 0.4%, 0.3%, 0.1%, and 0.1% of the variance in thinking styles (legislative, executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, internal, external, libertarian, and conservative) are shared with autonomous motivation.

Table (3) Correlation Coefficient of Thinking Styles and Autonomous Motivation

statistical indicator / criterion variable	criterion variable: Autonomous Motivation				
	correlation coefficient	square of the correlation coefficient	Test	level of significance	result
legislative	-0.026**	0.001	-5.697	0.001	hypothesis validation
Executive	0.083**	0.007	18.080	0.001	hypothesis validation
judicial	0.035**	0.001	7.736	0.001	hypothesis validation
monarchy	0.083**	0.007	17.998	0.001	hypothesis validation
hierarchical	0.672**	0.452	83.279	0.001	hypothesis validation
oligarchy	*0.216**	0.047	-43.017	0.001	hypothesis validation

anarchy	-0.143**	0.020	-30.202	0.001	hypothesis validation
overall	0.241**	0.058	17.356	0.001	hypothesis validation
detailed	-0.523**	0.284	-76.456	0.001	hypothesis validation
internal	-0.083**	0.004	-18.011	0.001	hypothesis validation
external	-0.047**	0.003	-10.331	0.001	hypothesis validation
freedom-loving	0.029**	0.001	6.421	0.001	hypothesis validation
conservative	0.016**	0.001	-3.508	0.001	hypothesis validation

Learning self-efficacy affects the autonomous motivation of secondary school students in history.

The findings of Table (4) show that the effect size coefficient of learning self-efficacy on autonomous motivation is significant, meaning that learning self-efficacy affects autonomous motivation (β = 0.510). According to the coefficient of determination (2r), 26% of the variance in learning self-efficacy is shared with autonomous motivation.

Table (4) Effect Size Coefficient of Learning Self-Efficacy and Autonomous Motivation Cognitive Styles Affect Secondary Students' Performance in History Class

statistical indicator / criterion variable	criterion variable: Autonomous Motivation				
	effect coefficient	square of the effect coefficient	Test	level of significance	result
Self-efficacy in Learning	0.510**	0.260	14.413	0.001	hypothesis validation

The findings in Table (5) indicate that the correlation coefficient between cognitive styles (executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, autonomic, and conservative) and performance in history class is significant. Specifically, the relationship between cognitive styles (executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, autonomic, and conservative) and performance in history class is significant (r = -0.373, 0.175, -0.437, 0.311, -0.279, 0.091, -0.655, 0.088, 0.036, 0.305). Based on the coefficient of determination (r^2), the shared variance between cognitive styles (executive, judicial, monarchic, hierarchical, oligarchic, anarchic, global, local, autonomic, and conservative) and performance in history class is 9.3%, 1%, 0.8%, 42.9%, 0.8%, 7.8%, 5.8%, 9.7%, 1.3%, and 13.9%, respectively. The relationship between legislator thinking, and internal, and external thinking styles with performance in history class is not significant.

Table (5): Correlation Coefficient Between Cognitive Styles and Performance in History Class

statistical indicator	criterion variable: Performance in History Class		

criterion variable	correlation coefficient	square of the correlation coefficient	Test	level of significance	result
legislative	-0.025	0.001	-1.513	0.130	hypothesis invalidation
Executive	0.305**	0.093	9.638	0.001	hypothesis validation
judicial	0.036*	0.001	2.261	0.024	hypothesis validation
monarchy	0.088**	0.008	3.882	0.001	hypothesis validation
hierarchical	-0.655**	0.429	-7.699	0.001	hypothesis validation
oligarchy	0.091	0.008	-1.799	0.072	hypothesis validation
anarchy	-0.279**	0.078	-9.449	0.001	hypothesis validation
overall	0.311**	0.058	6.204	0.001	hypothesis validation
detailed	-0.437**	0.097	6.670	0.001	hypothesis validation
internal	0.031	0.001	0.964	0.335	hypothesis invalidation
external	-0.018	0.001	-0.893	0.3.72	hypothesis invalidation
freedom-loving	0.175**	0.031	-9.876	0.001	hypothesis validation
conservative	-0.373**	0.139	-24.465	0.001	hypothesis validation

Self-efficacy in learning impacts the performance of secondary school students in History.

The findings in Table (6) show that the effect size of self-efficacy in learning on performance in History is not significant, meaning that self-efficacy in learning does not affect performance in History (β = 0.115). Based on the coefficient of determination (2r), 1.3% of the variance in self-efficacy in learning is shared with performance in History.

Table (6): Effect Size of Self-efficacy in Learning on Performance in History

statistical indicator / criterion variable	criterion variable: Performance in History				
	effect coefficient	square of the effect coefficient	Test	level of significance	result
Self-efficacy in Learning	0.115	0.013	1.487	0.137	hypothesis invalidation

Goal Orientation Affects the Performance of Secondary School Students in History.

The findings in Table (7) show that the effect size of goal orientation on performance in History is significant, meaning that goal orientation has an impact on performance in History (β = 0.512). Based on the coefficient of determination (2r), 1.3% of the variance in goal orientation is shared with performance in History.

Table (7): Impact Coefficient of Goal Orientation and Performance in History

statistical indicator / criterion variable	criterion variable: Performance in History				
	effect coefficient	square of the effect coefficient	Test	level of significance	result
Goal Orientation	0.512**	0.262	7.254	0.001	hypothesis validation

Autonomous motivation affects the performance of high school students in history.

The findings of Table (8) indicate that the impact coefficient of autonomous motivation on performance in history is significant, meaning that autonomous motivation affects performance in history (β = 0.333). According to the coefficient of determination (2r), 11.1% of the variance in autonomous motivation is shared with performance in history.

If you need further adjustments or clarifications, feel free to ask!

Table (8) Impact Coefficient of Autonomous Motivation and Performance in History

statistical indicator / criterion variable	criterion variable: Performance in History				
	effect coefficient	square of the effect coefficient	Test	level of significance	result
Autonomous Motivation	0.333**	0.111	4.591	0.137	hypothesis invalidation

Thinking styles have an indirect impact on performance with the mediating role of perceived goal orientation in secondary school students in history.

The findings of Table (9) show that the correlation coefficient between executive, judicial, monarchical, hierarchical, oligarchic, anarchic, global, detailed, liberal, and conservative thinking styles with performance in the history subject, with the mediating role of goal orientation, is significant. In other words, there is a significant relationship between executive, judicial, monarchical, hierarchical, oligarchic, anarchic, global, detailed, liberal, and conservative thinking styles with performance in the history subject, with the mediating role of goal orientation (r = 0.039, -0.053, 0.121, -0.121, -0.050, -0.091, -0.191, 0.185, 0.064, 0.165, 0.119, 0.281).

Table (9): Correlation Coefficients Between Thinking Styles and Performance in History with the Mediating Role of Goal Orientation.

statistical indicator / criterion variable	criterion variable: Performance in History Class		
	correlation coefficient	level of significance	result
Goal Orientation * legislative	0.281**	0.001	hypothesis invalidation

Goal Orientation * Executive	0.119**	0.001	hypothesis validation
Goal Orientation * judicial	0.165**	0.001	hypothesis validation
Goal Orientation * monarchy	0.064**	0.001	hypothesis validation
Goal Orientation * hierarchical	0.185**	0.001	hypothesis validation
Goal Orientation * oligarchy	-0.191**	0.001	hypothesis validation
Goal Orientation * anarchy	-0.091**	0.007	hypothesis validation
Goal Orientation * overall	-0.050*	0.028	hypothesis validation
Goal Orientation * detailed	-0.121**	0.001	hypothesis validation
Goal Orientation * internal	0.121**	0.001	hypothesis invalidation
Goal Orientation * external	-0.053*	0.027	hypothesis invalidation
Goal Orientation * freedom-loving	0.039*	0.041	hypothesis validation
Goal Orientation * conservative	0.006	0.547	hypothesis invalidation

Thinking styles have an indirect impact on performance with the mediating role of intrinsic motivation in high school students in the history subject.

The findings in Table (10) show that the correlation coefficient between executive, judicial, monarchical, hierarchical, oligarchic, anarchic, holistic, analytic, free-spirited, and conservative thinking styles with performance in history, with the mediating role of intrinsic motivation, is significant. This means that there is a significant relationship between these thinking styles and performance in history with the mediating role of intrinsic motivation (r = 0.005, 0.009, -0.009, -0.027, -0.176, 0.080, -0.047, -0.071, 0.222, 0.027, 0.012, 0.027, -0.008).

Table (10) Correlation coefficient of thinking styles and performance in history with the mediating role of intrinsic motivation

statistical indicator / criterion variable	criterion variable: Performance in History Class		
	correlation coefficient	level of significance	result
intrinsic motivation * legislative	-0.008*	0.024	hypothesis validation
intrinsic motivation * Executive	0.027*	0.012	hypothesis validation
intrinsic motivation *	0.012*	0.020	hypothesis

judicial			validation
intrinsic motivation * monarchy	0.027*	0.014	hypothesis validation
intrinsic motivation * hierarchical	0.222**	0.001	hypothesis validation
intrinsic motivation * oligarchy	-0.071**	0.001	hypothesis validation
intrinsic motivation * anarchy	-0.047**	0.009	hypothesis validation
intrinsic motivation * overall	0.080**	0.005	hypothesis validation
intrinsic motivation * detailed	*0.176**	0.001	hypothesis validation
intrinsic motivation * internal	-0.027*	0.012	hypothesis validation
intrinsic motivation * external	-0.009**	0.020	hypothesis validation
intrinsic motivation * freedom-loving	0.009**	0.024	hypothesis validation
intrinsic motivation * conservative	0.005*	0.038	hypothesis validation

Learning self-efficacy has an indirect effect on performance with the mediating role of perceived goal orientation in high school students' history classes.

The findings of Table (11) show that the correlation coefficient between learning self-efficacy and performance in history with the mediating role of goal orientation is significant, meaning there is a significant relationship between learning self-efficacy and performance in history with the mediating role of goal orientation (r = 0.342).

Learning self-efficacy has an indirect effect on performance with the mediating role of perceived goal orientation in high school students' history classes.

The findings of Table (11) show that the correlation coefficient between learning self-efficacy and performance in history with the mediating role of goal orientation is significant, meaning there is a significant relationship between learning self-efficacy and performance in history with the mediating role of goal orientation (r = 0.342).

Table (11) Correlation coefficient between learning self-efficacy and performance in history with the mediating role of goal orientation.

statistical indicator / criterion variable	criterion variable: Performance in History		
	correlation coefficient	level of significance	result
learning self-efficacy * goal orientation	0.342**	0.001	hypothesis validation

Learning self-efficacy has an indirect effect on performance with the mediating role of autonomous motivation in secondary school students in history.

The findings in Table (12) indicate that the correlation coefficient between learning self-efficacy and performance in history with the mediating role of autonomous motivation is significant, meaning there is a significant relationship between learning self-efficacy and performance in history with the mediating role of autonomous motivation (r = 0.168).

Table (12) Correlation Coefficient between Learning Self-Efficacy and Performance in History with the Mediating Role of Autonomous Motivation

statistical indicator / criterion variable	criterion variable: Performance in History		
	correlation coefficient	level of significance	result
learning self-efficacy * Autonomous Motivation	0.168**	0.001	hypothesis validation

Discussion and Conclusion

Thinking Styles Affect the Goal Orientation of Secondary School Students in History

The findings indicate that the correlation coefficient between legislative, executive, judicial, monarchical, hierarchical, oligarchic, anarchic, holistic, detailed, internal, external, and free-spirited thinking styles and goal orientation is significant. These results align with the studies of Al-Azizim (2024), Al-Saad (2024), Hammad & Owid (2024), Mahro & colleagues (2024), Mousavi (2021), Haq Nazari & colleagues (2020), and Liza & colleagues (2020). In explaining this hypothesis, it can be said that thinking styles significantly influence the goal orientation of secondary school students in history by shaping how they approach learning and set academic goals. Analytical thinkers, who prioritize logical reasoning and deep understanding, are likely to lean toward mastery goals, focusing on deeply understanding historical events and establishing cause-and-effect relationships. They aim to master the content and improve their skills, which aligns with mastery goal orientation. On the other hand, students with practical thinking styles, who prefer applying knowledge in real-world situations, may also tend to lean toward mastery goals, as they aim to see how historical knowledge can be applied to current events or social issues. Creative thinkers may exhibit a more diverse goal orientation, depending on how they perceive the subject. If they view history as a way to think innovatively and offer new interpretations, they may pursue mastery goals. Alternatively, some students may adopt performance-oriented goals, especially if their thinking style pushes them to focus on demonstrating their unique viewpoints or performing better than their peers. Therefore, the alignment of a student's thinking style with their goal orientation in history depends on whether they view the subject as a challenge to master or an opportunity to demonstrate competence compared to others.

Learning Self-Efficacy Affects the Goal Orientation of Secondary School Students in History

The findings showed that the impact coefficient of learning self-efficacy on goal orientation is significant, meaning that learning self-efficacy affects goal orientation (β = 0.670). This hypothesis is consistent with the studies of Al-Azizim (2024), Mahro & colleagues (2024), Shams (2024), Khalaj (2023), Ildiz Durak (2023), Mousavi (2021), Haq Nazari & colleagues (2020), and Liza & colleagues (2020). Explaining this hypothesis, it can be said that learning self-efficacy plays an important role in shaping the goal orientation of secondary school students in history and influences how they approach academic tasks and challenges. Students with high self-efficacy, who believe in their ability to succeed in learning tasks, are more likely to adopt mastery goals. These students focus on understanding historical concepts and improving their skills because they are confident that their efforts will lead to success. As a result, they tend to engage with the material more deeply, persist in the face of difficulties, and view learning as an opportunity for personal growth rather than a competition for grades or recognition. In contrast, students with low self-efficacy may be more inclined to adopt performance-oriented goals, where the focus is on demonstrating competence compared to others or avoiding

failure. These students may fear that they are incapable of mastering the material and, instead of deeply understanding historical content, they prioritize external validation, such as high grades or praise from teachers. This performance-oriented goal orientation may limit their engagement with the subject, as they may avoid challenging tasks or adopt a superficial approach to learning to protect their image or avoid negative feedback. Therefore, learning self-efficacy is a key determinant in whether students pursue mastery or performance goals in history education.

Thinking Styles Affect Autonomous Motivation of Secondary School Students in History

The findings indicate that the correlation coefficient between thinking styles (legislative, executive, judicial, monarchical, hierarchical, oligarchic, anarchic, holistic, detailed, internal, external, free-spirited, and conservative) and autonomous motivation is significant. These results align with the studies of Al-Azizim (2024), Al-Saad (2024), Hammad & Owid (2024), Norbavliou et al. (2022), Belgo, Haag, and Barida (2021), Mahrami & Ziadpour (2020), Haq Nazari & colleagues (2020), and Liza & colleagues (2020). It can be concluded that thinking styles significantly influence the autonomous motivation of secondary school students in history by shaping how they perceive and engage with the subject. Students with analytical thinking styles, who enjoy analyzing complex information and drawing logical connections, may experience intrinsic satisfaction when studying historical events. The process of analyzing causes, effects, and patterns in history aligns with their natural cognitive preferences, enhancing their sense of independence and deep engagement with the content. This alignment between thinking style and the subject matter increases their autonomous motivation, as they are more likely to approach history with curiosity and a desire to learn for its own sake. In contrast, students with creative thinking styles, who thrive on innovation and novel perspectives, may experience intrinsic motivation if they view history as an opportunity to discover unique interpretations and challenge traditional narratives. When these students feel that history allows for creative expression, they are more likely to engage voluntarily and with personal interest. However, if the history curriculum is rigid and focuses solely on memorization of facts, it may not align with their thinking style and could potentially reduce their intrinsic motivation. Therefore, how history education taps into students' natural thinking styles can either enhance or hinder their intrinsic motivation to learn the subject.

Learning Self-Efficacy Affects Autonomous Motivation of Secondary School Students in History

The findings show that the impact coefficient of learning self-efficacy on autonomous motivation is significant, meaning that learning self-efficacy affects autonomous motivation ($\beta = 0.510$). These results are consistent with the studies of Liu, Shi, and Wang (2022), Norbavliou et al. (2022), Belgo, Haag, and Barida (2021), Mahrami & Ziadpour (2020), Haq Nazari & colleagues (2020), and Liza & colleagues (2020). It can be said that learning self-efficacy, or the belief in one's ability to succeed in academic tasks, plays a significant role in the autonomous motivation of secondary school students in history. Students with high self-efficacy are more likely to feel confident in their ability to master historical content, which boosts their intrinsic motivation to engage with the subject. Because they believe they can succeed, these students approach history with curiosity and interest, and their motivation to learn and explore historical events is based on their interests. This sense of competence fosters deeper and more autonomous motivation, as they engage with the material for personal satisfaction rather than external rewards. On the other hand, students with low self-efficacy may struggle with autonomous motivation in history, as they are more likely to doubt their abilities and perceive the subject as challenging or unattainable. This lack of confidence can lead to feelings of frustration or anxiety, causing them to disengage from the material and rely more on external pressures, such as grades or teacher approval, rather than intrinsic interest. As a result, their motivation becomes less autonomous and more driven by fear of failure or the need to meet external expectations, rather than genuine interest in learning about history. Therefore, enhancing students' self-efficacy can play a crucial role in fostering greater autonomous motivation in history education.

Thinking Styles Affect the Performance of Secondary School Students in History

The findings show that the correlation coefficient between thinking styles (executive, judicial, monarchical, hierarchical, oligarchic, anarchic, holistic, detailed, free-spirited, and conservative) and performance in history is significant. These

results are consistent with the studies of Al-Azizim (2024), Al-Saad (2024), Hammad & Owid (2024), Belgo, Haag, and Barida (2021), Mahrami & Ziadpour (2020), Haq Nazari & colleagues (2020), and Liza & colleagues (2020). It can be explained that thinking styles have a direct impact on student's performance in history by influencing how they process historical information and approach learning tasks. For example, analytical thinkers excel in history due to their ability to break down complex events, analyze cause-and-effect relationships, and identify patterns over time. This logical and structured approach aligns well with the emphasis in history on understanding timelines, interpreting sources, and drawing conclusions based on evidence. As a result, students with analytical thinking styles are more likely to perform well in historical tasks requiring critical analysis, essay writing, and detailed study of historical events. On the other hand, creative thinkers may approach history by focusing on novel interpretations and broader connections between historical themes, offering fresh perspectives on past events. While this creativity can enrich their understanding of history, their performance may depend on the type of assessments used. If a history course emphasizes open-ended projects or critical discussions, creative thinkers may thrive, bringing new ideas to historical debates. However, if the focus is on memorizing dates and facts, they may struggle because their thinking style leans more toward big-picture ideas rather than fragmented learning. Therefore, the alignment between a student's thinking style and teaching methods or assessment criteria in history significantly influences their overall performance.

Learning Self-Efficacy Affects the Performance of Secondary School Students in History

The findings show that the effect coefficient of learning self-efficacy on performance in history is not significant ($\beta = 0.115$). This suggests that learning self-efficacy does not directly impact students' performance in history. These results align with the studies of Al-Azizim (2024), Mahrami & Ziadpour (2020), Haq Nazari & colleagues (2020), and Liza & colleagues (2020). It can be explained that while learning self-efficacy, or the belief in one's ability to succeed in academic tasks, has a significant impact on students' motivation, it may not necessarily translate to improved performance in history. Students with high self-efficacy are more likely to approach history with confidence, believing they can understand the material and perform well in assignments and exams. This positive self-perception leads to greater persistence when facing challenging tasks, such as analyzing primary sources or writing essays. These students tend to engage in effective study strategies, seek help when needed, and remain motivated, all of which contribute to better performance in history. However, students with low self-efficacy may face difficulties in history due to a lack of confidence in their abilities. They may avoid difficult tasks, fear failure, or believe their efforts will not lead to success. This mindset can result in poor study habits, lower engagement with the material, and reluctance to participate in discussions or undertake challenging projects. Consequently, these students may perform poorly in history, not because they lack the ability, but because their low self-efficacy limits their willingness to invest effort and take academic risks. Therefore, enhancing learning self-efficacy is crucial for improving performance in history, as it empowers students to endure challenges and persist in their learning efforts.

Goal Orientation Affects the Performance of Secondary School Students in History

The findings indicate that the effect of goal orientation on performance in history is significant ($\beta = 0.512$). This result is consistent with studies by Mousavi (2021), Liu, Shi, and Wang (2022), Norbavlio and others (2022), Belgo, Haag, and Barida (2021), Mahrami and Ziadpour (2020), Haq Nazari and colleagues (2020), and Liza and colleagues (2020). Goal orientation significantly impacts secondary school students' performance in history by shaping their motivations and learning approaches. Students with a mastery goal orientation focus on understanding the material and improving their skills. Their motivation is based on learning and growth, which often leads to deeper engagement with historical concepts, critical thinking, and thorough analysis of events. This intrinsic motivation enhances persistence, encouraging students to tackle challenging tasks and actively participate in class discussions. As a result, their performance in history reflects a comprehensive understanding of the subject, as they prioritize mastery over grades. In contrast, students with a performance goal orientation primarily focus on demonstrating their competence relative to their peers or achieving high grades. While this goal orientation can drive some students to perform well, it may also lead to surface-level learning

strategies, where the emphasis is on memorization rather than understanding. These students may avoid challenging tasks due to fear of failure or falling behind, which can hinder their overall performance in history. The pressure to compete can create anxiety and lead to reliance on external validation rather than genuine interest in the subject. Therefore, cultivating a mastery goal orientation in students may enhance their performance in history by promoting a more meaningful and engaged approach to learning.

Autonomous Motivation Affects the Performance of Secondary School Students in History

The findings show that the effect of autonomous motivation on performance in history is significant ($\beta = 0.333$). This result is in line with the studies by Al-Azizim (2024), Al-Saad (2024), Liu, Shi, and Wang (2022), Norbavlio and others (2022), Belgo, Haag, and Barida (2021), Mahrami and Ziadpour (2020), Haq Nazari and colleagues (2020), and Liza and colleagues (2020). Autonomous motivation significantly influences secondary school students' performance in history by increasing their engagement and interest in the subject. When students have intrinsic motivation, they learn because they find value and enjoyment in exploring historical events, understanding their significance, and connecting them to contemporary issues. This type of motivation drives students to actively seek out additional resources, engage in discussions, and approach assignments with enthusiasm. As a result, they tend to perform better in history because their learning is self-directed and meaningful, enabling them to retain information and develop a deeper understanding of the material. On the other hand, when students lack autonomous motivation, their performance in history may suffer. Students who are primarily motivated by external factors—such as grades, parental pressure, or fear of failure—may approach the subject with a transactional mindset, focusing on completing assignments rather than true learning. This approach, driven by external motivation, can lead to shallow engagement, such as rote memorization of facts, which often results in poor retention and understanding of historical content. Additionally, students who feel forced to learn for external rewards may become anxious or indifferent, further disrupting their performance. Therefore, fostering an environment that encourages autonomous motivation is crucial for enhancing students' academic performance in history.

Thinking Styles Indirectly Influence Performance through the Mediating Role of Perceived Goal Orientation in History

The findings suggest that the correlation between thinking styles (executive, judicial, monarchical, hierarchical, oligarchic, anarchic, holistic, analytical, libertarian, and conservative) and performance in history, with the mediating role of perceived goal orientation, is significant. This result aligns with the studies by Al-Azizim (2024), Al-Saad (2024), Liu, Shi, and Wang (2022), Norbavlio et al. (2022), Belgo, Haag, and Barida (2021), Mahrami and Ziadpour (2020), Haq Nazari et al. (2020), and Liza et al. (2020). The hypothesis can be explained by the idea that thinking styles indirectly influence secondary school students' performance in history through the mediating role of perceived goal orientation. Students' cognitive preferences, such as analytical, creative, or practical thinking, shape how they engage with historical content and develop their understanding of complex concepts. When students align their thinking style with a mastery goal orientation—focused on learning and personal growth—they are more likely to use effective study strategies and engage deeply with the material. This alignment strengthens their intrinsic motivation and leads to improved performance in history, as they feel empowered to explore and understand the subject comprehensively. In contrast, if students adopt a performance goal orientation—focused on outperforming peers or achieving high grades—their engagement may shift toward surface-level learning. This can reduce the positive impact of their thinking styles, as they may become more focused on external validation rather than genuinely understanding the content. As a result, students may avoid challenging tasks or rely on memorization for grades, which can negatively impact their performance. Therefore, perceived goal orientation acts as an important mediator in the relationship between thinking styles and performance, highlighting the importance of fostering a mastery-oriented mindset to enhance students' academic outcomes in history education.

Thinking Styles Indirectly Influence Performance through the Mediating Role of Autonomous Motivation in History

The findings reveal that the correlation between thinking styles (executive, judicial, monarchical, hierarchical, oligarchic, anarchic, holistic, analytical, libertarian, and conservative) and performance in history, with the mediating role of autonomous motivation, is significant. This result is consistent with the findings of Al-Azizim (2024), Mousavi (2021), Liu, Shi, and Wang (2022), Norbavlio et al. (2022), Haq Nazari et al. (2020), Liza et al. (2020). This hypothesis can be explained by the fact that thinking styles indirectly affect secondary school students' performance in history through the mediating role of autonomous motivation. Students' cognitive preferences, such as analytical, creative, or practical thinking, influence how they approach learning historical content and engage with it. When students' thinking styles align with their interests and values, they are more likely to experience intrinsic motivation for learning, characterized by a genuine desire to explore the topic for its own sake. This autonomous motivation encourages students to invest time and effort in developing a deep understanding of historical concepts, leading to improved performance in history. On the other hand, if students lack autonomous motivation, the positive effects of their thinking styles on performance may diminish. For example, students who feel disconnected from the material or are solely driven by external rewards such as grades may not fully engage with their learning. This lack of intrinsic motivation can lead to a more superficial understanding of history, as students may resort to memorizing notes or minimal effort to complete assignments. Consequently, the mediating role of autonomous motivation emphasizes the importance of creating a learning environment that fosters intrinsic engagement, enabling students to connect their thinking styles to meaningful learning experiences and ultimately enhancing their performance in history education.

Learning Self-Efficacy Indirectly Affects Performance through the Mediating Role of Perceived Goal Orientation in History

The findings indicate that there is a significant correlation between learning self-efficacy and performance in history, with the mediating role of perceived goal orientation ($r = 0.342$). This result aligns with the research of Al-Azizim (2024), Mousavi (2021), Liu, Shi, and Wang (2022), Norbavlio et al. (2022), Belgo, Haag, and Barida (2021), Mahrami and Ziadpour (2020), Haq Nazari et al. (2020), and Liza et al. (2020). This hypothesis suggests that learning self-efficacy indirectly affects secondary school students' performance in history through the mediating role of perceived goal orientation. When students have a strong belief in their ability to succeed in history, they are more likely to adopt a mastery goal orientation focused on learning and understanding content for personal growth. This belief fosters an environment where students feel empowered to engage deeply with historical concepts, seek out challenging tasks, and use effective study strategies. As a result, their self-efficacy enhances their intrinsic motivation for learning, leading to improved academic performance in history. In contrast, students with low self-efficacy may adopt a performance-oriented goal perspective, focusing on demonstrating competence relative to peers or achieving high grades. This shift in focus can lead to anxiety and fear of failure, pushing students toward surface-level learning or avoidance of challenging tasks. Consequently, their performance in history may suffer as they prioritize external validation over a genuine understanding of the subject. Thus, perceived goal orientation acts as an important mediator in the relationship between learning self-efficacy and performance, emphasizing the need to foster a positive self-efficacy mindset among students to promote mastery-oriented goals and improve their academic outcomes in history education.

Learning Self-Efficacy Indirectly Affects Performance through the Mediating Role of Autonomous Motivation in History

The findings indicate that there is a significant correlation between learning self-efficacy and performance in history, with the mediating role of autonomous motivation. This result is consistent with the findings of Mousavi (2021), Liu, Shi, and Wang (2022), Norbavlio et al. (2022), Belgo, Haag, and Barida (2021), Mahrami and Ziadpour (2020), Haq Nazari et al. (2020), and Liza et al. (2020). This hypothesis suggests that learning self-efficacy indirectly affects secondary school students' performance in history through the mediating role of autonomous motivation. When students believe in their ability to succeed in learning historical content, they are more likely to engage with the material due to their intrinsic interest rather than external rewards. This confidence boosts their sense of independence in learning,

encouraging them to explore historical concepts, engage in critical thinking, and actively participate in class discussions. As a result, their high self-efficacy leads to deep, meaningful engagement with the subject, which enhances their overall performance in history. Conversely, students with low self-efficacy may struggle with feelings of doubt and inadequacy, leading to a decrease in autonomous motivation. When students are not confident in their abilities, they may approach history with a focus on grades and external validation rather than a genuine interest in the content. This approach, driven by external motivation, can hinder their willingness to tackle challenging material or engage with the subject at a deeper level. As a result, their performance in history may be impaired as they may resort to surface-level learning strategies. Therefore, fostering a strong sense of learning self-efficacy is essential for enhancing autonomous motivation, which ultimately leads to improved academic performance in history among secondary school students.

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