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Interplay of a Learner's Regulatory Focus and Genre on Second Language Writing

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Many empirical findings of previous studies have suggested a connection between motivational factors and L2 writing. Nonetheless, the impact of motivational factors on the genre-based L2 writing has not gained much attention. The present study explored the extent to which the characteristics of two writing tasks involving different genres interact with a learner's motivational disposition (regulatory focus) and, further, affect language production of writing. 106 essays collected from 53 university EFL learners were assessed in terms of linguistic complexity and accuracy. 2X2 ANOVA results revealed significant main effects of genre on lexical complexity (lexical variation and MSTTR). More importantly, there were significant interaction effects between genre and regulatory focus on both measures of the syntactic complexity (mean length of T-unit and clause per T-unit) and lexical complexity (lexical density). The findings highlighted the significance of learners' motivational dispositions in genre writing. Drawing on the findings, some pedagogical suggestions to ensure the effectiveness of writing tasks on L2 development were proposed.

Key words: L2 motivation, genre, regulatory focus, individual differences, L2 writing task, linguistic complexity

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1. INTRODUCTION

Different genres drive a learner to focus on various linguistic elements to communicate appropriately and elicit certain syntactic and discourse features (Biber & Conrad, 2019). L2 writing research observed L2 learners exhibit different levels of linguistic performance across genres. Studies focusing on linguistic differences across genres have found that, compared to its narrative or descriptive counterparts, argumentative writing has higher syntactic complexity, such as mean clause length (Lu, 2011; Yoon & Polio, 2017), subordination (Zhang, Lu & Li, 2022), and higher lexical complexity (Jeong, 2017; Staples & Reppen, 2016).

Through various approaches, the research has proposed different explanations for the effect of genres on the language production of L2 writing. One explanation is based on cognitive hypotheses (Kuiken & Vedder, 2012; Ong & Zhang, 2010; Ruiz-Funes, 2015; Tavakoli, 2014; Zhan, Sun, & Zhang, 2021) which argues that language variances across different genres are based on the level of 'reasoning demands'. The other interpretation available is from the socio-cultural view of language development, under which task types of different genres were assumed to share distinct communicative purposes and functions (i.e., narrative, descriptive, or argumentative) (Biber & Conrad, 2019; Qin & Uccelli, 2016). Taken together, different communicative goals and the levels of cognitive demand embedded in genres have shown to affect the linguistic production of L2 writing. Regarding linguistic variability across genres, some recent studies have attempted to explore the reasons behind genre effects through considering learner factors such as proficiency (Jeong, 2017; Yoon, 2017), genre knowledge (Bi, 2020), and topic familiarity (Atak & Saricaoglu, 2021). Despite numerous empirical findings on the role of motivation on L2 writing, learners' motivational factors have not yet been addressed in relation to genre effect on L2 writing.

The role of a learner's motivational sources in writing is well highlighted in the Hayes' (2000) new writing model. Hayes emphasizes the interplay among cognitive components (e.g., working memory, long-term memory), motivational attributes (e.g., goals, *predispositions*, belief, and attitude), and task environment (e.g., task materials, writing medium, collaborators, and audience). The biggest difference between the old model (Hayes-Flower model; Hayes & Flower, 1980)[1] and the new model is that the latter framework sheds light on motivation and affective variables. Many empirical findings of previous studies suggest that there exists a connection between L2 writing and a learner's motivational factors such as self-efficacy (Piniel & Csizér, 2015), learner beliefs (Rahimi & Zhang, 2019), self-regulation strategies (Teng & Zhang, 2018; Zhang et al., 2022), and

[1] Hayes-Flower model (1980) is a cognitive writing process model. This old model illustrates the cognitive writing process within the framework of the two components: task environment (topic, audience, motivating cues) and writer's long-term memory.

anxiety (Rahimi & Zhang, 2019; Zabihi, Mousavi, & Salehian, 2020).

The present study aims to further research on the role of motivational sources in L2 writing. Within the field of L2 writing research, learners' motivational sources have so far been seen as a quantitative factor in which the general conclusion has been repetitively drawn; greater motivation brings better outcomes in L2 writing development. In the field of L2 motivation research, however, researchers started to pay attention to the role of a learner's qualitative motivation (Papi, 2018), connecting both the cognitive and motivational aspects of language learning. For instance, studies that have employed future L2 self-guides (Kim, 2021; Papi & Khajavy, 2021) best reflect the role of qualitatively different motivation, which is promotion-prevention distinction outlined in the regulatory focus theory (Higgins, 1997, 1998). More importantly, some studies have revealed significant impacts of the regulatory fit effect (Higgins, 2005) on L2 performance of vocabulary learning (Papi, 2018) and oral production (Han & Mcdonough, 2018, 2021). The general findings of these studies suggest that the levels of 'fit' between L2 learning task and the regulatory focus of learners were positively related with their task performance.

In addition, whereas there are many findings as to the role of learner factors on L2 writing task performance, there is a lack of research establishing the links between a learner's qualitative motivation and their L2 writing task performance. L2 writing task performance may vary depending on how well the writing task's features support the learner's motivational disposition. The link between L2 writing tasks and learners' motivational dispositions may be more pronounced in writing tasks with different genres due to genre-specific task characteristics including various communicative goals and rhetorical functions. The present study attempts to fill this research gap and explores how qualitatively distinguishable motivational disposition may interact with writing tasks and affect L2 writing task performance. Drawing on insights of the regulatory fit effect (Higgins, 2005), the current study examines the relationship between regulatory focus and the performance of two writing tasks: picture descriptive writing and argumentative writing.

2. LITERATURE REVIEW

2.1. Genre Effects and Individual Difference Factors

Within the field of L2 writing research, genre is considered as a task variable which affects the linguistic quality of writing. Genre effects observed in L2 writing studies have been often interpreted based on its varying degrees of reasoning demand (Ong & Zhang, 2010; Ruiz-Funes, 2015; Tavakoli, 2014; Zhan et al., 2021) and genre-specific communicative purposes and functions (Biber & Conrad, 2019; Qin & Uccelli, 2016). Although some studies have

shown the tendency that, compared to its narrative or descriptive counterparts, argumentative writing leads to higher linguistic complexity, other studies yielded inconsistent findings in terms of complexity measures. For example, some studies observed significant differences in the measure of mean clause length, or subordination (Lu, 2011; Yoon & Polio, 2017), whereas others revealed differences in the measures of lexical complexity (Jeong, 2017).

Regarding inconsistent findings of genre effects on L2 writing, some researchers further explored how learner variables such as proficiency or topic familiarity can affect language performance across genres. Jeong (2017) investigated the impact of proficiency on genre effects. Jeong examined the narrative and expository essays written by 180 EFL learners, and categorized them into three levels (beginner, intermediate, and advanced). He assessed the essays using four performance criteria: paragraph structure, content, form, and vocabulary. The results demonstrated the impact of proficiency on genre effect where beginner writers obtained higher scores on the narrative essay, while advanced writers did so on the expository essay. His study clearly showed the evident role of proficiency on writing quality across genres. Yoon (2017) also examined 1198 argumentative essays written by Chinese EFL students but failed to observe significant differences in clause-level measures across proficiency levels. Yoon's study only showed differences in phrase-level complexity but revealed significant topic effects on complexity measures: a topic which was more relevant to the learner's experiences elicited more complex language. The prediction on topic effect obtained in Yoon's study, however, was rejected in the recent study by Atak and Saricaoglu (2021). Atak and Saricaoglu examined the same topic effect by evaluating argumentative essays of 90 Turkish EFL learners and the participants were asked to compose essays under three different topics: 1) Death penalty should/should not be legalized, 2) Online learning is /is not better than traditional learning, 3) Cell phones should/ should not be banned in schools. To their surprise, the hypothesis which claimed the cell phone topic would elicit the most complex language due to familiarity, was rejected. Results rather showed that the death penalty topic led to more complex structures, representing different kinds of topic effect on writing.

Unlike previous findings of the genre effect, the study by Zabihi et al. (2020) found genre significantly impacts accuracy. Using writing samples from 102 L2 English learners in Iran, they examined how a learner's anxiety influences language production in narrative and argumentative writing. The results revealed that, for narrative writing, anxiety was negatively correlated with only the level of accuracy, but for argumentative writing, significant negative correlations were found in all dimensions: complexity, accuracy, and fluency. Hence, Zabihi et al.'s study findings imply there exists a connection between the level of anxiety and accuracy of L2 writing. Although most studies observed different levels of language performance primarily in the complexity measures, the present study examined accuracy as well as complexity. The main reason for the inclusion of the 'accuracy' measure

is to observe the interactive impact of regulatory focus and genre on learner's anxiety and in turn, on the levels of writing accuracy.

In sum, previous literature reviewed above has attempted to elucidate individual differences in genre effects by investigating variables such as proficiency, genre knowledge, and topic familiarity. Genre-based studies have mainly focused on exploring whether their results correspond to the predictions of genre effect. That is, a researcher manipulates writing tasks with genres by only controlling external variables based on the assumption that the rhetorical function of the genre will affect their language use. There is a lack of research to critically observe the influence of learners' motivational characteristics on the genre effect, which may be closely linked to L2 development through writing. The current study examines the influence of learners' regulatory foci on language production of two writing tasks with different genres**.**

2.2. Regulatory Focus as Motivational Disposition and Regulatory Fit Effect

The theoretical rationale of the current study stems from the recent trend of the L2 motivation studies (Papi & Khajavy, 2021) that first have addressed language learners' trait-like motivational preferences to paint a better picture of the role of motivation in L2 learning. With an attempt to explore the link between L2 cognitive and motivational aspects of language learning, L2 motivation studies recently started to adopt Higgins's (1997, 1998) regulatory focus theory. According to this theory, learners with different self-regulatory orientations (i.e., promotion-focus vs. prevention-focus) exhibit differences in their motivational, emotional, and behavioral characteristics. In detail, learners with a predominantly promotion-focus are concerned with advancement, growth, and accomplishment, and are sensitive to the presence or absence of positive outcomes. They take more risks (Scholer, Zou, Fujita, Stroessner, & Higgins, 2010), think intuitively (Pham & Avnet, 2009), follow an eager strategic inclination to maximize their opportunities for gains (Crowe & Higgins, 1997), use more abstract words (Semin, Higgins, Montes, Estourget, & Valencia, 2005), and favor speed over accuracy in task completion (Förster, Higgins, & Bianco, 2003). On the other hand, prevention-focused learners tend to be more concerned with security, safety, and calmness, and are sensitive to the presence or absence of negative outcomes. Prevention-focused learners are more risk-averse (Scholer et al., 2010), think analytically (Pham & Avnet, 2009), follow a vigilant strategic inclination to insure they avoid making mistakes, use more concrete words (Semin et al., 2005), and favor accuracy over speed (Förster et al., 2003).

Regulatory fit theory (Higgins, 2005) predicts that individuals will be more strongly engaged in an activity and value it more when there is the 'fit' between the task and his or her regulatory focus. Fit influences the strength of value because it makes people "feel right"

about what they are doing. Regulatory fit has been shown to influence judgments and decision making, attitude and behavior change, and task performance. That is, the higher level of regulatory fit increases the value of the goal and induces a higher level of motivation, which in turn may lead to better task performance (e.g., Spiegel, Grant-Pillow, & Higgins, 2004; Van Dijk & Kluger, 2011). Studies that explored the relationship between regulatory focus and learning tasks often involved various types of tasks to test the regulatory fit effect. Among the studies that examined regulatory fit effect on task performance, the study by Semin et al. (2005) is worth reviewing as it well demonstrates the effects of regulatory fit in relation to language learning and use. They examined the systematic differences in language use among individuals with varying regulatory focus. In this study, it was hypothesized that the linguistic signature of promotion-focus would be characteristically abstract, and the same of prevention-focus would be concrete. The results showed that individuals with promotion focus tend to mentally represent information at an abstract level and are inclined to use more abstract language, while individuals with prevention focus tend to mentally represent the same information at a concrete level and are likely to use more concrete language. Moreover, the influence of motivational orientation was shown to be strong and evident in task performance when there is a fit between the linguistic signature of a message and regulatory focus (promotion or abstract vs. prevention or concrete).

Accumulated study findings regarding regulatory fit (see Van Dijk & Kluger, 2011) suggest that various task types can create different levels of 'fit' depending on the task characteristics and learner's regulatory focus. Specifically, promotion tasks often require creativity, risk-taking, and eagerness (e.g., generating ideas, creative problem solving, and challenging decision making), whereas prevention tasks require attention to details, vigilance, and adherence to rules (e.g., detecting errors, work scheduling, and maintaining safety and quality control). As mentioned above, the role of regulatory focus on L2 learning has been understood through how it postulates L2 motivational traits. Many researchers in the field of L2 learning motivation have often employed the promotion-prevention distinction to account for future L2 self-guides (Papi & Khajavy, 2021; Taguchi, Magid, & Papi, 2009). Regulatory fit effect was first introduced in the field by Papi (2018). He examined its effects on learners' task engagement and L2 vocabulary learning. In his study, 189 ESL learners completed the regulatory focus questionnaire, took a pretest of vocabulary, and completed an integrated reading/writing task, followed by a vocabulary post-test. One group of learners received the instructions in gain condition (promotion), while the other group of learners received the instructions in loss condition (prevention). The results revealed the levels of 'fit' between the incentive structure of a task and the regulatory focus of learners were positively related with their vocabulary learning outcomes. The two studies by Han and McDonough (2018, 2021) also provide evidence of the regulatory fit effect on L2 task performance. Their first study explored whether an L2 learner's regulatory focus and

a task-induced condition is related to their L2 oral task performance. In their study, 62 Vietnamese university students learning Korean as a foreign language were randomly assigned to the promotion or the prevention-induced task conditions and completed an oral task. The results revealed that whereas the participants' regulatory foci did not impact their linguistic performance, the prevention-focus task condition facilitated fluency and accuracy more than the promotion-focus condition. Han and McDonough (2021) explored the effectiveness of communicative tasks distinguished as 'promotion' or 'prevention' on 47 Korean L2 speakers' oral productions. They found results inconsistent from the earlier study: instrumentality-prevention had a negative effect on accuracy and task-induced promotion/prevention had no main or interaction effects on linguistic performance.

To summarize, studies reviewed here may provide evidence that the success of L2 learning would rely on how well the learning task features support a learner's motivational disposition. Although the results of vocabulary learning or L2 oral production studies reviewed above may not directly apply to the L2 writing, they intrigue the question of whether a learner's regulatory focus may influence L2 writing by interacting with the various writing task characteristics, and in turn, creating different levels of 'regulatory fit'. Given that L2 writing instruction involves various writing tasks, the regulatory fit perspective may provide a useful framework for understanding individual variances in L2 writing task performance. In the next section, we propose a theoretical framework, which is drawn from regulatory fit effects and Hayes' (2000) new writing model that highlights the significant role of learners' motivational sources in the writing process.

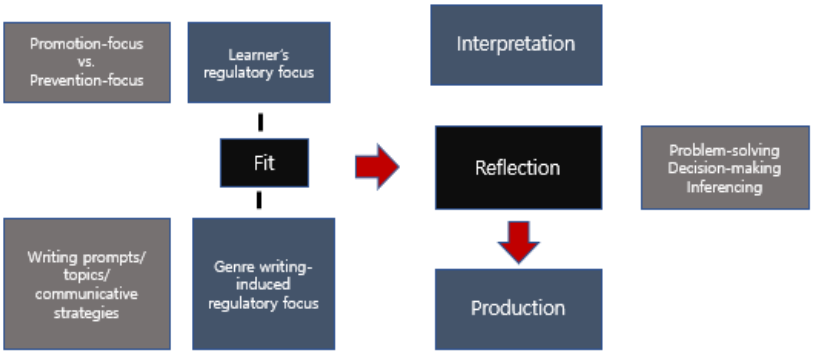
2.3. Hayes' (2000) New Writing Model and Theoretical Framework

Hayes argued writing is a goal-directed learning activity where a writer pursues achieving a balance among various competing goals during writing. Since the original writing model of Hayes' (1996), the model has been constantly modified by including more affect and motivational factors. Specifically, Hayes' (2000) new writing model highlights the significance of interplay among cognitive components, motivational attributes (e.g., goals, predispositions, belief, and attitude involved in writing), and task environment (e.g., task materials, writing medium, collaborators, and audience). At a large level, the new model involves two factors: task environment and individual. The latter consists of four components that interact with one another: motivation/affect, cognitive processes, working memory, and long-term memory. Among these, 'motivation/affect' was a new component in the revised model and Hayes and Flower (1980) highlighted that a significant place is reserved for motivation and affect in the new framework. During the act of writing, the knowledge-related component (such as topic knowledge, audience knowledge, and genre knowledge), together with other dimensions of individual differences (working memory and

motivational attributes), interacts with the task environment.

FIGURE 1

Theoretical Framework Modified from Hayes' (2000) New Writing Model



The new writing model consists of three stages of the writing process: text interpretation, reflection, and text production. According to the new model, among three stages of cognitive processing, reflection is an activity that operates internal representation through problem solving, decision making and inferencing. Hayes' new writing model and the regulatory fit effects demonstrated in various studies may provide a good rationale for understanding the possible impact of an individual's motivational disposition defined as a regulatory focus on L2 writing. Figure 1 presents the theoretical framework of the current study. It is hypothesized that the varying regulatory fit between regulatory focus and situationally induced regulatory focus by genres (e.g., topic prompts and the communication strategies) will greatly influence problem-solving and decision-making strategies during the reflection phase of the writing process and result in qualitatively different language production. The following two research questions guided this study:

1. Do learners exhibit linguistic differences in complexity and accuracy across the two genres of picture descriptive writing and argumentative writing?
2. Is there an interaction effect between the learner's regulatory focus and genre on linguistic performance of complexity and accuracy?

3. METHODOLOGY

3.1. Participants

Sixty intermediate level Korean EFL university students (34 females and 26 males) participated in this study. Descriptive statistics is presented in Table 1. Their ages ranged from 20 to 28 (M = 22). At the time of data collection, the students were enrolled in two English courses designed to help them improve English communication skills and academic reading and writing skills. Students received three hours of instruction for each course per week during a 15-week-long semester and practiced various tasks involving discussions and debates on social issues. Much of the writing instruction was used to develop various academic reading and writing skills including summarizing, paragraphing, and revising skills, as well as guiding them in completing timed essay writing tasks.

TABLE 1
Descriptive Statistics of Demographic Variables

Variables	*M* (*SD*)	Range
Mean of the two essay scores	87.3 (9.5)	72.5-91.5
TOEFL score	82.8 (14.7)	78-105
Age	22.0 (2.4)	20-28
Months of stay in English speaking country	0.8 (0.4)	0-12
Years of English language learning	10.9 (2.6)	9-15

The participants' English proficiencies were controlled by two scores: 1) The course entrance exam including two essay writings and previous TOEFL scores. Initially, 64 students replied to the recruiting email and participated in the study. Out of 64, four students whose entrance exam scores were beyond the range of 72.5 to 91.5 were initially removed, resulting in the data of 60 students entering SPSS for coding. Out of 60, seven participants' data were excluded from the data analysis including four who did not complete the second writing task, two who failed to complete the regulatory orientation questionnaires, and one who had lived in an English-speaking country for seven years. Consequently, the 106 writing samples of 53 participants remained in the final dataset.

3.2. Instruments

3.2.1. Regulatory focus questionnaire

The Composite Regulatory Focus Questionnaire (CRFQ) validated by Haws, Dholakia, and Bearden (2010) was used to assess learners' motivational orientation. Haws et al. (2010)

reported that the CRFQ showed predictive power similar to or even in cases stronger than the Regulatory Focus Questionnaire (RFQ), one of the most popular instruments of regulatory focus. The CRFQ contains ten items measured with a five-point response scale, ranging from '(1) never true of me' to '(5) always true of me'. Among the 10 items, five measure the prevention focus (e.g., 'I frequently think about how I can prevent failures in my life'), and five assess the promotion focus (e.g., 'I feel like I have made progress toward being successful in my life'). Participants were asked to indicate their levels of agreement with each statement. The questionnaire was translated into Korean by the researcher, and back-translated into English by two Korean-English bilingual translators who had not seen the original English version of the questionnaire. The Korean version was administered after making some modifications based on a comparison between the original English version and the back-translated English version.

To examine the validity of regulatory focus measures, 10 items of CRFQ were factor analyzed using principal component analysis (PCA) with Varimax rotation. The analysis yielded two factors explaining a total of 51.23% of the variance for the entire set of variables (See Appendix.) Also, the internal consistency reliability of the CRFQ, Cronbach's Alpha (α) coefficient was first calculated. The alpha coefficient was .81 for the promotion scale (M = 3.80, SD = .74), and .67 for the prevention scale (M = 3.61, SD = .47).

3.2.2. Writing tasks

Writing tasks involved two distinctive genres: a picture descriptive writing and an argumentative writing. The picture descriptive task required learners to compose a story based on a set of six chronologically sequenced pictures, borrowed from Heaton's (2007) book '*Beginning Composition Through Pictures*.' The given pictures involved two boys cutting a ping-pong table's legs to adjust it to their height in order to play together. The pictures were easily comprehensible and straightforward. For the argumentative task, the students were given the two short passages (average length of 205 words) which had been translated into Korean to avoid any plagiarism of preformed English descriptions. The task stated arguments for and against the invention of a driverless car. Essentially, it required learners to write an essay supporting their position, for or against the invention of a driverless car.

The main reason for selecting these two tasks was to accentuate the differences between promotion-focus and prevention-focus characteristics of writing tasks. While the argumentative task required learners to write an argumentative essay giving their opinions, the descriptive task involved learners describing a story based on pictures as visual cues. That is, a picture descriptive writing task asks learners to find a value and meaning, eventually communicating with the reader through their description. In fact, some studies

have shown inconsistent results regarding the genre effect even with same evaluations of genre-narrative and argumentative, and the authors concluded that it seems to be due to the range of the topics presented in the narrative writing; often, this has been interpreted as the topic effect. In this regard, the picture descriptive writing was suitable for controlling the range of linguistic sources and useful for eliciting a learner's different regulatory focus (risk-taking vs. risk-avoiding) since the pictures provide a wide range of details for the learner to perceive. The straightforward picture story highlights the risk-avoiding prevention-focus orientation, whereas the more creative topic of driverless cars highlights the risk-taking promotion-focus orientation. Another reason to utilize the picture description task as the counterpart of argumentative task is to better capture the link between regulatory focus and visual/spatial features of the writing process, which is proposed by Hayes' (2000) new model. According to this model, in addition to linguistic representation, the writing process involves interpretation of various visual information presented (graph, text, figures, tables, etc.). A picture description task was considered appropriate to observe such interaction between motivational sources and visual/ spatial features of the writing process.

3.3. Procedures

Data were collected from the university students who enrolled in the two writing and debate courses, entitled 'Discussion and Debate in English' at a university in South Korea. Approximately two weeks prior to data collection, the instructor invited the researcher through a Skype call and the researcher presented the aim of the study to the participating students with information about their tasks. The researcher informed the students that participation in the study was voluntary and the data collected from them would remain anonymous and confidential. Data was collected after the last session of the semester, depending upon the number of participants and the availability of the instructor. The instructor and four assistants were all given detailed instructions in Korean on the data collection procedures. For thorough communication, the researcher utilized an online tool named 'Kakao video-talk' to guide the data collection session. First, students were asked to sign the consent form. Then, they were asked to complete a survey including the regulatory focus questionnaire and demographic information. Following, they were asked to complete two essay writing tasks (picture descriptive and argumentative) for 30 minutes each. Upon completion, students were asked to place all materials in the envelope and write a numerical code assigned to them previously (to ensure an anonymous process), and the instructor collected the envelopes. Data collection took approximately 90 minutes and each student received 20,000 won (equivalent to $17) as compensation for their participation.

3.4. Data Coding

3.4.1. Measures of linguistic performances

Linguistic performances were measured by the following dimensions: syntactic complexity, lexical complexity, and accuracy. The operational definitions for the variables are given in Table 2. The analysis of linguistic dimensions was completed using the web-based automated processing tools: L2 Syntactic Complexity Analyzer (L2SCA; Lu, 2010) and Lexical Complexity Analyzer (LCA; Ai & Lu, 2010).

TABLE 2

Operationalization of the Linguistic Measures Adopted

Variables	Measures	Definition
Syntactic complexity	Mean length of T-units (MLT)	Number of words/ Number of T-units
	T-unit complexity ratio (C/T)	Number of clauses/ Number of T-units
	Sentence coordination ratio(T/S)	Number of T-units/ Number of sentences
Lexical complexity	MS type token ratio (MSTTR)	Mean Type /Token ratio per 50 words
	Lexical word variation (LV)	Number of word types x100 / Number of word tokens
	Lexical density (LD)	Number of lexical items/ Number of words
Accuracy	Ratio of errors (ROE)	(Number of error cases / Number of words) x100

Regarding syntactic complexity, genre effects have often demonstrated the differences in length of production, subordination/ coordination. Out of three unit-length measures (MLS, MLT, and MLC), MLT were selected. The selection of measures in the present study was also based on the redundancy and construct distinctiveness of the measures (see Yoon, 2017). For example, clauses per sentence (C/S) is a measure of clausal sophistication that encompasses both subordination and coordination, but these two constructs can be measured using two distinct measures (clauses per T-unit (C/TU) for subordination and T-unit per sentence (TU/S) for coordination). Accordingly, the C/S and the T/S were selected. Also, the three measures of lexical complexity, mean segmental type token ratio (MSTTR), lexical word variation (LV), and Lexical Density (LD), were selected to gauge lexical variation and lexical density of the text.

Regarding accuracy, commonly employed measures of accuracy in the studies of L2 writing are ratio of errors over the total words, the total number of errors per T-unit and the ratio of error-free units. Inoue (2016) pointed out this "percentage of error-free clauses can have clustered errors in certain clauses, leaving others error-free, and hence produce quite a different value" (p. 499). We therefore elected to measure accuracy by means of the number of errors per 100 words. Two English native speakers with a master's degree in linguistics assessed the grammatical accuracy of the texts and were asked to identify any syntactic and

morphological errors, except for punctuation or capitalization errors. If there was a discrepancy in the scores of the two evaluators, it was discussed until a consensus was reached.

3.4.2. Regulatory focus

The questionnaire responses were coded based on the rubric of chronic regulatory focus (Haws et al., 2010). The two levels of predominant orientation (promotion-focus and prevention-focus) were considered as an index of regulatory focus score. The predominance of regulatory focus was calculated based on Higgins' scoring guide. The participants' predominant focus is computed by subtracting the mean rating for prevention-related items from the mean rating for promotion-related items: dominant orientation = promotion – prevention. A positive score indicates promotion-dominant orientation (promotion group), and a negative score indicates prevention-dominant orientation (prevention group). Larger absolute values indicate the strength of predominance. Participants with the same values of promotion and prevention were excluded from the analysis.

3.5. Data Analyses

To test the internal consistency reliability of the CRFQ, Cronbach's Alpha (α) coefficient was calculated on the data collected using the questionnaire. Following, principal component analysis (PCA) with Varimax rotation was performed. Then, descriptive analyses were performed to assess the levels of complexity and accuracy and regulatory focus scores for each of the two writing essays. To answer the two research questions, A mixed design 2×2 ANOVA was conducted, with writing genre as a within-subjects variable and regulatory focus as a between-subjects variable. The main effects for regulatory focus and genres and the interaction effects between regulatory focus and genre were analyzed.

4. RESULT

4.1. The Main Effects of Genre on Linguistic Complexity

Based on the learner's regulatory focus score, the data were divided into two groups: the promotion-focus group (n = 30) and the prevention-focus group (n = 23). The descriptive statistics and the results of ANOVA including the main and interaction effects with statistical significance are presented in Tables 3 and 4. The magnitude of effects was reported in terms of the partial eta squared (η^2_p). First, the ANOVA results are presented in Table 3. Regarding

genre effects on syntactic complexity measures, there were significant main effects for genre on T-units per sentence (T/S), F (1, 51) = 38.93, p < .001, η^2_p =.43, and there were no significant effects of genre found on mean length of T-unit or clause per T-unit. The significant main effect of writing genre on the T-units per sentence (T/S) indicates the argumentative writing tends to elicit less coordination than the picture descriptive writing (t (32) = -4.70, p < .001, t (19) = -5.71, p < .001).

TABLE 3

Descriptive Statistics on Measures by Regulatory Focus and Genre

Measure	Regulatory Focus	Picture Descriptive		Argumentative	
		M	*SD*	*M*	*SD*
Mean length of T-unit	Promotion	13.2	3.80	15.70	3.70
	Prevention	13.8	2.46	12.81	2.95
Clauses per T-unit	Promotion	1.53	.35	1.65	.41
	Prevention	1.77	.41	1.55	.28
T-unit per sentence	Promotion	1.11	.14	.90	.20
	Prevention	1.07	.08	.93	.11
MSTTR	Promotion	.68	.06	.77	.04
	Prevention	.68	.05	.77	.03
Lexical word variation	Promotion	.59	.09	.70	.09
	Prevention	.57	.06	.65	.09
Lexical density	Promotion	.53	.04	.60	.11
	Prevention	.52	.03	.53	.04
Errors per 100 words	Promotion	6.22	3.85	5.93	4.29
	Prevention	6.48	2.82	8.74	4.23

For the lexical complexity measures, there were significant main effects for genre on the lexical word variation (LV), F (1, 51) = 50.90, p < .001, η^2_p = .50, and the mean segmental type-token ratio (MSTTR), F (1, 51) = 97.90, p < .001, η^2_p = .68, suggesting learners produced more various types of lexical items in the argumentative writing than the picture descriptive writing. The T-test results showed the significant differences of the measures: MSTTR for the promotion-focus group t(32) = 7.20, p < .001, and for the prevention-focus group t(19) = 8.20, p < .001; the lexical word variation for the promotion-focus group t(32) = 3.77, p = .001, and for the prevention-focus group t(19) = 6.28, p < .001.

4.2. Interaction Effects Between Genre and Regulatory Focus

The main purpose of this study was to explore whether a learner's regulatory focus can mediate the effects of writing genres on linguistic complexity and accuracy. As shown in Table 4, the significant interaction effects were found on both syntactic and lexical complexity measures.

TABLE 4

2 × 2 ANOVA Results for the Effects of Genres and Regulatory Focus on the Measures

Measures	Source	*MS*	*F*	*p*	η^2_p
Mean length of T-unit	Genre	12.12	3.20	.081	.06
	Regulatory Focus	30.57	1.60	.216	.03
	Genre * RF	87.95	23.90***	.000	.32
Clauses per T-unit	Genre	.07	.63	.430	.01
	Regulatory Focus	.12	.73	.390	.02
	Genre * RF	.68	6.14*	.020	.12
T-units per sentence	Genre	.76	38.93***	.000	.43
	Regulatory Focus	.01	.22	.642	.01
	Genre * RF	.02	.92	.341	.02
Lexical word Variation	Genre	.22	50.90***	.000	.53
	Regulatory Focus	.02	2.22	.141	.05
	Genre * RF	.00	.77	.380	.02
Mean segmental TTR	Genre	.19	97.90***	.000	.68
	Regulatory Focus	1.56	.01	.940	.00
	Genre * RF	1.53	.01	.923	.00
Lexical density	Genre	.04	9.01**	.004	.17
	Regulatory Focus	.03	1.34	.158	.11
	Genre * RF	.03	6.01*	.008	.12
Ratio of errors	Genre	22.29	2.08	.162	.04
	Regulatory Focus	52.92	2.67	.113	.06
	Genre * RF	36.67	3.43	.072	.07

* p<.05, ** p<.01, *** p<.001.

Regarding the syntactic complexity measures, there was a significant interaction between genre and regulatory focus on the mean length of T-unit, $F(1, 51) = 23.90$, $p < .001$, $\eta^2_p = .32$, the clauses per T-unit, $F(1, 51) = 7.63$, $p < .01$, $\eta^2_p = .14$. First, as shown in Figures 2 and 3, the promotion-focus group produced longer T-unit and more clauses per T-unit in the argumentative writing than in the picture descriptive writing. On the contrary, the prevention-focus group produced more clauses per T-unit and longer T-units in the picture descriptive writing than in the argumentative writing.

A significant interaction effect was also found between genre and regulatory focus on the lexical density, $F(1, 51) = 6.01$, $p < .01$, $\eta^2_p = .12$. Importantly, the further analysis showed that the prevention-focus group did not show any significant difference in lexical density between the two writings, but the promotion-focus group produced significantly higher level of lexical density in the argumentative writing than in the picture descriptive writing, $t(32) = 3.77$, $p = .001$. Further, as visualized in Figure 4, the mean difference of lexical density between the promotion group and the prevention-focus group was significant in the argumentative writing with the former producing more lexically dense texts, $t(52) = 2.54$, $p < .001$. Such a group difference of the lexical density that is more pronounced in argumentative writing may reflect the interplay of regulatory focus and genre.

FIGURE 2

Interaction Between Genre and Regulatory Focus on MLT

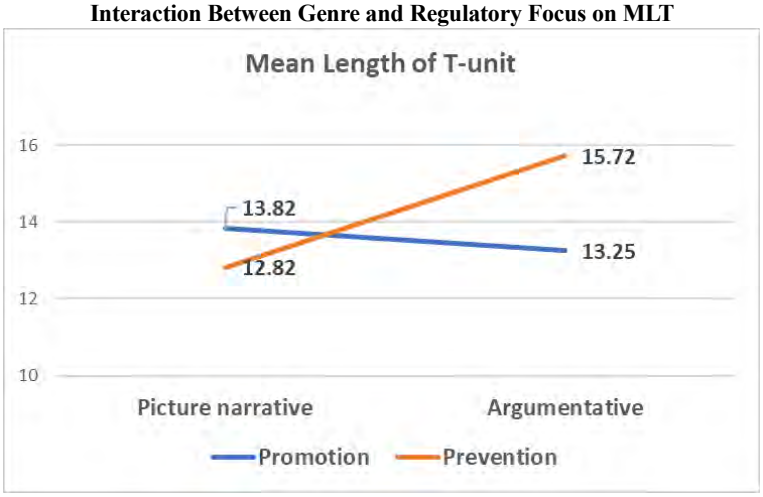


FIGURE 3

Interaction Between Genre and Regulatory Focus on C/T

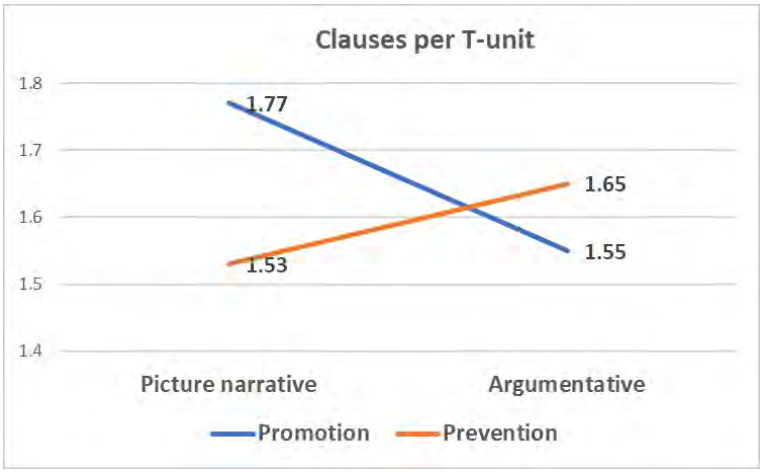
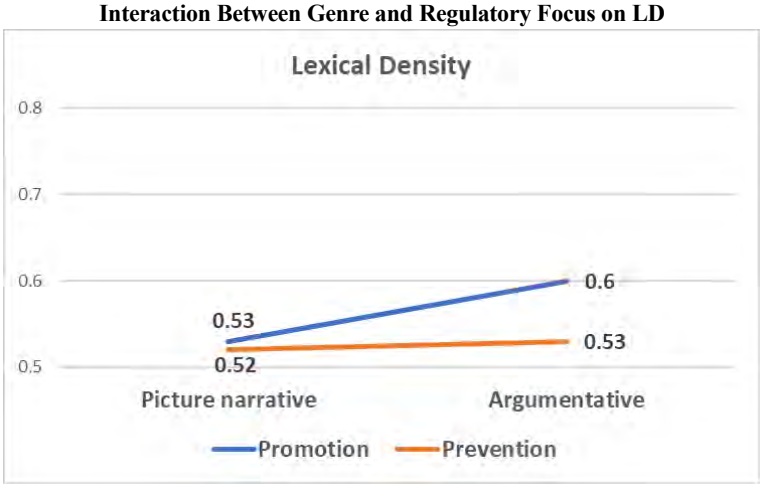


FIGURE 4

Interaction Between Genre and Regulatory Focus on LD



There was a near-significant and medium-sized interaction effect between genre and regulatory focus on the errors per 100 words, $F(1, 51) = 3.43$, $p = .07$, $\eta^2_p = .07$. The promotion-focus group, the value of the mean number of errors per 100 words was lower in the complex task than in the simple task, while the prevention-focus group showed the reverse pattern, that is, they made fewer errors in the picture description task compared with the argumentative task.

The interaction effects found here together clearly suggest that the effects of genres on language production were mediated by learners' regulatory focus. That is, the promotion-focus learners produced language with higher syntactic complexity and lexical complexity in the argumentative writing than in the picture descriptive writing, while prevention-focus learners' language production showed significantly better syntactic complexity in the picture descriptive writing than in the argumentative writing.

5. DISCUSSION

The first research question addressed whether the writing task that involves different genres impacts language production. The ANOVA results showed that genre affected the lexical complexity (segmental type-token ratio and the lexical word variation) and the level of coordination (T-units per sentence). Regarding the differences in lexical complexity, it supports the previous findings that argumentative writing elicited more various lexical items compared to narrative writing (Qin & Uccelli, 2016; Yoon & Polio, 2017). As reported by previous studies, these results may be due to the communicative functions of the

argumentative essay. In the current study, such functions would involve generating various possible situations with 'the driverless car,' while evaluating evidence to establish a position on the topic in a concise manner (Johnson, 2017; Michel, Kormos, Brunfaut, & Ratajczak, 2019; Yoon & Polio, 2017). The results of greater coordination may be caused by the rhetorical functions of the picture descriptive task that requires learners to detail the story in the order presented, resulting in more coordination by eliciting conjunctions (e.g., and, but, furthermore, so, however, but etc.). Due to the sequential characteristic of the task, learners might have been encouraged to elicit more copulas and adjectives to illustrate the situation being described, and to require simple clauses connected through coordination rather than subordination. Such a tendency of higher coordination in descriptive tasks has also been shown in previous studies (Alexopoulou, Michel, Murakami, & Meurers, 2017).

The results, however, revealed no significant differences in syntactic complexity measures but coordination, which is inconsistent with the results of the previous studies where significant differences were mostly shown in the subordination measures (Lu, 2011; Ruiz-Funes, 2015). Although the results showed greater coordination in the picture description task than the argumentative task, this is not necessarily equivalent to higher level of syntactic complexity. According to Lu (2011), measure of coordination is not shown to be significantly associated with syntactic complexity of genre effects. Lu assessed syntactic complexity of argumentative and narrative writings using 14 measures, where 13 of them were significantly higher in argumentative writing than narratives. However, only coordination (shown by T-units per sentence) was not related to the syntactic complexity of argumentative writing. Therefore, although the current study elucidates a coherent result of how picture descriptive tasks elicit higher coordination, on the other hand, it indicates there's no significant differences in syntactic complexity between the two essays. In sum, regarding the main effect of genre on language complexity, the results of the current studies were, in a way, inconsistent with the previous findings that suggest argumentative tasks tend to induce syntactically more complex language. The results might reveal that the argumentative genre itself is not the sole cause of the production of complex language.

The major concern of this study was to explore whether learners' regulatory focus can mediate the influence of genres on language production. Significant interaction effects between genre and regulatory focus were observed in the complexity measures (syntactic and lexical), suggesting that language production was influenced by genre in different manners depending on the learner's regulatory focus. The promotion learners produced syntactically better language (longer T-units and more clauses per T-unit) in the argumentative writing than in the picture descriptive writing, while prevention-focus learners' language production showed a reversed pattern. These results indicate that in terms of complexity, picture descriptive writing elicited better performance from prevention learners, while argumentative writing did so from promotion learners. However, due to the

lack of existing research on this topic and the novelty of our theoretical framework, interpretation of the results relied on predictions derived from regulatory fit effects.

When the genre *fits* the learner's regulatory focus, the learner tends to feel more engaged in the process, thus resulting in better performance (e.g., Spiegel et al., 2004; Van Dijk & Kluger, 2011). As hypothesized, two aspects of the writing task may have interacted with the learner's regulatory focus: the nature of the writing prompt and the genre-specific communicative strategies. Primarily, the interaction, or *fit,* between the nature of the writing prompt and the regulatory focus of a learner's may have enhanced -what Hayes (2000) calls- the *reflection process*. In other words, higher engagement in the topic that is driven by the regulatory fit may allow for a smoother reflection process. As mentioned earlier, promotion-focus orientation is more suited to tasks requiring creativity, willingness to take risks, and eagerness (e.g., Markman, Maddox, & Baldwin, 2005). Such tasks may entail generating ideas, creative problem solving, and challenging decision making. On the other hand, prevention-focus orientation fits better with tasks requiring vigilance, attention to details, and adherence to rules. These tasks include, but are not limited to, detecting errors, work scheduling, and maintaining safety and quality control. The argumentative task of the current study involved arguing about the invention of a driverless car, requiring the learners' imagination, creativity, and optimism. In order to imagine the possible scenarios of the car, learners generated ideas from various perspectives, which might have driven promotion-focus learners more engaged with the task, resulting in better language performance, both syntactically and lexically. For the picture descriptive writing, learners were required to describe a story presented in the picture, paying attention to the details of each scene. Contrasting to the driverless car prompt, the task was a concrete and straight-forward story involving cutting the legs of an unbalanced ping pong table, and therefore the learners did not have to think beyond what was shown. Hence, this topic interested prevention-focus learners more than the argumentative topic on the driverless car. Our findings suggest the consideration of a *fit* between a writer and a topic itself can sheds light on important aspects of individual differences in writing performance, and account for the impact of learner factors beyond a within-genre topic effect called 'topic familiarity' (Atak & Saricaoglu, 2021; Yoon, 2017).

Another aspect of writing that may have interacted with a learner's regulatory focus is the communicative strategy embedded in genre. Prevention-focus learners tend to possess a conservative risk-averse tendency (Scholer et al., 2010), leading them to adopt vigilant strategies to ensure they avoid choices associated with negative consequences (Crowe & Higgins, 1997). Conversely, promotion-focus learners tend to take more risks and utilize eager strategies (Crowe & Higgins, 1997). In second language contexts, prevention-focus learners have been found to use vigilant L2 use strategies concerned with the minimal use of the L2 in obligatory contexts, which in turn has been found to negatively affect L2

achievement (Papi & Khajavy, 2021). By contrast, promotion-focus learners have been found to use eager strategies concerned with the maximal use of the target language, which in turn, has been found to lead to higher levels of writing achievement (Tahmouresi & Papi, 2021). In the present study, prevention-focus learners' vigilant L2 use inclination has likely resulted in shorter mean lengths of t-units due to avoiding any additional frivolous evidence. Conversely, promotion-focus learners' eager strategic inclination has allowed them to take more risks and utilize eager strategies, which in turn has benefitted their performance in the argumentative writing task, which requires learners to make a challenging decision in favor of either agreeing or disagreeing with the invention of a driverless car. Such decision-making may be determined by one of the two manners: the risk-taking vs. the risk-avoiding. Promotion-focus learners' significantly better performance of lexical density in argumentative writing (the proportion of different lexical items) may be due to a *fit* between their risk-taking orientation and communicative strategies involved in the argumentative writing. The *fit* may have led them to use various types of lexical words and language structures to support their claims to the fullest. On the contrary, prevention-focus learners' risk-avoiding and conservative orientations might have created a better *fit* with the picture descriptive writing task. It is relatively easy to infer and specific, which requires the learners to pay attention to detail while taking minimal risks. In addition, the necessity of risk-taking or risk-avoiding communicative strategies might have influenced the level of anxiety of learners, resulting in differential impact on their language production (Zabihi et al., 2020).

The findings of the present study may provide significant pedagogical implications for the educators and researchers in the field of English teaching and learning. English teachers may be encouraged to measure learners' regulatory orientations and utilize it for instructional planning and writing task manipulation. Supposedly, had the picture scenario been incomplete, hence making it difficult to infer the story, prevention learners' language performances may have varied. Such incompleteness creates a problem-solving situation requiring 'creativity' and 'taking risks,' possibly making the task a better *fit* for promotion learners as it asks learners to generate ideas. This means that, even within the same genre of writing, the interaction between a learner's regulatory focus and genre may differ depending on the main problem-solving skills or communication strategies required by the specific writing task. Teachers can also temporarily induce either promotion-orientation or prevention-orientation, whichever matches the task type or condition. For example, for a picture description task requiring creativity (i.e., completing picture stories or changing certain parts of the stories), a promotion induction will boost task performance. On the other hand, if a task requires accurate decision or attention to details (i.e., detecting mismatch between the picture and description), prevention-induction would positively influence a learner's engagement and task performance.

In essence, the study results confirmed that a learner's motivational orientation of either

promotion-focus (risk-taking and creativity) or prevention-focus (risk-averse and concrete) interacts with the context of writing. This result supports the proposal by Hayes' (2000) model that distinctive orientation and predispositions may influence the writing process and the outcome.

6. CONCLUSION

The current study was designed to deepen our understanding of the role of a learner's motivational source in L2 writing and examine the influence of a learner's regulatory focus on language production for two contrasting genres. The results confirmed the prediction that the match between a learner's regulatory focus and the characteristics of writing genres would be what may elicit the varying level of language complexity. There were significant interaction effects between genre and regulatory focus on both syntactic complexity and lexical complexity. The related findings showed empirical evidence supporting the new perspective of L2 motivation research, 'motivation as quality' (Papi, 2018).

With regards to our research design, one limitation worth highlighting is that the data was collected from learners within an EFL context where learners have varying amounts of exposure to English as a foreign language, thus limiting the generalizability of the findings to other contexts. Also, the present study used general and chronic regulatory focus to examine individual differences in L2 production across genres. Using L2-specific measures of this orientation, however, could provide a better picture of how learners' motivational traits influence L2 writing process and outcomes.

Kormos and Wilby (2019) emphasized the importance of motivational sources in L2 task performance. At a larger scope, understanding a learner's regulatory focus will help teachers develop an awareness of how to increase learner motivation and engagement in learning practice through reflecting the learners' regulatory foci on the teaching syllabus, classroom management, teacher-student interaction, providing feedback, and developing and using language tasks. Language educators and researchers acknowledge that a combination of genre and writing task can create a meaningful pedagogical link between writing performance and choice of language use (Yasuda, 2011), leading to successful L2 development. Consideration of the regulatory focus in L2 writing instruction would be critical to ensure the effectiveness of such writing task manipulation on L2 development. More specifically, further investigation of the interactive relationship between regulatory focus and other external variables involved in writing tasks (i.e., guided/unguided planning, revision process, writing task complexity or peer feedback, etc.) could provide a solid basis for successful writing instruction for L2 development. Exploring how to better reflect learner's regulatory focus on L2 instructional planning and writing task design would be

valuable topics for future research.

Applicable levels: Tertiary

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APPENDIX

Factor Analysis Results of CRFQ

Item	Promotion	Prevention
1) When it comes to achieving things that are important to me, I find that I don't perform as well as I would ideally like to do.	-0.51	0.04
4) I feel like I have made progress toward being successful in my life.	0.64	0.54
5) When I see an opportunity for something I like, I get excited right away.	0.67	0.24
7) I frequently imagine how I will achieve my hopes and aspirations.	0.70	0.42
8) I see myself as someone who is primarily striving to reach my "Ideal self"—to fulfill my hopes, wishes, and aspirations.	0.88	0.30
2) Growing up, I usually obeyed rules and regulations that were established by my parents.	0.46	0.78
3) Not being careful enough has gotten me into trouble at times.	0.31	-0.43
6) I worry about making mistakes.	0.17	0.52
9) I frequently think about how I can prevent failures in my life.	0.34	0.57
10) I see myself as someone who is primarily striving to become the self I "ought" to be—fulfill my duties, responsibilities, and obligations.	0.18	0.50