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The relationship between Self-efficacy, Sources of self-efficacy, and Performance of EFL Students at University of Hafr Al-Batin

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Abstract

Since Bandura theorizes that self-efficacy stems from four sources, many studies have focused on understanding the different impacts of these sources on the construction of students' self-efficacy. Similarly, the connection between self-efficacy and performance has been of interest in many investigations. Still, there is a need for further research concerning the validity of these constructs in a variety of settings. This study investigated the validity of self-efficacy and self-efficacy sources as predicting variables of EFL students' performance at Hafr Al-Batin University. Findings suggest that self-efficacy was not an efficient predictor of students' performance. Findings also reveal that Bandura's hypothetical sources did not bear a significant relationship to self-efficacy. Results are discussed in the context of the possible causes that led to the current findings.

Keywords: self-efficacy, mastery experience, vicarious experience, verbal persuasion, physiological and emotional states, culture

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Introduction

The desire to understand human behavior has led to the emergence of a variety of theoretical frameworks in a multitude of disciplines. The theory of self-efficacy emerged in an attempt to interpret variances between individuals when they are faced with the same challenge. Self-efficacy or the belief in one's capability to exert the required effort to reach a specific attainment is considered an important variable in human functioning (Bandura, 1977). In academia, self-efficacy has been shown to impact students' academic performance. Self-efficacy is linked to students' scholastic achievement, as those who believe in their capability to plan and perform the required action to reach success will actually attain their goal. In contrast, students who suffer from low self-efficacy may not sustain in the face of challenges or even try to avoid difficult situations and, as a consequence, experience failure. In this regard, Artino (2012) theorized that strong self-efficacy is created with repeated success while low or weak self-efficacy is a result of frequent failures. Bandura (1994) postulated that self-efficacy stems from four sources, mastery experience, vicarious experience, social persuasion, and psychological states, among which mastery experience appears to be the primary influential source in constructing individuals' self-efficacy.

Most of the work on self-efficacy and academic performance was done in western contexts (e.g., Lent, Brown & Larkin, 1986; Bouffard, 1990; Bouffard, Parent & Larivèe, 1991; Pajares & Johnson, 1994,1996; Pajares, 1996). The result of such work indicates a consensus on the existence of a relationship between these two variables. Similarly, studies that investigated self-efficacy sources and overall achievements reported a connection between them. (e.g., Joet, Usher & Bressoux, 2011; Loo & Choy, 2013).

Study Purpose and Importance

Despite the rich literature about the importance of self-efficacy in academia in the West, there is a paucity of self-efficacy research in the Arab context. With regard to Saudi students, there is a lack of research on the relationship between self-efficacy and performance in English. To the best of the author's knowledge, the influence of the four sources of self-efficacy on Saudi EFL students' self-efficacy, specifically, has never been investigated before. The only study concerned with self-efficacy in English language learners is that of Alrabai (2018). Alrabai investigated the association between the self-efficacy of EFL college-level students and their performance in English. He found that participants had a low self-efficacy about their English ability, which correlated with their achievement in their end-of-year exam. Apart from that study, there is no record of any research about the connection of self-efficacy and performance. Similarly, no research yet has explored the relationship between self-efficacy sources and performance in the Saudi setting. Further research is required in order to complement past research in other contexts and to increase knowledge about the influence of self-efficacy and its sources on academic performance across various contexts.

Study Objectives and Research Questions

The current study addresses the research gap about the influence of self-efficacy in the Saudi context by investigating the relationship between Saudi EFL students' self-efficacy and their performance. It aims to answer the following questions:

- RQ1: What is the most rated source (most influential source) of self-efficacy of Saudi learners of English at the University of Hafr Al-Batin?
- RQ2: Is there a relationship between students' self-efficacy and their academic achievements in English?
- RQ3: Is there a relationship between the four sources of self-efficacy and self-efficacy? Which of the four sources has the most influence on self-efficacy?
- RQ4: Is there a relationship between the four sources of self-efficacy and students' academic achievements in English?

Literature Review

Bandura (1977) theorized that self-efficacy is responsible for the variances in people's responses to a certain object in a certain situation. The theory of self-efficacy inspired a number of studies intended to help better understand the link between academic performance and self-efficacy. Honicke & Broadbent, (2016) conducted a systematic review of 59 studies that investigated the relationship between self-efficacy and academic performance of college students between September 2003 and April 2015. They found that academic performance moderately correlated with self-efficacy in the reviewed studies. A meta-analysis by Robbins et al. (2004) looked at the relationship between self-efficacy, among other psychological variables such as motivation, and students' overall outcome in 109 studies. It was found that self-efficacy had higher correlation with students' outcomes than the other variables. Similar results were reported by subsequent studies (e.g., Sanchez & Nichols, 2007; Recber et al., 2018). In the Saudi context, Alyami et al. (2017) investigated the relationship between self-efficacy, stress, and academic performance of Psychology students. They found a low correlation between self-efficacy and academic performance. Alrabai (2018) researched the association between self-efficacy and performance of EFL learners. He found that leaners in general had low self-efficacy, which correlated with their achievement in English.

Self-efficacy develops from certain experiences individuals encounter in their life. According to Bandura (1994), self-efficacy originates from four sources: mastery experiences (past experiences), vicarious experiences, social persuasion, and physiological and emotional states.

Mastery, or past experience, is regarded as the primary and most influential source of self-efficacy as people recall their sense of capability and their performance in the past and compare it with similar situations in the present. Accordingly, based on their past performance, the knowledge they constructed about their capabilities nurtures their confidence in their capability to deal with similar situation in the future. This does not mean, however, that success in the past inevitably leads to desirable outcomes with regard to self-efficacy in the present and future. Bandura (1994) explains that easily gained success does not result in a strong and resilient sense of self-efficacy since that is dependent on overcoming obstacles. Surmounting difficulties, in other words, is a prerequisite for establishing self-efficacy. When individuals encounter difficulties in the future, that is, following a mastery experience, they are unlikely to be deterred by complications and are therefore usually capable of maintaining the required effort to achieve their goals. However, if individuals construct their confidence in their capabilities based on effortless achievements, they may become frustrated in situations in which success is more difficult to attain than previously experienced and, as a result, may be discouraged from exerting further effort and undertaking more challenging tasks. In brief, mastery experience is related to successful or unsuccessful experiences

a student has accumulated. These past experiences seem related to the cognitive, behavioral and self- regulatory tools learners use to overcome the different kinds of challenges without minimizing their self-efficacy (Gutiérrez & Narváez, 2017).

Sometimes, individuals do not have sufficient experience at their disposal to rely on, especially when they go through an entirely new challenge. For this reason, they look for alternative sources that may help them estimate their self-efficacy. In such situation, self-efficacy can develop from vicarious experience. Seeing others with similar capabilities and similar circumstances succeed can lead to the belief that one has what it takes to succeed as well (Bandura, 1994).

Verbal persuasion is another source of self-efficacy. Feedback on students' performance can enhance their perceived confidence about their capabilities. Bandura (1994) theorizes that sometimes people's self-efficacy stems from the statements of influential others, such as parents, relatives, teachers, or friends. In such situations, it is suggested, the opinion of others is valued more than one's own experience. Moreover, the physiological and emotional changes individuals go through when they do an activity reflect their perceived beliefs about their own capabilities.

Although mastery experience is commonly believed to be the most influential source of self-efficacy, there is some evidence that other sources can, in fact, have a greater impact on participants' self-efficacy. For instance, it has been found that social persuasion had a stronger influence on middle-school girls than mastery experience and vicarious experience, in addition to the fact that social persuasion affected the self-efficacy of females in higher education subjects such as mathematics and science (Zeldin & Pajares, 2000). Mastery experience was the main source of men's self-efficacy in the two studies that provided the data for female learners (Usher, 2009). It seems that gender is a determining factor in self-efficacy sources. The findings indicate that females may construct their self-efficacy rather by seeking confirmation from influential others than by relying on their past experiences. Other studies, however, suggest lack of connection between one or all of the sources and self-efficacy. For instance, Panagos & DuBois (1999) investigated the self-efficacy of 96 LD high school students. They reported lack of correlation between self-efficacy sources and self-efficacy. Bandura (1997) argues that the inconsistencies of results regarding the significance of the four sources of self-efficacy may be due to the fact that self-efficacy is domain-specific, or that individuals interpret the sources' meaning in different ways. Klassen (2004) believes that ethnicity may mediate the predictive power of self-efficacy sources and render them uninfluential in some settings. Other researchers (e.g., Oettingen, 1995; Usher & Pajares, 2009) argue that cultural, and contextual and social factors, may also have an impact on the strength of self-efficacy sources as main predictor of self-efficacy.

Method and Design

The purpose of this study is to investigate the degree to which the four sources of self-efficacy predict self-efficacy among Saudi college EFL learners. The study also aims to find out if students' performance is linked to self-efficacy or to the main sources of self-efficacy. Four research questions guided this study:

- RQ1: What is the most influential source (the most rated source) of self-efficacy of Saudi learners of English at the University of Hafr Al-Batin?
- RQ2: Is there a relationship between self-efficacy and students' academic achievements?

- RQ3: Is there a relationship between the four sources of self-efficacy and self-efficacy? Which of the four sources has the most influence on self-efficacy?
- RQ4: Is there a relationship between the four sources of self-efficacy and students' academic achievements in English?

Data Source

The study was conducted at the Department of English in the girls' College of Arts at the University of Hafr Al-Batin.[7] Upon enrollment in the English programme, the students study courses like linguistics, literature, and translation, and are required to submit assignments and give presentations. The modules train undergraduate students of English in a variety of skills, e.g., cognitive, interpersonal, and psychomotor skills (Alrabai, 2018). According to the programme of study, these modules were taught in the third level (the second year). It was thought that students enrolled in those courses would form a suitable data sample for the study, so all sophomore students were targeted as respondents in this study. A questionnaire was distributed to 150 sophomores in the second term of the academic year 2019. The researcher explained to the students that the goal of the research was to identify the factors necessary to the learning and teaching of English in order to facilitate the learning process for the learners and to design the best possible teaching strategies. Students were informed that their participation in the research was completely voluntary and that they could withdraw from participation if they so wish. They were also assured that their data would be treated confidentially and only be used for the purposes of the current research.

Research Design

The study employed a quantitative method to determine the significance of the self-efficacy sources and to investigate any potential association between participants' self-efficacy and their academic achievement in English. Data collection was undertaken in two stages. A modified version of the sources of self-efficacy scale by Usher & Pajares (2009) was used during the first stage of the study, in order to collect information about the learners' sources of self-efficacy and the degree of their self-efficacy about their performance when they learn English. The questionnaire has been used frequently in past research on the sources of self-efficacy in mathematics, science, and French. In the current study, the statements in the questionnaire were slightly modified to be applicable to EFL learners. For example, the word English was used to substitute for French in the statements. Cronbach's alpha coefficients were .83 for mastery experience; and .60 for vicarious experience; and .80 for social persuasions; and .81 for physiological and affective states. Also, the fact that the questionnaire has been well tried and tested by previous studies (e.g., Multon et al., 1991; Usher & Pajares, 2006; Usher & Pajares, 2009; Joet, Usher & Bressoux, 2011) contributes to its reliability. Therefore, it was assumed that the repeated testing of the questionnaire and the accuracy of the data obtained by using it in past studies were sufficient proofs of its reliability and validity when measuring self-efficacy in English. The questionnaire consists of 24 items designed to elicit information on the four sources of self-efficacy: mastery experience, vicarious experience, social persuasion, and physiological and emotional states. Each source was assessed with six items. The responses to the statements

[7] Hafr Al-Batin is a city in northeast Saudi Arabia.

were given along a three-point Likert scale. The participants had to choose either to agree or disagree with the provided statement or to state that they were unsure.

English language self-efficacy was examined using four items asking the participants to rate their confidence in achieving a particular grade in the final exam along a scale of 100. Since Arabic was the first language of the participants, all the questionnaire statements were translated into Arabic in order to make the questionnaire easy to follow for the participants and to avoid potential misunderstanding. To check its validity, the questionnaire was verified by two native speakers of Arabic teaching linguistics at the college where the respondents study.

The second stage required information about the participants' language skills. A criterion-referenced test (CRT) that assessed participants' knowledge in linguistics was taken as a measure of their performance. At the time of the evaluation, the students had been studying linguistics for 4 months, had taken midterm exams, submitted assignments and given presentations as part of their course assessment. Participants' grades in their final exam were used as indicators for their achievement.

Analysis and Results

Survey Questionnaire and Study Variables

The survey questionnaire consists of the following items: 24 items for self-efficacy sources, four items for self-efficacy ratings, and 1 item for academic achievement.

Self-efficacy sources were measured with 24 3-point Likert scale items (1 = disagree, 2 = neutral, and 3 = agree) adapted from Usher & Pajares (2009). These 24 items can be used to form the following four sub-scales:

- Mastery experience (q1, q2, q3, q4, q5, q6)
- Vicarious experience (q7, q8, q9, q10, q11, q12)
- Social persuasion (q13, q14, q15, q16, q17, q18)
- Physiological state (q19, q20, q21, q22, q23, q24)

Note that q3 and q19-q24 were items that needed to be reverse-scored when computing sub-scale scores (Usher & Pajares, 2009). For each sub-scale, a composite score can be computed by adding the response scores for the associated items (after reverse-scoring the negative items).

Self-efficacy ratings were measured with four survey items:

- How confident are you that you will get a grade of D or better in Introduction to linguistics this term?
- How confident are you that you will get a grade of C or better in Introduction to linguistics this term?
- How confident are you that you will get a grade of B or better in Introduction to linguistics this term?
- How confident are you that you will get a grade of A in Introduction to linguistics this term?

The rating for each survey item ranges from 0 (not confident at all, i.e., convinced of their inability) to 100 (very confident, certain of their ability).

As mentioned above, self-efficacy refers to an individual's belief in their capability to perform actions necessary to produce specific achievements (Bandura, 1997). Therefore, self-efficacy rating in this study was defined as the maximum rating of the items for self-efficacy.

Academic achievement was measured by one single item regarding students' grade. Possible grade levels are: A (best), B, C and D (worst).

Analysis Methods

For analysis, data were imported into SPSS version 23 for Windows (IBM Corp., Armonk, NY). Participants' missing responses for any of the survey items were excluded from the data analysis. Frequency tables and descriptive statistics were used to summarize the survey responses. Descriptive statistics were computed for the composite scores of the four sources of self-efficacy and the self-efficacy ratings. Normality of the data (the four sources of self-efficacy and the self-efficacy ratings) was examined using QQ plots. Regarding descriptive statistics, for normally distributed variables, means and standard deviations were presented; for non-normally distributed data, medians and interquartile (IQR) were presented.

To answer RQ1[8], descriptive statistics for the composite scores of the four sources of self-efficacy were computed.

To answer RQ2[9], ordinal logistic regression, i.e., the proportional odds model (Agresti, 2002), was used. The dependent variable was academic achievement (a categorical variable with four levels (A, B, C, and D). The independent variable was self-efficacy. The Wald chi-square test was used to determine if the independent variable was significant. Odds ratios and 95% confidence intervals were computed to determine the strength of the association. The validity of the proportional odds assumption was checked using the score test (Agresti, 2002). A non-significant test result indicates that the proportional odds assumption is satisfied.

To answer RQ3[10], a multiple linear regression (Chatterjee & Hadi, 2006; Montgomery & Peck, 1992) was performed to investigate the relationship between the dependent variable, self-efficacy, and the independent variables, the four sources of self-efficacy. The *t* statistic was used to test whether the effect of each independent variable was statistically significant, under the assumption that the sampled populations were normally distributed. The standardized regression coefficients were calculated to determine which source of the four had the greatest influence on self-efficacy. The three assumptions of linear regression were checked:

- Independence of observations
- Normality (the distribution of the residuals is normal)
- Homoscedasticity (the residuals have constant variance (equal variance)

Normality was examined through the quantile-quantile (Q-Q) plot and the residual plot (residuals versus the fitted values) was used to investigate if the variance was constant/equal. In addition to the model assumptions, multicollinearity (a high degree of correlation among two or more independent variables) was also investigated as it commonly occurs when several independent variables are incorporated in a regression model. Issues of multicollinearity include misleading p-values, large standard errors of the coefficients, small changes in the data producing wide swings in the parameter estimates. In this analysis, the variance inflation factor (VIF) was used to assess multicollinearity (Chatterjee & Hadi, 2006; Montgomery & Peck, 1992). A VIF value greater than 10 was a concern of multicollinearity (Chatterjee & Hadi, 2006; Montgomery & Peck, 1992).

[8] RQ1: What is the most influential source of self-efficacy of Saudi learners of English at the University of Hafr Al-Batin?

[9] RQ2: Is there a relationship between self-efficacy and students' academic achievements?

[10] RQ3: Is there a relationship between the four sources of self-efficacy and self-efficacy? Which of the four sources has the most influence on self-efficacy?

To answer RQ4[11], ordinal logistic regression, i.e., the proportional odds model (Agresti, 2002) was used again. As with RQ2, the dependent variable was academic achievement (a categorical variable with four levels (A, B, C, and D). In this case, the independent variables were the four sources of self-efficacy. The analysis procedure used was similar to that of RQ2, e.g. The Wald chi-square test. For any of the tests, a p-value less than 0.05 indicates significance.

Analysis Results

Although the questionnaire was distributed to all sophomore students, a total number of 150 students, only 89 participants took part in the survey study. All participants answered the 24 survey items for source of self-efficacy. Of the 89 participants of the study, 13 (14.6%) answered all four questions concerning self-efficacy ratings, two answered three of them, while 69 (77.5%) answered one question, and 5 (5.6%) did not answer any of the self-efficacy ratings survey questions at all. Of the 89 participants of the study, only one did not answer the single survey item regarding the students' grade. Only participants with complete data were included in the data analysis. This resulted in a final sample size of 83. Table 1 shows a summary of the survey responses for the 24 items for self-efficacy sources.

[11] RQ4: Is there a relationship between the four sources of self-efficacy and students' academic achievements?

Table 1

Summary of survey responses for the 24 items for self-efficacy sources

Qs	1 = Disagree	2 = Neutral	3 = Agree	Mean (SD)
Q1	3 (3.6)	33 (39.8)	47 (56.6)	2.53 (0.57)
Q2	3 (3.6)	49 (59.0)	31 (37.3)	2.34 (0.55)
Q3*	56 (67.5)	14 (16.9)	13 (15.7)	1.48 (0.75)
Q4	7 (8.4)	22 (26.5)	54 (65.1)	2.57 (0.65)
Q5	3 (3.6)	22 (26.5)	58 (69.9)	2.66 (0.55)
Q6	23 (27.7)	39 (47.0)	21 (25.3)	1.98 (0.73)
Q7	2 (2.4)	1 (1.2)	80 (96.4)	2.94 (0.33)
Q8	4 (4.8)	14 (16.9)	65 (78.3)	2.73 (0.54)
Q9	5 (6.0)	11 (13.3)	67 (80.7)	2.75 (0.56)
Q10	6 (7.2)	4 (4.8)	73 (88.0)	2.81 (0.55)
Q11	7 (8.4)	48 (57.8)	28 (33.7)	2.25 (0.60)
Q12	1 (1.2)	17 (20.5)	65 (78.3)	2.77 (0.45)
Q13	13 (15.7)	28 (33.7)	42 (50.6)	2.35 (0.74)
Q14	20 (24.1)	30 (36.1)	33 (39.8)	2.16 (0.79)
Q15	8 (9.6)	13 (15.7)	62 (74.7)	2.65 (0.65)
Q16	8 (9.6)	39 (47.0)	36 (43.4)	2.34 (0.65)
Q17	13 (15.7)	32 (38.6)	38 (45.8)	2.30 (0.73)
Q18	15 (18.1)	25 (30.1)	43 (51.8)	2.34 (0.77)
Q19*	47 (56.6)	16 (19.3)	20 (24.1)	1.67 (0.84)
Q20*	32 (38.6)	23 (27.7)	28 (33.7)	1.95 (0.85)
Q21*	35 (42.2)	14 (16.9)	34 (41.0)	1.99 (0.92)
Q22*	39 (47.0)	20 (24.1)	24 (28.9)	1.82 (0.86)
Q23*	58 (69.9)	14 (16.9)	11 (13.3)	1.43 (0.72)
Q24*	47 (56.6)	8 (9.6)	28 (33.7)	1.77 (0.93)

Note. * Indicates items that needed to be reverse scored when computing sub-scale scores

Table 2 summarizes students' grades and self-efficacy ratings. Over half of the students (53.0%) had grade D. The majority of the students (81.9%) had a self-efficacy rating equal to or greater than 60, indicating that students in general had a moderately high level of self-efficacy.

Table 2

Grades and self-efficacy ratings

		N (%)
Grade	A	12 (14.5)
	B	6 (7.2)
	C	21 (25.3)
	D	44 (53.0)
Self-efficacy rating	30	1 (1.2)
	40	1 (1.2)
	50	13 (15.7)
	60	13 (15.7)
	70	13 (15.7)
	80	17 (20.5)
	90	19 (22.9)
	100	6 (7.2)

Table 3 shows the descriptive statistics of the four sources of self-efficacy (mastery experience, vicarious experience, social persuasion, and physiological state) and of the self-efficacy ratings. According to the results of the QQ plots (Figures 1-5 in the appendices), the four sources of self-efficacy were not normally distributed as the data points in the QQ plots seem to deviate from the 45-degree line. However, self-efficacy ratings seem to be normally distributed, as the data points in the QQ plots fell close to the 45-degree line. Consequently, for the four sources of self-efficacy, median and IQR should be addressed, while for the self-efficacy ratings, mean and standard deviation should be mentioned.

The median scores for the four sources of self-efficacy ranged from 14 to 17 (possible range: 6-18), indicating that students reported high levels regarding each of the self-efficacy sources (i.e., good mastery experience, good vicarious experience, good social persuasion, and good physiological state). The mean self-efficacy rating was 73.25 (SD = 16.68), which suggests that students in general had moderately high levels of self-efficacy.

Table 3

Descriptive statistics

Self-efficacy source	Mean	SD	Median	IQR
Mastery experience	14.59	1.98	15	3
Vicarious experience	16.25	1.42	17	1
Social persuasion	14.13	2.86	15	4
Physiological state	13.36	3.77	14	6
Self-efficacy rating	73.25	16.68	80	30

Analysis Results for RQ1

RQ1 asked: What is the most influential source (the most rated source) of self-efficacy of Saudi learners of English at the University of Hafr Al-Batin?

The median scores for the four sources of self-efficacy were 14 (physiological state), 15 (mastery experience), 15 (social persuasion), and 17 (vicarious experience) (Table 3), indicating that students reported high levels concerning each of the self-efficacy sources. Vicarious experience was the most rated source; it had the highest median score.

Analysis Results for RQ2

RQ2 asked: Is there a relationship between self-efficacy and students' academic achievements? To answer RQ2, ordinal logistic regression was used. The results are presented in Table 4. There was no statistically significant relationship between academic achievement and self-efficacy ($\chi^2(1) = 1.087$, $p = 0.297$). The validity of the proportional odds assumption for the ordinal logistic regression was checked using the score test, the results of which were not significant ($\chi^2(2) = 3.915$, $p = 0.141$). It can therefore be concluded that it was appropriate to answer RQ2 using ordinal logistic regression (Table 5 in the appendices).

Table 4

Results of Logistic Regression – Parameter Estimates and Odds Ratios

Parameter		B	SE	Hypothesis Test			Exp(B)	95% CI for OR	
				Wald	df	p		Lower	Upper
Threshold	Grade = A	-2.746	0.9875	7.733	1	0.005	0.064	0.009	0.445
	Grade = B	-2.246	0.9673	5.389	1	0.020	0.106	0.016	0.705
	Grade = C	-1.076	0.9470	1.291	1	0.256	0.341	0.053	2.182
Self-efficacy		-0.013	0.0126	1.087	1	0.297	0.987	0.963	1.012

Note. The dependent variable "grade" was measured with a 4-point scale (A (best), B, C, D (worst)).

Analysis Results for RQ3

RQ3 asked: Is there a relationship between the four sources of self-efficacy and self-efficacy? Which source of the four sources has the most influence on self-efficacy?

To answer RQ3, a multiple linear regression was performed to investigate the relationship between the dependent variable, self-efficacy, and the independent variables, the 4 sources of self-efficacy. The regression results are $R^2 = 0.086$ (Table 6), indicating that the regression model

explained 8.6% of the variability in the dependent variable, self-efficacy. According to the regression results, there was no statistically significant relationship between self-efficacy and the four sources of self-efficacy, including mastery experience (t (78) = 1.550, p = 0.125), vicarious experience (t (78) = -1.649, p = 0.103), social persuasion (t (78) = 0.801, p = 0.425), and physiological state (t (78) = 0.351, p = 0.726).

Table 6

Results of multiple linear regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	p	95% CI for B		VIF
	B	SE	Beta			Lower	Upper	
(Constant)	74.093	23.073		3.211	0.002	28.158		
Mastery experience	1.624	1.048	0.193	1.550	0.125	-0.462	1.321	1.321
Vicarious experience	-2.158	1.308	-0.184	-1.649	0.103	-4.762	1.060	1.060
Social persuasion	0.572	0.713	0.098	0.801	0.425	-0.848	1.277	1.277
Physiological state	0.184	0.525	0.042	0.351	0.726	-0.861	1.200	1.200

Analysis Result for RQ4

RQ4 asked: Is there a relationship between the four sources of self-efficacy and students' academic achievements?

To answer RQ4, ordinal logistic regression was used. The results are presented in Table 7. There was no statistically significant relationship between academic achievement and three out of the four sources of self-efficacy, including mastery experience ($\chi^2(1) = 1.390$, $p = 0.238$), vicarious experience ($\chi^2(1) = 3.677$, $p = 0.055$), and social persuasion ($\chi^2(1) = 1.442$, $p = 0.230$). However, there was a statistically significant relationship between academic achievement and physiological state ($\chi^2(1) = 6.256$, $p = 0.012$). In particular, students with a better physiological state are, statistically, significantly more likely to have better academic achievements than students with a worse physiological state (OR = 1.180, 95% CI = (1.036, 1.344)).

The validity of the proportional odds assumption for the ordinal logistic regression was checked using the score test (Table 8 in the appendices). The proportional odds assumption was satisfied as the score test was not significant ($\chi^2(8) = 11.385$, $p = 0.181$): it was appropriate to answer RQ4 using ordinal logistic regression.

Table 7

Results of Logistic Regression – Parameter Estimates and Odds Ratios

Parameter		B	SE	Hypothesis Test			Exp(B)	95% CI for OR	
				Wald	df	p		Lower	Upper
Threshold	Grade = A	1.897	2.9570	0.412	1	0.521	6.667	0.020	2192.377
	Grade = B	2.442	2.9658	0.678	1	0.410	11.494	0.034	3845.687
	Grade = C	3.736	2.9793	1.573	1	0.210	41.946	0.122	14409.298
Mastery experience		-0.158	0.1337	1.390	1	0.238	0.854	0.657	1.110
Vicarious experience		0.336	0.1751	3.677	1	0.055	1.399	0.993	1.972
Social persuasion		-0.110	0.0915	1.442	1	0.230	0.896	0.749	1.072
Physiological state		0.166	0.0662	6.256	1	0.012	1.180	1.036	1.344

Note. The dependent variable "grade" was measured with 4-point scale (A (best), B, C, D (worst)).

Discussion

The main objective of this study was to investigate the strength of the hypothetical self-efficacy sources in developing the self-efficacy of sophomore EFL Saudi students, and to determine the relationship between self-efficacy and academic achievement. The results of the study suggest that other factors may contribute to the construction of self-efficacy and that self-efficacy is not, as it appears to be the case elsewhere, a significantly predictive variable for academic performance in some EFL educational settings in Saudi Arabia.

Sources of Self-efficacy

Bandura hypothesizes that self-efficacy stems from four sources: mastery experience, vicarious experience, social persuasion, and physiological and emotional states. One of the purposes of this study was to find out which source would be the most rated among the four sources (Research Question1). Vicarious experience appears to be the highest rated source by the participants; it had the highest median score. This suggests that participants value witnessing the success of similar others and consider them as models against which they compare their own capabilities. In this regard, Blumenthal (2014:10) states that 'successful models have the greatest impact on observers when the observers believe the model to be similar to themselves in terms of ability.' In the current context, the fact that participants were in their late adolescence and early adulthood may account for their favoring of vicarious experience. It is common that young adults adopt their peers' view about learning more than other sources like family and teachers, and evaluate their success based on those views. Such findings need to be taken into consideration by teachers and language instructors when designing classroom activities.

Another purpose of researching the sources of self-efficacy in the current study, was to determine which source has the most effect on constructing self-efficacy (Research Question 3). Unlike past research (e.g., Pajares et al., 1999; Usher, 2009), none of the four hypothetical sources of self-efficacy had a significant relationship with self-efficacy. This means that the reported self-efficacy of the participants in this study must originate from different sources than the ones Bandura suggested. The current result is in line with the results of Panagos & DuBois (1999).

In cases in which the main sources bear no connection to self-efficacy, contextual and social factors, Usher & Pajares (2009) argue, could influence the relationship between the sources of self-efficacy and self-efficacy. Accordingly, it may be proposed that the four sources are not constant constructors of self-efficacy across different cultures. Culture could affect the information the students use in order to develop their self-efficacy (Oettingen, 1995) due to different educational settings and learning experiences. In other words, information that learners use as sources to self-efficacy in western cultures is not always available to learners in Saudi cultures. English in Saudi Arabia is taught as a foreign language, which means the application of English is limited, particularly in a city like Hafr Al-Batin. This means that classrooms are the only place where the students can practice the target language. In this context, classroom activities may not enhance and promote the accurate development of self-efficacy. Indeed, limited usage may be an obstacle to obtaining some of the information that, in other cultures, can be used as sources to construct self-efficacy. For example, in past research, mastery experience proved to be the most influential source in building learner's self-efficacy (e.g., Usher, 2009). In the current study, mastery experience was not connected to the establishment of learners' self-efficacy. It is possible that students may not have participated in activities designed to promote their mastery experience. Importantly, most Saudi undergraduates fail to develop proficiency in English (Alaraj, 2016). Failure in mastering a language hinders learners to evaluate their capability to use that language effectively, since they do not have sufficient amount of successful experiences at their disposal to support the evaluation process.

In a similar fashion, information related to vicarious experience is not directly accessible to the participants as there is very limited opportunity to learn about their classmates' achievements and, consequently, to use this information as a gauge of their own capability. EFL classroom practices in Saudi Arabian universities rarely promote collaboration and cooperation. Lack of cooperative learning strategies, Alarbia (2018) argues, makes it impossible for learners to observe others' successful leaning experiences and benefit from them.

The different pattern of the participants' self-efficacy is not unusual. It is well documented in the literature that self-efficacy varies across cultures. It appears that the participants in the current study developed their self-efficacy based on other factors than the sources postulated by Bandura. Accordingly, these factors proved a hindrance to an accurate evaluation of self-efficacy. If this is assumed to have been the case, we need a clear understanding of how the self-efficacy of these students developed.

The descriptive analysis showed that the mean of mastery experience was the highest among the sources in relation to self-efficacy, which suggests that participants rely on their past performance when they estimate their capabilities in performing similar tasks. Despite this interesting finding, neither mastery experience nor any other of the four sources appears to have a relationship with self-efficacy. Therefore, as discussed above, other factors may have contributed to the development of self-efficacy in the context of the current study.

Self-efficacy and Academic Performance

One of the objectives of this study is to investigate the relationship between self-efficacy and academic performance (Research Question 2). The participants' self-efficacy was not associated with their performance. This result comes in contrast to past studies (e.g., Alrabai, 2018; Alyami et al., 2017; Sanchez & Nichols, 2007; Recber et al., 2018). This suggests that the students misestimated their abilities and anticipated higher scores than they had already achieved. In other words, they provided inaccurate ratings of their self-efficacy.

Many factors may contribute to the development of an inaccurate sense of one's own capabilities, for instance, the type of performance. The type of activity the students undertook could have nullified the predictive power of self-efficacy. It is possible that participants misunderstood the instructions or felt complacent about their past performance in the course and, therefore, did not feel the need to put much effort into studying and preparation.

Another possible reason, although exclusive to the context of this study, is the programme design. The English department at UHB offers two specializations: education and arts. The education branch follows an older plan and stakeholders decided to discontinue it and transfer all new admissions to the arts. The participants in this study represent the final group of students in the education branch at the department. Being aware of this fact, they may have thought that the teaching staff would be more lenient and award them the passing grades to accelerate the branch shutdown.

Unfortunately, if the students truly misjudged their abilities, they might feel confident about improving their current level. It has been documented that overconfidence in self-efficacy may have negative consequences. Kruger & Dunning (1999:1121) explain that individuals may suffer a dual burden because "[n]ot only do these people reach erroneous conclusions and make unfortunate choices, but their incompetence robs them of the metacognitive ability to realize it" Sometimes, when students are overconfident about their achievements, they are more prone to relaxation and, consequently, may devote less time and effort to their studies. It is moreover possible that participants did not feel the need to study harder as long as they were satisfied with their performance. Luckily, inaccurate self-efficacy is unlikely to persist. Bandura (1994) argues that unrealistic self-efficacy will quickly be disconfirmed once the individual is disappointed with the consequences of his or her performance. Only when students become aware of the discrepancy between their confidence and their inadequate results, do they realize their actual capabilities, and only then, may they adapt their constructed self-efficacy. Klassen & Klassen (2018) postulate that overestimated self-efficacy may reveal that participants are insecure about their capabilities and, as a defensive strategy, therefore, rate their capabilities higher than they actually are in order to appear more capable.

Researchers believe there is a relationship between self-efficacy at odds with students' performance and their academic level. In this regard, Bastola (2016) and Kruger & Dunning (1999) hypothesize that overestimation of ability is a feature of low-performing students. Talsma et al., (2019) suggest that 'weaker students' sense of efficacy may exceed their capacity to perform because they are unaware of where they are lacking – in this case, "unable and unaware"(p.20) To control this, researchers (Bastola, 2016, and Kruger & Dunning, 1999) suggest that self-assessment be carried out directly after participants' assessments. This, they believe, would allow students to access usable knowledge— students' knowledge— and knowledge of their performance.

Regarding performance and the four sources (Research Question 4), only physiological and emotional states had a significant relationship with the participants' performance. This finding suggests that students with better emotional and physiological states achieve better results than those who experience negative feelings, such as apprehension. This association indicates that, in the current EFL context, situational variables such as apprehension may have more influence on performance than gradually developed constructs, such as one's perceived beliefs about one's capabilities.

Since language learning is a stressful process, classrooms need to account for the influence of apprehension in order to support learners during this process. In Saudi EFL classrooms, there is still a lack of the appropriate approaches to deal with the physiological states the learners may experience (Alrabai 2018). Simple techniques such as appraisal and encouragement can help the students feel at ease in the classroom. However, careful consideration needs to be applied to these techniques. For example, if appraisals are utilized, instructors need to be careful not to use them excessively, because exaggerated appraisal could lead to false self-perception and to overestimated self-efficacy on the part of the students. Other implementations, such as educational support center can provide academic consultations and assistance to the students, which may consequently minimize the negative influence of these variables on the learning process.

Conclusion, Limitations, and Implication

This study examined the relationship between self-efficacy and performance of Saudi EFL learners. Self-efficacy seems to be a significant variable in determining academic performance in a variety of contexts. However, this was not evident in the current context. In the present study, self-efficacy bore no connection to the subsequent performance. Likewise, sources of self-efficacy did not actually influence self-efficacy. As self-efficacy appears not to stem from the well-known four sources, it is possible that cultural contexts are significant factors in self-efficacy construction. Longitudinal research may help in investigating the impact of culture on the information the students select when they develop their self-efficacy. The influence of cultures was largely ignored in past research about self-motivation and evaluation. Peterson (2018:22) declared that "[t]here is still much that is unanswered in regard to cultural differences and self-assessment (p.22)". Researching the probable causes from a cultural perspective could lead to interesting findings regarding the relation between motivational variables and cultures. As a construct that is basically developed in Western societies, this particular finding may be interesting to other researchers as it confirms that the predictive power of self-efficacy is not stable, and it varies according to the different socio-cultural settings and to the type of the performance. It has been suggested that 'self-efficacy is effective but depends on the setting in which participants perform the activity in question' (Salanova et al., 2012). The setting of this research could be considered as one of the settings where overconfidence may manifest due to specific circumstances (e.g., acceleration of education stream closure).

In general, it is relatively important to understand the calibration of self-efficacy. Although the research proposes different causes of miscalibration such as the dual burden theory and the defensive strategies, investigating the impact of context on mis-calibrated self-efficacy from different socio-cultural settings may offer different explanations to the ones exist.

Based on the results of this study, teachers should be warned not to unquestionably take self-efficacy as an indicator of students' awareness of their capabilities and of learning taking

place smoothly. The present finding can offer an explanation to the cases when students appear at ease until the end of the term and then rush to the course teacher complaining about their unexpected final results. In such cases, focusing on enhancing self-efficacy for the sake of improving the performance of the students will not always lead to the desired achievement. The aim rather should be on helping students construct a realistic sense of self-efficacy and recognize their strengths and weakness.

Teachers should assist the students to construct realistic self-efficacy by setting achievable goals at first. By putting attainable goals, learners are given the opportunity to regulate their learning and direct their effort towards a tangible achievement. Students can then gradually be introduced to harder tasks. Prompt feedback is essential in guiding the construction of learners' self-efficacy. It is necessary that teachers provide feedback after each task to control any unfavorable beliefs the students may develop regarding their capabilities. By so doing, students would be aware of their capabilities and, consequently, may be more inclined to exert effort to improve their weakness. If left without intervention, inaccurate or mis-calibrated self-efficacy may develop, and as a result, it could lead to negative outcomes. Overconfident students may underestimate the required effort to succeed in a task (Boekaerts & Rozendaal, 2010), which could lead to failure in course completion.

In sum, the present study gives an example of self-assessment in the Saudi culture. However, the small sample size needs to be taken into consideration; more research on the influence of culture and educational programmes on self-efficacy is required in this context to reach a definite conclusion. Similarly, the present study limitedly focused on female undergraduates from one university. Further research may include data from both male and female participants at different universities in Saudi Arabia to help understand the perception of self-efficacy among Saudi students and to explore its relation to performance in a larger context. The questionnaire used in this study contributes to the limitation of its findings. Although self-report tools are practical in collecting data, the validity of the given information cannot always be guaranteed. Some participants may not respond to questionnaires with positive attitudes; thus, they may not express their belief sincerely and honestly. As a result, some of the collected data may reflect intentionally false beliefs and attitudes. Other data collection methods such as interviews may add more validity to the results.

Bio

Maram Alluhaybi received her PhD in linguistics from the University of St Andrews, UK, and is currently an assistant professor of linguistics at the University of Hafr Al-Batin. Her research interests include linguistics, EFL learning, sociolinguistics, language and communication, discourse analysis.

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Appendices

The QQ plots of self-efficacy sources and self-efficacy rating

Figure 1

QQ plot of mastery experience

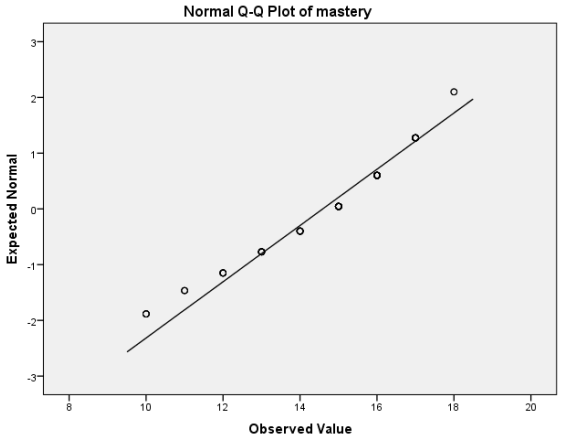

Figure 2

QQ plot of vicarious experience

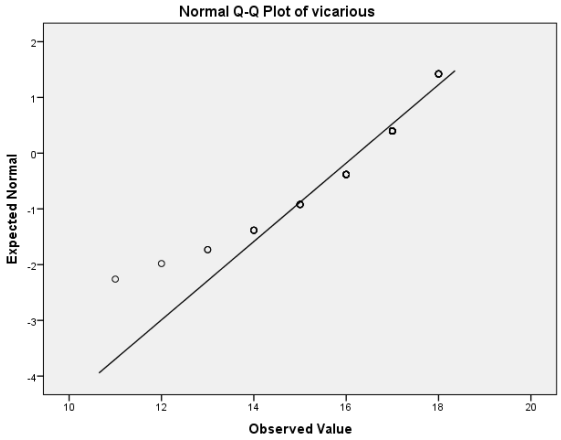

Figure 3

QQ plot of social persuasion

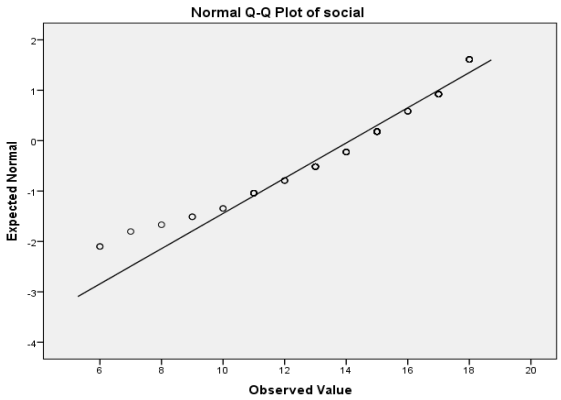

Figure 4

QQ plot of physiological state

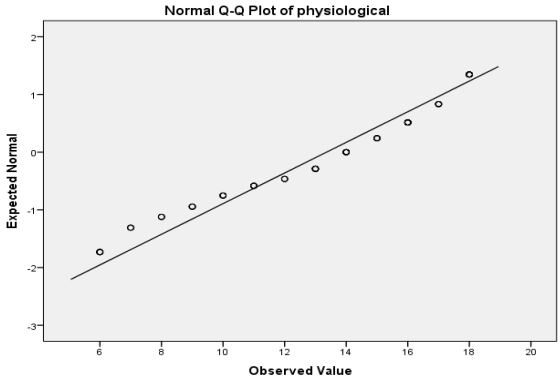

Figure 5

QQ plot of self-efficacy rating

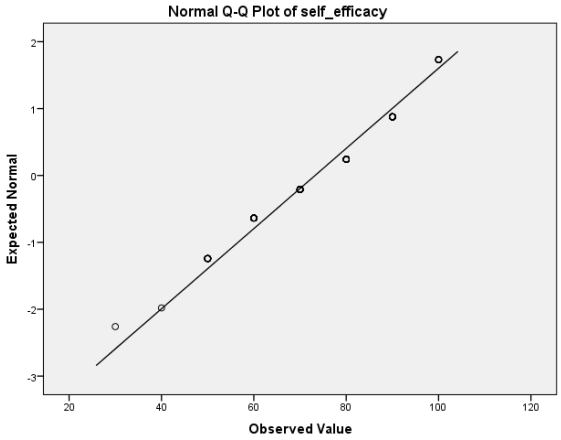

Figure 6

QQ plot of regression residuals.

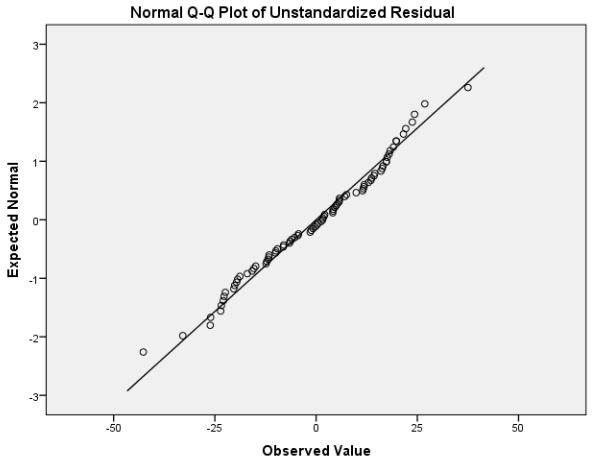

Figure 7

Residual plot

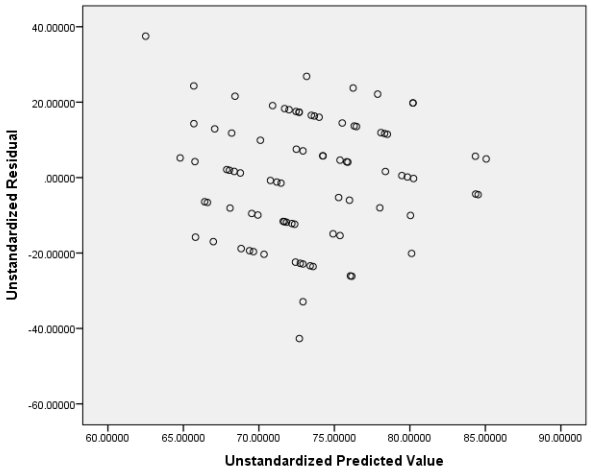

Table 5

Test of parallel lines

Model	-2 Log Likelihood	Chi-Square	df	p
Null Hypothesis	52.881			
General	48.966	3.915	2	0.141

Table 8

Test of parallel lines (RQ4)

Model	-2 Log Likelihood	Chi-Square	df	p
Null Hypothesis	176.062			
General	164.676	11.385	8	0.181