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Academic Language Achievement: A Structural Equation Model of the Impact of Teacher-Student Interactions and Self-Regulated Learning

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Abstract

A correlational survey research design was utilized to investigate self-regulated Learning (SRL) and teacher-student interaction factors that had been realized to have contributive roles in EFL learners' academic success. A sample of 218 EFL learners (male = 102 and female = 116) was drawn with the aid of a prior sample size calculator for the structural equation models from 645 students. They were within the age range of 18-45 and were enrolled at Islamic Azad University, Tabriz Branch. The structural equation model (SEM) hypothesis testing procedure revealed that the teacher-student interaction directly and significantly influenced learners' academic accomplishments. Likewise, the obtained results indicate that the impact of the teacher-student interaction on EFL learners' academic achievement is mediated by the effects of SRL. Correspondingly, the obtained results indicate that the theorized model fits the data. The causal contribution of psychological factors, consisting of the teacher-student interaction and SRL, to EFL learners' academic achievement was validated. The findings of this exploratory research have certain implications for classroom practice which are elaborated in detail in this paper.

Keywords: academic achievement, correlational research design, self-regulated learning, structural equation model, teacher-student interaction

Introduction

Learner proficiency or achievement is regarded as being of crucial concern for educational organizations and for the governments that value economic and universal progress (Ryan & Brown, 2005). The term 'academic achievement' is defined as learners' observable knowledge of various skills and subject materials utilizing valid and reliable examinations (Joe, Kpolovie, Osonwa, & Iderima, 2014). This highlights the fact that academic performance is different from the learners' academic capability. It stems from the everlasting modifications in a person's performance as a result of his/her experiences, and it demands the capacity to preserve the knowledge and to choose its essential parts without consulting the information source.

The relevant literature underlines the fact that EFL learners' academic achievement has its own complexities (Abrantes, Seabra, & Lages, 2007). Several scholars documented that learners' academic achievement is influenced by the contribution of both cognitive skills and personal non-cognitive skills such as motivational (Guay, Ratelle, Roy, & Litalien, 2010) and situational factors (Rezazadeh & Tavakoli, 2009). The related studies indicate excessive attention to acknowledging the pathway that non-cognitive, motivational, such as learners' SRL, and situational factors, such as the amount of classroom interaction, are significant in learners' capability to accomplish upper scores (Guay et al., 2010). A large number of explanations have been provided to address specific cognitive aspects of academic achievement (e.g., Khalaila, 2014; Veas, Castejón, Miñano, & Gilar-Corbí, 2019; Wolff, Nagy, Helm, & Möller, 2018), yet, it is perhaps safe to state that no single theory has ever been able to address all of the complications of the EFL learners' academic achievements.

One of the furthermost authoritative features within the learning environment is the concept of the teacher–student relationship. According to Cadima, Leal, and Burchinal (2010), the excellence of teachers' communication with the learners in the classroom is progressively recognized as of chief significance for student achievements in school (Cadima, Leal, & Burchinal, 2010). The teacher–student relationship concept is regarded as one of the most authoritative features within learning

environment. This type of relationship which is observed as school engagement and academic motivation formulates the foundation of the societal framework in which the learning occurs (Hughes & Chen, 2011; Roorda, Koomen, Spilt, & Oort, 2011). The interactions between the teacher and the student are not only affected by a number of variables such as gender, but in turn, they can similarly impact a student's academic consequences and behavior. Hughes and Chen (2011, p. 278) believe that the sympathetic and encouraging relationships that exist amongst teachers and students eventually stimulate a "sense of school belonging" and this inspires the students to "participate cooperatively in classroom activities" (Hughes & Chen, 2011).

Generally speaking, academic achievement would be described as attaining a specific consequence in a task, examination, topic, or degree. It is customarily communicated in terms of a grade point average (Richardson, Abraham, & Bond, 2012). The main purpose of the educational procedure is no longer restricted to supplying learners with knowledge and evidences. It now encompasses developing their thinking and analytical abilities, and providing them with higher mental skills to deal with emerging information and knowledge efficiently and effectively. Henceforth, it is essential to profoundly think about the educational systems that provide interpretations, applications, and models that enable the students to meet the challenges of this era (Alotaibi, Tohmaz, & Jabak, 2017). Among the utmost imperative models that have developed in this field, SRL has attracted attention due to the fact that it may be a predictor of learner success in the academic context (Gilliam & Shahar, 2006).

According to Pintrich (2000, p.435), SRL is defined as "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation and behavior, guided and constrained by their goals and the contextual features in the environment" (Pintrich, 2000). Zimmerman (1989) documented that the connotation between learners' academic achievements and SRL is discussed under the social-cognitive view that the notion of SRL is developed via a triadic interaction among three significant features, namely self-observation, self-judgment, and self-reactions. More notably, this approach hypothesizes that learning is not simply a motionless attribute, but

that it can be enhanced and affected with the purpose of reaching efficacious academic consequences (Zimmerman, 1989).

A growing number of research discoveries show positive links between SRL and academic achievement (Fadlelmula, Cakiroglu, & Sungur, 2015; Farajollahi & Moenikia, 2010; Richardson et al., 2012). Schunk and Greene (2017) proposed that in addition to students' skills and abilities, other variables such as SRL account for differences in their academic achievement. He argued that actual self-regulated students have an extraordinary amount of internal motivation and as a consequence of this they are greatly prepared to apply the required strength and persevere it for longer periods of time than others (Schunk & Greene, 2017). Similarly, Alkhatib (2010) showed that SRL is regarded as a noteworthy predicator of university scholars' academic growth (Al Khatib, 2010). Moreover, DiBenedetto and Bembenutty (2011) indicated that the anticipated relation between self-regulated learning and academic success in courses is considered essential for urban college students studying science (DiBenedetto & Bembenutty, 2011). Moreover, Peng (2012) accomplished a research in order to scrutinize the connection between self-regulated learning and academic achievement. Results exhibited that self-regulation, cognitive strategies, and anxiety were imperative prognosticators of academic achievement. Based on the outcomes of his study, SRL advances scholars' self-satisfaction and their enthusiasm, and consequently augments their academic achievement (Peng, 2012). In recent times, Muhammad and Abu Bakar (2015) inspected the association between SRL and academic success amongst 364 undergraduate learners in Malaysia. The results revealed that there is a significant association between SRL and academic success, and the notion of self-regulated learning plays an imperative role in predicting higher academic performance (Muhammad & Abu Bakar, 2015). This was in line with Yusuf's (2011) survey which was performed utilizing a sample of 300 college students in Malaysia. The outcomes of this study confirmed the direct and indirect influences of SRL on academic achievement. Furthermore, Fabriz, Dignath-van Ewijk, Poarch, and Büttner (2014. pp._239) determined that "SRL is an important key competence for university students and they should be informed about the benefits of SRL

to increase their motivation" (Fabriz, Dignath-van Ewijk, Poarch, & Büttner, 2014).

Despite the recent introduction of a conceptual model of SRL, it is regarded as an indirect predictor of academic achievement. Eisenberg, Valiente, and Eggum, (2010) argued that achievement is indirectly influenced by emotion regulation and effortful control due to the impact of these factors on learner relationships; that is, learners with high degrees of effortful control are successful at controlling their emotions in their relationships (Eisenberg, Valiente, & Eggum, 2010). These learners will have a better classroom behavior due to their ability to control their emotions and will have a favorable interaction with their teachers and classmates (e.g., Rudasill & Rimm-Kaufman, 2009). This issue affects learners' classroom engagement and task enjoyment (Eisenberg et al., 2010). Learners' interaction with their teachers and classroom behaviors determine the academic motivation (Ames, 1992). The establishment of a positive environment in schools depends on teachers' attention to learner needs. Based on the Object Relations perspective, efficient teachers trust their learners and enhance their self-worth (Cashdan, 1988). The attention to learners' needs enables the teachers to build a trusting learning context and helps learners to express their concerns and ideas. Consequently, leaners' discovery learning and academic success is accelerated largely due to their intrinsic motivation and SRL.

Efficient teachers are able to develop secure attachments with their learners and improve their sense of relatedness (Rudasill & Rimm-Kaufman, 2009). They protect learners' emotional space, encourage them to examine the appropriateness of academic materials for their learning, and facilitate their learning process. However, regarding the positive effects of these variables on EFL learners' academic language achievement, a few studies had addressed the contributive predictive roles of these factors on student academic growth. Consequently, the current study aimed to investigate this gap through identifying the actual magnitude of the influential effects of these variables and examine the mediated role of SRL. Accordingly, the foremost purposes of the current study are: (a) to find out about the actual magnitude of the effects of teacher-student interaction and SRL on EFL learners' academic achievement, and (b) to determine the

extent to which SRL plays a mediator role in learners' academic achievement. To do so, the study employed a structural equation modeling technique to test the hypothesized model presented in Figure 1.

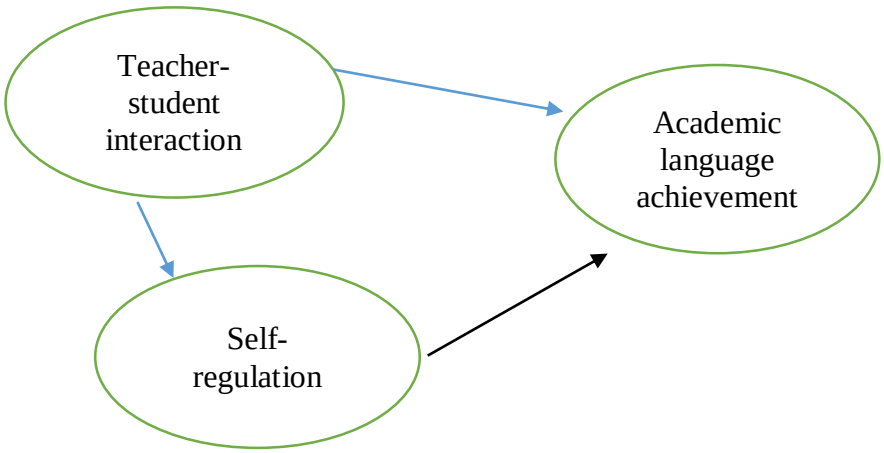

Figure 1. The Hypothesized SEM Model

Overall, in this study we examined the extent to which a hypothesized model of EFL learners' academic achievement can be developed. More specifically, we will use structural equation modeling (SEM) to construct our model of academic achievement. Based on our understanding of the literature, we formulated the following hypotheses:

H_1: Teacher-student interaction has a direct impact on EFL learners' language achievement.

H_2: EFL learners' SRL has a direct impact on their language achievement.

H_3: The impact of teacher-student interaction on EFL learners' language achievement is mediated by SRL.

Method

Participants

A prior sample size calculator for SEMs was applied to observe the contributive roles of teacher-student interaction and SRL to EFL learners' academic language achievement. Based on the results of this online free calculator (version 4.0), 218 EFL learners (male= 102, and female= 116),

within the age range of 18-45, were nominated as the sample size of the study. The participants were selected from among those who were studying English as a foreign language at Islamic Azad University, Tabriz Branch. The mother language of all of the participants was Azeri.

Instruments

In order to investigate the proposed research hypotheses, five instruments were employed:

a. Self – regulation questionnaire (SRQ): This questionnaire was formulated by Miller and Brown (1991). It is composed of 63 questions with five Likert scale items, ranging from strongly disagree to strongly agree. The reliability of SRQ has been indicated to be excellent (r= 0.85). The SRQ attempted to investigate seven major subscales; receiving, evaluating, triggering, searching, planning, implementing, and assessing.
b. The Questionnaire on Teacher Interaction (QTI) (designed by Wubbels and Levy, 2006): This questionnaire is an instrument to estimate the insights of teachers by students at the pattern level which was designed in line with the two-dimensional Leary model and the eight subdivisions, including leadership, strictness, uncertainty, student responsibility/freedom, helping/friendliness, being understand, being dissatisfied, and being admonish. The reliability of this questionnaire reported by Den Brok, Brekelmans, & Wubbels (2006), was indicated to be significant (r= 0.81).
c. Students' grade point averages (GPA) were used to measure learner achievement. EFL learners self-reported their grade point averages. In Iranian schooling system, the range of the students' grades vary from 0 (the worst grade) to 20 (the best grade).

Procedure

When the research basis was documented, the required data for this study was collected throughout the 2017 academic year. Initially, following the universities' administrative principles, the researchers secured the appropriate permissions. At the outset of the experiment, the researchers provided the students with a brief clarification of the purposes and importance of the study. Additionally, the researcher clarified the research process and the ways in which they were required to complete each

questionnaire. Then the researcher administered the questionnaire to each of the participating English classes on an agreed upon date. The participants were asked to respond the statements in each question on the word of the provided instructions on top of the questionnaires. To acquire a reliable and high response rate, every statement was read out loud for the students and they were required to tick in a one-response possibility of their particular choice in the questionnaires. Throughout the process, the participants were ascertained that their opinions will not be revealed to anybody. The participants were requested to precisely write their demographic information including their age, gender, grade, and their (GPA). Since the students' academic achievement was measured according to the participants' GPA, the researcher emphasized the accurate self-reporting of their GPA. All of the completed questionnaires were computer-coded, and then SPSS 22.0 and LISREL 8.80 were used to test the hypothetical model.

Results

In order to assess the reliability and validity of the measures, confirmatory factor analysis was used to evaluate the data by engaging in full-information all-out likelihood approximation procedures in LISREL 8.80. Equally, the SEM of the observed and latent variables of the study was discovered. First, the skewness and kurtosis of the variables and the correlational relationship of the research variables were demonstrated as follows (Table 1).

Table 1
Skewness and Kurtosis of Research Variables

Variable	**Mean**	**Standard Deviation**	**Skewness**	**Kurtosis**
GPA	17.34	1.64	-0.59	**-0.40**
SRL	203.44	42.76	-0.80	**0.17**
Teacher-student interaction	212.97	40.09	-0.59	**0.76**

According to the outcomes of Table 1, the distributions of academic achievement demonstrated negative skewness (-0.59) and negative kurtosis

(-0.40). The skewness of the measures utilized for assessing SRL was -0.80 and the kurtosis of these measures was 0.17. In the same way, the distributions of teacher-student interaction measured an established negative skew of -0.59 and positive kurtosis of 0.76. Nevertheless, according to Finney and DiStefano (2006), the field commonly approves that skewness and kurtosis are undesirable when the total standards of skewness is over 2 and that of kurtosis is over 7 (Finney & DiStefano, 2006). In this study, the skewness and kurtosis of the distributions of all measures were within an acceptable and normal range.

With the purpose of determining the relationship among the research variables, Table 2 makes available the statistics on the correlations among the variables.

Table 2
Correlational Statistics among Variables

No	**Variable**	**1**	**2**	**3**
1	GPA	1		
2	SRL	0.47**	1	
3	Teacher-student interaction	0.45**	0.47**	**1**

As indicated in Table 2, a meaningful relationship between the students' academic achievement and SRL was confirmed. As demonstrated, the p-value of the SRL questionnaires was p= 0.47, which is less than the acceptable p-value ($p<0.01$). Therefore, there is a significantly positive correlation between academic language achievement and SRL. Considering the relationship between teacher-student interaction and the students' academic language success, there is a noteworthy coefficient correlation between the two variables ($p=0.45$, $p<0.01$). As a result, it was demonstrated that students' SRL and their interaction with the teacher were positively correlated with their academic language achievements. Furthermore, the acquired outcomes of Table 2 exemplified the coefficient correlation between teacher-student interaction and SRL. The teacher-student interaction was significantly related to the learners' SRL ($p=0.47$,

p<0.01), representing that as the scores on the teacher-student interaction increase, the scores of this latent variable are enhanced too.

Additionally, confirmatory factor analysis was utilized to assess the validity of measures as well as the fitness and likelihood of the proposed model. In this study, indices from all classes were applied to evaluate the goodness of data-model fit (Hu & Bentler, 1999): absolute fit indices (Goodness of Fit Index or GFI), Adjusted Goodness of Fit Index (AGFI), and Standardized Root Mean Square Residual (SRMR)), comparative fit indices, Comparative Index (CFI), Normed Fit Index (NFI), and Non-Normed Fit Index (NNFI)), and parsimonious fit indices (Chi-Square/Degree of Freedom or $\chi 2$/df), Parsimonu Normed Fit Index (PNFI), and Root Mean Square Error of Approximation (RMSEA) (Table 3).

Table 3
Data-Model Fit Indices

Absolute fit indices			
SRMR	AGFI	GFI	index
0.04	0.95	0.1	value
<0.05	>0.95	>0.95	Acceptable range
comparative fit indices			
NNFI	NFI	CFI	index
0.99	0.98	0.97	value
>0.95	>0.95	>0.95	Acceptable range
Parsimonious fit indices			
RMSEA	PNFI	X2/df	Index
0.06	0.62	1.31	Value
<0.09	>0.06	1-3	Acceptable range

As demonstrated in Table 3, the GFI of the proposed model was 0.1 and the AGFI was 0.95, and the SRMR equaled 0.04. All of these measures of absolute fit indices fall within the suggested ranges, signifying this model was a good fit of the data (Schumacker & Lomax, 2010). The NFI of the model was 0.98, and the NNFI demonstrating the value of 0.99 falls within the accepted value of 0.95. The CFI of the operationalized model was 0.97 and the RMSEA amount to 0.06. A CFI value of 0.97 falls within a significant range of 0.95 or higher, specifying this model was a good fit of

the data (Schumacker & Lomax, 2010). The ratio of $\chi 2$ divided by the degree of freedom equaled 1.31. Along with McIver and Carmines (1981), a $\chi 2$ divided by the degree of freedom ratio of 1-3 suggests a good fit, thus approving that this model fits the data.

Correspondingly, the LISREL software (version 8.80) was employed to characterize factor loadings for each of the evaluated variable onto the latent construct and coefficients for the directional paths between the constructs. Figure 2 exhibits the SEM of the study.

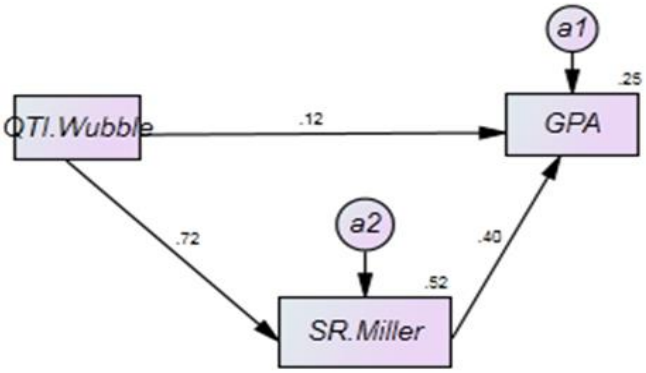

Figure 2. Structural Equation Model of the Study

As well, the direct and indirect effects of variables are confirmed in Table 4 which indicates the direct and indirect effects of each variable on academic achievement.

Table 4
The Direct and Indirect Effects of Each Variable on Academic Achievement

Path	Direct effect	Indirect effect	Total effect	R^2
To Academic achievement from				0.32
SRL	0.40^{***}	-	0.40^{***}	
Teacher-student interaction	0.12^{***}	0.17^{**}	0.29^{***}	
To SRL from				0.35
Teacher-student interaction	0.72^{***}	-	0.72^{***}	

As illustrated in Table 4, the learners' SRL had a meaningful predictive power over their academic success (β=0.40, p<0.01). The amount of teacher-student interaction, also, had a positive significant predictive role in estimating academic achievement (β=0.12, p<0.001). These discoveries support the first and second hypotheses, claiming that both teacher-student interaction and SRL positively affected the learners' academic language success, that is, EFL learners would be more successful in their learning as the level of these variables increases. Moreover, the indirect effect of teacher-student interaction through SRL on academic language achievement was indicated to be (0.17), which demonstrated to be considerably meaningful according to standardized significant level (p <0.01). Consequently, it would be sensible to state that the learners' SRL had a mediated role considering teacher-student interaction and academic achievement association. In other words, enhancing the amount of teacher-student interaction caused an improvement in the learners' self-regulation, resulting in the augmentation of academic achievement.

Discussion

The major purpose of this study was to scrutinize the contributive role of teacher-student interactions in enhancing the EFL learners' academic language achievement as well as the role of SRL as a mediator considering the teacher-student interaction and academic language success relationship. To this end, the study employed a structural equation modeling technique. The obtained results revealed that teacher-student interactions had a direct and positive effect on the learners' academic language achievements. It was also authorized that the learners' SRL played a predicator role in improving their success. Similarly, the outcomes demonstrated that SRL mediated the effect of teacher-student interaction on the EFL learner's academic language achievement. Accordingly, it would be logical to claim that both the teacher-student interaction and SRL significantly affects the learners' academic language achievement. Additionally, the effect of teacher-student interaction on academic language growth was significantly mediated by the influence of SRL.

As hypothesized, the consequences of this study are in harmony with the outcomes of the study by Dent and Whitehead (2013). This study employed a meta-analytic design to determine the correlation between the capacity aspect of SRL and academic success throughout childhood and adolescence. The findings revealed that the correlation between SRL and academic achievement was significantly high (Dent & Whitehead, 2013). Overall, the findings of the present study corroborate Broadbent and Poon's (2015) views. The researchers investigated the ways in which the learners employed their self-regulated strategies to improve their academic performance in their on-line interactions. The investigation of the related databases from 2004 to 2014 showed that SRL strategies significantly correlated with academic success in the learners' online interactions in an academic context. From among the 12 identified strategies, elaboration, organization, and rehearsal weakly correlated with academic achievement. However, high positive correlations were observed between metacognition, effort regulation, time management, critical thinking, and academic success. Moreover, despite the role of the confidence interval of the peer learning strategy (since it was crossed zero), it had a relatively positive impact on academic achievement (Broadbent & Poon, 2015).

However, the results of the current study are not along the lines of the fallouts of the study by Çetin (2015). In the Early Childhood Education Department, the researcher employed a prediction design to examine the relationships between academic motivation, academic SRL, and students' GPAs. The participants of this study were 166 university students studying early childhood education at Georgia Southern University, USA (Çetin, 2015). The researchers employed the academic motivation scale (Vallerand et al., 1992), and the academic SRL scale (Meidani & Sharifi, 2015) to collect the data of the study. The outcomes of the study exhibited that there were not any noteworthy correlations between the aforementioned variables. More specifically, academic motivation and academic SRL could not predict the students' GPAs.

Similar to the present study, Nota, Soresi, and Zimmerman (2004) focused on the correlation between Italian high school students' SRL strategies and their future academic success and choice to continue higher education. The researchers employed a SRL interview program to collect the data. Based on

the results, the organizational and transformational strategy from within the cognitive category significantly predicted the students' achievements in high school and their examination grades at university. Furthermore, the self-consequence strategy from the motivational category significantly predicted the learners' high school diploma scores and their decision regarding university-level education (Nota, Soresi, & Zimmerman, 2004).

The results of this study are similar to the results of the study by Dent and Koenka (2016). The researchers investigated the correlation between the elementary and secondary school students' academic achievements and two predominant constituents of SRL. The employed meta-analyses examined the results of the previous studies regarding the metacognitive procedures of SRL and the learners' employed cognitive strategies. The average of the correlations varied based on certain criteria: the type of achievement measure, the subject, the learning measure, the academic grade level, the specific process or strategy, and the type of SRL. The subsequent tests examined the essence of these variations and underpinned the relevant hypotheses (Dent & Koenka, 2016).

The discoveries of this study are analogous to the results of the study by Nietfeld, Shores, and Hoffmann (2014). The researchers observed the impact of SRL and gender on the student's academic achievement. Based on the results, the SRL factors significantly predicted the learners' in-game performance. Moreover, although there were equal content learning gains for the male and female learners, the male learners were better at using cognitive instruments to deal with the aforementioned mystery. Nonetheless, the consideration of the gaming experience diminished this significant difference. Finally, overconfidence in terms of the monitoring judgments was found to significantly predict the male participants' in-game performance (Nietfeld, Shores, & Hoffmann, 2014).

The findings of the study reinforced Pintrich and De Groot's (1990) results. These researchers focused on the correlations between SRL, motivational orientation and academic success. The participants of the study were 173 high school learners from English and Sciences classes. The results of the multiple regression revealed that test anxiety, self-efficacy,

and SRL significantly predicted academic achievement (Pintrich & De Groot, 1990).

Moreover, the findings of this study confirm the results of the study by Ahmad (2012). The researcher tried to examine the relationships between goal orientation, SRL, and academic achievement. The participants of the study were 40 secondary school students who were enrolled in an online science course. The Motivation Strategies for Learning Questionnaire and the participants' final achievement scores were employed as part of the data collection. Based on the results, there were significant positive correlations among the aforementioned variables (Ahmad, 2012).

By the same token, Ellis, Han, and Pardo (2017) explored how to investigate the association between SRL skills and the discernible measures of online activity to boost the prognostic competences of learner academic performance with the aim of providing evidence of both teaching and task design. This case study exhibited that the dissimilarity in the scholars' final score for their course was better elucidated when the issues from both methods were considered. The consequences point toward the potential of assuming the collective usage of self-reporting and observed data to achieve a more wide-ranging understanding of efficacious university student learning (Ellis, Han, & Pardo, 2017).

Considering the correlation between SRL and the teacher-student interaction, the results of this study reinforce the results of the study by Azevedo, Dias, Salgado, Guimaraes, Lima, and Barbosa (2012). The aforementioned researchers explored the correlation between SRL and the learners' ideas of their teachers' behavior. The participants were 625 students who were taught by the means of QIPBasic and the IPAAr in a Compulsory Education course. Based on the results, in regard to leadership, helping/friendly relationships, and understanding, there were found to be significant positive correlations between the teacher-student relationship and SRL (Azevedo, Dias, Salgado, Guimarães, & Lima, 2012).

In the same vein, Alotaibi1, Tohmaz & Jabak (2017) inspected the relationship between SRL and the academic achievement at King Saud University. 356 college students were considered as the sample of the study (Alotaibi et al., 2017). The students' scores in English language skills and mathematics were used to assess their academic achievement. The obtained

outcomes specified that the relationship between SRL and the academic achievement of the students were positive and significant. Likewise, the paradigms of SRL, predominantly goal setting and planning, were established to be profoundly and definitely related to achievement.

Overall, the findings of the present study support Perry and Rahim's (2011) view that the nature of the teacher-student interaction impacts on the learners' SRL. More specifically, the results provided a superior consideration of the significance of teacher-support in the classroom based on the significant correlation between the relevant variables. In summary, according to the foregoing outcomes, it would be reasonable to conclude that the learners' academic achievement is positively influenced by the effects of the teacher-student interaction and SRL. Correspondingly, regarding the relationship between academic achievement and teacher-student interaction, SRL was confirmed to be influential in enhancing this relation (Perry & Rahim, 2011).

The unique conceptual and methodological approaches to this research have produced several main theoretical implications in terms of regarding the aforementioned variables. Drawing from diverse disciplinary perspectives and paradigms, the conceptual framework guiding this study represents the first attempt to integrate the entire array of academic achievements and teacher-student interactions. Numerous previous scholars have constantly simulated the compensations of a positive teacher-student relationship in stimulating amended student consequences. On the whole, superlative educators are both exceedingly leading and extremely supportive.

The structural equation model utilized in this study provides an indication of the power of the teacher-student interaction on student achievement. The statistical model teases apart the inspiration of the teacher-student relation at the individual level and its interactions with SRL on the students' academic achievement. The results provide a strong understanding of the mechanisms that trigger the students' academic achievement by denoting that student success entails a mishmash of close support from the teacher, the teachers who use worthy instructional practices, a more positive relationship, high

degrees of interest and SRL, and a classroom with less academic risk. Likewise, many researchers have conducted research into the area of SRL.

However, Zimmerman's (2000) theory has been regarded as the most commonly mentioned theory in the reviewed studies (Zimmerman, 2000). For instance, Perels, Merget-Kullmann, Wende, Schmitz, and Buchbinder (2009) made use of this theory to carry out their research on the effect of training German teachers on developing their own SRL skills and SRL within their students' context. The consequences propose that students have the capability to self-regulate and that training can successfully support the teacher's ability to generate classroom environments that foster SRL. This study examined the contributive predictive role of SRL as well as its mediated part in the teacher-student interaction and academic achievement association. The findings suggest there to be a positive and significant effect, individually and mutually, in promoting the EFL learners' academic success (Perels, Merget-Kullmann, Wende, Schmitz, & Buchbinder, 2009).

The extent to which students use SRL strategies and have positive attitudes towards the use of this notion seems to positively correlate with the conceptions of the teacher-student interaction and academic achievement. Learners should have the occasion to communicate and acquire with their coworkers and the teachers should inspire them to convey their attitude, to be receptive to new-fangled thoughts, to provide the students with the chance to inquire questions and to arouse class conversation. Considering the process of the teacher-student interaction, (Marzano & Toth, 2013) admonished "don't leave relationships to chance" (p. 9). They mention that by means of interaction tactics, teachers will encourage the dynamic forces of their classrooms and construct robust teacher-student relationships that will support student learning.

The findings of this study support the hypothesis that the teacher-student interaction significantly affects the learners' academic success. Hence, this finding has highlighted the importance of effective communication in the learning process which, subsequently, results in the facilitation of learning, encouraging the learners' interactions and their participation in the construction of knowledge. Accordingly, the purposeful design of a teacher-student interactive learning environment improves the scholastic involvement of the students. Likewise, this study has underlined the

importance of SRL in improving the EFL learners' academic growth. The diverse literature on this dynamic and elusive construct underscores its academic consequence from preschool through to college (Liew, 2012). Drawing from three decades of research, this study sought to address whether this construct, both directly and indirectly, has an effect on the learners' success. Doing so provides a panoramic view of how this factor moderates the relationship between academic achievements and the teacher-student interaction. The findings from this study have the potential to corroborate the proposed hypotheses concerning not only the direct effect of this construct on academic achievement but also the mediated role SRL in terms of the teacher-student interaction and academic achievement association.

Declaration of interest: none

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