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Research Article

Creativity, Learning Style, and Metacognition as Predictors of Iranian Intermediate/Advanced EFL Learners' Writing Complexity

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ABSTRACT

This mixed-method research study attempted to illuminate the best predictors of writing complexity among creativity, learning style, and metacognition. Data were collected from 120 Iranian intermediate and advanced EFL learners. The Oxford Quick Placement Test was applied to check the participants' proficiency levels. In addition, a creativity questionnaire was applied to check their creativity levels. Moreover, a learning style questionnaire was used to check their learning style. Further, the Metacognitive Awareness Inventory was applied. In addition, participants were asked to write at least two paragraphs to ensure the suitability of the participants' levels based on the complexity framework. Further, a semi-structured interview was applied in this study. The results of the multiple regression analysis revealed that only creativity is the predictor of writing complexity among intermediate EFL learners. However, none of these variables were the predictor of writing complexity among advanced learners. The first implication of the study is that learners can be aware of their metacognitive strategies and learning styles. On the other hand, teachers can apply various interesting materials to attract learners' attention and facilitate learning. In addition, teachers can provide a setting where learners can apply creativity in their learning. Moreover, material developers and syllabus designers can develop creative materials to attract learners' attention and interest. Further, the findings can enrich the literature concerning the predictors of writing complexity among creativity, learning style, and metacognition.

Introduction

Language is a tool to communicate and express ideas, beliefs, feelings, and thoughts. On the other hand, learning a foreign language needs to master its skills and sub-skills. Writing, which is one of these skills, is considered as a significant communicative skill in language acquisition (Hayes & Flower, 1986; Richards & Renandya, 2002).

Although writing is an important medium of communication, some studies have indicated that becoming proficient in writing skills in L1 or L2 deals with some challenges (Gregersen, 2003; Hasani & Moghadam, 2012; Mirzaii, 2012). There are some reasons for the challenges that L2 learners face in mastering writing skills. The first reason is due to the shortage of grammatical structures and vocabulary knowledge (Hyland, 2003).

The second reason is because of having low levels of motivation, stress in writing, and insufficient teaching strategies, techniques, and styles (Fareed et al., 2016). Some L2 researchers (Ellis, 2003; Ellis & Barkhuizen, 2005; Skehan 1998) believe that L2 writing proficiency is a multi-dimensional aspect, and thereby, they have paid more attention to the development of writing skills (Seidlhofer & Widdowson, 1999).

It is believed that writing skills can be mastered by the notions of complexity, accuracy, and fluency (CAF; Housen & Kuiken, 2009). While complexity is defined as the use of more complicated and elaborated second or foreign language (Skehan & Foster, 1997; Skehan, 1998), accuracy is described as the correct use of target-like structures (Skehan, 1996). In addition, fluency is described as the smooth and easy spoken or written production with few pauses, corrections, hesitations, and normal speed (Hashemifardnia et al., 2021). In this study, writing complexity was selected among these triads (CAF) to provide an opportunity for learners to become familiar with the production of complex clauses and structures and enable them to produce more elaborated clauses and structures in writing instead of simple and short sentences.

Over the past century, there has been a dramatic increase in the number of studies that have focused on the effective factors of language learning, especially human characteristics, because it is believed that human variables can have a considerable impact on L2 learning (Nosratinia & Zaker, 2014; Zaker, 2016). Among those factors, creativity has received particular attention because it is considered a vital factor in language proficiency (Kabilan, 2000). In addition, creativity can improve both learners' language achievement and life skills (Agarwal, 1992). All human beings are equipped with a little creativity, and it can be developed over time. Therefore, adopting creativity in education can provoke and develop learners' creativity and result in promising results in learning (Fahim & Zaker, 2014; Kabilan, 2000; Nosratinia & Zaker, 2014; Zaker, 2016).

Another factor is learning style, which has generated considerable interest in the last decades. In other words, it is concerned with the personalized way of learning that learners use to acquire something. In addition, it indicates how learners acquire, process, and memorize new materials. Learners may learn in different styles; some learners might learn better through their eyes, while others might learn better through their ears (Zapalska & Brozik, 2006). Therefore, learning style can be defined as the different preferred types of learning, like visual and kinesthetic learning styles. Depending on the way of acquiring the materials, learners might have one or more styles of learning. If the teachers' styles of teaching do not match learners' learning styles, some problems will emerge (Ehrman, 1994). Familiarizing with the learners' style of learning can result in accelerating the process of language learning and promoting language success (Macaro, 2001; Reid, 1995).

In addition, metacognition, which has been thought of as a key factor in language achievement and success, refers to the higher mental processes in learning, such as making plans for learning and applying appropriate skills and strategies (Dunslosky & Thiede, 1998). It can help learners learn new materials. Moreover, metacognition is regarded as an effective factor in second-language writing because the complicated process of writing

can be monitored and controlled through metacognition (Teng, 2020; Teng et al., 2021). Since writing is a complex process, it creates considerable challenges for ESL or EFL learners. Therefore, research studies have paid attention to the individual factors to help learners overcome these challenges by promoting learners' awareness of their abilities, improving their performance, and enhancing their proficiency in L2 (Negretti, 2017; Qin & Zhang, 2019; Teng et al., 2021; Zhang & Qin, 2018; Zhang & Zhang, 2022; Zhao & Liao, 2021). In addition, learners are different in metacognition. Therefore, learners with high metacognition might perform better compared to learners with low metacognition (Everson & Tobias, 1998).

Research has shown that creativity, learning style, and metacognition can play a key role in language learning and success. In addition, considerable research studies have been conducted on each of these variables separately or simultaneously (Ajideh & Gholami, 2014; Asrullah & Radiah, 2024; Atkinson, 2004; Fahim & Zaker, 2014; Ghasemi et al., 2011; Grant, 2017; Khodabakhshzadeh et al., 2017; Nosratinia & Zaker, 2014; Nosratinia & Razavi, 2016; Pishghadam et al., 2011; Pranata et al., 2023; Rezaei & Almasian, 2007; Sajedi, 2014; Sun & Zhang, 2023; Sun et al., 2024; Suzuki et al., 2022; Taneja et al., 2023; Teng & Zhang, 2016; Teng & Yue, 2022), but the relationships between these three variables and writing complexity have not been run in the field of language learning. Moreover, there were some reasons for choosing these factors in this study. The first reason was that some learners did not know their learning styles. Some others did not even know the meanings of such concepts like creativity and learning style. Some learners even claimed that they like stimulating materials and when the materials are not stimulating, they quit them. The second reason was that the researchers believe that the study must be related to their teaching courses to solve real problems in a learning setting. The third reason was that based on the researchers' experiences as English instructors, many problems in language learning such as boredom, lack of success, and frustration could be due to learners' unawareness of their learning style, creativity, and metacognition as well as teachers' unconscious of their learners' learning style preferences, creativity levels, and metacognitive activities. The last reason was that few research studies have been conducted on the relationship between creativity, learning style, metacognition, and writing complexity. Considering these issues, this study tried to solve the problems and contribute to the existing literature on the role of creativity, learning style, and metacognition in writing complexity.

Literature Review

Theoretical Background

Writing is a complicated mode of communication in that a person can express his or her personal beliefs, opinions, and thoughts. In addition, different kinds of writing can be produced, such as essays, poems, and stories. Further, there are some differences between writing and other skills, such as listening, reading, and speaking. For instance, producing a piece of writing is time-consuming. Moreover, a piece of writing is more permanent than a spoken format (Ellis, 2003; Ellis & Barkhuizen, 2005; Gregersen, 2003; Richards & Renandya, 2002; Skehan, 1998).

On the other hand, language acquisition could be a creative work in that learners can use language creatively to express their needs, thoughts, and wants. In addition, each learner has his or her learning style, which means some learners might learn through watching, some others might learn better by listening, and others through some other channels. Further, learners might use different

kinds of metacognitive strategies for learning, such as planning, organizing information, and setting goals (Artzt & Armour-Thomas, 1992; Baker, 1989; Schraw & Dennison, 1994). Studies over the past two decades have provided important information on the effects of creativity, learning style, and metacognition on language learning (Ajideh & Gholami, 2014; Barzegar & Tajalli, 2013; Gholami et al., 2022; Khodabakhshzadeh et al., 2017; Nosratinia & Razavi, 2016; Sajedi, 2014; Septiani et al., 2024; Siregar et al., 2024; Teng & Zhang, 2024).

Creativity

Learners' personal and mental features could be effective factors in language learning. One of these features is creativity, which plays a key role in life skills and language acquisition (Fahim & Zaker, 2014; Kabilan, 2000; Nosratinia & Zaker, 2014; Zaker, 2016). Because creativity is a complicated feature, there are different definitions for it. At first, it is considered as a trait of creative people (Campbell, 1985; Cropley, 1992; Guilford, 1950). In addition, it is defined as the new solutions, processes, and products (Amabile, 1996; Dewett, 2007). Further, creativity could be described as a further step into the strange world, accepting new experiences, and recombining ideas and things (Afolabi et al., 2010). A comprehensive definition considered four factors in creativity: aptitude, environment and social context, process, and product (Plucker et al., 2004).

Moreover, many studies have been conducted to investigate the characteristics of creative people (Cropley, 1992; Otto´, 1998; Pishghadam et al., 2011). In one study, it was indicated that creative people have some features including (1) being realistic; (2) complexity; (3) curiosity; (4) having high interest; (5) imaginativeness; (6) independence; (7) openness to new experiences; (8) persistence; (9) risk-taking; (10) self-sufficiency; and (11) sensitivity. Further, a more comprehensive list of features was proposed: (a) appreciation of art, (b) attraction to new and complex ideas, (c) energy, (d) need to have a private life, (e) open-mindedness, (f) originality, and (g) self-awareness of creativity (Alder, 2002).

Further, Guildford (1959), who considered creativity as the focus of psychological and educational research studies, indicated that creativity consists of two aspects: convergent and divergent thinking. While convergent thinking is connected to finding the best solution for a problem, divergent thinking is concerned with the different possible answers or solutions to the intended problem. To be a creative individual, these two factors (convergent thinking & divergent thinking) are crucial (Simonton, 2012). On the other hand, divergent thinking consists of four elements: elaboration, flexibility, fluency, and originality (Guilford, 1967).

Learning Style

Another important feature that can be effective in language acquisition is learning style which refers to an individual's method of learning. In other words, learning style is connected to the methods of perceiving and remembering information (Zafar & Meenakshi, 2012). Learners have different types of learning styles; some learners prefer to watch and listen to learn, while others prefer to read and perform something to learn better. In other words, learning style is an indicator of the preferred way of learning (Lujan & DiCarlo, 2005). In addition, learning style is described as the affective, cognitive, and physiological characteristics that show how learners learn, perceive, and memorize materials (Keefe, 1982). For instance, some learners prefer to follow interesting and relevant materials, while others like to follow a syllabus or textbook step by step from the beginning of the textbook to the end.

There are different kinds of classification for learning styles (Barzegar &Tajalli, 2013). Based on Reid's (1995) classification, there are three types of learning styles: cognitive styles, personality types, and sensory preferences. Cognitive styles are related to the personalized ways of processing information. Personality types refer to the affective and emotional factors like extroverted or introverted. Sensory preferences or kinds of memory are concerned with the physical channels such as ears, eyes, and touch to perceive information. Visual learners learn something through their eyes; therefore, they comprehend something better when they read or see it in a book. Auditory learners acquire through their ears; therefore, they connect a new word to a known sound.

Metacognition

Another effective factor in learning is metacognition which is regarded as a significant factor in academic success (Dunning et al., 2003). Metacognition contains two parts: "meta" and "cognition". Meta can be defined as going or moving from a lower level to a higher level or position and "cognition" involves knowing or thinking (Larkin, 2010). In other words, metacognition is concerned with the higher levels of knowing and thinking (Kreber, 2005). It involves some mental processes in learning like making plans and using appropriate skills and strategies for problem-solving (Dunslosky &Thiede, 1998). Metacognitive activities can be different from one person to another person, from one task to another task, or from one field to another field (Kelemen et al., 2000). Metacognition is a multi-dimensional notion involving knowledge, processes, and strategies that monitor and control cognition (Larkin, 2010).

There are two important factors in metacognition: metacognitive knowledge and metacognitive regulation (Schraw & Moshman, 1995). Metacognitive knowledge is connected to cognitive knowledge such as knowledge about skills, strategies, and techniques and knowledge about how and when to use them (Artzt & Armour-Thomas, 1992; Baker, 1989; Negretti, 2017; Qin & Zhang, 2019; Schraw & Dennison, 1994; Teng et al., 2021; Zhang & Zhang, 2022; Zhao & Liao, 2021). In addition, metacognitive regulation refers to regulating activities to control a person's thoughts and learning like planning, controlling understanding, detecting errors, and assessing. In addition, metacognition is defined more thoroughly as the ability to solve problems, to have a critical view and reflective thinking (Goh, 2018).

Some researchers (Schraw & Dennison, 1994) claimed that there are three aspects of metacognitive knowledge: conditional, declarative, and procedural knowledge. Conditional knowledge is connected to declarative knowledge about when, where, why, and for what purpose a specific metacognitive strategy should be used (Schraw & Moshman, 1995). Learners with low metacognition might not know when, why, and what strategy to choose and use. Declarative knowledge is concerned with a person's memory abilities and the effective strategies on the memory processes (Cavanaugh & Perlmutter, 1982). Conditional knowledge can be a prerequisite for declarative and procedural knowledge when a metacognitive strategy is applied and then it becomes a skill. Therefore, learners who have high levels of metacognition can perform better than learners who have low levels of metacognition. Conditional, declarative, and procedural knowledge are different from one person to another due to the individual differences such as age, education level, experience, interests, and some other factors.

Writing Complexity

Complexity is concerned with the number of coordinate and subordinate clauses in a text (Ellis, 2003). In addition, complexity is defined as the ratio of clauses to T-units or the percentage of dependent clauses of total clauses. Moreover, it is defined as the ability to utilize a wide variety of complicated structures and words in L2 (Jiang et al., 2021).

Selecting an appropriate measure that can measure various aspects and subdimensions is crucial (Norris & Ortega, 2009). Three kinds of measurement were recognized by Wolfe-Quintero et al. (1998): (a) ratio measures dividing a particular unit by the numbers of another unit such as type/token ratio (TTR), (b) frequency numbers of a specific linguistic unit such as the number of tokens, and (c) indices are calculated through a more complex formula (Ellis & Barkhuizen, 2005). In calculating ratios, the unit might be words, sentences, and clauses. Sentences might be used in writing as syntactic units. In addition, some alternative syntactic units, such as T-units are applied. Based on Wolfe-Quintero et al.'s (1998) guidelines, the complexity framework was used to gauge the participants' writing complexity in this study: the ratio of clauses to T-units was applied to measure complexity, while a T-unit is a main clause and all subordinate clauses.

Empirical Studies

Some research studies have demonstrated that creativity is a crucial element in language learning (Naderi et al., 2009; Otto´, 1998; Pishghadam et al., 2011). For instance, Pishghadam et al. (2011) indicated a significant relationship between creativity and language achievement. Generally speaking, it is an essential factor in all fields and activities. Each activity or field will be boring if creativity is not involved (Robinson, 2001). Some studies have examined the correlation between creativity and many other factors like course grade, critical thinking, success, and writing (Atkinson, 2004; Fahim & Zaker, 2014; Ghasemi et al., 2011; Grant, 2017; Nosratinia & Zaker, 2014; Pishghadam et al., 2011; Suzuki et al., 2022). Rezaei and Almasian's (2007) study indicated a strong relationship among creativity, language proficiency, and language learning strategies. In addition, Nosratinia and Razavi (2016) attempted to explore the correlation between creativity and L2 writing complexity, accuracy, and fluency (CAF). The findings revealed a significant relationship between creativity and writing CAF. Further, a study done by Suzuki et al. (2022) tried to demonstrate a relationship between creativity and L2 speech. The findings indicated a relationship among creativity, lexical, syntactic sophistication, and discourse aspects of L2 speech production.

On the other hand, learning style plays a significant role in language acquisition (Salam et al., 2020). Learners will succeed in language learning if they become aware of their learning styles (Gilakjani, 2012). Some studies indicated that there are insufficient clues to claim that learning style is a beneficial factor in language learning, and therefore, some antithesis findings (Busato et al., 2000; Evers & Chen, 2021; Papadatou-Pastou et al., 2021; Whitman, 2023). In addition, Husmann and McLoughlin's (2019) study showed that there is no relationship between learning style and course grades. In the same vein, Rashvand Semiyari and Jahani (2020) examined the effects of learning styles and self-efficacy on achievement test scores. The findings demonstrated that there is no significant relationship between learners' learning styles and achievement scores.

However, this term, learning style, has attracted considerable attention. Some studies have investigated the correlation between learning style and other factors, including gender, language proficiency, and success in language learning

(Aliakbari & Qasemi, 2012; Gholami et al., 2022; Khodabakhshzadeh et al., 2017). The findings of Aliakbari and Qasemi's (2012) study revealed that there is no significant relationship between gender, language proficiency, and their learning style preferences. However, the findings of some studies are in contrast with the findings of Aliakbari and Qasemi's (2012) study. For instance, Barzegar and Tajalli's (2013) study attempted to examine the relationship between Iranian EFL learners' learning style and their achievement. The findings of the study indicated a positive relationship between learning style and achievement. Similarly, Pranata et al.'s (2023) study revealed that there is a relationship between learners' learning styles and their academic achievement.

In the same vein, Ajideh and Gholami (2014) tried to explore the role of learning style in test performance. The findings demonstrated that learning style is the best predictor of EFL learners' test performance. In addition, Asrullah and Radiah (2024) attempted to investigate the effects of learning material and learning style on speaking skills. The findings revealed that learning style has a significant effect on speaking skills. Moreover, a study conducted by Halim et al. (2024) showed that learners have different learning styles based on their creativity, characteristics, and interests. Further, a study done by Sajedi (2014) tried to show the relationship between creativity and learning styles. The findings indicated that there is a relationship between creativity and learning style. Further, Taneja et al. (2023) attempted to illuminate the effects of learning style on creativity. The findings indicated the positive effects of learning style on creativity.

In addition, metacognition is regarded as an important variable in achievement. Learners with high levels of metacognition have better performance and organization to promote their learning (Coutinho, 2007). Moreover, learners might apply metacognitive knowledge for decision-making to achieve higher autonomy and proficiency (Zhang & Zhang, 2019). Some studies have revealed a correlation between metacognition, assessment, and collaborative learning (Adler et al., 2016; Baas et al., 2015; Wang et al., 2024). Further, a study by Pishghadam and Khajavy (2013) attempted to examine the role of metacognition and intelligence in language achievement. The findings indicated that metacognition has a greater effect on language achievement than intelligence.

Similarly, the study of Khodabakhshzadeh et al. (2017) aimed to examine the role of creativity, learning style, and metacognition in L2 success. The findings indicated that all three variables are effective in language achievement. In addition, the findings demonstrated that metacognition has more effects on L2 success compared to the other two factors (creativity & learning style).

On the other hand, some studies have indicated that there is a relationship between writing scores and metacognitive knowledge (Coughlin et al., 2015; Hidayat et al., 2018; Qin & Zhang, 2019; Teng & Zhang, 2016). In addition, Sun and Zhang (2023) tried to explore the effects of metacognitive experiences on writing CAF. The findings of the study indicated that metacognitive estimates have positive effects on lexical complexity and fluency, while they have negative effects on writing accuracy. In addition, the findings revealed that metacognitive feelings have a positive relationship with syntactic complexity, and there is a positive correlation between online metacognitive strategies and writing accuracy. Moreover, Teng and Yue (2022) attempted to explore the significance of metacognition in academic writing performance. The findings indicated a significant relationship between metacognition, critical thinking skills, and academic writing performance. In the same vein, Sun et al. (2024) indicated that

metacognitive experiences change in terms of writing development and language competence.

Purpose of the Study

Since there has been little empirical evidence on the correlations between creativity, learning style, metacognition, and writing complexity, this area of research has been selected. In this respect, the purpose of the present study is to explore the predictors of L2 writing complexity among creativity, learning style, and metacognition. This study contributes to the existing literature on the role of creativity, learning style, and metacognition in L2 writing complexity. In addition, it tries to explore how participants describe the role of creativity, learning style, and metacognition in their process of learning. Different procedures, such as interviews and questionnaire, were used to achieve these purposes. Therefore, this paper seeks to address the following questions:

1. Are creativity, learning style, and metacognition the predictors of L2 writing complexity among intermediate Iranian EFL learners?
2. Are creativity, learning style, and metacognition the predictors of L2 writing complexity among advanced Iranian EFL learners?
3. How do intermediate and advanced Iranian EFL learners describe their learning style?

Methodology

Design and Context of the Study

The present study is a mixed-methods research study (the convergent mixed methods design) to present rich data about the intended participants. To generalize the results of this study, both qualitative and quantitative data were applied. In addition, the mixed methods design was selected due to minimizing the limitations of both qualitative and quantitative designs and drawing on both methods (qualitative & quantitative data). It is qualitative since a semi-structured interview was adopted. In addition, since it is based on the quantification of the questionnaires and the scoring of participants' writings, it is quantitative. Moreover, the study is non-experimental because there was no manipulation or control imposed on the variables. The study was carried out in Pishraft and Parvin English institutes in Isfahan, Iran, and female learners were selected based on convenience sampling.

Participants

Participants were chosen from two language institutes (Pishraft & Parvin) in Isfahan, Iran. 120 Iranian EFL learners (60 intermediate & 60 advanced) who were conveniently selected took part in this study to compare these two levels. There were two reasons behind selecting them: The first reason was that there is sufficient knowledge about them because they have passed some courses in these institutes. The second reason was that intermediate and advanced learners might be aware of the concepts of creativity, learning style, and some other notions like metacognition, while elementary learners might not know the meanings of these notions. According to the Oxford Quick Placement Test (OQPT), two levels (intermediate & advanced) were selected. The participants were Iranian EFL learners, and their first language was Persian and they had never been in a foreign country. In addition, the participants were all female to control gender effects, and their ages were between 25 and 35.

For ethical issues, the consent forms were filled in by the participants of the study, and the confidentiality of their identity was maintained throughout the data collection and data analysis procedures. To do so, some codes were used instead of their personal information. It is important to note that two English instructors (the researcher & her colleague with an MA degree) took part in the present study to rate writings. Table

1 demonstrates the participants' demographic background features.

Table 1

Demographic Background of the Participants

No. of Students	120 (60 intermediate & 60 advanced Iranian EFL learners)
Gender	Only Females
Native Language	Persian
Target Language	English
Age	25-35
Place	Two English language institutes
Academic Years	2023-2024

Instrumentation

Oxford Quick Placement Test

The Oxford Quick Placement Test (OQPT) was used to check the homogeneity of the participants in terms of proficiency level. This test, which was developed by Oxford University Press Cambridge Local Examinations Syndicate (ESOL), includes 60 multiple-choice items with a reliability of .90 (r=.90). It involves some fill-in-the-blank items and close passages to check grammar, reading comprehension, and vocabulary. Based on the OQPT test, learners who score between 30 and 47 are regarded as intermediate learners, and learners scoring above 54 are considered advanced learners. This test was administered in a classroom context, and the participants were given 60 minutes to complete it.

Creativity Questionnaire

To avoid miscomprehension and misinterpretation, the Persian version of Abedi's (2002) Creativity Questionnaire was used to check the learners' creativity levels. This questionnaire was translated by Daemi and Moghimi (2004) and validated by Nosratinia and Zaker (2013). This three-choice questionnaire involves 60 items with no correct or false answers (for instance, question one: how do you deal with a very difficult problem? A) I cry because I think I cannot solve it. B) I do not cry, but I become upset. C) I try to find an appropriate solution for it), and 60 minutes were allocated to complete it.

It includes four sections, being the major subsections of creativity: elaboration, flexibility, fluency, and originality (Torrance & Wu, 1981). Fluency consists of 22 items, and its scores vary from 22-66. The other section, elaboration, includes 11 items, and its scores vary from 11-33. The scores of the next section, originality, range between 16 and 48, including 16 items. The scores of the last part, flexibility, range between 11 and 33, and it involves 11 items. The coefficient of these sections was confirmed by Abedi (2002) and reported the reliability of elaboration, flexibility, fluency, and originality as 0.80, 0.82, 0.85, and 0.84, respectively. Further, two English experts at Khorasgan University checked the reliability of the questionnaire (r=89), and confirmed its validity.

The choices in this questionnaire can demonstrate different creativity levels in a way that learners with scores between 3 and 90 (less than 90) are regarded as learners with low creativity levels, and learners with scores between 90 and 180 (above 90) are considered as learners with high creativity levels. In addition, an individual's creativity score is the sum of these four sections (elaboration, flexibility, fluency, &originality), which ranges from 60-180 in a way that more creative people will have a higher score.

Learning Style Questionnaire

Cohen et al.'s (2001) Learning Style Questionnaire was applied to measure the participants' learning styles. This questionnaire includes 110 items, and 110 minutes were assigned to respond to this five-point Likert scale questionnaire (for instance: I remember something better if I write it down. Never = 0, Rarely = 1, Sometimes = 2, Often = 3, Always = 4). This

questionnaire consists of eleven sections relating to the different types of learning styles, such as auditory, visual, tactile/kinesthetic, extroverted, and introverted learning styles. In addition, at the end of this session, the participants were asked to describe their learning style on a piece of paper. Further, two experts at Khorasgan University checked its reliability (r=.74) and confirmed the validity of the questionnaire.

Schraw and Dennison's Metacognitive Awareness Inventory (MAI)

To measure the metacognition of the participants, Schraw and Dennison's (1994) Metacognitive Awareness Inventory was used and the participants had 60 minutes to respond it. This updated format and five-Likert scale questionnaire has 52 items (Krosnick & Presser, 2010). It includes two subsections: the knowledge of cognition and the regulation of cognition. Cognition knowledge contains 17 items concerning the conditional, declarative, and procedural knowledge. The other subsection, the regulation of cognition, has 35 items related to comprehension monitoring, debugging strategies, evaluation, information management strategies, and planning. The reliability of this questionnaire is .95 (Schraw & Dennison, 1994), and the validity of the questionnaire was confirmed by two experts at Khorasgan University.

Writing

To ensure the suitability of the participants based on complexity framework, participants wrote a piece of writing (at least 2 paragraphs). To check the validity of their writing, three phases were necessary. First, some topics were selected from the learners' course books such as their hobbies and favorite things. Second, two English experts at Khorasgan University checked the suitability of the topics of writing. Third, they were asked to write a piece of writing (at least 2 paragraphs) about their selected topic. Since intermediate and advanced Iranian EFL learners participated in this study, their course books were applied (Family and Friends 3, 2nd edition & Top Notch 2 B).

Family and Friends 3, 2nd edition, was selected because the intermediate participants had grammatical problems. Although the learners have studied English in guidance school and high school, it seemed that many of them lacked necessary skills for language acquisition, and thereby, this book includes 15 units, in which each unit contains vocabulary, grammar, and skill exercises related to the culture, brand-new fluency, and digital materials compared to the first edition. In addition, the complexity framework was used to measure the participants' writing complexity. Moreover, one session (90 minutes) was allocated to collect their writings. It is noteworthy that their writings were analyzed by two raters: the first rater was the researcher of the study, and the second rater was her colleague holding an MA degree in TEFL. Further, 40 writings, which were scored by two raters, were randomly selected to ensure the inter-rater reliability between these two raters. The results of the Pearson correlation analysis revealed that two raters agree on the scores of writing complexity (r (40) = .80, p <.05), representing a large effect size. Finally, the mean of the two scores provided by these two raters was considered as the participants' writing complexity.

The Complexity Framework

To measure the participants' writing complexity, a profile, which is a reliable rating scale, was used. Based on the guidelines of Wolfe-Quintero et al. (1998), the complexity framework was used to measure the participants' writing complexity: the total number of clauses to T-units was applied to measure writing complexity. It is noteworthy that a main clause and all its

subordinate clauses are termed a T-unit (Hunt, 1965).

Interview

Regarding the study variables, 10 questions were prepared and then piloted with 15 learners similar to the intended participants to ensure the reliability of the questions. Therefore, two English experts at Khorasgan University checked the questions and revised them into five questions. In the next phase, 10 intermediate and advanced female participants (6 intermediate & 4 advanced) voluntarily responded to these five questions in a classroom context one by one. Each participant signed the consent form and had nine minutes to respond to the interview questions. Further, the following questions were answered by the participants in this session:

- Can you describe a situation at school where you apply or show creativity in English learning, particularly in writing?
- Have you ever had problems in language learning, particularly in writing? What styles and strategies do you use to deal with these problems?
- How do you usually learn in your classes? Do you like your learning style?
- How do your teachers help you to be more creative?
- Do you think that creativity is important in developing writing skills?

In addition, two English instructors talked about the study variables at the end of the session. They stated that they usually try to apply creativity in their teaching style. Moreover, they claimed that they usually apply different kinds of materials to support learners' different learning styles and their metacognitive activities. Further, two instructors responded to these three questions in ten minutes:

- In your personal experience, what do you do to get good results in teaching?
- Do you think that the educational system can help learners to be creative in learning, especially in developing writing skills?
- Have you ever done any special activities to promote creativity in learners?

Generally, one session (100 minutes) was devoted to this interview session. In addition, the interview session was recorded and transcribed, in which both English and Persian could be used to answer the questions.

Data Collection Procedure

Quantitative Phase

The participants were selected from Pishraft and Parvin English institutes in Isfahan, Iran. To do so, 120 Iranian EFL learners (60 intermediate & 60 advanced) were chosen based on convenience sampling and the Oxford Quick Placement Test (OQPT).

Data collection was conducted through paper and pencil questionnaires and face-to-face sessions. In the first stage, the Oxford Quick Placement Test (OQPT) was answered by the participants to ensure the suitability of their levels. It took 45 minutes to answer this test. In the second stage, the aims of the present study were explained clearly to the participants. In the third stage, the Persian versions of the intended questionnaires (creativity, learning style, & metacognition questionnaires) were prepared on paper and pencil to avoid misinterpretations and misunderstandings. In the next stage, after piloting these three questionnaires and ensuring their reliability and validity, the questionnaires were handed to the participants to complete. In this study, 120 intermediate and advanced Iranian EFL learners participated. One session was allocated to complete each of these questionnaires (3 sessions total). In addition, one session (90 minutes) was allocated to collect their writings, and the participants were asked to write at least two paragraphs about the intended topics. and

then, the complexity framework was applied to assess the collected writings in terms of writing complexity. Moreover, the participants filled in the consent forms, and the ethical issues were observed throughout the study. Further, two raters (the researcher & her colleague) assessed the participants' writing in terms of the writing complexity framework.

Qualitative Phase

To explore the learners' attitudes towards the study variables, two phases were conducted. In the first phase, when learners responded to the learning style questionnaire, they were asked to respond to one more question relating to learning style on a piece of paper, and then, they described it based on their understanding and words. Each of them defined it in their own words. In the second phase, one session (100 minutes) was allocated to the interview session. In addition, the interview session was recorded, transcribed, and analyzed, in which the participants were allowed to use both English and Persian.

Data Analysis Procedure

After collecting and measuring both qualitative and quantitative data, the multiple regression analysis was applied to investigate the predictors of writing complexity among the study variables, namely, creativity, learning style, and metacognition among intermediate and advanced Iranian EFL learners.

Results

The Descriptive Statistics of Intermediate and Advanced EFL Learners

Prior to presenting the results of the regression analysis, it is good to take a look at the descriptive statistics of the variables and examine the underlying assumptions of the regression analysis. Table 2 presents the results of the descriptive statistics for intermediate learners' creativity, learning style, metacognition, and complexity scores:

Table 2

Descriptive Statistics Results for Intermediate Learners

	N	Minimum	Maximum	Mean	Std. Deviation
Creativity	60	60.00	174.00	126.51	40.80
Learning style	60	204.00	328.00	258.85	24.83
Metacognition	60	72.00	208.00	146.50	40.30
Writing Complexity	60	.40	1.80	1.24	.41

In Table 2, among other things, the mean scores and standard deviations of the creativity, learning style, metacognition, and writing complexity distributions are presented. Regarding the underlying assumptions of multiple regression, based on Stevens (1996), for social studies, a sample size of 15 participants for each independent variable is needed for a reliable equation. The sample size of 60 intermediate learners in this study is well greater than 45, as there are three independent variables here. As for the assumptions of multicollinearity and singularity, the correlation results among the variables were observed and it was found that there were at least some degrees of correlation between the dependent variable (i.e., writing complexity) and each of the independent variables in this study, hence ensuring that the assumption of collinearity was met. In addition, no two independent variables had a very strong (larger than .90) correlation, and there was no singularity between them, indicating that the assumption of singularity was not violated. As multiple regression

is very sensitive to outliers, the initial screening of the data was also performed, and it was found that there were no outliers in the dataset, hence, this assumption was also met.

In addition, before moving on to the results of the regression analysis, it is recommended to take a glance at the descriptive statistics of the variables and check the underlying assumptions of the regression test among advanced learners. Table 3 presents the results of the descriptive statistics for advanced learners' creativity, learning style, metacognition, and complexity scores:

Table 3

Descriptive Statistics Results for Advanced Learners

	N	Minimum	Maximum	Mean	Std. Deviation
Creativity	60	60.00	180.00	148.16	33.08
Learning style	60	201.00	316.00	234.61	28.82
Metacognition	60	69.00	197.00	136.50	38.50
Complexity	60	.44	1.87	1.16	.43

Table 3 shows the number of participants, minimum scores, maximum scores, mean scores, and standard deviations of the creativity, learning style, metacognition, and complexity distributions. As far as the underlying assumptions of multiple regression are concerned, the assumption of sample size had been met. The assumption of multicollinearity had not been violated since the correlation results among the variables revealed that there were at least some degrees of correlation between writing complexity and each of the independent variables of creativity, learning style, and metacognition. Additionally, no two independent variables had a very strong correlation, and thus they could not be regarded as a single variable, indicating that the assumption of singularity was also met. Finally, the initial screening of the data showed that there were no outliers in the dataset, and this assumption was also met.

After making sure the assumptions were met, the multiple regression analysis was applied to find out whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among intermediate Iranian EFL learners. In addition, the multiple regression analysis was subsequently employed to find out the answer to the second research question, which dealt with whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among advanced Iranian EFL learners.

The Predictors of L2 Writing Complexity among Intermediate EFL Learners

Multiple regression was applied to find out whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among intermediate Iranian EFL learners. Table 4 indicates the results:

Table 4

Model Summary for Multiple Regression Run for L2 Writing Complexity for Intermediate Learners

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.33	.11	.06	.40

Table 4 shows .11 under the column of the R Square, which means that creativity, learning style, and metacognition explained 11 percent of the variance in complexity among intermediate EFL learners. Table 5 demonstrates the statistical significance of the multiple regression results run for writing complexity for intermediate EFL learners.

Table 5

Statistical Significance of the Multiple Regression Results Run for L2 Writing Complexity for Intermediate Learners

Model	Sum of Squares	*df*	Mean Square	*F*	Sig.
Regression	1.24	3	.37	2.29	.08
Residual	9.14	56	.16		
Total	10.26	59			

As Table 5 indicates the p-value is .08 and it was larger than the significance level ($p > .05$), which reveals that these three factors (creativity, learning style, & metacognition) did not significantly predict the complexity of writing among intermediate EFL learners. Therefore, Table 6 demonstrates the Beta scores on the Standardized Coefficients column.

Table 6

Predictive Power of the Independent Variables for L2 Writing Complexity: Intermediate Learners

	Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.378	.598		2.30	.025	.179	2.577
Creativity	.003	.001	.304	2.39	.020	.001	.006
Learning Style	-.002	.002	-.144	-1.13	.260	-.007	.002
Metacognition	.001	.001	.066	.52	.601	-.002	.003

As shown in Table 6, the largest value of Beta in the Standardized Coefficients column is connected to creativity (Beta=.30). The values of Beta for learning style and metacognition are (-.14), and (.066), respectively. Therefore, creativity is the predictor of intermediate EFL learners' writing complexity.

The Predictors of Writing Complexity among Advanced EFL Learners

Multiple regression was employed to find out the answer to the second research question, which dealt with whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among advanced Iranian EFL learners. The results of multiple regression are shown in Table 7.

Table 7

Model Summary for Multiple Regression Run for L2 Writing Complexity for Advanced Learners

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.18	.03	-.01	.44

As Table 7 shows, the R Square value is .03, which means creativity, learning style, and metacognition explained only 3 percent of the variance in the writing complexity among advanced EFL learners. In addition, Table 8 indicates the statistical significance of the multiple regression results run for writing complexity for advanced EFL learners.

Table 8

Statistical Significance of the Multiple Regression Results Run for L2 Writing Complexity for Advanced Learners

Model	Sum of Squares	*df*	Mean Square	*F*	Sig.
Regression	.40	3	.13	.69	.56
Residual	10.86	56	.19		
Total	11.26	59			

As Table 8 indicates, the Sig. was higher than the significance level (.56>.05) and therefore, creativity, learning style, and metacognition did not significantly predict L2 writing complexity among advanced EFL learners. Table 9 reveals which independent variables (creativity, learning style, & metacognition) were the predictors of writing complexity among advanced EFL learners.

Table 9

Predictive Power of the Independent Variables for L2 Writing Complexity: Advanced Learners

	Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
	B	Std. Error	Beta	*t*	Sig.	Lower Bound	Upper Bound
(Constant)	1.052	.532		1.97	.053	-.013	2.117
Creativity	-.002	.002	-.163	-1.23	.223	-.006	.001
Learning Style	.001	.002	.092	.69	.492	-.003	.005
Metacognition	.001	.001	.064	.48	.627	-.002	.004

As shown in Table 9, the Beta values for creativity, learning style, and metacognition were (-.16), (.09), and (.06), respectively. However, as Table 9 reveals, the p-values of these three factors were insignificant. Therefore, these three independent variables did not significantly predict L2 writing complexity among advanced EFL learners.

The Learners' Descriptions of Learning Style

Concerning the third research question, which dealt with how intermediate and advanced Iranian EFL learners describe their learning style, some definitions were provided by the learners. One of the participants had written that learning style is connected to the learners' characteristics. In other words, she believed that each person has his or her own learning style. The second participant had written in his paper that some learners learn materials through different methods, such as watching and memorizing. In addition, she had written that one specific style of learning does not fit everyone, and each person can choose one or more learning styles to learn better. The third participant answered this question by introducing her learning style. She had written that she usually learns through listening, reading, watching, and performing. She defined learning style as the

specified method of learning. The fourth participant had written that she usually writes the important materials in a notebook, and then she tries to summarize them. Another participant had written that she usually learns better when she listens to the teacher and writes the teacher's notes on the whiteboard. Other participants had written similar definitions for learning style. In addition, they had written about their different learning styles and described their different activities that they usually do to learn better.

The Results of the Interview

The Results of the Interview with Learners

This part of the results section explains the findings of the interview with EFL learners. This session took 90 minutes, in which 10 female participants (6 intermediate & 4 advanced) voluntarily took part and answered five questions concerning the study variables, such as creativity, learning style, and metacognition. In addition, the participants filled in the consent forms to participate in this session. Moreover, this session, which was held in a classroom context, took 90 minutes and each participant was provided nine minutes to respond to the interview questions. Further, this session was recorded and transcribed. It is noteworthy, confidentiality and privacy were observed throughout the interview session and transcribing it.

Participants talked about how to learn materials and about the strategies and styles that they use for learning. Some learners claimed that they learn by watching the words on the whiteboard or in their books. Some claimed they must write the words and materials to learn better. Some others claimed that they prefer to do something to learn materials. The transcribed data indicated that a lot of participants like creativity, and they believed that creativity can make everything attractive, and therefore, it can enhance the learners' enthusiasm to learn better. One of the advanced learners claimed that she became more interested in learning something through creative and novel materials. She stated:

> I always become more interested in creative and novel things and try different styles of learning. For instance, I sometimes learn by listening, sometimes by watching, and some other times by doing. In addition, I apply different strategies to learn new materials, such as taking notes, organizing the materials, and planning for study. I usually try to create new ideas and things to provoke my motivation and interest to learn. Moreover, I use different strategies to develop my writing skills. For instance, sometimes I read a text, and then I try to reconstruct it. Sometimes, I apply mind mapping to create an interesting and creative piece of writing.

Another advanced learner claimed that she usually applies different strategies for learning, particularly in writing. She stated:

> I usually apply different strategies and techniques to learn different materials, specifically in language learning and writing skills. For instance, I make flashcards to learn new words and phrases. In addition, I sometimes learn grammar better by providing the grammar rules and structures, whereas other times, the grammatical structures are learned by presenting different examples. Moreover, I always have a notebook to write the new words in and review them. Further, an amusing and fascinating context can help me learn new materials. Therefore, I usually try to create an interesting environment with a lot of novel ideas and materials to provoke my motivation to learn. Because I do not like the repetitive and boring context and materials.

> As a result, I think about the new ideas and things to stimulate my interest and motivation to learn new materials better. I believe that all human beings like new and creative things. I think that it is an inherent feature of human beings. Sometimes my friends and I apply Dictogloss to make comprehensible sentences. To do this, one of my friends read a text several times, and then we tried to write whatever we understood. Next, we check our writing one by one and give comments on the errors.

The responses of the third participants were surprising and reflective. She was an intermediate learner who claimed that she could not learn the materials because the materials were not presented in a stimulating manner. She stated:

> Since the materials were provided in traditional methods, and without creating new and interesting contexts to learn, I lost my motivation to learn. I learn better by watching and listening, while some of my friends learn by performing. My friends and I are trying to learn and teach materials to each other through different strategies and techniques. For instance, we employ videos and technology to create an interesting context to learn materials better. I believe that each of us enjoys novel and creative things in our lives, especially in education. When materials are presented with novel techniques and methods and based on learners' styles, they will be more comprehensible. I think teachers should teach materials according to learners' learning styles. In addition, teachers should apply creativity in their teaching style.

Other intermediate and advanced learners had positive attitudes about these concepts in learning, and they claimed that they usually use different strategies and styles to learn materials. They believed that creativity in everything makes it interesting and enhances learners' motivation to study. This session provided the opportunity for some learners to become familiar with these concepts technically; they claimed that they always like new things and materials, and this novelty provokes their interest and enthusiasm to learn better. Some other learners became aware of their learning styles and the most dominant strategies they apply in learning. This revealed that although the participants were not familiar with the technical names of these concepts, they were aware of them. They thought that these concepts were crucial in learning, especially creativity, because creativity is important in a wide variety of fields, such as our lives, jobs, and learning.

The Results of the Interview with English Instructors

Creativity in teaching can increase learners' motivation and self-esteem and lead to academic achievement (Fisher, 2004). In the interview session, two language instructors took part and discussed creativity, learning style, and metacognition in ten minutes. They stated that creativity is used in their classrooms. In addition, they claimed that teachers should have enough knowledge to apply more engaging and interesting materials. When teachers are knowledgeable in subject matter and issues related to it, they have self-confidence, and then, they will have control of their class. One of these English instructors stated:

> I usually try to create an interesting environment for learning English by using pictures, posters, and other attractive materials. Sometimes, I do not follow the exact lesson plans or the books, instead, I try to teach in terms of learners' needs and styles. I apply new strategies and approaches

to attract learners' attention and interest. I always try to help learners develop their self-confidence, and then, they will succeed in language learning, particularly in writing skills. In addition, I use different creative strategies to develop my writing skills. For instance, I sometimes ask my learners to rewrite or reconstruct some reading texts. Sometimes I involve them in teaching process to increase their self-confidence and self-esteem. Sometimes we use brainstorming and mind mapping to practice and develop writing skills. I usually ask my learners to keep a journal and write their daily activities. Sometimes I ask them to bring their journals, read some of their sentences in the class, and reflect on the structures of the sentences. In addition, we have some free writing sessions, in which my learners can write about everything that they like. In this session, learners read their writings and comment on the structural and grammatical problems. In this way, they pay attention to the structures and word choices and try to make creative and meaningful texts. Moreover, I make links between different language skills (reading, writing, listening & speaking). For instance, the other day, we had a reading about the different types of pollution, such as air pollution and water pollution. We started talking about the meaning of pollution, its causes, and effects. We wrote some sentences and tried to reconstruct some other sentences. In this method, learners are confronted with different structures in writing and learned how to write complicated sentences with compound clauses and phrases. Therefore, learners made links between reading and writing skills and they had writing activities in a reading task.

In addition, the second English instructor talked about what they have done in their classes. She stated:

> Sometimes my students and I try to write different kinds of paragraphs about the same topic to focus on writing complexity. We talk about the text structures, their organization, and the sequence of the words. I teach them how to make long, complicated, and comprehensible sentences or clauses through different conjunctions and compound phrases. Sometimes I try to involve learners in the process of teaching through writing about learners' personal events and experiences. Sometimes I ask students to select a topic and write some paragraphs about it. Next session is devoted to these topics, their features, organizations, and how to make them longer and more complex clauses or sentences. I usually try to teach based on the learners' styles of learning. Therefore, I usually apply different approaches and tasks to support different learning styles.

Generally speaking, both of these English instructors agreed on employing creativity in teaching. They stated that creativity should begin in the educational system. In addition, they stated that creativity should be supported by the educational system in a way that schools and institutes should allow teachers to teach based on the learners' needs and learning styles. Moreover, teachers should be allowed to apply creativity in their teaching rather than following the rigid lesson plans or textbooks. They stated that teachers should use the different creative and attractive techniques to support the leaners' styles of learning and attract their attention and interest.

Discussion

This study aimed to illuminate whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among intermediate and advanced Iranian EFL learners, and the learners' descriptions of learning style. Concerning the first research question, which investigated whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among intermediate Iranian EFL learners, the findings revealed that only creativity can significantly predict L2 writing complexity among intermediate learners. Regarding the second research question, which examined whether creativity, learning style, and metacognition are the predictors of L2 writing complexity among advanced Iranian EFL learners, the findings demonstrated that none of these three variables (creativity, learning style, & metacognition) are the predictors of L2 writing complexity among advanced learners. Concerning the third research question, which explored how intermediate and advanced Iranian EFL learners describe their learning style, the findings indicated that participants have similar perceptions about learning style. They defined learning style as the specified way of learning for everyone, which is connected to his or her characteristics.

With respect to the intermediate learners, creativity is the predictor of L2 writing complexity. This is because the intermediate learners might use different creative and stimulating strategies to create complicated and elaborated sentences compared with the advanced learners. Therefore, creativity was the only factor that could predict L2 writing complexity among the intermediate learners. On the other hand, the advanced learners might not pay attention to L2 writing complexity, and then, they do not apply creativity in their writing and do not make complex sentences. They might pay more attention to other factors like fluency or accuracy, and thereby, creativity, learning style, and metacognition did not predict L2 writing complexity among creativity, learning style, and metacognition.

Theoretically, these findings are supported by Guildford's (1959) theory, which identified two aspects in creativity: convergent thinking and divergent thinking. Convergent thinking is concerned with finding the best solution for a problem, while divergent thinking is connected with finding different solutions to the intended problem. To be a creative person, both of them (convergent thinking & divergent thinking) are necessary (Simonton, 2012). In addition, the findings are confirmed by Vygotsky's (2004) developmental theories, who stated that individuals have different levels of creativity from childhood to adulthood, and it can be developed over time.

The findings of this study align with Baghaei and Baghaei' s (2022), Khodabakhshzadeh et al.'s (2017), Pishghadam et al.'s (2011), and Rezaei and Almasian's (2007) findings which have indicated that creativity is a significant predictor in language success. In addition, the findings of the study conform to those of Nosratinia and Razavi (2016), who demonstrated that there is a significant relationship between creativity and writing complexity, accuracy, and fluency (CAF). Moreover, the findings of the present study are consistent with the findings of previous research studies indicating no relationship between learning style and achievement (Aliakbari & Qasemi, 2012; Husmann & McLoughlin, 2019; Rashvand Semiyari & Jahani, 2020).

However, the findings of this study contrast with Khodabakhshzadeh et al.'s (2017) findings, who revealed that metacognition is more effective than two other variables (creativity & learning style). In addition, the findings are inconsistent with those of Barzegar and Tajalli (2013), and Ajideh and Gholami (2014), who have maintained that learning

style is the best predictor of EFL learners' test performance. Similarly, the findings of Pranata et al. (2023) indicated that there is a relationship between learners' learning styles and their academic achievement. On the other hand, Sun and Zhang (2023) indicated that metacognitive experiences have effects on writing CAF.

The findings of the semi-structured interview revealed that although some participants were not aware of the technical notions of these concepts, they enjoyed creativity in their contexts and had a specific learning style. In addition, they claimed that they use a wide variety of strategies and techniques to learn better. Moreover, two instructors took part in this session, and they agreed on applying creativity in education. They stated that schools should encourage both teachers and students to be creative. Further, both qualitative and quantitative data indicated that learners have different levels of creativity and learning styles, and they apply different strategies to learn better.

Generally speaking, this study and its findings align with the existing literature (Atkinson, 2004; Baghaei & Baghaei, 2022; Fahim & Zaker, 2014; Ghasemi et al., 2011; Grant, 2017; Naderi et al., 2009; Nosratinia & Zaker, 2014; Otto´, 1998; Pishghadam et al., 2011; Rezaei & Almasian, 2007; Suzuki et al., 2022) which has shown that creativity has a significant relationship with many factors such as course grade, critical thinking, language proficiency, and language achievement. In addition, the findings support the findings of the study of Nosratinia and Razavi (2016), who revealed that there is a statistically significant relationship between creativity and writing complexity, accuracy, and fluency (CAF). On the other hand, the findings of this study confirm the findings of the previous studies (Aliakbari & Qasemi, 2012; Husmann & McLoughlin, 2019; Rashvand Semiyari & Jahani, 2020), which have demonstrated that there is no relationship between learning style and achievement.

Conclusion

This study aimed to explore the predictive powers of creativity, learning style, and metacognition on L2 writing complexity among intermediate and advanced Iranian EFL learners, and the learners' descriptions of learning style. This study's contribution to the existing literature is its discovery in finding out the predictors of writing complexity of intermediate and advanced EFL learners. The findings revealed that creativity is the predictor of writing complexity among intermediate EFL learners. In the case of advanced learners, none of these three variables (creativity, learning style, & metacognition) were the predictors of L2 writing complexity.

The findings of the present study confirmed the findings of Nosratinia and Razavi (2016), who indicated a significant correlation between creativity and writing CAF. In addition, the findings corroborated the findings of Naderi et al. (2009), who revealed a relationship between creativity and academic achievement. Moreover, the findings supported the findings of other studies which have demonstrated that there is a significant correlation between creativity and some other factors such as language proficiency and language achievement (Atkinson, 2004; Baghaei & Baghaei, 2022; Fahim & Zaker, 2014; Ghasemi et al., 2011; Grant, 2017; Nosratinia & Zaker, 2014; Otto´, 1998; Pishghadam et al., 2011; Rezaei & Almasian, 2007; Suzuki et al., 2022).

Based on the findings of the study, this research study can have some micro and macro implications in education. Learners can enjoy these findings at the micro level by getting familiar with their creativity, learning style and metacognitive activities. Creativity is a critical factor in language learning, especially in writing. In addition, learners

can practice creativity in learning, and then they can promote language learning. A setting that provides learners to apply creativity in their learning can give them a sense of freedom, self-evaluation, and empathy (Fisher, 2005). Moreover, English instructors can attract learners' attention with interesting and creative materials. Therefore, instructors and their parents can provide a setting for students to promote creativity (Meera & Remya, 2010). Based on the interview results, teachers can apply various techniques and strategies to enhance learning. At the macro level, the study can be beneficial for syllabus designers, materials developers, and decision-makers to modify syllabi and textbooks involving different activities to attract the learners' attention and provoke their creativity, and thereby, promote their learning (Otto´, 1998). Therefore, learners would follow the materials enthusiastically and learn better.

This study has several limitations that need to be acknowledged and considered in future research. First, a major weakness resides in the small number of participants in the present study. Further studies could be conducted with a large sample of participants. Second, the participants were at intermediate and advanced English levels and confined to these particular types of learners. Findings could differ with elementary or higher-level learners with different characteristics. Third, female learners were selected to control gender effect. Future studies could be conducted involving both genders (males & females). Fourth, further studies could be conducted in different settings such as universities by considering other variables in the study. Fifth, writing was concentrated in this study, and other skills such as reading, listening, and speaking were been ignored. Since there are some differences between productive and receptive language skills (Ekstrand, 1977; Genesee, 1976), further studies can investigate other skills. Finally, assessing personal features like creativity, learning style, and metacognition through questionnaires is less valid and reliable compared with the actual and natural methods of assessment such as observation (Veenman & Hout-Wolters, 2001).

This study opens up some interesting questions for further research. First, one variable that was not investigated here was gender. There is much room for further research in this respect. Second, further studies can be conducted with a larger sample size in different settings such as schools, universities, and language institutes. Third, further research studies can consider other language skills such as reading, listening, and speaking. Fourth, future studies can apply other methods of measurement.

In spite of the limitations of this study, one of the strong points of this study is that it attempted to investigate the predictors of L2 writing complexity among creativity, learning style, and metacognition. The findings revealed that creativity is the predictor of L2 writing complexity among intermediate EFL learners. In addition, the findings indicated that none of these three variables (creativity, learning style, & metacognition) were the predictors of L2 writing complexity among advanced learners.

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