

Predictors of Writing Anxiety in English: Testing a Model Based on Self-regulated Learning Skills and Epistemological Beliefs

¹Mohamad Heidarzadi

²Hamed Barjesteh*

³Atefeh Nasrollahi Mouziraji

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Abstract

Due to the importance of learners' beliefs and learning strategies, a voluminous work has directed on Second Language (L2) learners over the last decades. As an endeavor to further pursue the nexus between learner-related variables in L2 learning, this study was set to probe the role of Self-regulated Learning Skills (SRLS) and Epistemological Beliefs (EBs) in predicting second language Writing Anxiety (L2WA) among Iranian EFL students. To this end, three validated scales measuring these constructs were administered to 240 male and female students. The scales were emailed to the target groups during the pandemic Covid 19. As for the data analysis, Structural Equation Modeling (SEM) was adopted to test the hypothesized model of the constructs. The results indicated that SRLS and EBs could account for 40% of the L2WA. Notably, SRLS could account for (-.246) and EBs could account for (.325) of the variance in L2WA. The result yields a significant change. Particularly, the analysis shows that EBs increases L2WA and SRLS reduces the L2WA (R^2 EBs = .148; R^2 WSE = .093). The findings suggest that L2 teachers and materials developers should train learners to promote their self-regulatory strategies.

Keywords: EFL Learner, Epistemological Beliefs, Writing Self-regulation Skill, L2 Writing Anxiety, Writing Skill

1. Introduction

There is a consensus among L2 practitioners (e.g., Cheng, 2004; Graham & Harris, 1994; Liu & Yuang, 2021) that writing is difficult for L2 students to master. Richards and Renandya (2002) believe that learners should go through two thinking processes for an intelligent writing. To write effectively L2 writers should consider higher level thinking (i.e., planning and organization), and lower level thinking (i.e., spelling, punctuation, word choice). They postulated that such mission makes writing a difficult task. Currently, some professional studies (e.g., Liu & Yuang, 2021; Zhu, et al., 2021) acknowledged that teaching writing demands high level of self-beliefs, writing skill and additional tasks (e.g., cognitive, affective, social and psychological factors). Thus, the beliefs that learners hold about their academic abilities can influence writing achievement (Pajares & Valiante, 1999). Pajares and Valiante posited that the degree of learner's beliefs affects the level of language achievement. Bandura (1986) notes that "If self-efficacy is lacking, people tend to behave ineffectually, even though they know what to do" (p. 425). Thus, lack of self-efficacy leads to underachievement. Reis and McCoach (2000) defined *underachievement* as the incongruity between potential (i.e., ability) and performance (i.e., achievement).

Different factors are associated with underachievement in L2 professional literature such as academic low epistemic-beliefs, low self-efficacy (Bandura, 2011), low self-motivation (Weiner, 1992), high writing anxiety (Cheng, 2004), and low SRLS (Zimmerman, 1986). These factors may affect learners' writing performance by influencing the degree of engagement in writing effectively

¹ PhD Student of TEFL, mohamad.heidarzadi@gmail.com; Department of English Language and Literature, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran.

² Associate Professor in TEFL (Corresponding Author), ha_bar77@yahoo.com; Department of English Language and Literature, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran.

³ Assistant Professor of TEFL, nasrollahi.atefeh@gmail.com; Department of English Language and Literature, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran.

(Bandura, 2011; Cheng, 2020). Recently, some practitioners (e.g., Lui & Yuang, 2021; Sun & Wang, 2020) acknowledged that high WA can debilitate writing achievement. Cheng (2020) believes that the degree of L2WA influences learners writing achievement. Hassan (2001) characterized L2WA as “a general avoidance of writing and of situations perceived by the individuals to potentially require some amount of writing accompanied by the potential for evaluation of that writing” (p. 4). Cheng (1999) conceptualized L2WA as “language-skill specific anxiety” (p.417). He enumerated some dimensions in L2WA (e.g., somatic, cognitive, and avoidance behavior) that may inhibit writing skill. Such avoidance leads “fear of the writing process” that would influence writing achievement (Thompson, 1980, p. 121). Dally and Miller (1975) coined the term *writing apprehension* for the fear of writing process. Daly (1979) defined writing apprehension as “the general avoidance of writing and situations perceived by the individuals to potentially require some amount of writing accompanied by the potential for evaluation of that writing” (p. 37). Practitioners agree that highly anxious students seem to write shorter essays have lower writing self-efficacy (Tsao et al., 2017), hold low level of EBs (Yang et al., 2019), get lower scores (Zhang & Yang, 2022), and experience less self-regulated strategies (Zimmerman & Moylan, 2009). L2 professional literature acknowledged the pivotal role of writing self-beliefs in the quality of writing. Some authorities in the field (Bandura, 2011; Hofer, 2016; Liu & Yuang, 2021; Morelli et al., 2022) postulated that the degree of writing self-beliefs can lead anxiety experience among students. They enumerated different writing self-beliefs (i.e., self-efficacy, self-regulated strategies, EBs) affect writing achievement. They argued that L2 writers with high writing self-beliefs seem to have a positive sense of self in writing. Likewise, some practitioners postulate that students’ EBs can influence learning achievement. More recently, some practitioners (e.g., Barjesteh & Niknezhad, 2020; Shirzad et al., 2020; Hofer, 2016; Zhu et al., 2021) concluded that the beliefs hold by learners influence their performance in the language skill. They found that learners with higher level of EBs seem to have a better conception of learning. (COL). Further studies (e.g., Bendixen et al., 1998; Walker et al., 1991) attested that the level of EBs is related to reasoning and complex thinking skill due to the fact that there is no overall acknowledged ordinal scale for measuring EBs. Specifically, they uncovered that learners’ beliefs about knowledge (i.e., simple or specific) are significantly associated low moral justification and simpler views (e.g., knowledge is certain).

Various theoretical and empirical studies substantiated the influence of learners’ beliefs on language anxiety (e.g., Cheng, 2004; Gregersen, 2020; Xiangming et al., 2020). They attested that the degree L2 writing self-beliefs cause anxiety experience among L2 writers. In previous studies (e.g., Hofer, 2016; Pajares, 2007; Sun & Wang, 2020; Zimmerman & Moylan, 2009; Zhang & Yang, 2022), the efficacy of SRLS, EBs, motivation, and self-confidence on learning have been appreciated. Some theoretical studies (e.g., Bandura, 1989; Hofer, 2004; Kitchener, 1983; Perry, 1970; Zimmerman, 1986; Zimmerman & Schunk, 2008) acknowledged that SRLS and EBs may provoke both direct and indirect contributions to the writing skill in general. Furthermore, accumulated body of empirical studies (e.g., Liu & Yuang, 2021; Morelli et al., 2022; Shirvan & Taherian, 2021; Zhang & Yang, 2022) have corroborated that L2WA is a stronger predictor of writing quality. Likewise, voluminous experimental studies (e.g., Cheng, 2020; Shirzad et al., 2020; Liu et al., 2019) have been acknowledged on the efficacy of learners’ thought and beliefs as a robust predictor of students’ academic achievement. To date, the interplay of EBs, L2WA, and SRLS has not been examined concurrently. In this regard, this study attempted to test a model to explore how L2WA will be related to EFL learners’ SRLS and EBs. Notably, the study aimed (a) to examine whether EBs with the mediating role of SRLS has a significant indirect effect on the L2WA, and (b) to investigate if SRLS has a significant direct effect on L2WA.

1.1. Hypothesized Model

Drawing on the theoretical underpinnings and the empirical studies, this study hypothesized a model to explore the interplay among EBs, SRLS, and L2WA. Notably, the present model aimed to uncover the predictors of L2WA in EFL classroom. Therefore, the model will be tested based on learners’ EBs, and the SRLS. It has been hypothesized that EBs and SRLS influence EFL learners’ L2WA which in turn promote their writing achievement. In addition, it has been hypothesized that students’

EBs with the mediating role of SRLS may indirectly influence L2WA. The empirical studies for the universal beneficial impact of learners' beliefs on the academic achievement (i.e., Pajares & Valiante, 1999; Sun & Wang, 2020; Zhu et al., 2021), and the supportive literature on the mediating role of SRLS on writing performance (i.e., Cheng, 2004; Lui & Yuang, 2021; Zimmerman, 1986) resulted in drawing a hypothesized path from SRLS to L2WA. In addition, there are positive evidence in the L2 professional literature regarding the supportive role of the EBs on learners' academic achievement (Bandura, 2011; Cheng, 2020; Hofer, 2016; Lonka et al., 2021; Pajares, 2007; Shirzad et al., 2020; Yang et al., 2019). Accordingly, a path was drawn from EBs to L2WA. Due to the theoretical and empirical supports which identify L2WA as a leading factor in writing performance, the path was depicted from SRLS to L2WA, and EBs to L2WA. Although there is rich supportive evidence for the efficacy of learners' beliefs, this study theorized a model that the selected variables have a complex and unpredictable relationship. To test such argument, this study the proposed a structural model with mediating role of SRLS among three latent and eight observed variables using SEM approach (See Figure 1).

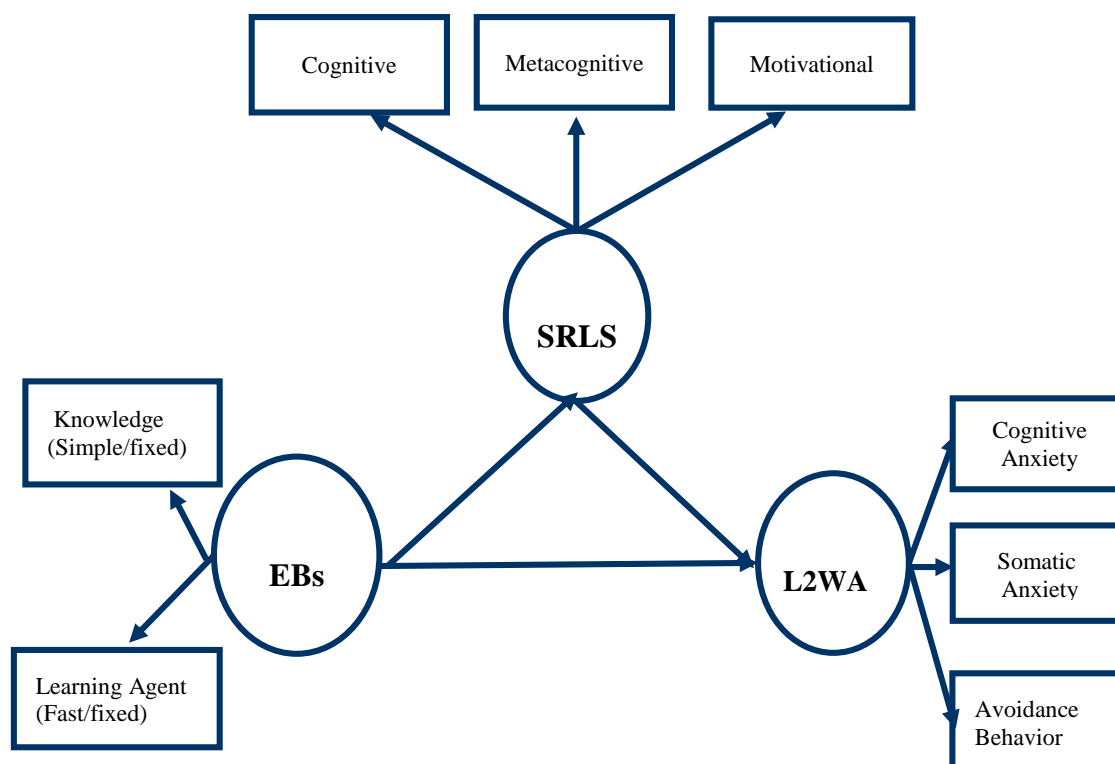


Figure 1: The Hypothesized Model for the Research Constructs

To test the hypothetical model, and to predict factors affecting L2WA, the following questions were proposed:

Research Question One: What is the nature of the relationship among EFL learners' EBs, SRLS and their L2WA?

Research Question Two: Does students' SRLS have a significant direct effect on their L2WA?

Research Question Three: Does EFL learners' EBs with the mediating role of SRLS have a significant indirect effect on the L2WA?

2. Literature Review

2.1. Epistemological Beliefs

The beliefs hold about learning and knowledge can influence the way L2 learners approach learning process (Lonka et al., 2021). Personal beliefs seem to affect what individuals can do and how they behave in the classroom. They are associated with different factors such as COL, academic achievement, and nature of learning, and the learning process (Yang et al., 2019). Examining beliefs about the nature of knowledge, the way knowledge are perceived, and how learners' belief may influence learning process have gained considerable attention in L2 literature (Shirzad et al. 2020). In the L2 professional literature, such beliefs has been called "*personal epistemologies*" (Hofer & Pintrich 1997), "*epistemic cognition*" (Kitchener, 1983) a set of "*personal values*" (Bandura, 1986), or "*epistemic beliefs*" (Hofer, 2004) that refine learners' behavior, decisions, and knowledge acquisition. Perry (1970) is one of the innovative scholars who classified different levels for the EBs. Perry's classification was developmental in four unidimensional aspects (e.g., *dualist beliefs, multiplism, relativism & commitment*). Perry presumed that adept learners initiate with dualist beliefs. To him, knowledge is absolute and teachers should transmit the knowledge bases to the learners. In multiplism, students are able to distinguish the matter of debate. They view knowledge from more than one source. The third dimension of the model, *relativism*, views knowledge acquisition relative. The final stage of the model involves personal judgment and assessment interwoven with the promise to the beliefs. Later, Kitchener (1983) categorized three aspects of cognitive processing comprising cognitive, metacognitive and epistemic cognition. He examined the levels of cognitive processing that students employed for the problem solving process. Likewise, Hofer (2004) distinguished four dimensions of personal epistemology (a) *certainty*, (b) *simplicity*, (c) *source*, and (d) *justification of knowledge*. Currently, Hofer (2016) used "*epistemic cognition*" as a hyponym to conceptualize how beliefs, theories and knowledge are conceptualized. Hofer (2016) defined EBs as learners' ideologies about how knowing happen, what the nature of knowledge is, and how it is constructed and assessed. Schommer (1990) raised doubt the practicality of Perry's model due to the developmental and unidimensional aspect of the model. Schommer defined EBs as the learner's ideology about knowledge and learning. Schommer (1990) interpolated the term multidimensionality in EBs. She suggested that EBs involve belief systems that may (not) proceed in an integrated way. Schommer distinguished five facets for the COL (a) *innate/fixed ability*, (b) *quick learning*, (c) *simple knowledge*, (d) *certain knowledge*, and (e) *omniscient authority*. Schommer summarized the facets into two repertoires (i.e., *simple/definitive knowledge; fast/fixed learning agent*) that deal with the COL and the essence of knowledge. The facets reveal the extent to which learners consider the ability to learn is predetermined (i.e., innate), learning happen rapidly or not at all (i.e., quick learning), a conception that knowledge can be explained as isolated facts (i.e., simple knowledge) or unchanging (i.e., certain knowledge).

2.2. The Models of SRL: The Socio-cognitive Aspect

The notion of self-regulation is a mega-theory that involves assorted social, cognitive, affective, and motivational processes (Morelli et al., 2022; Sun & Wang, 2020; Zimmerman & Moylan, 2009). SRL is a dynamic process during which students set goals, adjust strategies, and manage various processes in achieving their goals (Zimmerman & Kitsantas, 2002). It has been broadly examined over the past three decades, generating voluminous theories, frameworks, models, and definitions in language learning (Panadero, 2017). For example, Bandura's (1986, 1997) social cognitive theory pinpointed that the anticipated outcome of the learners' performance depends on their beliefs about their competence. Bandura's theory highlighted the necessity of social environment in learning (Zimmerman & Schunk, 2008). Correspondingly, Zimmerman proposed different models of SRL. Zimmerman is commonly known as one of prominent scholars in SRL for advancing three models (i.e., *triadic analysis, cyclical & multilevel phases of SRL*) (Panadero, 2017). Zimmerman (1986) designated that the model encompasses the reciprocations of environment, behavior and personal (self) level. The model expresses how SRL could be visualized within Bandura's socio-cognitive theory. Zimmerman (1986) conceptualizes SRL as "the degree to which students are metacognitively, motivationally, and behaviorally active participants in their own learning" (p. 329). Zimmerman stated that there is a cause and effect association among personal, behavioral, and environmental processes. She maintained that SRL is the outcome of fostering strategies to control learners'

behavior. Bandura (1989) posited that such effect does not represent that these processes have an identical power. Figure 2 depicts the interplay among three processes.

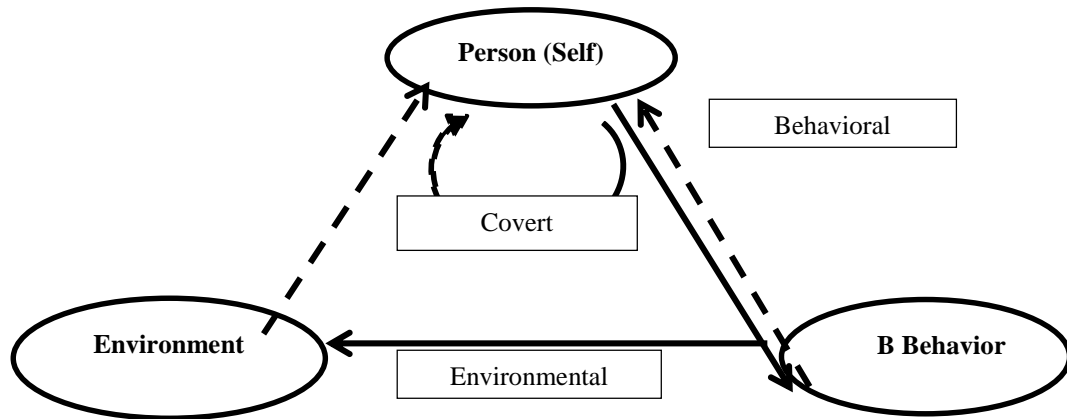


Figure 2: The Triadic Model of SRL

The second model illustrates the cyclical aspect of SRL. This model comprises three phases: (a) *forethought*, (b) *performance*, (c) *self-reflection*. Zimmerman and Campillo (2003) posited that the phases represent the linkage of metacognitive and motivational processes. Figure 3 indicates the interrelationship among each phase.

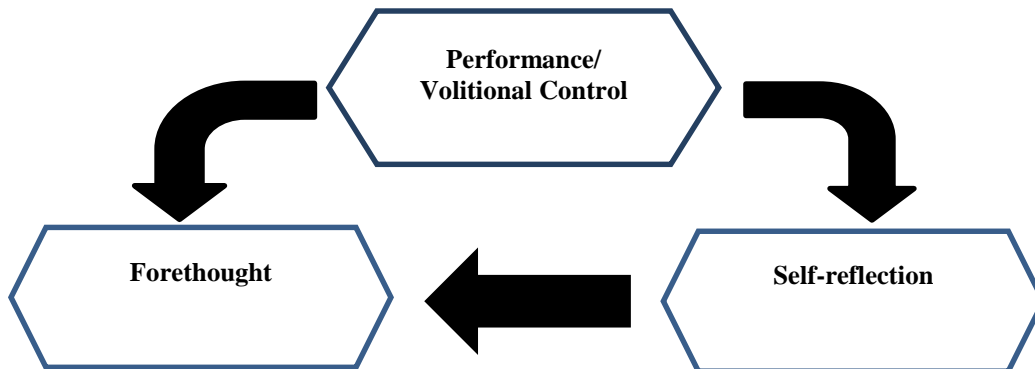


Figure 3: The Cyclical Aspect of SRL and the Interrelationship among Each Phase

The cyclical aspect of SRL involves different process and sub-process. The first phase (i.e., *forethought*) deals with different motivational beliefs and the way learners examine the task, decide, and determine how to accomplish the goals. The second phase (i.e., *performance*) concerns the actualization of a task, while learners monitor how they are developing, and using various self-control strategies in an effort to keep themselves cognitively involved and encouraged to accomplish the task. Lastly, students evaluate how they have conducted the task in the *self-reflection* phase. Particularly, they assess the success or failure of the task (See Table 1).

Table 1: Zimmerman and Moylan's (2009) Cyclical Phase of SRL Model

Phase	Process	Task analysis	Self-motivation beliefs
Forethought	Sub-processes	Goal setting Strategic planning	Self-efficacy Outcome expectation Task interest value Goal
	Processes	Self-control Task strategies Help-seeking Self-instruction	Self-observation Meta-cognitive Monitoring
Performance	Sub-processes	Imagery Time management Environmental structuring Interest Self-consequence	Self- recording
	Process	Self-judgment Self-evaluation	Self-reaction Self-satisfaction/affect
Self-reflection	Sub-processes	Causal attribution	Adaptive/definitive inferences

The third model of SRL is a multi-level phase comprising four arenas in which learners accomplish their self-regulatory competency. Panadero (2017) posits that models of SRL are a conceptual framework in which different aspects of cognitive and affective factors (e.g., motivational, emotional, and cognitive) are involved. Zimmerman and Schunk (2008) argue that in the conventional model of SRL students are assessed regardless of their mental ability. Actually, they are evaluated based on how they can learn without some features such as social, environmental backgrounds, or quality of schooling. In contrast of the traditional model, the conventional models of SRL are evaluated due to different sub-process “to achieve self-designated goals in their real-world contexts” (Zimmerman, 1986, p. 307). Zimmerman and Schunk (2008) proposed sequential skill acquisition in the multilevel model. Table 2 illustrates the multi-level model and the description of each level in detail.

Table 2: The Social Cognitive Model of Sequential Skill Acquisition

Level	Name	Description
1	Observation	Vicarious induction of a skill from a proficient model
2	Emulation	Imitative performance of the general pattern
3	Self-control	Independent display of the model’s skill
4	Self-regulation	Adaptive use of skill across changing personal and environmental condition

2.3. Writing skill, Writing Anxiety, and Writing Self-regulation Skill

Writing skill is a laborious process demanding practice and personal requirements which direct L2 writers to employ various self-regulatory strategies to manage their performance, such as strategic planning, self-control, self-instruction, time management, self-evaluation, to name but a few (Graham & Harris, 1994). Following Zimmerman and Schunk’s model, students can learn new writing tasks at different linear levels. Zimmerman and Kitsantas (2002) postulate that L2 writing skill demand high-quality acquisition. They proposed different levels that represent social and cognitive aspect. Each level instructs learners to foster their competence with the aim to direct students at self-disciplined levels. They suggested promoting reliance on self-regulated sources to move students from writers’ initial dependence on social sources (i.e., observation, emulation) to depend on their own (i.e., self-regulated writers). The model proposed by Zimmerman and Kitsantas conforms different phases of the writing skill like planning and monitoring stage. The model shows that the planning phase in writing goes with the *forethought phase* of self-regulation. In writing skill, students employ goal setting to perform a writing task. They use different strategies and schematic knowledge. At the *performance phase* students use different strategies such as time management, help seeking task strategies and self-control. In L2 writing skill, using self-regulatory strategies, such as self-recording,

self-imagination, and environmental instruction seem to be important to accomplish a writing task. Self-regulatory phase of the model can be best matched with the *monitoring stage* of writing. This phase involves various task analyses such as self-judgment, self-evaluation of students writing achievement. Evaluating the content, organization, and form of writing task, and revising the written documents are both cognitive and affective process.

As voluminous studies (e.g., Cheng, 2019; Gregersen, 2020; Tsao et al., 2017; Zhang & Yang, 2022; Xiangming et al., 2021) have been conducted within L2 classroom anxiety, teachers, L2 practitioners, and materials developers contemplated other aspects language skills-related anxiety like reading, writing, speaking and listening anxiety. The findings uncovered the positive and negative effects of foreign language classroom anxiety on the language achievement. Though speaking is commonly seemed to be the most anxiety-provoking skills, writing can be stressful activity for the EFL/ESL learners due to the thinking process learners should go through for an effective writing (Richards & Renandya, 2002). Thus, Richards and Renandya proposed higher and lower level thinking that makes writing an anxiety-provoking skill. Thompson (1980) confirmed that such anxiety-provoking skill cause fear of writing; therefore, it can affect writing outcome negatively. Originally, the concept of “*writing anxiety*” was released by Daly and Miller (1975). Daly and Miller conceived L2WA as a language barrier that demotivate students to write. Likewise, Hassan (2001) conceptualized L2WA an overall avoidance of writing perceived by the learners. Later, Cheng (2004) proposed various avoidance and fear of L2WA (e.g., *fear of teacher and peer evaluation, fear of losing identity*) to endorse the claim proposed in the professional literature. They supported that such avoidances avoid students to write. In the same vein, Cheng (2004) determined three types of L2WA (i.e., *somatic anxiety, cognitive anxiety, and avoidance behavior*) faced by L2 writers during the process of writing. Cheng’s facets of L2WA formulated the theoretical underpinning of this study. Recently, Huwari and Al-Shboul (2015) distinguished three effects of L2WA. They were classified as *personal, social* and *academic* effects. Huwari and Al-Shboul listed various factors such as anxiety, health, depression, isolation, feeling embarrassed, low academic performance as the sub-themes of L2WA. Table 3 reveals the types of effect and the corresponding themes on L2WA.

Table 3: Effects and the Sub-themes on L2WA

Effects	Sub-themes
Personal	<i>Anxiety</i> : The influence of L1; make grammatical mistakes, unable to express ideas
	<i>Health issues</i> : High blood pressure, low back pain, sleeping disorder and problem.
	<i>Depression</i> : receive many comments from the supervisors on the writing
Social	<i>Isolation</i> : Students prefer to isolate and not to talk with peers. They feel too embarrassed from or supervisors' comments on writing.
Academic	<i>Low academic performance</i> : Writing anxiety will affect performance.

3. Methodology

3.1. Participants

The sample consisted of 240 EFL students from different private language institutes in Tehran province, City of Karaj. The minimum sample size in SEM modeling approach is up to 15 cases per parameter (Byrne, 2010). For the purpose of this study three constructs and a total of eight sub-factors were investigated. Accordingly, a minimum sample size of 120 participants seemed to be justified. To provide a valid response, the data were collected from 240 respondents so as to some may excluded from the sample due to the sample attrition, incomplete answer, or the unwillingness to reply or return the questionnaires in due time. The participants were selected based on cluster random sampling method. Thus, a multi-stage cluster level was employed. The multi-stage comprised 3 levels (i.e., school, region, and classroom). Precisely, the subjects were from 10 schools, 5 districts in two cities of Karaj and Tehran, and 25 online classrooms. They included both male ($n = 135$) and female ($n = 105$) with the same their native language (i.e., Persian), cultural, social, identity, and experience in

learning English language. They all had similar experience in learning English language (i.e., 3 to 5 years) at different English language institutes. The age ranged from 20 to 25 years ($M = 22.05$; $SD = 1.41$) from different English language institutes.

3.2. Instruments

3.2.1. Schommer's Epistemic Questionnaire (SEQ)

To assess learners' EBs, the scale developed by Schommer (1990) was utilized. The SEQ has been widely used as a common instrument for measuring students' EBs. Originally, SEQ included 63 items. However, some practitioners (Chan & Elliott, 2004; Clarebout et al., 2001; Rezaei, 2010) raised doubts the appropriateness of SEQ due to the fact that some items were difficult to understand. Moreover, they remarked that the length of the items ($n = 63$) may demotivate the respondents to complete the questionnaire. Accordingly, some adapted questionnaires (e.g., Chan & Elliott, 2004; Rezaei, 2010; Schraw et al., 2002) with fewer dimensions (e.g., two or three) and items (e.g., 16, 24, 30, and 42) have been proposed. They assumed that culture may be an influential factor in EBs studies. Therefore, they developed and validated a revised SEQ for different settings such as Japan, Turkey, Belgium, Netherlands, Chinese, Hong Kong, and Iran, to name but a few. Thus, for the purpose of this study, an adapted version of SEQ has been utilized. Rezaei (2010) adapted Schommer's questionnaire (1990) among 518 students studying at different majors within the context of Iran. The revised scale included 16 items measuring two dimensions (i.e., knowledge, and learning agent). They were stated in either the negative or the positive extreme. The dimensions included students' simple/definitive knowledge ($n = 9$ items), and their fast/fixe learning agent ($n = 7$ items). The first dimension deals with the conception about the origin and acquisition of knowledge (e.g., *Scientists will ultimately get to the truth if they keep searching for it*). The second dimension concerns learners' assumptions about acquisition/learning (e.g. *Learning something really well takes a long time or much effort*). The SEQ assessed beliefs in simple/definitive knowledge and fast/fixe learning ranging from 16 (minimum) to 112 (maximum). The scale was piloted with a number of similar students ($n = 90$) to check the reliability and validity. The result enjoyed high reliability ($\alpha = 80.5$). The reliability coefficient for subscale was as what follows: knowledge (simple/ definitive) =.85, learning agent (fact/fixe) =.76. As there is no general accepted ordinal scale for measuring EBs, some empirical studies (Bendixen et al., 1998; Shirzad et al., 2020; Tsao et al., 2017) revealed that complex EBs are associated with higher moral reasoning and more complex thinking (e.g., knowledge is uncertain). Specifically, Bendixen et al. (1998) pinpointed that students' beliefs about simple knowledge, specific knowledge, and all-knowing authority are significantly connected to low moral justification and simpler views (e.g. knowledge is certain).

3.2.2. Cheng's L2WA Inventory

To measure students' L2WA *inventory*, the scale developed by Cheng's (2004) was utilized. It included 22 self-report items with a five-point Likert scale. The scale contained three subcategories: *Somatic anxiety* ($n = 7$ items), *cognitive anxiety* ($n = 8$ items), and *avoidance behavior* ($n = 11$ items). Somatic anxiety concerns the physiological effects of anxiety (e.g., *I feel my heart pounding when I write English compositions under time constraint*). Cognitive anxiety deals with learners' mental aspect (e.g., *While writing in English, I'm not nervous at all*). Finally, avoidance behavior is behavioral aspect when the learners are anxious (e.g., *I often choose to write down my thoughts in English*). The score obtained from the scale reveals the degree of psychological arousal, avoidance behavior, and fear concerned in L2 writing. Cheng (2004) reported the reliability of the scale using test-retest reliability ($\alpha = .91$). In addition, appropriate convergent and discriminant validity was employed by means of correlation and EFA. For this research, the scale was piloted among similar subject ($n = 68$) in EFL context of Iran. The estimated reliability was found to be ($\alpha = .83$). The reliability coefficient for subscale was as what follows: somatic anxiety ($\alpha = .81$), cognitive anxiety ($\alpha = .84$), and avoidance behavior ($\alpha = .84.5$).

3.2.3. Self-Regulation Questionnaire (SRQ)

The SRQ adapted from Bouffard, Boisvert, Vezeau and Larouche (1995). It aimed to measure students' use of SRLS based on Bandura's cognitive-social theory. The SRQ contained 14 items in three sub-scales. Each sub-scale measures one component of SRLS in a 5-point Likert scale. More precisely, they assessed (a) *cognitive* (5 items), (b) *metacognitive* (6 items), and (c) *motivational strategies* (3 items) of self-regulation. The validity and reliability of the questionnaire were examined by Talebzadeh et al. (2011) among different EFL learners at three universities. The factorial analysis revealed that SRQ explained .52 of self-regulation variance. In addition, the internal consistency enjoyed an adequate reliability ($\alpha = .70$). More precisely, the reliability coefficient for the subscale was as what follows: (a) cognitive strategy ($r = .68$), (b) metacognitive strategy ($r = .72$), (c) motivational strategies of self-regulation ($r = .70$). For the purpose of the current study, a pilot study was conducted among 86 EFL learners. The results enjoyed an adequate reliability ($\alpha = .79$).

3.3. Procedure

The data collection was initiated by distributing the batteries of the questionnaires (i.e., three variables) to 240 targeted subjects. To ease the data collection procedure during the pandemic COVID-19, only the online version was employed via the Porsline database. To collect the data, the Persian versions of the questionnaires were used. The students were asked to answer the questionnaires at the same time during their regular class time, or they could answer at the free time after the classroom. The scales included the directions and instructions on how to complete. It took the participants about 15 minutes to fill out each questionnaire. The participants were assured that their answers to the instruments would be kept confidential and not considered to any further assessment. To minimize the bias effect, different EFL classes from different districts in two cities were randomly selected to distribute the questionnaires. The data were collected after a period of five months. After collecting the data, they were analyzed for the missing data, the outliers, and fact-checking. Thus, some questionnaires ($n = 24.10\%$) were discarded since they seemed to be incomplete, blank, or carelessly filled out. Therefore, the remaining qualified questionnaires ($n = 216$) were considered a valid response rate of 95%. Next, the SEM approach was deployed at two different subsequent phases. Initially, an exploratory factor analysis (EFA) was run to test the direction of EBs, SRLS, L2WA, and to test the theoretical driven hypothesis about the linear interrelationships among the latent and observe variables. Then, the validity of the hypothesized model was tested using various goodness-of-fit indices. All the data were analyzed using SPSS and AMOS software.

3.4. Data Analysis

A non-experimental correlational design was adopted using SPSS and Analysis of Moment Structures (AMOS) software (version 20). Initially, all the missing and outlier data were identified. To eliminate such data, a Mahalanobis test and the expectation-maximization algorithm were run. Next, the assumptions for the normality of the constructs were investigated using Pearson correlation matrix, the confirmatory factor analysis (CFA) and Composite Reliability (CR). Moreover, the SEM was run to test the predictive role of the constructs. Afterwards, different goodness-of-fit indices were examined at three corrective steps followed by Hu and Bentler's (1999) guidelines for the acceptable values of such indices (i.e., $\chi^2/df < 3$, $TLI > .95$, $GFI > .95$, $RMSEA < .06$, and $CFI > .95$).

4. Results

4.1. The Preliminary Step: The Assumptions for the Normality of the Constructs

To answer the research questions, some preliminary steps were taken to analyze the obtained data. Initially, tests of kurtosis and skewness were conducted to verify the normality of three variables. The values for Skewness and Kurtosis for all subscales fall within the acceptable range. The normal range of values obtained in this test is between -2 to 2. Table 4 illustrates the assumptions for the normality of the constructs in detail.

Table 4: Skewness, Kurtosis, and Normality test for Different Variables

Construct	Skewness		Kurtosis		Kolmogorov Smirnov*	
	Std. Error	Statistics	Std. Error	Statistics	Statistics	Sig
K	.153	.138	-.855	.311	1.361	.049
LA	.389	.138	-.562	.311	1.452	.030
EBs	.785	.138	-.001	.311	1.449	.030
CO	-.452	.138	-.006	.311	-.452	.062
ME	.287	.138	-.389	.311	0/287	.035
MO	.460	.138	-.107	.311	.460	.205
SRLS	.044	.138	-.413	.311	.044	.29
SA	.350	.138	-.96	.311	1.785	.004
CA	.669	.138	-.107	.311	1.621	.018
AB	-.741	.138	-.280	.311	1.458	.032
L2WA	-.520	.138	-.452	.311	1.521	.034

Note: K= Knowledge; LA= Learning Agent; CO = Cognitive; ME= Metacognitive; MO= Motivational; SA = Somatic anxiety; CA = Cognitive Anxiety;

AB = Avoidance Behaviors

a. Lilliefors Significance Correction; * This is a lower bound of the true significance

Table 4 indicates that the indices of kurtosis, skewness, and Kolmogorov–Smirnov fell within acceptable ranges, except motivational construct. The indices of skewness and kurtosis are considered acceptable (Hu & Bentler, 1999). Notably, the measure of skewness (*range* = -.055 to .785) and Kurtosis (*range* = -.001 to -.855) are at appropriate bound for the different subscales. However, the result of Kolmogorov–Smirnov test reveals that the distribution of data was not normal for SRLS (i.e., .29; $p > .05$). To explore multivariate outlier data, Mahalanobis test was conducted. Table 5 indicates outlier data.

Table 5: Outlier Detection with Mahalanobis Distance

	Minimum	Maximum	Mean	SD	N
Mahalanobis Distance	.132	52.85	11.175	2.693	240
Leverage Values	.000	.008	.004	.003	240

Table 5 indicates the Mahalanobis Distance from a possible rating (i.e., *Min* =132; *Max* =52.85). Mahalanobis Distance indicates 24 multivariate outliers were not considered acceptable. Thus, a total of ($n = 216$) students met the normal range. Testing different assumptions (e.g., Kolmogorov–Smirnov, Mahalanobis test, Q-Q plot and P-P plot) reveal that the use of parametric statistical procedures was appropriate.

4.2. Using CFA and CR to Evaluate Construct Validity of the Proposed Model

To examine the construct validity, SEM was adopted. Kline (2011) concluded that the SEM approach is a strong statistical procedure that joins factor analysis with regression. Kline underscored to check the measurement model (also called CFA) before running the SEM. Thus, for the purpose of this study, CFA using AMOS 20 was utilized to probe whether the established dimensionality and factor-loading pattern measured appropriately. The following figures depict the standardized beta coefficients for CFA analysis and error variance of the selected variables. This value shows the slope of the line between the predictors and the dependent variable. Besides, the details of each GFI are presented the subsequent Tables.

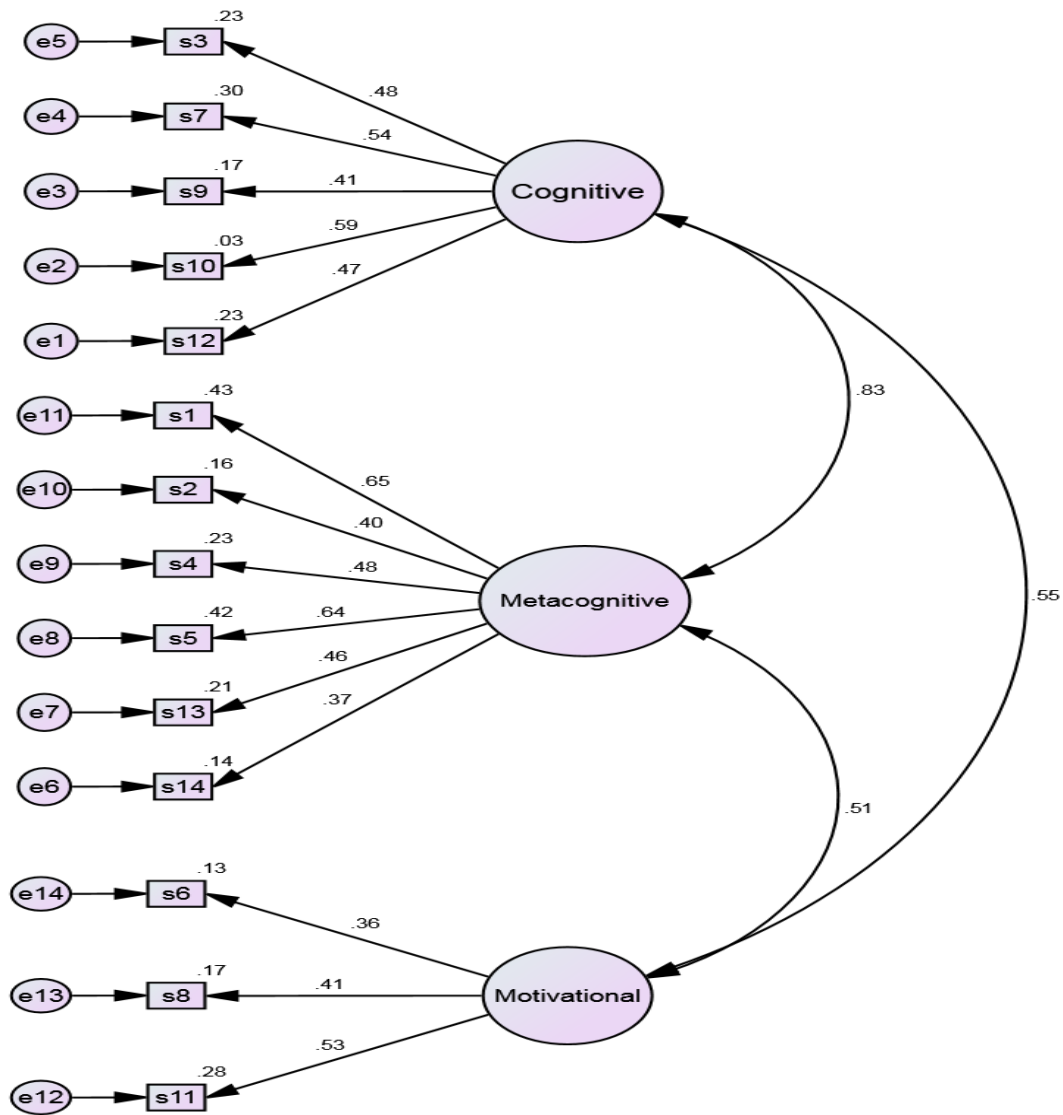


Figure 4: Standardized (β) Coefficients for CFA Analysis and Error variance for SRLS

Table 6: Goodness of Fit Indices of the SRLS before Revision

Fit index	Preference Value	Obtained value	Result
X^2 / degree of freedom	Nil	112.098	-
AGF	CFI	.981	GF
	AGFI	.985	GF
	NFI	.989	LF
	CFI	.985	GF
	RFI	.991	LF
	PNFI	.536	GF
SRMR	.08 ≥	.040	-
RMSEA	.08 ≥	.039	-
PFI	DF / X^2	2.198	LF
	Df	105	-
	P	.001*	GF

Significant at the .05 significance level (* $P < .05$) GF= Goodness of fitting; LF=Lack of fit

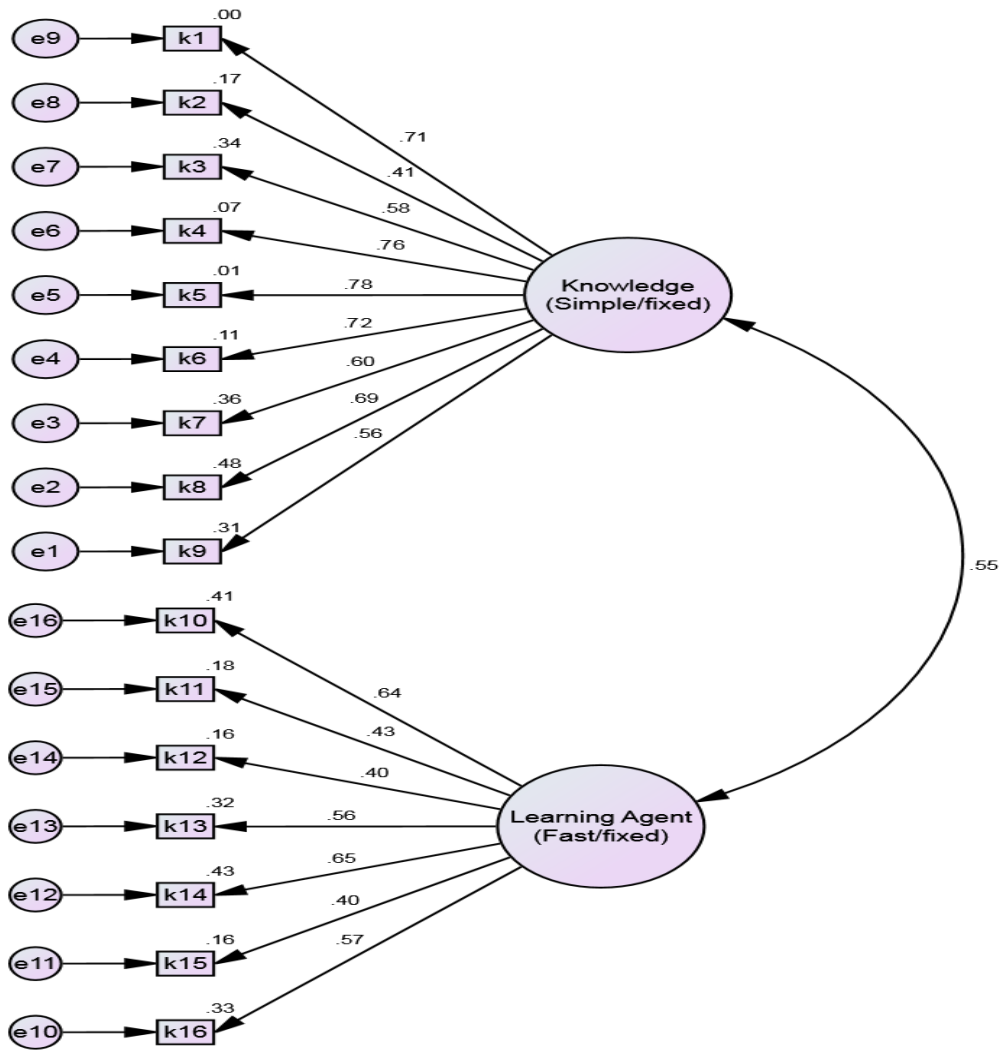


Figure 5: Standardized (β) Coefficients for CFA Analysis and Error variance for EBs

Table 7: Goodness of Fit Indices of the EBs before Revision

Fit index	Preference Value	Obtained value	Result
X^2 /degree of freedom	Nil	112.098	-
CFI	$\geq .90$	.990	GF
AGFI	$\geq .90$	.989	GF
NFI	$\geq .90$	.996	LF
CFI	$\geq .90$	.995	GF
RFI	$\geq .90$	.991	LF
PNFI	$\leq .5$	.536	GF
SRMR	$\geq .08$	.040	-
RMSEA	$\geq .08$	.033	-
DF/ X^2	≥ 3	2.198	LF
Df	\leq	62	-
P	$\geq .05$	.001*	GF

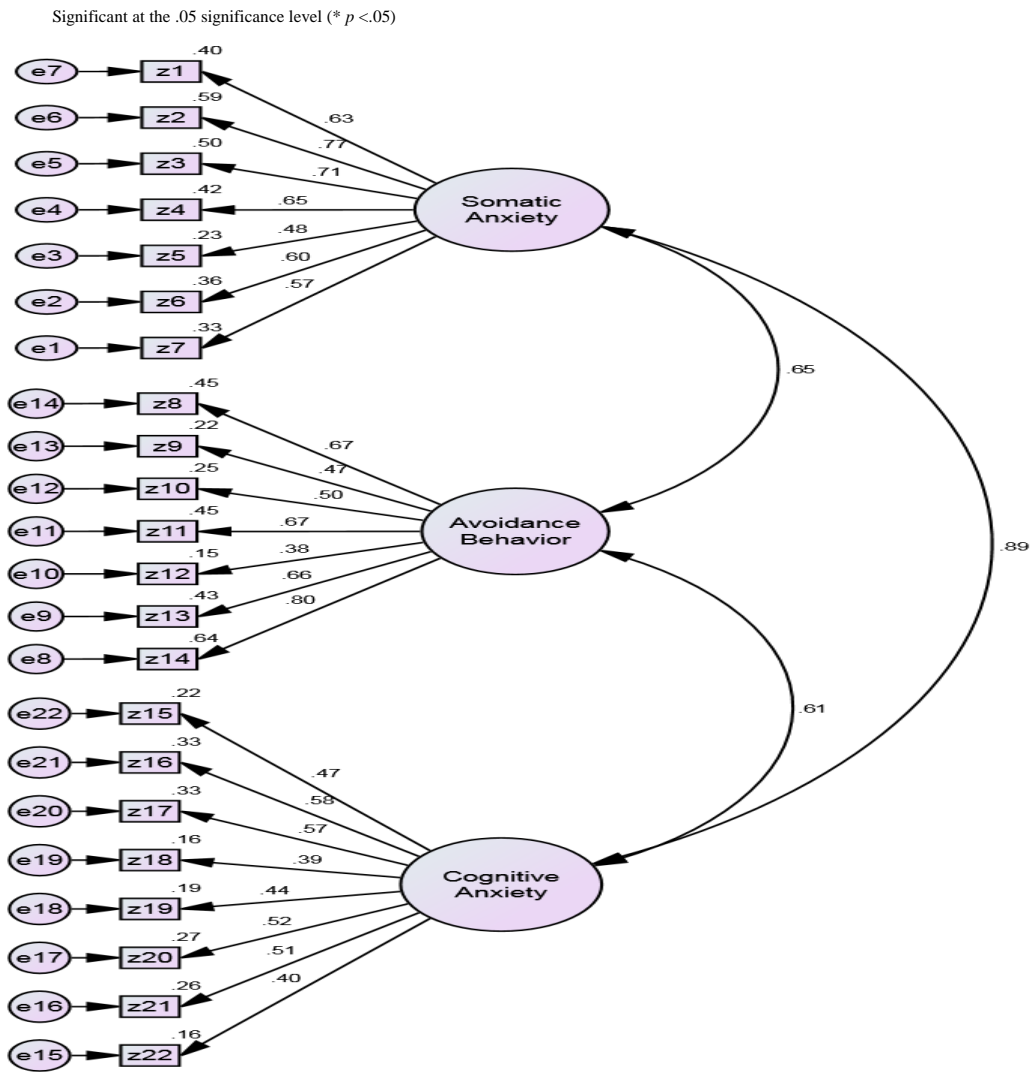


Figure 6: Standardized (β) Coefficients for CFA Analysis and Error variance for L2WA

Table 8: Goodness of Fit Indices of the L2WA before Revision

Fit index	Preference Value	Obtained value	Result	
X^2 /degree of freedom	Nil	222.357	-	
AGF	CFI	$\geq .90$	.979	GF
	AGFI	$\geq .90$	.991	GF
	NFI	$\geq .90$	.988	LF
	CFI	$\geq .90$	.995	GF
	RFI	$\geq .90$	.994	LF
	PNFI	$.5 \leq$	.511	GF
	SRMR	$.08 \geq$	.044	-
PFI	RMSEA	$.08 \geq$	.031	-
	DF/ X^2	$3. \geq$	2.679	LF
	Df	$. \leq$	128	-
	P	$.05. \geq$	.001*	GF

Significant at the .05 significance level (* $p < .05$)

The Standardized (β) coefficients for CFA analysis and error variance of the constructs indicated that the fid model were acceptable ($p > .30$). Notably, all the sub-factors in SRLS have the predictive power ($>.30$; $df = 105$; $RMSEA = .039$; $sig = .000$; $GFI = .985$; $CFI = .981$; $NFI = .989$). Measuring CFA for EBs confirmed that the factor loading of all subscales indicate good fit (i.e., $df = 62$; $RMSEA = .033$; $sig = .000$; $GFI = .989$; $CFI = .990$; $NFI = .996$; $p < .05$). Besides, all observed variables for the L2WA are indicative of acceptable model fit (i.e., $df = 128$; $RMSEA = .031$; $sig = .000$; $GFI = .991$; $CFI = .979$; $NFI = .988$). Notably, the value confirms that the factor loading of all subscales for L2WA reveal the fitness level for the corresponding model.

The second step for the analysis of the construct validity is to test the internal consistency of the items in the variables. To undertake the analysis, the convergent validity of the measurement model was examined by the average variance extracted (AVE) and CR. Fornell-Larcker (1981) suggested that CR index value should exceed .7, and the minimum AVE index values should exceed .5. Table 9 reveals the CR analysis for the EBs, SRLS, and L2WA.

Table 9: Composite Reliability Analysis for EBs, SRLS, and L2WA

No.	Construct	Cronbach Alpha	AVE ($p > .5$)	CR ($p > .7$)
1	K	.711	.521	.718
2	LA	.796	.630	.749
3	EBs	.782	.502	.752
4	CO	.742	.569	.743
5	ME	.803	.521	.778
6	MO	.786	.567	.712
7	SRLS	.810	.541	.766
8	SA	.769	.510	.824
9	CA	.682	.577	.715
10	AB	.726	.539	.763
11	L2WA	.775	.524	.784

The AVE and CR analysis revealed that all the measurement scales enjoyed internal consistency (*Cronbach's Alpha range* = .711 to .810) except for the scale which show relatively low test score reliability ($\alpha = .682$). With reference to the normality of the scales, Pearson correlation will be adopted as a parametric test. Before running the test, some basic assumptions for testing the correlational analysis is examined.

4.3. Testing of Assumptions for the Pearson Product Moment Correlation

In the next step, descriptive statistics and correlations among EBs, L2WA, and WSE were computed. The results between the constructs and underlying components have been illustrated in Table 10. The descriptive statistics and correlations between total EBs, total SRLS, and total L2WA indicated that there is a significant linear relationship at the significance level ($p < .01$). More precisely, there is a positive significant linear relationship between total EBs and total L2WA ($r = .35$, $p < .01$) and there is a negative interplay between total SRL and total L2WA ($r = -.31$, $p < .01$). As presented in the Table 10, the correlation between total EBs and L2WA is higher than the correlation between total SRLS and L2WA. The result implies that the high level of SRLS will facilitate L2WA. Moreover, the L2WA will increase as soon as their EBs promote.

Table 10: Descriptive Statistics and Correlations for EBs, SRLS, L2WA, and the Sub-factors

	C	M(SD)	1	2	3	4	5	6	7	8	9	10	11
1	K	24.39 (4.11)	1										
2	LA	19.05 (4.69)	.69**	1									
3	TEBs	42.63 (8.52)	.77**	.81**	1								
4	CO	13.27 (3.47)	-.24**	-.21**	-.25**	1							
5	ME	16.19 (3.90)	-.23**	-.22**	-.27**	.59**	1						
6	MO	9.86 (2.45)	-.21**	-.18**	-.23**	.63**	.73**	1					
7	TSRL	39.41 (7.22)	-.27**	-.26**	-.28**	.88**	.78**	.81**	1				
8	SA	17.29 (3.58)	.23**	.19**	.26**	-.20**	-.17**	-.21**	-.23**	1			
9	CA	20.47 (5.41)	.29**	.25**	.22**	-.19**	-.15*	-.18**	-.26**	.72**	1		
10	AB	18.13 (4.20)	.24**	.21**	.28**	-.22**	-.19**	-.20**	-.24**	.65**	.68**	1	
11	TWA	62.91 (11.78)	.33**	.28**	.35**	-.24**	-.22**	-.24**	-.31**	.81**	.73**	**86.	1

Note: C= Construct; TEBs= Total Epistemic Beliefs; TSRL= Total Self-regulated Learning Skill; TWA= Total Writing Anxiety * $p < .05$. ** $p < .01$.

4.4. Screening the Direct and Indirect Effect of EBs, and SRLS on L2WA

To uncover the significant role of EBs and SRLS in predicting L2WA, SEM was employed. This approach was adopted to investigate the overall model fit and to screen the predictive power of the independent variables on the dependent variable. At this step, the direct and indirect effects of EBs, and SRLS on L2WA were examined in the hypothesized model. Following Hu and Bentler's (1999) guidelines, different goodness of fit indices (e.g., χ^2/df , TLI, GFI, RMSEA, and CFI) were conducted for the examining of the adequacy of the model. Therefore, the preference value for each index was considered for the evaluation. Table 11 indicates GFI of the research variables after applying all modifications suggested by AMOS.

Table 11: Goodness of Fit Indices of the Research Variables after two Stepwise Correction

	Fit index	Preference Value	Obtained value	Result
	X^2 /degree of freedom	Nil	521.733	-
AGF	GFI	. \geq .90	.991	GF
	AGFI	. \geq .90	.989	GF
	NFI	. \geq .90	.987	GF
	CFI	. \geq .90	.996	GF
CFI	TLI	. \geq .90	.969	GF
	RFI	. \geq .90	.944	GF
	PNFI	. \geq .5	.531	GF
	RMSEA	.08. \geq	.035	GF
	X^2	3. \geq	2.805	GF
	Df	. \leq	142	-
	P	.05. \geq	.001	GF

*GF=Goodness of fitting

As indicated in the table 11, the mean square error of the revised model falls within the preference value ($RMSEA = .035$. $.08. \geq$). Besides, the Chi-square value ($X^2 = 2.805$) is between 1 and 3 preference value. In addition, the fit indices of the hypothesized model GFI CFI, and NFI are also all

above the critical point ($\geq .90$; $GFI = .991$; $NFI = .987$; $CFI = .996$). The model assessment indicated a good fit to the data. Accordingly, the revised measurement model was considered appropriate for the further analysis. Table 12 reveals the regression analysis and coefficients for the exogenous and indigenous variables.

Table 12: Regression Analysis and Coefficients^a for Exogenous and Indigenous Variables

Exogenous Variable	Direction	Indigenous Variable	Coefficients		t	Sig.
			Unstandardized	standardized		
			B	β		
EBs	→	L2WA	.457	.325	4.215	.001
SRLS	→	L2WA	-.380	-.240	3.437	.001

a. Dependent variable: L2WA

Table 12 reveals that the predictor variables (i.e., EBs & SRLS) have a low p-value ($p < .05$). This implies that the changes in the predictors/exogenous variables are connected to the changes in the response value. Specifically, the coefficients for EBs ($t = 4.215$, $p < .05$) and SRLS ($t = 3.437$, $p < .05$) are statistically significant. The results indicate that all the exogenous variables are the robust predictors of L2WA. Accordingly, the following directional hypotheses are proposed:

H₁₁: EBs directly affects students' L2WA.

H₁₂: SRLS has a significant direct effect on students' L2WA.

H₁₃: EBs with the mediating role of WSE has a significant indirect effect on the L2WA.

Next, MLE was investigated to examine if the path of EBs and SRLS have any direct effect on L2WA (See Table 13). MLE is a method of evaluating the parameters of a distribution by promoting a likelihood function (Hu & Bentler, 1999).

Table 13: Direct Maximum Likelihood Estimation for L2WA

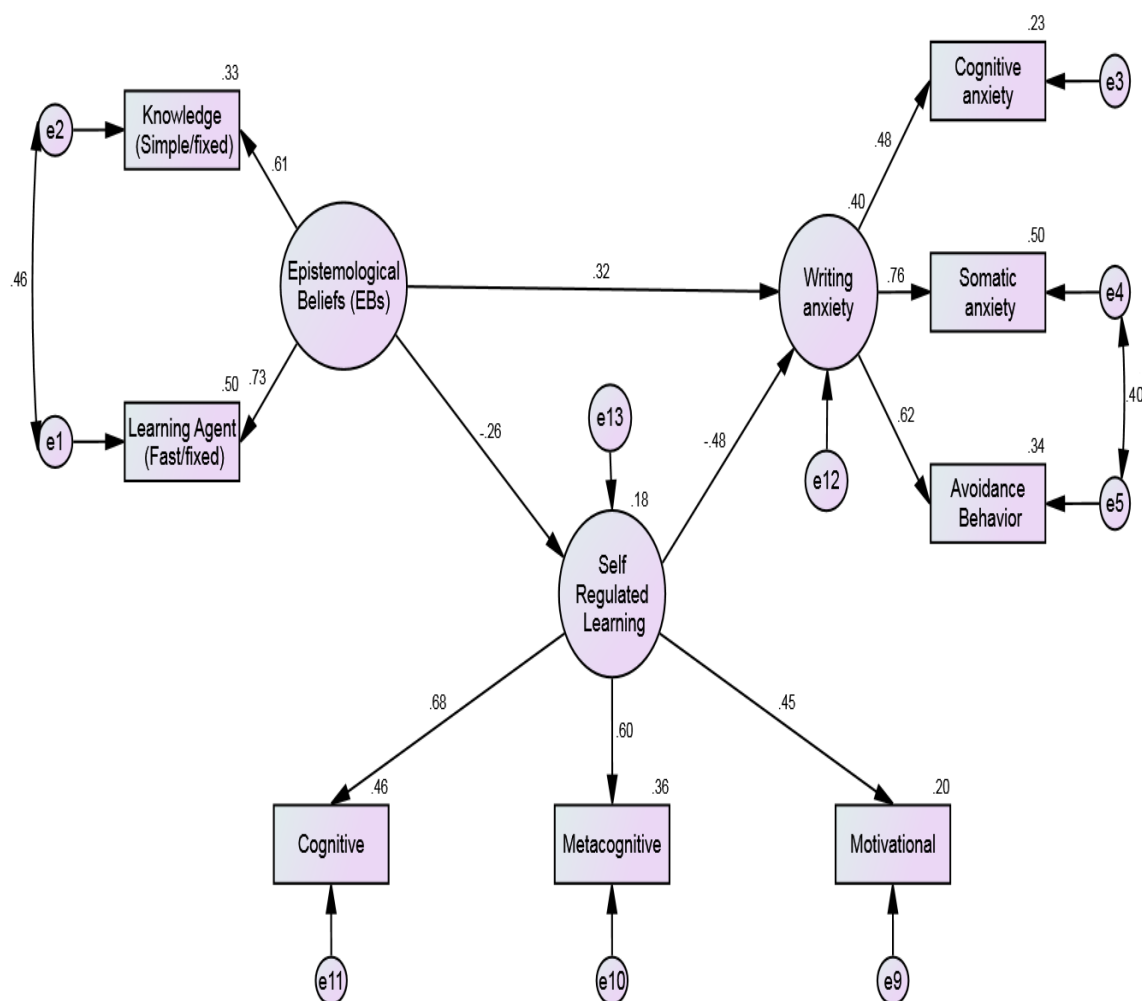
Variable	Coefficients		R ²	t	Sig.
	Unstandardized	Standardized			
	B	β			
EBs	.457	.325	.148	4.215	.001
SRLS	-.380	-.246	.093	3.437	.001

Table 13 reveals that the standardized coefficients for EBs, and WSE are (β EBs = .325; β SRLS = -.246), and (R^2 EBs = .148; R^2 SRLS = .093). The result yields a significant change. To simply put, the analysis shows that EBs increases L2WA and SRLS reduces the L2WA. The results obtained from standardized coefficients (β) and R^2 confirmed that the conceptual model proposed is statistically significant. Thus, the assumptions for the finalized research model between latent and observed variables have not been violated. To determine if the EBs indicate a reverse effect on L2WA with the mediating role of SRLS, bootstrapping regression model was employed (see Table 14).

Table 14: Bootstrap Estimate of Indirect Effect with Mediating SRLS

Variable	β	Lower Limit	Upper Limit	Sig.
EBs	-.487	-.6559	-.346	.000

With respect to standardized (β), unstandardized (b), R^2 ($\beta = -.487$, the lower limit = -.6559; upper limit = -.346), and the direction of EBs with mediating SRLS on L2WA, SRLS is a stronger predictor of L2WA than EBs. Figure 7 illustrates the finalized model tested with the standardized (β) and unstandardized (b) statistics.



Significant at the .05 significance level (* $P < .05$).

Figure 7: EBs and SRLS as the Predictors of L2WA for Direct and Indirect Paths

Figure 7 illustrates the direction in predicting L2WA with respect to EBs and SRLS. As indicated the Figure, EBs and SRLS along with the corresponding sub-factors have factor loading above ($>.30$). Besides, the co-variances in the sub-factors of EBs and SRLS enjoy acceptable fit indices for revising model. Figure 7 indicates that EBs had a significant direct effect on L2WA. Besides, EBs with the mediating role of SRLS had a significant indirect effect on L2WA. Therefore, it can be argued that SRLS serves as a partial mediator in the interplay between EBs and L2WA. The results reveal that the direct and indirect path could predict 40% of L2WA.

5. Discussion

Among the objectives of the current study was to test a model based on SRLS and EBs among EFL learners. The central point of significance for this study lies in the theoretical-conceptual model with the aim to predict L2WA. Notably, this study was set to examine the nature of the interplay among EFL learners' EBs, SRLS, and their writing anxiety. The results indicated that the independent variables (i.e., EBs & SRLS) yielded a significant effect on an L2WA. The analysis showed the direct and indirect effect of EBs and SRLS on L2WA and its subsequent effect on writing performance of the students. Results revealed that some of the components of SRLS were predictors of L2WA. In the present study, SRLS comprised three sub-factors of cognitive, metacognitive and motivational strategies. The results of correlational analysis revealed that metacognitive, cognitive, and motivational strategies were the best predictors of L2WA respectively. Furthermore, the results

revealed that EBs has a significant and positive relationship with L2WA. For this study, EBs included two sub-scales of knowledge and learning agent. The correlational analysis revealed that both components can increase WA. In sum, the finding affirmed that there is a positive significant linear interplay between the sub-factors of total EBs and total L2WA, and there is a negative relationship between total SRLS and total L2WA. The result reveals that the high level of SRLS will aid learners reduce their L2WA. Moreover, the results revealed that students will experience L2WA when their EBs increases. Notably, the learners who have a high sense of EBs can elicit anxiety and stress that could debilitate writing performance. In other words, this evidence shows that a high level of EBs makes L2WA among EFL learners. Notwithstanding, the correlational analysis revealed that SRLS were better predictor of L2WA than EBs.

From theoretical and empirical perspective, L2WA can impede L2 writing, and thus affect the writing quality and performance. From a theoretical perspective, students who experience a high level of L2WA are unwilling to write, whereas those who have low level of L2WA are perceived to approach writing effectively (Chenge, 1999; Tsao et al., 2017; Hassan, 2001). From empirical perspective various practitioners (e.g., Gregersen, 2020; Yang et al., 2019; Zimmerman & Campillo, 2003) confirm that students with high anxiety in writing seem to not to write long essays, unwilling to promote their writing performance, hold low level of EBs, and employ less self-regulated strategies. This aspect is endorsed by the findings of this study that the learners with high L2WA revealed poor writing performance, whereas, those with low anxiety used more SRLS. Different factors (e.g., sample size, socio-cognitive, socio-cultural context, motivation, and language proficiency level) might have contributed to the findings obtained in this study. This finding is in line with Bandura's (1986, 1997) model of SRL. This model supports a need for the adaptive beliefs such as EBs, and SRLS. Notably, this model indicates a need for interaction among personal factors and learners' beliefs. This finding echoes Bandura (1986) model of triadic reciprocally. Likewise, the results support Zimmerman (1986) who proposed the interplay among strategies to control personal beliefs, behavior, and skills to aid learners in their self-regulated learning. Findings are in line with the past researches pinpointing that student's SRLS and EBs are connected to their L2WA (Bandura, 2011; Cheng, 2004; Weiner, 1992; Zimmerman, 1986). The findings echo different body of studies (Chenge, 2020; Lui & Yuang, 2021) that indicate the relationship between EBs and the use of SRLS. They found that different internal and external factors such as low epistemic-beliefs, low self-efficacy, low self-motivation, high L2WA, and low SRLS can affect learners' writing performance. In line with their findings, the present study indicated that the degree of learners' EBs and SRLS influence the degree L2WA. In line with some studies (e.g., Golombek et al., 2019; Sun & Wang, 2020), the hypothesized model predicted that high L2WA can debilitate writing achievement. Similarly, some empirical works (e.g., Shirzad et al., 2020; Yang et al., 2019) indicated that the level of learners' EBs affects the type of strategies they utilize in language learning. The findings are in agreement with those of Liu and Yuang (2021) who concluded that the degree of writing self-beliefs can lead anxiety experience among students. Likewise, the present study revealed that the level of learners' beliefs leads L2WA. This finding reflects some recent works on learners' belief in that the beliefs hold by the learners influences their performance in the language skill (Barjesthe & Niknezhad, 2020; Cheng, 2020; Liu et al., 2019; Shirzad et al., 2020; Zhu et al., 2021).

Moreover, some theoretical models and empirical works (e.g., Hofer, 2016; Schommer, 1990) confirmed that there is a significant interplay between EBs and learners' academic performance. In fact, the L2 professional literature have highlighted that the beliefs hold by the learners can affect their performance. Notably, they found that students employ fewer strategies when they have high level of EBs. Specifically, the results support Schommer's (1990) theoretical framework who suggested that different beliefs hold by the learners affect learners' academic achievement and psychological factors. Among the dimension of EBs, all the sub-factors of EBs were the positive predictors of L2WA. It signifies if learners believe that scientific results are separate, absolute, objective and error free, their academic achievement will be lower. Moreover, if they believe the learning ability innate and invariable, and they consider that learning occurs quickly, they will have lower academic achievement. This is in tandem with the view that "if students consider the learning

ability inherent and unchangeable" they will refrain from maintaining activities (Pakdaman et al., 2013).

Among the dimension of SRLS, all the sub-factors of SRLS were the negative predictors of L2WA. The results showed that there is a negative nexus between SRLS and L2WA. It denotes that if the cognitive, metacognitive, and motivational strategies of self-regulation are high, their academic achievement will be higher. For the purpose of the current study, the findings showed that if learners employ different cognitive, metacognitive, and motivational strategies of self-regulation, they will have less L2WA. This finding verifies the findings of some studies that indicate SRL promotes academic achievement (e.g., Pintrich, 1994; Pintrich & Schunk 2002; Zimmerman, 1986). They found that learners who have higher academic achievement can employ SRLS successfully. Similarly, this study found that the high level of SRLS will debilitate learners' L2WA. It can be argued that higher degree of SRLS in writing skill felt by students can promote writing performance in general, and reduce L2WA, in particular. This is consistent with the findings of a various studies (Liu & Yuang, 2021; Shirvan & Taherian, 2021) reporting that high degree of L2WA may lead to the low writing quality. More particularly, the WA is a stronger predictor of students' quality of writing. It may be argued that students who creatively employ different SRLS can experience less L2WA. Accordingly, they will write a better writing performance as far as the quality of writing is concerned. Moreover, the findings are in agreement with some studies (e.g., Cheng, 2020; Zimmerman, 1986; Weiner, 1992) that report that self-regulated learners have motivation for language skills. The findings supported the theory proposed by Zimmerman and Moylan (2009) who claimed the self-regulated students have higher performance in learning. Likewise, Pintrich and Schunk (2002) found that self-regulated learning, facilitate academic achievement. They postulated that learners who employ different SRLS have higher academic achievement. Therefore, they can use different strategies in coping with the situations.

6. Conclusion and Implications

This study has uncovered several effective paths for the role learners' beliefs and self-regulation in writing skills. Notably, this study examined a model based two variables (SRLS & EBs) in predicting L2WA in the classroom. Thus, the interrelationship among the sub-factors of SRLS, EBs, and L2WA comprising eight dimensions were tested using SEM approach. In general, some conclusions and implications can be drawn from the findings of this study. In this context, this study has revealed that SRLS, EBs, and L2WA have a significant direct or indirect impact on L2 writing performance. Both positive and negative interplay was found among the target variables. More particularly, the positive interconnection obtained between the components of EBs and three sub-factors of L2WA. Furthermore, the negative relationship was found between the sub-factors of SRLS and TL2WA. All in all, it has been confirmed that promotion in SRLS of EFL learners in their writing skill is connected to the enhancement in their writing quality. Notably, SRLS had a unique contribution on L2WA. It was revealed that SRLS turned out to be a stronger predictor of L2WA. Likewise, the more self-regulated oriented students demonstrated a less L2WA approach to the writing performance. In particular, the high level of SRLS promotes EFL learners' writing performance and reduces their L2WA. However, high level of EBs debilitates writing performance. A straightforward conclusion for this variable (i.e., EBs) denotes that when students believe learning ability is inherent and unchangeable, they do not attempt to learn. Accordingly, it will increase their L2WA. This conclusion is in tandem with the hypothetical predictions illustrated in the model that emphasizes the working together of SRLS and EBS to influence L2WA. A general conclusion for the current study is incorporating a focus on SRLS into EFL classroom, in general, and L2 writing classroom, in particular.

Concerning the pedagogical implications of this study, the findings suggest EFL practitioners, materials developers and language teachers to instruct various self-regulatory strategies to abate L2WA. Writing is considered as one of the most anxiety breeding activity among L2 learners and if the cognitive, metacognitive and motivational dimensions of the SRLS are not introduced to the students, their experience L2WA. Accordingly, the inclusion of SRLS in writing classroom and different writing textbooks can foster learners' active participation in the writing process by reducing

their anxiety in writing task. Therefore, it is recommended that there should be programs to systematically train SRLS and to foster learners' SRLS by adopting a practical course of actions in writing classrooms with the hope to cope with stressful situations and facilitate affective factors in writing process.

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8. Declaration of Conflicting Interests

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