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# Critical Thinking Skills, Academic Resilience, Grit and Argumentative Writing Performance of Iranian EFL Learners

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The significance of positive psychology constructs in second language learning and teaching is currently being emphasized by many L2 scholars. The present study intended to investigate the relationship between a set of positive psychology variables (namely, critical thinking, academic resilience, and grit) and the argumentative writing performance of 48 Iranian EFL learners. The data were collected based on the students' responses to an argumentative essay writing prompt and the instruments measuring their status in critical thinking, academic resilience, and grit. The coefficient of correlation indexes indicated rather low associations between argumentative writing performance and these constructs. Multiple regression pointed to the superiority of subscales targeting affective aspects and emotion regulation in accounting for the argumentative writing performance of the learners. Nevertheless, despite the superiority of high-skilled writers compared to moderately-skilled and less-skilled writers in critical thinking, academic resilience, and grit, MANOVA results indicated no statistically significant differences among these groups of learners in these variables. Finally, it was concluded that since these positive psychology constructs are responsive and amenable to instruction, some appropriate pedagogical interventions, materials, and activities must be designed to improve the students' competence in these constructs which, in turn, can positively influence their performance on rather challenging academic tasks.

**Keywords:** *Argumentative writing, Positive psychology, Critical thinking, Academic resilience, Grit*

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## 1. Introduction

Due to the expanding role of English as a medium of scientific and professional transaction in the globalized world, many individuals have felt the need to improve their L2 writing competence (Matsuda et al., 2009). The research on L2 writing has gained the status of an interdisciplinary field of inquiry using insights from psychology, cognitive science, education, etc. (see Leki et al., 2010; Polio & Friedman, 2017). Empirical research on L2 writing covers a wide range of topics and researchers have investigated various aspects of writing such as the underlying processes involved in the act of writing, students' problems in writing, the procedures and interventions that can be used to teach and assess writing, and so on (Guan et al., 2013). More specifically, researchers have investigated the role of a variety of factors (namely, learners' language proficiency level, writing strategy use, educational background, literacy development, experiences in learning writing, knowledge of the writing process, writing beliefs, attitudes and motivation, self-efficacy, self-regulation and a variety of other internal and external constructs) that can influence the learners' writing performance, can distinguish the performance of high- and low-achieving learners and enable them to reach higher levels of academic development (see e.g., Matsuda et al., 2009; Sasaki, 2011; Zhang et al., 2015). Nevertheless, it is maintained that the findings of studies regarding the facilitative or inhibiting impacts of the variables explored on the students' writing performance are rather mixed and diverging (e.g., Gustilo & Magno, 2015; Kormos, 2012). Accordingly, the trend in conducting research for identifying and studying the variables that can explain L2 writing performance and achievement is continuing (Casanave, 2012; Gustilo & Magno, 2015). A new trend is the incorporation of insights from the field of positive psychology into L2 writing research in order to investigate the role of personality traits that help individual learners sustain their motivation while facing difficulties and master and flourish in the L2 learning process (MacIntyre, 2016). It is believed that these psycho-social factors can determine the level of students' cognitive engagement and the efforts they invest in the writing process (Han & Hiver, 2018). Accordingly, the consideration of these variables in the students' performance on the argumentative writing tasks which are highly challenging can be rewarding.

Argumentative writing has an analytic rhetorical structure and necessitates the use of critical evidence to support a position (Applebee, 1984). The ability to write argumentative texts of high quality is an indication of the students' problem-solving capacity and their ability to think independently and critically to logically defend their positions as essential skills to play an active role in society (Hisgen et al., 2020). Many students struggle to develop the skills needed for generating high-quality arguments (Allen et al., 2019; Noroozi et al., 2023), and most of the written arguments do not have effective evaluative standards,

lack adequate supporting proofs, and fail to consider alternative perspectives or counterarguments, which necessitates designing interventions to resolve the problematic areas and improve the quality of students' written arguments (Ferretti & Lewis, 2019). In fact, this genre of writing demands that students adopt a critical perspective and exert an adequate level of determination and effort to present a satisfactory argumentative text. In the same regard, the present study focuses on a number of positive psychology variables and personality traits (namely, critical thinking skills, academic resilience, and grit) that might play a role in the students' critical predispositions and determination while working on the argumentative genre of writing. In fact, except for the critical thinking construct, the role of academic resilience and grit in EFL writing has not been well-explored and the present study intends to shed some light on the possible influence of these positive psychology constructs on the argumentative writing performance of Iranian EFL learners. More specifically, the present study intends to answer the following research questions:

1. Are there any statistically significant relationships between critical thinking, academic resilience, grit, and argumentative writing performance of Iranian EFL learners?
2. Which sub-scales of critical thinking (analysis, inference, evaluation, inductive and deductive reasoning), academic resilience (perseverance, reflective and adaptive help-seeking, negative affect and emotional response), and grit (perseverance of effort and consistency of interest) can best predict the argumentative writing performance of Iranian EFL learners?
3. Are there any significant differences between High-skilled, Moderately-skilled, and Less-skilled student writers in their level of critical thinking, academic resilience and grit?

## **2. Literature Review**

### **2.1. Positive Psychology and L2 Learning**

Positive psychology studies how human beings adopt defending mechanisms, use perseverance and resilience and prosper while facing adversity (Seligman & Csikszentmihalyi, 2000). It addresses three important areas: the mechanisms for positive emotional experiences, personality traits required for living well, and institutions empowering individuals to flourish (MacIntyre & Mercer, 2014) not disregarding negative emotions and problems (Mercer & Gregersen, 2023). In fact, positive psychology, by establishing a balanced view of lived experiences, emphasizes the dialectic relationship between positive and negative emotions and intends to equip individuals with the skills and competencies required for human flourishing (Sulis et al., 2023).

According to MacIntyre (2016), the application of positive psychology to education has gone through four stages: (1) the switch from negative emotions and miseries like anxiety, apprehension, burnout, and distress to positive emotions like empathy, resilience, optimism, contentment, engagement, tolerance, etc.; (2) introduction of character strengths model delineating how L2 teachers and students can flourish and reach personal development by strengthening their character virtues like humanity, justice and wisdom; (3) development of EMPATHICS model for understanding well-being incorporating personality traits like empathy, motivation, perseverance, autonomy, intelligence, and character strengths (Oxford, 2016); and (4) re-emphasis on the concept of flow, as a positive condition of well-being that facilitates individual students' proper functioning and engagement with the learning task.

Positive psychology characteristics play a more significant role in language learning than other subjects since this endeavor is a complex and challenging undertaking that necessitates the application of psychological mechanisms such as motivation, self, communication and identity (MacIntyre et al., 2019). Second language educators are also concerned with developing individual learners' perseverance, resilience, motivation, and positive emotional experiences as necessary factors for the complex process of foreign language learning which is viewed as "a profoundly unsettling psychological proposition" (Guiora, 1983, p. 8). In fact, the students' success in learning a second/foreign language depends not only on the learners' effort and perseverance but on also their psycho-emotional status (MacIntyre & Mercer, 2014; Prior, 2019). Inspired by the positive psychology movement which emphasizes the significant role of positive emotions and behaviors in enhancing the performance of students and teachers, many L2 researchers and practitioners have started to investigate the role of personality traits and emotions that can influence teachers' and students' academic performance (e.g., Derakhshan et al., 2022; Dewaele & Li, 2021; Fan & Wang, 2022; Li & Wei, 2022; Liu & Chu, 2022; Mercer, 2020; Mystkowska-Wiertelak, 2021; Soozandehfar, 2021; Wang et al., 2021).

Among the L2 skills and components, performance in writing is entangled with emotions since students must fully invest their sense of self while engaged in the composing process (Byrd & Abrams, 2022). Despite the significance of emotional engagement in L2 writing, many L2 teachers ignore the emotional aspect of writing which is because of the L2 teaching profession's emphasis on cognition over emotion (Swain, 2013). In reality, cognition and emotion are deeply interwoven and can lead to deep learning (Dewaele & Li, 2020; Oxford, 2016). In fact, it is believed that some psychological variables can influence the degree of learners' engagement and investment in the writing process and the quality of final written drafts (Piniel & Csizér, 2015). Against this background,

the following sections elaborate upon the theoretical and practical significance of three psychological constructs, namely critical thinking, academic resilience and grit, in L2 learning, in general, and L2 writing performance, in particular.

## **2.2. Critical Thinking**

Critical thinking (CT) is an important psychological construct that can influence the quality of the personal and social lives of individuals. It involves a combination of higher-order cognitive skills and personal dispositions required for making a conceptual and evidential judgment). Many researchers have indicated that this construct plays a key role in the individual's personal life, professional work, and academic performance (e.g., Barry et al., 2020; Liu et al., 2021). In the case of second language learning, the learners face a completely new system in terms of structure, ideas, and conventions and it might be difficult for them to cope with the bulk of issues in the process of learning. The critical evaluation of the context in which the students are learning, the content and materials they are working with, teachers' instructional methods and practices, nature and demands of the subject being taught, their own appraisal of their capacities and competencies for learning and management of their actions and behaviors in the learning process can assist them in having a more rewarding learning experience. In addition, Li and Liu (2021) maintain that there is a reciprocal relationship between critical thinking and foreign language development, believing that the studies conducted in the domain of language learning have the potential to enhance and facilitate effective thinking skills like critical thinking.

Among the skills and components of language, mastering writing skills is considered the most complicated one and it is highly dependent upon the learners' cognitive resources. Good writing is connected to and demands good thinking (Preiss et al., 2013) since it is believed that critical thinking is implicated in writing. Barnawi (2011) highlights the necessity of critical thinking in L2 writing in the processes such as analyzing evidence and facts, producing and organizing the necessary ideas, making judgments and comparisons, evaluating arguments, and solving problems. Students must also engage in critical thinking to regulate their performance in various stages of the writing process (Teng et al., 2022). Students use various critical thinking resources while engaged in the process of writing: conceptualizing, analyzing, synthesizing, evaluating, and applying information (Rahmat, 2020). Many studies have found positive correlations between the L2 learners' critical thinking skills and their writing performance (Neimaoui, 2019; Renatovna & Renatovna, 2021), indicating that those individuals who benefit from a higher status of critical thinking skills experienced higher levels of improvement in their writing abilities (Esmaeli Nejad et al., 2022; Golpour, 2014; Taghinezhad et al., 2018). It is also believed that writing can improve students'

learning and critical thinking. Not all L2 learners are able to write professionally and analytically and further investigations must be conducted to see whether or not the students' level of critical thinking can influence their argumentative writing performance that demands higher-order thinking skills like critical evaluations to generate content and arguments that they can defend stances/positions and draw conclusions, reasons to support beliefs and assertions, evidence (including personal experience and facts, citing authorities and researchers, etc.), to support and strengthen arguments, recognition of oppositions and identification of shortcomings and fallacies in the arguments (Stapleton, 2002). Conducting a new study exploring the relationship between these two constructs is warranted on the ground that critical thinking skills are criticized as not being fostered in university education (McKinley, 2013) and little attention has been directed toward the role of critical thinking in the students' writing performance (Esmaeli Nejad, et al., 2022). Recent advances in the field of critical thinking have also experienced a new interest in EFL students writing performance (Renatovna & Renatovna, 2021). Conducting such studies can have theoretical and practical implications for teaching argumentative writing at university levels because it is believed that the successful presentation of an argument and the appropriate transmission of ideas and intentions demand the application of critical thinking resources.

### **2.3. Academic Resilience**

Academic or educational resilience is a multidimensional context-specific dynamic construct that emerges as a set of positive adaptive strategies that the students can use in the context of adversity or challenges in the path of their educational development (see e.g., Cassidy, 2016; Martin, 2013). It is defined as the faculty for successful adaptation while performing in challenging circumstances (Masten et al., 1990). This construct is associated with personal characteristics or predispositions like self-efficacy beliefs, self-regulation, personal and social structure and competence, commitment, tenacity, endurance, adaptability, control, composure, coordination, problem-solving, strategy use, social support, family cohesion and so on (Cassidy, 2016; Connor & Davidson, 2003). The research studies conducted to investigate the relevance and significance of this psychological construct to education have confirmed the positive impact of resilience and the interventions performed to enhance its level on the students' academic achievement (Cheng & Catling, 2015; Martin & Marsh, 2006).

Language learning and teaching are challenging and mentally draining tasks and teachers and students must be resilient enough to cope with the challenges and turn them into opportunities for their development. Resilience is an individual difference variable that can increase L2 learners' stamina for surpassing critical difficulties they encounter in the long and complex process of L2 learning (Kim

& Kim, 2016). Previous research has indicated that resilience has the potential to influence L2 learners' success in the learning process (Zarrinabadi et al., 2022). It is believed that by exposing the learners to protective and enabling factors and developing their positive repertoire of cognitive, affective and behavioral strategies, they can become more academically resilient (Edwards et al., 2016; Martin & Marsh, 2006) while facing difficulties or performing on challenging tasks like writing argumentative essays whose completion demands understanding of various move structures and genre features. While working on this genre of writing in classrooms, the students, besides considering the conventions and principles of academic writing, are expected to critically evaluate their arguments and supporting evidence, address the counterarguments or opposing perspectives and provide a response for them, and satisfy the linguistic and rhetorical demands of the tasks, which make the writing process quite challenging (Ferretti & Fan, 2016). More specifically, in argumentative essay writing, the writers have a sense of adversary and must either refute or concede to a set of counterarguments to support their own ideas and by bringing strong evidence make their own argumentative propositions more acceptable and believable to their intended readers.

Since students experience many linguistic, cognitive and psychological problems while writing argumentative essays (Beckett & Kobayashi, 2020) and this genre poses rhetorical challenges for the students (Abdollahzadeh et al., 2017; Mallahi & Saadat, 2018), L2 writing teachers must help develop resilience in the classrooms by organizing the task sequences in a manner that facilitates learners' success in completing the writing, offering scaffolding and dialogic mediation for applying writing strategies, providing good resources and exemplary text models for learners to follow, reviewing the particular rhetorical structure and necessary vocabulary and grammar, aiding the students in generating and developing ideas, providing them with quality feedback and mechanisms to complete the task with confidence, creating opportunities to help them develop cognitive flexibility, respecting the individuality of each learner and treating them as whole persons with feelings and emotions and providing a caring and compassionate learning environment to help them improve their personal competencies (Byrd & Abrams, 2022). Being a highly important and eminent concept, resilience needs further attention and demands exploration of its potential contributions and outcomes in language-related literature, in general, and second language writing scholarship, in particular.

## 2.4. Grit

Grit is a psychological construct that is related to the learners' "perseverance and passion for long-term goals" (Duckworth et al., 2007, p. 1087) that can influence their mindset and perceptions with regard to their learning capabilities. The grit construct is similar to the concept of resilience since both constructs focus upon the students' perseverance in the face of difficulties and resistance against failure. However, as Perkins-Gough (2013) maintains, grit entails deep commitment and loyalty over the years. As a higher-order construct, grit is related to some other psychological variables or personality factors such as conscientiousness and industriousness. More specifically, it includes two main aspects: perseverance of effort (POE) which refers to working hard and sustaining effort while facing challenging situations, and consistency of interest (COI) which emphasizes maintaining interest despite facing failures and setbacks (originally introduced by Duckworth et al., 2007; Duckworth & Quinn, 2009).

The key feature of grit is its positive response to the intervention and instruction conducted in the classrooms (i.e., malleability) (Clark & Malecki, 2019) whereby teachers can prepare the learners to provide appropriate responses to the challenges and difficulties they face in the learning process. It is believed that this construct can play a significant role in accounting for the individuals' performance and commitment to attaining goals in domain-specific and domain-general and academic and non-academic areas (Robertson-Kraft & Duckworth, 2014). Due to its positive social impacts, this construct has been applied in various life contexts such as education, workplace, entrepreneurship, schools, business, healthcare, military, e-learning and marriage (see e.g., Arco-Tirado et al., 2019). The past research has suggested that grit, as a positive personality disposition, can predict educational attainment and success better than cognitive ability (Paradowski & Jelińska, 2023). In addition, a number of studies have found a positive association between grit and L2 proficiency and achievement (Wei et al., 2019), vocabulary and reading tests (Kramer et al., 2018), and other related constructs such as self-efficacy, intended effort, persistence, attention, willingness to communicate, language mindset, academic motivation and engagement (Feng & Papi, 2020; Khajavi et al., 2021; Oxford & Khajavi, 2021).

On the whole, grit is considered as one of the fundamental variables in the extended and challenging process of L2 learning that requires a high level of stamina and dedication on the part of learners (Pawlak et al., 2020). Consequently, it deserves more systematic investigation with regard to students' performance on various language skills like writing which is considered as the most complex and demanding language skill to master and be competent in. Since grit can assist the students in sustaining their attempts despite the distress,



challenges and complexities, its resources can be used while students are engaged in writing argumentative essays which are quite challenging for EFL students (Abdollahzadeh et al., 2017) and thus warrants further investigation. Parts of the students' problems in writing argumentative writing are attributed to their lack of critical thinking, low motivation, low self-esteem, lack of interest, low mood condition and fear of making mistakes (Beckett & Kobayashi, 2020; Ghanbari & Salari, 2022; Saputrai et al., 2021; Shahriari & Shadloo, 2019), which can be compensated by psychological resources like grit and academic resilience that can help students overcome difficulties. Consequently, as Oxford and Khajavei (2021, p. 30) suggested "L2 grit researchers should continue pursuing their intensive investigations of grit," the present disquisition intends to investigate the role of these constructs in the argumentative writing performance of EFL learners.

Despite the existence of a large body of research on the significance of positive psychology constructs in L2 learning, our understanding of the contribution of some of these constructs (especially academic resilience and grit) to L2 writing, which is a complex process replete with challenges and difficulties, is only just developing and needs conducting further explorations. Because EFL students experience many difficulties in writing argumentative essays (Abdollahzadeh et al., 2017; Dastjerdi & Samian, 2011; Lee & Deakin, 2016; Saprina et al., 2021), engagement in this task demands flexibility and application of higher-order thinking skills and coping strategies. In the same vein, the present study intended to investigate the role of critical thinking, academic resilience and grit, as positive psychology constructs, in the writing performance of a group of Iranian EFL learners as it is assumed that such constructs can influence the learners' level of engagement and investment in the writing process and, thus, can significantly enhance their L2 writing performance and competence (Piniel & Csizér, 2015).

### **3. Method**

#### **3.1. Participants**

The present study was conducted at the University of Hormozgan, a State University in the south of Iran. A total of 48 junior and senior students of TEFL from two intact classes took part in the study. The average age of the participants was between 20 to 24 and they were from both genders (37 females and 11 males) and from a variety of ethnic and educational backgrounds. Their language proficiency level ranged from intermediate to advanced, which such heterogeneity is common in most Iranian EFL classrooms, especially in the universities far from the center of the country. These groups of students were conveniently and purposefully selected from two essay writing classes in the university and after being informed about the objectives of the study, willingly participated in

the online data collection session and completed the assigned writing task and responded to the questionnaires. These students have already passed advanced and essay writing courses as requirements for getting a BA degree in TEFL and were quite familiar with the conventions of argumentative essay writing. As for the instruction on argumentative writing, the students had benefited from a genre-process approach. They were taught the rhetorical structure of the argumentation and became familiar with the moves and strategies needed for writing different sections of an argumentative text.

## **3.2. Materials and Instruments**

### ***3.2.1. Measure of Writing Performance***

The students were required to write a 300 or more-word argumentative essay on the following topic taken from IELTS academic module writing task: “*Some students prefer to study individually and others prefer to study in a team of students. Which one do you prefer and why? Provide adequate evidence and explanation for your response*”. In the prompt given, they were informed that they have 40 minutes to write the essay and also their performance will be analytically scored in order to give a clear picture of their performance in various aspects of writing. After completing the tasks, the students’ argumentative essays were analytically scored by two raters using a modified form of an argumentative essay rubric (cited in Naznin, 2018) including eight criteria each receiving 5 points: claim (ideas and organization), opposing claim, evidence, refutation, word choice and sentence fluency, style (voice), concluding statement, and conventions, usage and mechanics. This rubric had been developed based on The 6+1 Trait Writing model (Culham, 2003). The average score from the two raters’ scoring practice was considered as an index of the students’ argumentative essay performance according to which the students were categorized as High-skilled (scoring 30-40, N = 13, 25%), Moderately-skilled (scoring 20-29, N = 20, 38.5%) and Less-skilled student writers (scoring below 20, N = 19, 36.5%).

### ***3.2.2. Critical Thinking Test***

The critical thinking questionnaire developed by Honey (2004) was used to determine the critical thinking level of the students in the present study. This instrument has 30 items exploring the things learners might or might not do while critically thinking about a subject. The responses were in the form of Likert scale ranging from never (1) to always (5). This instrument measured the extent of analysis, inference, evaluation, inductive and deductive reasoning by targeting micro-skills of questioning, inferencing, classifying, outlining, researching, discussing, comparing and contrasting, distinguishing, note-taking, paraphrasing,

summarizing and synthesizing more effectively (Golpour, 2014). The reliability index obtained for the questionnaire was .85 Cronbach's alpha which is satisfactory for the purpose of the present study.

### **3.2.3. Academic Resilience Scale**

The academic Resilience Scale (ARS-30) developed by Cassidy (2016) was used to measure the resilience level of university students based on their (non-) adaptive cognitive and affective (i.e., attitudinal) and behavioral responses to a specific instance of a hypothetical, but rather authentic, academic adversity case. This scale is based on self-efficacy and self-regulation principles of learning and targets the students' predispositional attributes with regard to the following subcategories: perseverance with 14 items, reflecting and adaptive help-seeking with 9 items, and negative affect and emotional response with 7 items. After being exposed to a short vignette representing an instance of academic challenge and struggle, the students were required to imagine themselves as the participants experiencing the adversity portrayed in the vignette and respond to the items of the academic resiliency scale comprising 5-point Likert scale responses ranging from likely (1) to unlikely (5). Cassidy (2016) ensured the validity and reliability of this measure and Cronbach's alpha indexes were acceptable for the three factors: perseverance = 0.83; reflecting and adapting help seeking = 0.78; and negative affect and emotional response = 0.80. In the present study, the reliability index for this instrument was .76 Cronbach's alpha.

### **3.2.3. Grit Scale**

The short grit scale (Grit-S) designed by Duckworth and Quinn (2009) was used in the present study. It totally includes eight items: 4 items measuring perseverance of effort (POE) and 4 items for consistency of interest (COI). The four items of COI were reverse-coded so that a larger value shows higher COI. As for the reliability of the Grit scale, the Cronbach's alpha for the items of consistency of interest ranged from .73 to .79, and for the items of perseverance of effort the values ranged from .60 to .79. The factor analysis and SEM analysis also supported the two-factor grit model and provided satisfactory fit indexes, respectively (Khajavi, et al., 2021). The estimated reliability index for this instrument in the present study was .64 Cronbach's alpha.

## **3.3. Procedures of Data Collection and Analysis**

Due to the Corona Virus pandemic and the closeness of university classes because of quarantine, the necessary data were collected in the virtual educational platform of the university which was designed for conducting online classes. In

fact, a two-hour session class was dedicated to collecting the data. After explaining the procedures to the students, the argumentative essay writing prompt, critical thinking test, academic resilience, and grit scales were uploaded to the website, and the students were required to, first, write the argumentative essay and then respond to the questionnaire items. The students' written essays were scored by two raters' using an analytic argumentative essay scoring rubric and then the average score based on the two ratings was considered as an index of their argumentative essay scoring performance according to which the students were categorized as high-skilled, moderately-skilled and less-skilled writers. These scores plus the students' responses to the questionnaire items were inserted in SPSS 23 statistical software and were analyzed by using descriptive statistics, correlation, multiple regression, and MANOVA in order to respond to the research questions.

## 4. Results and Discussion

### 4.1. Results

The first research question intended to explore the possible relationships between argumentative writing performance and a set of positive psychology constructs: critical thinking, academic resilience, and grit. Based on the results presented in Table 1, there were rather low levels of correlations between argumentative writing performance and critical thinking ( $r = .25, p < .05$ ), argumentative writing and academic resilience ( $r = .10, p < .05$ ), and argumentative writing and Grit ( $r = .20, p < .05$ ). In addition, there were low negative correlations between grit and critical thinking ( $r = -.01$ ) and grit and academic resilience ( $r = -.07$ ) despite the fact that in terms of the underlying constructs they seem to be related to each other. Factors such as the small sample size of the study and the idiosyncratic nature of the instruments used to measure these variables might have also led to these results.

**Table 1***Correlation Coefficients for the Variables of the Study*

Variables	Mean	SD	Argumentative Writing	Critical Thinking	Academic Resilience	Grit
Argumentative Writing	58.37	16.31	1	.252	.101	.204
Critical Thinking	73.60	12.35	.252	1	.157	-.010
Academic Resilience	101.56	9.38	.101	.157	1	-.072
Grit	25.93	3.42	.204	-.010	-.072	1

The second research question intended to explore which subscales among the positive psychology constructs measured could best predict the argumentative writing performance of the learners. Before interpreting the results of the standard multiple regression, two cut-off points, namely, Tolerance and VIF, have been checked for determining the presence of multicollinearity. In the present analysis, the values of both Tolerance and VIF observe the norm and it could be concluded that multicollinearity is not a cause for concern. Furthermore, the results presented in Table 2 indicated that none of the aspects of the three key variables had a significant contributory power to account for the argumentative writing performance of the sample of students investigated. Nevertheless, negative affect and emotional response in the academic resilience category ( $B = .658$ ,  $Beta = .279$ ,  $t = 1.680$ ,  $p = .100 > .05$ ) and consistency of interest in the grit category ( $B = 1.221$ ,  $Beta = .278$ ,  $t = 1.687$ ,  $p = .098 > .05$ ) showed better statistical indexes compared to other subcategories. Since these two subcategories are related to affective aspects of learning, we can point to the learners' capacity for emotion regulation while engaged in the act of writing which demands high levels of cognitive and affective engagement on the part of learners.

**Table 2***Coefficients of Multiple Regressions*

Models	Unstandardized Coefficients		Standardized Coefficients		95% Confidence Interval		
	B	Std. Error	Beta	<i>t</i>	<i>Sig</i>	Lower Bound	Upper Bound
(Constant Resilience)	28.104	30.485		.922	.362	-33.334	89.542
Perseverance	.551	.707	.169	.780	.440	-.874	1.976
Reflection	-.263	.552	-.098	-.476	.636	-1.376	.850
Emotional Response	.658	.391	.279	1.680	.100	-131	1.446
(Constant Grit)	40.867	19.294		2.118	.040	2.006	79.728
Effort	.281	.934	.049	.301	.765	-1.600	2.161
Interest	1.221	.724	.278	1.687	.098	-.237	2.679
(Constant Critical Thinking)	39.642	14.340		2.764	.008	10.703	68.581
Analysis	1.740	1.061	.345	1.640	.109	-.402	3.881
Inference	1.058	.925	.225	1.144	.259	-.808	2.924
Evaluation	-.094	1.008	-.016	-.093	.926	-2.129	1.941
Induction	.191	.977	.036	.195	.846	-1.781	2.162
Deduction	-1.621	.935	-.319	-1.734	.090	-3.507	.266

a. Dependent Variable: Argumentative Writing Performance

As a subsidiary aim, the present study also intended to identify whether or not there are any statistically significance differences among high-skilled, moderately-skilled, and low-skilled students in critical thinking, academic resilience and grit. According to the descriptive statistics presented in Table 3, high-skilled student writers outperformed mid- and less-skilled students in the extent of critical thinking ( $M = 77.66$ ,  $SD = 10.73$ ), academic resilience ( $M = 103.25$ ,  $SD = 8.87$ ) and grit ( $M = 26.91$ ,  $SD = 2.50$ ), which confirms the efficacy of these mental resources in enabling the learners to produce higher-quality argumentative passages.

**Table 3***Descriptive Statistics for Various Groups' Critical Thinking, Resilience and Grit*

	Writing Group	Mean	SD	N
Critical Thinking	High	77.66	10.73	12
	Mid	73.66	14.94	18
	Low	70.83	10.20	18
	Total	73.60	12.35	48
Resilience	High	103.25	8.87	12
	Mid	100.55	9.12	18
	Low	101.44	10.29	18
	Total	101.56	9.38	48
Grit	High	26.91	2.50	12
	Mid	25.50	2.93	18
	Low	25.72	4.33	18
	Total	25.93	3.42	48

However, in order to see whether the differences among these groups on the linear combination of the dependent variables (i.e., critical thinking, academic resilience and grit) were statistically significant or not, the results of Multivariate Analysis of Variance were examined (see Table 4). The results showed no statistically significant differences between the High, Mid, and Low writing groups on the combined dependent variables:  $F_{(3, 43)} = .663, p = .67 > .05$ ; Wilks'  $\Lambda = .914$ ; Partial Eta Squared = .044.

**Table 4***Multivariate (MANOVA) Tests for Different Writing Groups*

Effect		Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>Sig.</i>	Partial Eta Squared
Intercept	Pillai's Trace	.995	3097.222 <sup>b</sup>	3.000	43.000	.000	.995
	Wilks' Lambda	.005	3097.222 <sup>b</sup>	3.000	43.000	.000	.995
Writing group	Pillai's Trace	.087	.671	6.000	86.000	.673	.044
	Wilks' Lambda	.914	.663 <sup>b</sup>	6.000	86.000	.679	.044

Finally, Tests of Between-Subjects Effects (Table 5) revealed no statistically significant differences between the three groups of students with regard to critical thinking ( $F_{(2, 45)} = 1.107, p = .339 > 0.05, \text{Partial Eta Squared} = .047$ ), academic resilience ( $F_{(2, 45)} = .290, p = .749 > 0.05, \text{Partial Eta Squared} = .013$ ) and grit ( $F_{(2, 45)} = .664, p = .520 > 0.05, \text{Partial Eta Squared} = .029$ ). In fact, the students enjoyed rather similar statuses in terms of these positive psychology variables.

**Table 5**

*Tests of Between-Subjects Effects on Various Groups' Critical Thinking, Academic Resilience and Grit*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Academic resilience	52.674 <sup>a</sup>	2	26.337	.290	.749	.013
	Grit	15.785 <sup>b</sup>	2	7.892	.664	.520	.029
	Critical Thinking	336.312 <sup>c</sup>	2	168.156	1.107	.339	.047
Intercept	Academic Resilience	479198.893	1	479198.893	5281.219	.000	.992
	Grit	31400.671	1	31400.671	3641.041	.000	.983
	Critical Thinking	253841.286	1	253841.286	1671.189	.000	.974
Writing group	Academic Resilience	52.674	2	26.337	.290	.749	.013
	Grit	15.875	2	7.892	.664	.520	.029
	Critical Thinking	336.312	2	168.156	1.107	.339	.047
Error	Academic Resilience	4083.139	45	90.736			
	Grit	535.028	45	11.890			
	Critical Thinking	6835.167	45	151.893			
Total	Academic Resilience	499553.000	48				
	Grit	32843.000	48				
	Critical Thinking	267215.000	48				

a. R Squared = .013 (Adjusted R Squared = .031)

b. R Squared = .029 (Adjusted R Squared = -.015)

c. R Squared = .047 (Adjusted R Squared = -.005)



## 4.2. Discussion

The present study intended to examine the associations between argumentative writing performance and a set of positive psychology constructs (namely, critical thinking, academic resilience and grit). The results of the first research question indicated rather low correlation indexes between argumentative writing performance, on the one hand, and critical thinking, academic resilience and grit, on the other. This finding confirms the idea that critical-thinking-related skills are not effectively attended to and fostered in university education (McKinley, 2013) and little attention has been given to the role of critical thinking in the students' writing performance (Esmaeli Nejad, et al., 2022). In addition, since argumentative writing demand a response to a controversial issue by thinking logically and critically, the students' low level of critical thinking might have influenced the efficacy and adequacy of the arguments presented as well since the passages written were not supported with adequate facts, evidence, reasoning and logical explanations that made the texts more informative than argumentative.

Similarly, studies that have focused on the students' difficulties in argumentative writing have indicated that they have an incomplete understanding of the concept of argumentation and most of them do not know the key features of a well-developed argument (Lea & Street, 1998; Wingate, 2012). Besides this conceptual misunderstanding, students have difficulties in analyzing the conflicting viewpoints in the sources, cannot establish an effective position and present it in a coherent way in writing, lack the essential rhetorical knowledge and skill, and might face linguistic, cognitive and psychological problems (Andrews, 1995; Aydin & Ozfidan, 2014; Beckett & Kobayashi, 2020; Rahmatunisa, 2014; Shahriari & Shadloo, 2019; Zhu, 2001) since this genre poses rhetorical challenges for the students (Abdollahzadeh et al., 2017; Dastjerdi & Samian, 2011; Lee & Deakin, 2016; Saprina et al., 2021). In order to resolve the deficiencies, EFL students need more explicit instruction in this multifaceted genre of writing that involves a particular linguistic system, cognition, and rhetorical tradition (Ahmad, 2019), and need to be more effectively engaged in the specific acculturation and critical practice needed for exposition and argumentation (Hyland, 2009).

Furthermore, Paton (2005, as cited in Reid & Chin, 2021) attributes students' difficulties to a lack of adequate topic knowledge and writing practice rather than their thinking styles and mechanisms. In the same vein, Bali (2015) believes that factors such as the students' cultural capital, linguistic ability, background knowledge, exposure to critical thinking, their experiences in receiving instruction aimed at promoting critical thinking, and opportunities for practicing and using thinking resources such as interpretation, analysis, evaluation, inference, judgment, flexibility, open-mindedness, offering evidence, etc. can influence their ability to

read and write critically. The scholars who have found high positive association between critical thinking and writing consider critical thinking an indispensable aspect of academic writing and maintain that students having higher levels of critical thinking can more effectively organize their thoughts and use cognitive and metacognitive strategies while engaged in the act of writing and transfer these skills to new contexts (Golpour, 2014; Liu & Stapleton, 2017; Renatovna & Renatovna, 2021).

Another explanation can be the students' low level of engagement with the argumentative writing task which might not have provided an authentic experience for them to involve their personal characteristics like persistence and perseverance as the key aspects of academic resilience and grit (Duckworth et al., 2007). In addition, the students' sustained effort and commitment to surpass the uncertainty and difficulties encountered while performing a challenging task like argumentative writing might not have been fully developed or they might not have been able to cognitively and affectively adapt their behaviors while responding to the task in the possibly stressful situation. Since self-regulation is considered one aspect of academic resilience (Kim & Kim, 2017), the students in the present study might not have been competent enough to regulate their thoughts, behaviors, and emotions while engaged in the act of writing and use the required strategies to generate adequate ideas and manage their affective states (i.e., their anxieties and emotions) in the recursive process of writing (Bruning et al., 2013). In addition, resilience entails problem-solving mechanisms that can assist the learners in reflecting upon their actions and using strategies to cope with stress and nervousness caused by the situation or task at hand and help them attain their individualized and academic goals (Yang & Wang, 2022). The students had possibly not been motivated enough to write the argumentative task since it is maintained that motivation also plays a mediating and even reciprocal role in the process of being resilient while working on challenging academic tasks.

There were also almost zero correlations between grit and critical thinking and grit and academic resilience in the present study, which can be attributed to the nature of the grit construct and the instrument used for capturing the essence of this personal attribute that might lead to equivocal and contradictory results; in fact, the use of a reliable and valid domain-specific L2 grit instrument could have provided better indexes (Teimouri, et al., 2020; Zawodniak et al., 2021). Similarly, some researchers have not found positive relationships between grit and academic achievement because of the existence of various moderating factors such as the learners' ability and metacognition, the nature of the tasks, the learning environment, etc. (Usher et al., 2018). In addition, it is maintained that these personality traits may be culturally dependent favoring more individualist

Western contexts than collectivist Asian contexts (Sudina et al., 2021). However, in reality, similar to critical thinking and resilience constructs, grit is considered a fundamental variable in the stressful and challenging process of L2 learning that necessitates high levels of persistence and dedication on the part of learners (Feng & Papi, 2020; Khajavy et al., 2021). Grit also shows the individuals' tendency to maintain effort and interest while confronting difficult and challenging situations and, thus, can naturally play a role while the students engage in rather challenging academic tasks like writing argumentative essays; nevertheless, in the present study, as was previously mentioned, a rather high level of relationship between grit and argumentative essay writing was not established, which confirms "the importance of contextual variation of personality traits in SLA" (Zawodniak et al., 2021, p. 122) and necessitates the use of domain-specific measures to examine the status of these positive psychology constructs. In addition, since the positive psychology constructs are responsive and malleable to instruction, L2 writing teachers must establish a compassionate and supporting learning environment and use effective strategies to foster the development of these personality traits in the students. In case of challenging tasks such as argumentative essay writing, teachers must provide appropriate scaffolding and mediation for the students while engaged in the act of writing, model the use of effective composing strategies and provide them with feedback emphasizing their strengths.

The multiple regression analysis pointed to the rather superiority of controlling negative affect and emotional response (which included features like optimism, avoiding negative emotional responses, catastrophizing, anxiety and hopelessness" (Cassidy, 2016)) in the academic resilience category and consistency of interest (that is, the ability to maintain one's interest in the face of obstacles and problematic situations (Duckworth et al. (2007)) in the grit category. In fact, these constructs are positively related to the students' motivation and can assist the learners in controlling their language anxieties (Changlek & Palanukulwong, 2015). In addition, they include some protective and empowering factors and processes that can control negative emotions and behaviors caused by adverse situations and can lead to adaptive outcomes (Waxman et al., 2003). This finding can also point to the significance of students' capacity for emotion regulation and stability (Credé et al., 2017) and other socio-emotional faculties (Kautz et al., 2014) related to academic resilience and grit such as conscientiousness and subjective well-being (Duckworth & Gross, 2014), motivational intensity and L2 self-efficacy beliefs (Chen et al., 2020), classroom enjoyment and willingness to communicate (Feng & Papi, 2020) and being more cognitively engaged in the learning process (Teimouri et al., 2020) that influence the learners' efforts while facing the challenging situations in writing the argumentative essays. In the same regard, Kim and Kim (2016) maintain that L2 learners' capacity for persistence

and problem-solving in case of facing difficulties empower them to engage and immerse more wholeheartedly and enthusiastically in L2 learning process.

Finally, despite the superiority of high-skilled student writers in critical thinking, academic resilience and grit, there were no statistically significant differences between these groups of learners and moderately-skilled and low-skilled student writers in these personality traits. This finding can be attributed to the fact that most EFL students have been raised under social practices and experiences that emphasize conformity and group harmony, as worthwhile principles in collectivist societies, and have received traditional teacher-dominated instructions that focus on the retention of previously established information rather than embarking on reasoning and argumentation and using other thinking faculties (Stapleton, 2002). In addition, this finding shows that besides these thinking resources, many other factors like the learners' previous experiences in writing, their L2 writing proficiency, learning strategy use, individual differences in self-efficacy beliefs and self-regulation, and a variety of other socio-cognitive and affective resources like the learners' motivation, aptitude and working memory capacity might influence the students' writing performance and account for the differences in their final outputs.

## 5. Conclusion and Implications

The present study explored the status of critical thinking, academic resilience and grit, as positive psychology constructs, and argumentative writing performance of a group of Iranian EFL learners. The findings of the study indicated rather low relationships between these constructs. Among the subscales, control of negative affect and emotional response and consistency of interest had the highest level of potential to account for the argumentative writing performance of the learners. Nevertheless, there were no statistically significant differences among different groups of student writers in these psychological constructs. On the whole, the findings pointed to the rather low status of Iranian EFL learners in these personality traits and also confirmed the significance of contextual variations in the relevance of these traits to second language acquisition and performance. Adopting humanistic approaches that take into account the significance of psychological aspects of individuals in the learning process can be of great help as well.

It is maintained that these constructs are responsive to interventions, so some particular pedagogical endeavors and specific activities, tasks and materials must be designed to foster the development of these personal attributes in the students and to empower them to perform satisfactorily while engaged in academically challenging tasks such as L2 speaking and writing. Designing pedagogical tasks and using activities that can develop critical thinking and other cognitive and metacognitive mechanisms in the learners can also assist them in fostering and

presenting an authorial voice, as a reflection of their identity, while working on various rhetorical genres in their discipline-specific discourse communities. In addition, writing teachers must adapt their teaching approach and strategies to help EFL students increase their emotional competence and positive learning experiences, enhance their intended efforts and perseverance, and facilitate their self-motivated engagement, and, thus, progress in L2 writing skills achievement (Zarrinabadi & Rahimi, 2022; Shafiee & Jafarpour, 2022).

Relating the students' writing practice to their real-life situations which necessitates the adoption of progressive, process-oriented and social constructivist approaches to teaching writing can also foster the use of thinking resources and facilitates the provision of more authentic responses in written texts. Receiving explicit instruction on sociocultural conventions of academic writing such as knowing the rhetorical organization of argumentative texts, citing evidence to support the content, using hedging and boosting devices judiciously, interpreting and incorporating the literature to support one's claims and addressing the counterarguments can assist the learners in taking a critical stance and properly shaping their thinking processes in argumentative writing (McKinley, 2013). Such instruction can assist the learners in organizing their written passages more effectively and with a stronger argumentation that enjoys a higher level of acceptability in academic settings.

Due to having higher levels of critical thinking and being more academically resilient, learners can more judiciously select or adapt their approach to learning and be more autonomous and self-regulated in the learning process. In the same regard, some experimental studies can be conducted to investigate the effects of such treatments on improving the learners' socio-cognitive and affective capacities and resources. In addition, since the status of these psychological traits might change at different times and levels, judging the students in these aspects in a single situation and based on their performance on a single writing task might not be adequate for capturing the essence of these constructs, and consequently, more longitudinal and discovery-oriented research methodologies must be adopted to investigate the influence of these constructs on the students' learning process and outcomes. Finally, the main limitation of the present study has been the small sample size, which limited the possibility of reaching meaningful statistical results and generalization of the findings; therefore, further studies must be conducted to investigate the role of these constructs in the writing performance of a larger sample of participants.

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