# The effect of motivation on self-efficacy of English department students with mediational effects of learning styles and learning strategies

**Salma El Haj***

*English Department, Mohammed V University, Rabat, Morocco*

*salma.elhaj@um5r.ac.ma

**Mohamed Benhima***

*English Department, Mohammed V University, Rabat, Morocco*

*m.benhima@um5r.ac.ma

**Abstract**

*This study aims to investigate the effect of motivation on self-efficacy among English department students with the mediating roles of learning styles and learning strategies. A 5-point Likert scale questionnaire has been adopted from the Attitude/Motivation Test Battery (AMTB), the Strategy Inventory for Language Learning (SILL) Version 7.0, the Perceptual Learning Style Preference Questionnaire (PLSPQ) and the Academic Self-Efficacy Scales were employed, and 109 students (N=109) took part in the current study. The sampling procedure adopted is voluntary sampling. The questionnaire showed excellent alpha Cronbach's reliability and KMO validity. The regression and mediation analysis conducted on the collected data show a statistically significant positive impact of motivation on self-efficacy through a meditation of learning styles and learning strategies. Therefore, it is highly recommended for students, teachers, and administrators to focus on motivation to increase self-efficacy.*

***Key words:*** *English language learning, learning styles, learning strategies, motivation, self-efficacy*

## 1. Introduction

The study explores the intricate relationship between motivation and self-efficacy among English department students, with a particular focus on the mediational effects of learning styles and

strategies. Motivation, as defined by the internal drive guiding academic pursuits, can profoundly influence students' self-efficacy, which pertains to their confidence in mastering English-related tasks. Understanding the factors influencing students' academic performance and success has always been a subject of great interest in education (Qureshi, Khaskheli, Qureshi, Raza, & Yousufi, 2023). Since early works on educational psychology, researchers have stressed the importance of motivation, learning styles, learning strategies, and self-efficacy (Haswell, 2017; Pakdel, 2013; McCombs, 2017; Klassen, & Usher, 2010).

However, a notable research gap exists in determining the nuances of this relationship, especially when considering how individual learning preferences (styles) and adopted methodologies (strategies) might mediate it. The mediation of learning styles and strategies in the relationship between motivation and self-efficacy remains relatively unexplored in the existing research literature, especially with regard to English language in higher education. To bridge this gap and expand our understanding, the present study aimed to delve into this important aspect. Valuable insights can be gained by conducting this research, shedding light on the potential mechanisms through which motivation influences self-efficacy, with learning styles and strategies playing mediating roles.

From an academic standpoint, understanding these interplays can provide insights for curriculum design tailored to maximize student engagement and success. Educationally, insights from this study can equip educators with tools to foster better student outcomes by aligning teaching methods with prevalent learning styles and strategies. Psychologically, it contributes to a deeper understanding of the factors that bolster or hinder a student's belief in their capabilities, thus informing interventions aimed at enhancing student well-being and academic achievements. This research holds substantial promise in significantly contributing to the realms of academia,

education, and psychology.

This study investigated the effect of motivation on self-efficacy through the mediation of learning styles and learning strategies by self-reported Five-Points Likert scale cross-sectional survey of 109 students. By examining these variables and understanding the relationship with wider implications for English as foreign language learning, this study aims to provide insights into the factors contributing to students' self-beliefs and academic achievement.

## 2. Review of the literature

Learning as the attainment of knowledge, skills, and behavior is the interaction between several factors, including motivation, learning styles, learning strategies and self-efficacy. These are considered important factors that can influence students' academic achievement and the learning process. This section aims to explore the four constructs of this study and synthesize the findings of recent and relevant studies that have investigated the relationship between motivation, learning styles, learning strategies and self-efficacy.

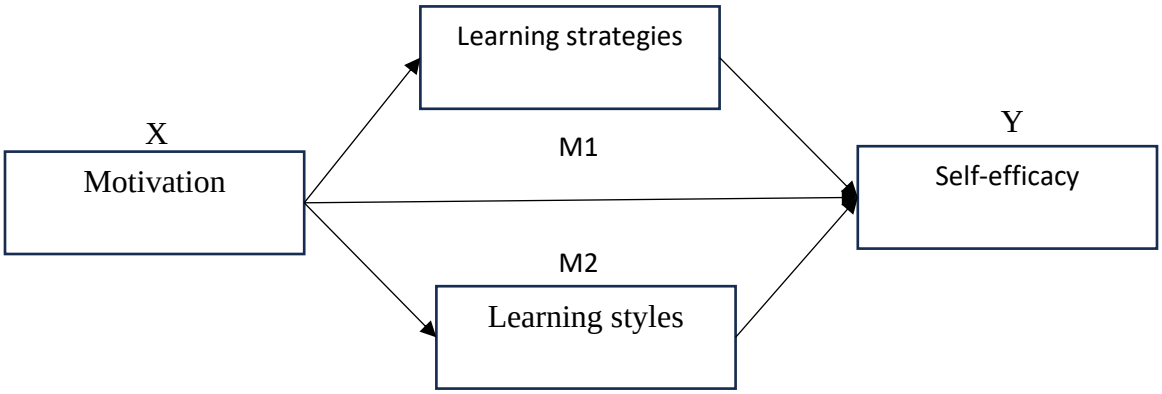
### *2.1 Research framework*

The relationship between motivation and self-efficacy in education has been extensively studied in the past few decades (Honicke, Broadbent, & Fuller-Tyszkiewicz, 2020). Historically, motivation was seen as a key component of learning, with early theories such as Maslow's Hierarchy of Needs emphasizing the importance of motivation in the learning process. Self-efficacy, on the other hand, was introduced as a concept by Bandura in the 1970s and has since been widely studied in the field of education.

Learning styles and learning strategies have also been studied for many years. The concept of learning styles was first introduced by Dunn and Dunn in 1978 and has since been widely used to

describe different ways in which individuals learn. Learning strategies, on the other hand, have been studied since the 1980s, with researchers such as Weinstein and Mayer proposing different taxonomies to classify these strategies.

**Figure 1.** Conceptual model




The investigation of the relationship between motivation and self-efficacy using learning styles and learning strategies as mediators is important for education practices. By understanding how these concepts are related, educators can develop more effective teaching strategies to enhance student learning and academic achievement.

### *2.2 Definitions and Taxonomies*

#### *Self-efficacy*

Self-efficacy refers to an individual's belief in their ability to complete tasks or achieve goals successfully. It is a measure of confidence in one's ability to control one’s motivation, behaviour, and surroundings. Bandura's Social Cognitive Theory states that self-efficacy beliefs play a crucial role in determining an individual's motivation and behaviour (Bandura, 1977, 1986, 1997). Self-efficacy can have a significant impact on students’ academic performance and motivation to

succeed. Students with high self-efficacy are more likely to approach challenges with confidence and determination, persist in the face of setbacks, and seek opportunities to improve their skills (Heslin & Klehe, 2006; Howard, Margolis, Patrick, & McCabe, 2006).

*Motivation*

Motivation is a driving force that initiates and sustains goal-directed behaviour influenced by expectations of outcomes and self-belief in one's ability to achieve those outcomes (Bandura, 1986). It is a combination of desires and tendencies that vary in frequency and intensity among individuals and drive behaviour toward change (Baumeister, 2016).

The need for goal attainment or achievement may be intrinsic or extrinsic. Intrinsic motivation refers to the internal drive to undertake an activity for the inherent satisfaction and enjoyment, whereas extrinsic motivation refers to the external rewards for carrying out the behaviour (Pintrich, 2003; Nevid, 2018).

*Learning styles*

Learning styles refer to an individual's stable and pervasive psychological characteristics that influence how they perceive, organize, and react to learning situations, leading to differences in their preferred modes of instruction or study. These characteristics are expressed through the interaction between one's behaviour and personality when approaching a learning task (Garger & Guild, 1984; Pashler et al., 2008).

According to Ried (1995), there are six main areas of sensory learning styles: visual, auditory, kinesthetic, tactile, group, and individual. Visual learners prefer graphics and images, whereas auditory learners prefer sound and oral modes. Kinesthetic learners prefer learning through experience and physical movement, whereas tactile learners prefer to touch and manipulate during learning. The learning style view has gained significant influence in education and is often

encountered at all levels of learning. Understanding and integrating one's learning style into the learning process can lead to more accessible and faster learning and success, as well as improved problem-solving skills and autonomy. Educating individuals in a manner that aligns with their learning styles is crucial for building confidence and avoiding frustration. By taking responsibility for their learning, individuals can gain control over the process and become more successful with teacher guidance rather than controlling the learning experience. Utilizing learning styles can improve teacher effectiveness and students' success (Fidan, 1986; Biggs, 2001).

*Learning strategies*

Learning strategies are techniques that learners intentionally use to aid in the acquisition, retention, and integration of new information during the learning process (Cross & Steadman, 1996; Weinstein and Mayer 1986).

These strategies can be divided into two major classes: direct and indirect strategies. Direct strategies consist of memory, cognitive, and compensatory strategies. Memory strategies are mental devices that are used to create linkages between new and existing information. Cognitive strategies aid in the processing and use of language such as writing notes or reports in the target language. Compensation strategies such as guessing the meaning of unfamiliar words are used to compensate for missing knowledge. Indirect strategies include metacognitive, affective, and social strategies. Metacognitive strategies include the planning, organization, evaluation, and monitoring of language learning, such as paying attention during conversations. Affective strategies deal with emotions, motivations, and attitudes, such as staying relaxed while using a target language. Social strategies involve interactions with other people in the context of language learning, such as asking questions in the target language for communication and social interactions (Oxford, 1990). By utilizing these strategies, students can become more effective learners and problem solvers, take

control of their learning, become more autonomous and achieve their language-learning goals (Oxford, 2016).

### *2.3 Previous empirical studies*

Motivation is a key factor in achieving successful learning outcomes. Various studies have explored the relationship between motivation and other variables such as learning styles learning strategies, and self-efficacy.

According to Odabas (2022), students with higher self-efficacy tend to be more motivated to learn. The study found a positive and statistically significant relationship between student self-efficacy and motivation levels. In another context, Srimulyani and Hermanto (2022) investigated the impact of entrepreneurial self-efficacy and motivation on the success of micro and small enterprises in the food and beverage sector in East Java, Indonesia. The study found that entrepreneurial motivation partially mediates the relationship between self-efficacy entrepreneurship and business success. The study suggests that high self-efficacy can directly or indirectly influence business success through entrepreneurial motivation. This result differs from that of Bárkányi (2021) who examined the role of motivation, anxiety, and self-efficacy beliefs in beginners' Spanish language massive open online courses (LMOOCs). The study found no correlation between motivation, anxiety and self-efficacy concerning speaking.

Usman and Tasya (2020) investigated the effects of e-learning, learning style, and interest on students' learning motivation and found no influence of learning styles on learning motivation. In contrast, Gumasing and Castro's (2023) study aimed to examine the factors affecting students' learning motivation and academic performance during online learning and found that visual learning style has a significant and positive effect on learning motivation.

Some other studies investigated the relationship between motivation and learning strategies. The recent research by Ortega-Torres, Solaz-Portoles, and Sanjosé-López (2020) investigated the relationship between motivation and cognitive and meta-cognitive learning strategies and found that motivation and cognitive and meta-cognitive learning strategies are significantly correlated. The study also suggests that low motivation is likely associated with low strategy use, while high motivation does not necessarily imply a particular level of strategy use. On the other hand, a low level of strategy use cannot be linked to any level of motivation, but a high level of strategy use is strongly related to high motivation.

Overall, the reviewed studies suggest that motivation is closely related to other variables such as self-efficacy, learning styles, and learning strategies. Additionally, the studies suggest that high motivation levels are often associated with these variables. However, most of these studies focused on the relationship between self-efficacy and motivation and neglected to consider the learning styles and learning strategies as mediators in this relationship. Therefore, this study will use learning styles and learning strategies as mediators to examine this relationship.

## 3. Methodology

This section provides a detailed explanation of the research methodology used to investigate the relationship between motivation, learning styles, learning strategies, and the self-efficacy of English department students. It covers aspects such as the research design, population, sample, data collection, data analysis, and ethical considerations.

### *3.1 Research design*

This study employed a quantitative research design based on empiricism to examine the relationship between motivation, learning styles, learning strategies, and self-efficacy among English department students. This study employed a cross-sectional survey to gather data (Creswell & Creswell, 2017). The decision to use this research approach was based on the need to obtain precise and reliable data to test the hypotheses and answer the research questions.

### *3.2 Research hypothesis and research objective*

The study hypothesizes the following:

$H0^1$: There is no statistically significant relationship between motivation, learning styles, learning strategies and self-efficacy.

$H1^1$: There is a statistically significant relationship between Motivation on learning styles, learning strategies, and self-efficacy.

$H0^2$: There is no statistically significant effect of motivation on learning strategies, learning styles and self-efficacy.

$H1^2$: There is a statistically significant effect of motivation on learning strategies, learning styles and self-efficacy.

$H0^3$: There is no statistically significant effect of learning styles on self-efficacy.

$H1^3$: There is a statistically significant effect of learning styles on self-efficacy.

$H0^4$: There is no statistically significant effect of learning strategies on self-efficacy.

$H1^4$: There is a statistically significant effect of learning strategies on self-efficacy.

### *3.3 Research questions*

This study aimed to answer the following questions.

Q1: Is there a correlation between motivation and self-efficacy among English department students in Morocco?

Q2: Do learning styles and learning strategies mediate the relationship between motivation and self-efficacy among English department students in Morocco?

Q3: What type of effect does motivation have on self-efficacy?

Q4: Is there a significant difference in motivation, learning styles, learning strategies, or self-efficacy levels between male and female English department students?

Q5: Is there a significant difference in motivation, learning styles, learning strategies, or self-efficacy levels between different-semester English department students?

Q6: Is there a significant difference in motivation, learning styles, learning strategies, or self-efficacy levels between different English department students' age groups

### *3.4 Research variables*

Independent variables: Motivation, learning styles, learning strategies.

Dependent variables: Self-efficacy

Control variables/independent variables: Age, semester, and gender. These variables are used as control variables for impact in one model and as independent variables for difference in another model.

### *3.5 Research sample*

This study aimed to investigate the relationship between motivation, learning styles, learning strategies and self-efficacy among English department students at Mohammed V University in Rabat, Morocco. Convenience sampling was used to select 109 students from the population, as the data collection process relied on English department students to respond to the survey.

### *3.6 Data collection procedure*

The primary data collection method used in this study was a questionnaire-based survey distributed through Google Forms. The survey featured Likert-scale statements that allowed for the collection of numerical data that could be analyzed using statistical methods to identify patterns and relationships. The survey consisted of a four-part 40-statement questionnaire that included questions about gender, age, and semester. The first section featured six statements of motivation adopted from the Attitude/Motivation Test Battery (AMTB; Gardner, 1985); the second section included 18 learning strategies statements adopted from the Strategy Inventory for Language Learning (SILL) Version 7.0, (ESL/EFL)(Oxford, 1989); the third section was about learning styles with 12 statements from the Perceptual Learning Style Preference Questionnaire (PLSPQ; Reid, 1984), and the self-efficacy section with four statements from the Academic Self-Efficacy Scale (Kunnathodi and Ashraf, 2006). The survey link was disseminated to English department students who had access to social media platforms, such as WhatsApp, Facebook, and Discord. The students were fully briefed about the research with the assurance of consent form, anonymity and confidentiality. All the survey data were obtained before or during the last month of the fifth semester.

### *3.7 Data analysis procedure*

The data analysis procedures for this study were conducted using the Statistical Package for Social Sciences (SPSS version 29.0) alongside Excel (office 2016) and SmartPLS 4. The first step was to conduct descriptive statistics to summarize and describe the characteristics of the data. Measures of central tendency, including frequencies (F), percentages (%), and mean (M), and dispersion measures, including standard deviation (SD). Next, factor analysis was performed to examine the distinctiveness of the four variables. The reliability of the questionnaire was tested using Cronbach's alpha, and the suitability of the data for factor analysis was tested using Kaiser-Meyer-

Olkin (KMO) and Bartlett's test of sphericity. Correlation analysis was then conducted to examine the relationship between the variables. Pearson's correlation coefficient was used to measure the strength and direction of the linear relationship between motivation, learning styles, learning strategies, and self-efficacy. Regression analysis was then conducted to test the hypothesis that motivation affects self-efficacy through learning styles and learning strategies. A path analysis with and without control variables was further used for more insights into the data. Furthermore, a one-way ANOVA was conducted to examine the differences in responses between semesters and age groups. Finally, Independent Samples T-Tests were also conducted to examine the differences in responses between gender groups.

### *3.8 Reliability and validity*

According to the American Psychological Association (2020), reliability is the degree to which a measurement yields consistent results. In other words, a reliable research instrument consistently produces the same results under similar conditions. High reliability is important for ensuring that the results of a study are accurate and trustworthy.

**Table 1.** Reliability Statistics

| Scale | Number of items | Cronbach's alpha |
|---|---|---|
| Motivation | 6 | .895 |
| Learning Strategies | 18 | .893 |
| Learning Styles | 12 | .814 |
| Self-efficacy | 4 | .796 |
| Total | 40 | .849 |

In this study, all four scales (Motivation, Learning Strategies, Learning Styles, and Self-efficacy) demonstrated good internal consistency reliability, with Cronbach's alpha values ranging from .796 to .895. The motivation and learning strategies scales had the highest Cronbach's alpha values at .895 and .893, respectively, while the learning styles and self-efficacy scales had slightly lower values at .814 and .796, respectively. According to Hinton et al. (2004), Cronbach's alpha values between 0.70 and 0.90 are considered to indicate high reliability. The results of the Cronbach's reliability test suggest that the four scales are highly reliable (α=.849)

### *3.9 Research ethics*

Ethical permission was obtained from the English Department. Prior to completing the survey, all students were fully briefed on the research objectives and procedures. They were also informed that their responses would remain anonymous and confidential.

### *3.10 Limitations*

One potential limitation of this study is the use of convenience sampling, which may limit the generalizability of the findings to other populations. Additionally, the study relied solely on self-reported measures, which may be subject to response and social desirability biases, potentially affecting the validity of the results. These limitations should be considered when interpreting results and designing future research studies.

This section provides a detailed account of the research methodology used to investigate the relationship between motivation, learning styles, learning strategies, and self-efficacy adopted by 109 English department students, using a quantitative research design and data collected using Google Forms. The data were analyzed using descriptive statistics, and ethical considerations and limitations are also discussed.

## 4. Data analysis

This section provides a clear and comprehensive understanding of the relationships among motivation, learning styles, learning strategies, and self-efficacy. The findings contribute to the overall objectives of the research paper and address the research questions posed. It begins with descriptive statistics, summarizing the data and providing insights into the variable distribution and variability. Regression analysis will then examine the relationships among motivation, learning styles, learning strategies, and self-efficacy and the predictability power of motivation, learning styles, and learning strategies on self-efficacy, highlighting the significant predictors and their relationships.

### *4.1 Sociodemographic variables*

**Table 2.** Participants' sociodemographic characteristics

| | Variables | N | % |
|---|---|---|---|
| Gender | Female | 74 | 67.9% |
| | Male | 35 | 32.1% |
| | Not disclosed | 2 | 1.8% |
| Age | 18-22 | 77 | 70.6% |
| | 22-26 | 24 | 22.0% |
| | 26-30 | 5 | 4.6% |
| | 30 and above | 1 | 0.9% |
| Semesters | S1 | 24 | 22.0% |
| | S3 | 20 | 18.3% |
| | S5 | 57 | 52.3% |
| | S6 | 1 | 0.9% |
| | Master | 7 | 6.4% |

Table 2 indicates that the sample of (N=109) participants was 67.9% female (n=74) and 32.1% male (n=35). The age of the participants ranged between 18 and 30 years, with the exception of two students (1.8%), who did not provide us with their age. 77 students (70.6%) were aged between 18 and 22 years. 24 students (22%) were aged between 22 and 26 years. Five students (4.6%) were between 26 and 30, whereas 1 student (0.9%) was 30 or above. The distribution of participants

based on their current semester was 22.0% in the first semester (n=24), 18.3% in the third semester (n=20), 52.3% in the fifth semester (n=57), 0.9% in the sixth semester (n=1), and 6.4% in the master's program (n=7).

### *4.2 Descriptive statistics*

**Table 3.** *Descriptive Statistics of the Scales*

| | N | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| Motivation | 109 | 1.00 | 5.00 | 4.1055 | 1.04100 |
| Learning strategies | 109 | 1.00 | 5.00 | 3.7202 | .88828 |
| Learning styles | 109 | 1.00 | 5.00 | 3.5367 | .88377 |
| Self-efficacy | 109 | 1.00 | 5.00 | 3.7569 | .88615 |
| Valid N (listwise) | 109 | | | | |

Based on the findings in Table 3, participants' mean scores for motivation, learning strategies, learning styles and self-efficacy fell within the range of "agree" on a 5-point Likert scale (3.41-4.20) ($p < .01$), as defined by Nyutu et al. (2021). Specifically, the mean scores ranged between 3.53 to 4.10 with motivation having the highest score ($M = 4.10$) ($SD = 1.04$), self-efficacy ($M = 3.75$) ($SD = .886$), learning strategies ($M = 3.72$) ($SD = .888$), and finally learning styles ($M = 3.53$) ($SD = .883$) with the lowest mean score of all the variables.

### *4.3 Inferential statistics*

Prior to conducting the regression analyses, the suitability of the data for factor analysis was performed to assess the appropriateness of using the data for regression. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used to evaluate the strength of the relationships among the variables. The KMO measure determines the degree of common variance among the variables, and a value greater than 0.5 is generally considered acceptable for factor analysis (Kaiser, 1974; Field, 2000). Bartlett's test of sphericity, on the other

hand, tests the null hypothesis that the correlation matrix is an identity matrix (i.e., variables are uncorrelated) (Bartlett, 1954).

**Table 4.** *KMO and Bartlett's Test*

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .808 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2578.715 |
| | df | 780 |
| | Sig. | .000 |

The KMO value obtained in this study was 0.808, indicating that the variables had a strong degree of correlation, which was considered appropriate for factor analysis. Additionally, the significant result of Bartlett's test of sphericity (approximate chi-square $= 2578.715, df = 780, p < 0.001$) indicated that the variables were significantly correlated and not an identity matrix. Therefore, the results suggested that the data were suitable for conducting regression analyses because there was a strong relationship among the variables.

To test the hypothesis that motivation predicts self-efficacy and whether learning style and strategies mediate this relationship, Baron and Kenny's (1986) approach was used to test the mediation effect. Regression analyses were performed with motivation, learning strategies, and learning styles as predictors of self-efficacy to test paths c and b. Simple linear regression tests were conducted with motivation predicting learning styles and learning strategies to test the significance of Path a alone (see Tables 5). To test whether the mediation is full or partial, multiple regression analysis was conducted with motivation, learning styles and learning strategies predicting self-efficacy. Since motivation was no longer significant when learning styles and learning strategies were controlled, the finding supports full mediation.

**Table 5.** *Regression Analysis: Motivation, Learning Styles, Strategies, and Self-Efficacy*

| | | Unstandardized Coefficients | | | |
|---|---|---|---|---|---|
| **Model** | **$R^2$** | **B** | **Std. Error** | **F** | **Sig.** |
| Motivation —› self-efficacy | .063 | .214 | .080 | 7.219 | .008 |
| Learning styles —› self-efficacy | .199 | .379 | .073 | 26.589 | .000 |
| Learning strategies —› self-efficacy | .346 | .502 | .067 | 56.534 | .000 |
| Motivation —› Learning styles | .379 | .214 | .073 | 26.589 | .000 |
| Motivation —› Learning strategies | .588 | .502 | .067 | 56.534 | .000 |

The main results show that motivation can positively predict self-efficacy $R^2$ = .06, $F$(1,107) =7.22, β = .21, $p$ = .008 and motivation positively predicts learning styles $R^2$ = .19, $F$(1,107) =26.58, β = .37, $p$ < .001 and learning strategies $R^2$ = .072, $F$(1,107) =8.32, β = .502, $p$ < .001, and learning styles and learning strategies, in return, predict self-efficacy $R^2$ = .06, $F$(1,107) =7.22, β = .269, $p$ = .005 and $R^2$ = .096, $F$(1,107) =11.35, β = .309, $p$ = .001, respectively. Since motivation was no longer significant when learning styles and learning strategies were controlled, the finding supports full mediation and learning styles and learning strategies account for 100% of the effect.

Significant positive correlations were observed between various academic and psychological constructs. Specifically, motivation was positively correlated with learning strategy, r(107) = .588, $p$ < .001, indicating that an increase in motivation is associated with enhanced learning strategies. Similarly, motivation showed a positive correlation with learning styles, r(107) = .446, p < .001, and with self-efficacy, r(107) = .251, $p$ = .008. Furthermore, learning strategy was notably correlated with learning styles, r(107) = .559, $p$ < .001, and with self-efficacy, r(107) = .310, $p$ = .001. Finally, a significant relationship was also found between learning styles and self-efficacy, r(107) = .269, $p$ = .005. Collectively, these findings suggest intertwined

relationships among motivation, learning strategies, learning styles, and beliefs in one's abilities.

T-tests and ANOVA were conducted to examine potential differences in motivation, learning styles, and learning strategies between males and females, different semesters, and different age groups. Females tend to use more learning strategies than males, which is statistically significant difference as revealed by the Mann-Whiteny U Test. One-Way ANOVA and Multiple Independent Tests show no statistically significant difference in semester and age groups in relation to motivation, learning styles, learning, strategies and self-efficacy. They were not statistically significant control variables the SEM Model run later as well.

The data analysis in this section revealed significant findings regarding the relationships between motivation, learning styles, learning strategies, and self-efficacy. Regression analysis demonstrated that motivation, learning styles, and learning strategies significantly predicted self-efficacy, with learning styles and strategies mediating the relationship between them. Overall, this study contributes to our understanding of the intricate dynamics between these factors and their impacts on academic achievement.

## 5. Discussion

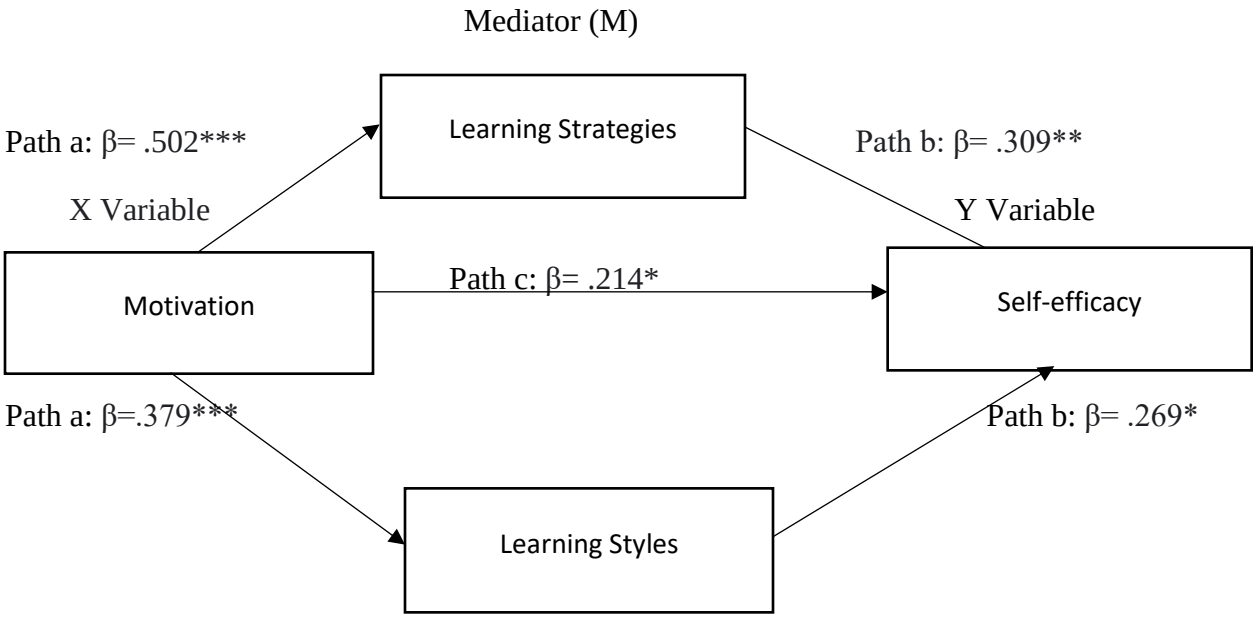
This section delves into the findings of the study, which examined the relationship between motivation, learning styles, learning strategies, and self-efficacy among English department students at Mohammed V University. The results revealed strong correlations between these variables, with motivation positively predicting self-efficacy with a full mediation of learning styles and learning strategies.

The purpose of this study was to investigate the effect of motivation on self-efficacy as mediated by learning styles and learning strategies among 109 Mohammed V University English department

students during 2022 and 2023. A quantitative cross-sectional research design was adopted, departing from empiricism in that reality can be measured in numbers. Therefore, a questionnaire was adapted from the Attitude/Motivation Test Battery (AMTB; Gardner, 1985), the Strategy Inventory for Language Learning (SILL) Version 7.0, (ESL/EFL) (Oxford, 1989), the Perceptual Learning Style Preference Questionnaire (PLSPQ; Reid, 1984), and Academic Self-Efficacy Scale (Kunnathodi and Ashraf, 2006). The questionnaire consisted of 40 items, and its Cronbach alpha reliability was good ($\alpha$= .893 for the learning strategies scale, $\alpha$= .814 for the learning styles scale, $\alpha$= .895 for the motivation scale, and $\alpha$= .796 for the self-efficacy scale).

The findings revealed that participants had a strong correlation between motivation, learning styles, learning strategies, and self-efficacy. Regression analyses showed that motivation positively predicted self-efficacy, learning styles, and learning strategies. Moreover, learning styles and learning strategies mediated the relationship between motivation and self-efficacy, suggesting that motivation influences self-efficacy indirectly through these mediators. This means that if a student's motivation increases, their use of learning strategies and styles will also increase, which will affect positively and increase their self-efficacy. Notably, if motivation increases by 1%, learning strategies will increase by 0.5 units which increases self-efficacy increase by 0.3 units. Additionally, if motivation increases by 1% learning styles will increase by 0.37 units and so will self-efficacy by 0.26 units (see Figure 3).

**Figure 3.** The path effect of motivation on self-efficacy




Note: $p \leq .05$*, .001**, .000***

It should be noted that no research has been conducted to explain the effect of motivation on learning styles, strategies, or self-efficacy. This means that no literature was found to be helpful in comparing the results _ to the best of the researcher's knowledge. However, a study conducted by Zheng, et all (2020) explored the relationship between self-efficacy, learning engagement, intrinsic motivation, extrinsic motivation, and academic performance by analyzing self-reported data collected from 1,930 medical students reported that both intrinsic motivation (IM) and extrinsic motivation (EM) are significantly and positively correlated with self-efficacy (SE) ($r = 0.34, p < 0.01$) and ($r = 0.21, p < 0.01$), respectively. Although the correlation does not establish causation, this study still offers valuable information about the association between motivation and self-efficacy, which aligns with the results of this study. Another research by West, Kahn, and Nauta (2007) examined learning styles as a predictor of self-

efficacy found that learning styles accounted for a significant percentage of variance in research self-efficacy ($R2 = .15, F(4, 127) = 5.76, p < .001$).

The study's findings demonstrated strong links between motivation, learning styles, learning strategies, and self-efficacy. Motivation emerged as a predictor of self-efficacy, whereas learning styles and strategies played a mediating role. These findings emphasize the need to promote effective learning techniques to enhance students' motivation and self-efficacy.

**Conclusion**

Learning involves multiple components such as motivation, learning styles, learning strategies, and self-efficacy, which significantly influence students' academic achievement and learning processes. These variables have been extensively studied, and a synthesis of previous research suggests a strong correlation between motivation and other factors, including self-efficacy, learning styles, and learning strategies. However, these studies have primarily focused on the relationship between self-efficacy and motivation, overlooking the potential mediating role of learning style and strategy. To bridge this research gap, this study examines the link between motivation, learning styles, learning strategies, and self-efficacy among English department students using a quantitative research methodology. Data were collected through a cross-sectional survey, and hypotheses and research questions were formulated to investigate the relationships between variables. Convenience sampling was used to select 109 participants who completed a questionnaire distributed using Google Forms, and SPSS Version 29 was used to analyze the collected data. The findings revealed a strong correlation between motivation, learning style, learning strategy, and self-efficacy. Regression analyses demonstrated that motivation significantly predicted self-efficacy, learning style, and learning strategy. Furthermore, learning styles and strategies were found to mediate the relationship between motivation and self-efficacy,

indicating that motivation indirectly influenced self-efficacy through these mediators. It is important to consider that Baron and Kenny's approach holds a lot of limitations (Pardo & Román, 2013). First, the small sample size in mediation can affect the significance of c' and label mediation as full. While this study provides valuable insights into the relationship between motivation, learning styles, learning strategies, and self-efficacy among English department students, there is still room for further investigation. In social studies, it is almost impossible to claim full mediation or measure variables without an estimated margin of error (Memon et al., 2018; Zhao, Lynch & Chen, 2010; Memon et al., 2018).

The findings of this study have significant implications for English language teachers, students, and policymakers. This study suggests that motivation plays a critical role in improving student self-efficacy and academic achievement. Therefore, teachers must develop motivational strategies to engage students and enhance their self-efficacy. Teachers can design interactive lessons, provide positive feedback, and consider student interests and needs. In addition, understanding students' learning styles and strategies is crucial. Teachers can use this knowledge to design tailored learning activities and help students develop effective strategies. These findings also inform policymakers in curriculum development as they can create programs that align with student needs and support teachers in promoting self-efficacy and academic success. While this study provides valuable insights into the relationship between motivation, learning styles, learning strategies, and self-efficacy among English department students, there is still room for further investigation. Future research should consider expanding the sample size and including students from different disciplines to enhance the generalizability of the findings. Additionally, qualitative studies may provide a deeper understanding of the underlying processes and mechanisms involved in the

relationships between these variables. Furthermore, longitudinal research designs can explore temporal aspects and potential changes in these relationships over time.

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***Appendix A: Questionnaire***

**Motivation, learning strategies, learning styles**

| | | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
|---|---|---|---|---|---|---|
| 1 | Studying English is important because I will need it for my career. | | | | | |
| 2 | Studying English is important because it will be useful in getting a good job. | | | | | |
| 3 | If I can speak English, I will use it for travelling abroad. | | | | | |
| 4 | Studying English is important because other people will respect me more if I know English. | | | | | |
| 5 | I want to learn other culture and understand the world better. | | | | | |
| 6 | Studying English is important because it will allow me to meet and converse with more and varied people. | | | | | |
| **LEARNING STRATEGIES** | | | | | | |
| | | Never or almost never true of me | Usually not true of me | Somewhat true of me | Usually true of me | Always or almost always true of me |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | I use new English words in a sentence so I can remember them. | | | | | |
| 2 | I remember a new English word by making a mental picture of a situation in which the word might be used. | | | | | |
| 3 | I use flashcards to remember new English words. | | | | | |
| 4 | I try to talk like native English speakers. | | | | | |
| 5 | I write notes, messages, letters, or reports in English. | | | | | |
| 6 | I watch English language TV shows spoken in English or go to movies spoken in English. | | | | | |
| 7 | If I can' t think of an English word, I use a word or phrase that means the same thing. | | | | | |
| 8 | To understand unfamiliar English words, I make guesses. | | | | | |
| 9 | I try to guess what the other person will say next in English | | | | | |
| 10 | I try to find as many ways as I can to use my English. | | | | | |
| 11 | I notice my English mistakes and use that information to help me do better. | | | | | |
| 12 | I have clear goals for improving my English skills | | | | | |
| 13 | I encourage myself to speak English even when I am afraid of making a mistake. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 14 | I notice if I am tense or nervous when I am studying or using English. | | | | | |
| 15 | I try to relax whenever I feel afraid of using English. | | | | | |
| 16 | I ask English speakers to correct me when I talk. | | | | | |
| 17 | I try to learn about the culture of English speakers. | | | | | |
| 18 | If I do not understand something in English, I ask the other person to slow down or say it again. | | | | | |
| **LEARNING STYLES** | | | | | | |
| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 1 | I learn more by reading textbooks than by listening to lectures. | | | | | |
| 2 | learn better by reading what the teacher writes on the chalkboard. | | | | | |
| 3 | I learn more when I make something for a class project. | | | | | |
| 4 | When I build something, I remember what I have learned better. | | | | | |
| 5 | I remember things I have heard in class better than things I have read . | | | | | |
| 6 | When someone tells me how to do something in class, I learn it better. | | | | | |
| 7 | I get more work done when I work with others. | | | | | |
| 8 | In class, I learn best when I work with others. | | | | | |
| 9 | I learn best in class when I can participate in related activities. | | | | | |
| 10 | I enjoy learning in class by doing experiments. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | In class, I work better when I work alone. | | | | | |
| 12 | When I study alone, I remember things better. | | | | | |
| **SELF-EFFICACY** | | | | | | |
| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 1 | I can accomplish my aims in learning. | | | | | |
| 2 | If I miss some classes for some reason, I can compensate the loss fairly well. | | | | | |
| 3 | I know the skills I need to improve. | | | | | |
| 4 | I know the appropriate way for me to learn English successfully. | | | | | |