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| RESEARCH ARTICLE

An Empirical Study on Task Complexity and Task Difficulty in L2 English Writing Production

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| ABSTRACT
The current study explores how the two dimensions-task complexity and task difficulty, affect the writing production of Chinese high school students in the EFL classroom and what kind of implication the findings have for writing teaching. The study was done in a high school in Jiangsu province, Mainland China and ten students were selected. The data were generated by collecting writing production, questionnaire and interview. Through quantitative and qualitative analysis, the results revealed that the genre of the writing task affected the writing production, while the effect of task complexity on the writing production was less obvious among the ten participants. The study also demonstrated the mismatch between task complexity and task difficulty in the small sample, suggesting the importance of students' feelings about the writing task.

| KEYWORDS
Task complexity; task difficulty; English classroom; writing production

| ARTICLE INFORMATION
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1. Introduction
Task complexity and task difficulty are two conceptions that may be generally considered to be synonyms and can be used interchangeably (Robinson, 2001). However, from a pedagogical perspective, there are differences between these two concepts. Moreover, the correlation between task complexity and task difficulty remains to be a disputable question. This paper intends to find out the possible correlations between task complexity and task difficulty by conducting research on 10 students from the same high school. The participants were required to finish three writing tasks consecutively, together with a Likert scale after each task. This paper will analyze the data generated and draw conclusions on the correlation between task complexity and the difficulty precepted by the participants, with a discussion of the possible implication of the result for high school English education.

2. Literature review
2.1 Definition of "task."
The word task is the central concept in language teaching. A task does more than just classroom or in-class activities.

Generally, there are different schools of defining tasks. According to Long (1985), a "task" is any general thing that people do in everyday life. In this sense, a task is not specified with classroom context or teaching context but with a much broader area, including every possible thing that would require people to use language, and students who are given such tasks need to use the target language to achieve certain goals, such as asking for direction or buying things. In a word, Long's perception of the task is general and is not specified for educational purposes.

Nunan (1989, p.10), however, defines a task as "a piece of classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language", while his attention is primarily focused on meaning rather than form. From this

perspective, the task is limited to classroom context, which is specified to help students to utilize what they have already built up in their interlanguage system to develop their language skills. Moreover, Nunan claims that it is meaning rather than form that should be focused on, which means that students' output should be meaning-based, and the accuracy of form is less concern. Nunan's definition narrows the definition of the task and makes it rather a pedagogical term.

Branden (2006, p.4) takes a task as "an activity in which a person engages in order to attain an objective, and which necessitates the use of language." Branden uses the word "activity" and "task" interchangeably and lessens the broader of tasks between daily life and classroom teaching. According to his definition, the focus of tasks is to use language, and the design of tasks should make it necessary for students to use language, either to communicate or to change information. Branden stresses the necessity of guiding students to use language properly for objectives.

Task authenticity is another important factor in the pedagogical context. Guariento and Morley (2001, p.347) claim that the authenticity of the classroom stands for materials that are "created to fulfill some social purpose in the language community in which it was produced" and "bridge the gap between classroom knowledge and students' need to participate in the real-world events." MacDonald et al. (2006) also give the definition as the "correspondence between pedagogical language and real-world language." This means that authentic tasks should have references to how language is used in the speech community. However, high authenticity does not necessarily stand for good task designs. Guariento and Morley (2001) point out that there is still the possibility that such materials prevent learners from meaningful responses and bring even frustration or demotivation to the learners; hence simplification could be used to modify. Another aspect of authenticity is classroom authenticity. According to MacDonald et al. (2006), it stands for those conditions where "participants can publicly share the problems, achievements and overall process of learning a language…." Moreover, both pedagogic texts and pedagogic tasks are authentic because the classroom is their point of origin (MacDonald et al., 2006). This means that the authenticity of classroom tasks may not be constrained to real-life activities only, and even mechanical drills could bear classroom authenticity. Therefore, the design of the tasks in our study is pedagogically authentic based on the high school setting.

2.2 Task complexity

According to Robinson (2001), task difficulty and task complexity are often used interchangeably, but it is necessary to separate them when considering task effects.

Robinson (2001, p.29) defines task complexity as "the result of the attentional, memory, reasoning, and other information processing demands imposed by the structure of the task on the language learner." In other words, complexity is obvious in how cognitively demanding it is to the given learners. For example, a task that requires learners to do calculus will be much more demanding than doing number calculation, and a task that requires learners to describe the path towards a certain destination will be more demanding than point another place on the map, for they will require more ability on attention, memory, and reasoning; thus these tasks can be defined as complex tasks.

Wood (1986) introduces three different dimensions of task complexity: component complexity, coordinative complexity, and dynamic complexity. Wood claims that by such a definition, a more complete and general definition of complexity can be built. According to Wood (1986), component complexity is directly linked with the number of acts that need to be executed during the performance of a task. Wood (1986, p.66) claims that "as the number of acts increases, the knowledge and skill requirements for a task also increase, simply because there are more activities and events that an individual needs to be aware of and able to perform." This is coordinated with Robinson's definition of complexity, as the increasing of components of tasks will make the task more demanding, thus enhancing the complexity of the task.

Another dimension is coordinative complexity, which stands for the relationship between task inputs and task products. (Wood, 1986). This includes the sequencing of different elements of one task (Wood, 1986, p.68). If the acts during one part will have an influence on another and even require the learner to do multiple things simultaneously, then there would be higher coordinative complexity. One example given by Wood is painting the wall compared with assembling a radio. Painting the wall is obviously less demanding, for it requires only one linear process, while assembling a radio can be started from different parts, and each part will have underlying connections with the other.

Dynamic complexity is different from the two dimensions. Wood (1986, p.71) claims that the instant changes during the task process may require the learner to deal with the effect, and the degree to which the changes bring to the task is the dynamic complexity of the task. Thus, tasks that go through a longer time horizon will be more dynamically complex (Wood, 1986).

2.3 Task complexity and writing

The production of writing tasks also has a relation to task complexity. Shao (2003) learns the influence of task genres, such as self-description, picture descriptions, and argumentative writing, which are considered to be rising complexity, together with the influence of time management, on the production of Chinese second language learners' writing production. Kuiken and Vedder (2011) conduct research to study the relationship between task complexity and performance. The result shows that task complexity does influence the accuracy of writing tasks, as fewer mistakes are made in tasks with higher complexity. Adams et al. (2015) also study the relationship between task complexity and task production. It turns out that tasks with higher complexity will contribute to the higher complexity of writing, as the "increase in task complexity did not divert learners' attention from both accuracy and complexity".

Table 1: Measures for Task Complexity (Robinson, 2001)

	Task Complexity				
	(simple)				(complex)
	1	2	3	4	5
Planning time (Before writing)	+	-	-	-	-
Single task (Route marked)	+	+	-	-	-
Prior Knowledge (of familiar area)	+	+	+	-	-
Few elements (A small area)	+	+	+	+	-

2.4 Task difficulty

Task difficulty is distinguished from task complexity. According to Robinson (2001), task complexity is related to the cognitive factors of the task itself, while task difficulty is more about the learner's factors. A learner's aptitude level, intelligence, and other elements will contribute to the difficulty of a task. Moreover, Robinson (2001) claims that task difficulty can be dynamic, as the temporarily limiting, such as motivation, will change the learner's attitude towards the task.

According to Robinson (2001), task difficulty can be influenced by two kinds of variables of learners. The first is affective variables, such as mood, confidence, anxiety, etc. Another one is ability variables, such as aptitude and intelligence. Robinson (2001) also notes that ability variables can be diagnosed "ahead of syllabus implementation."

Robinson (2007) proposed the Cognition Hypothesis, which mainly concerns the relationship "between the cognitive factors contributing to task complexity and the learner factors contributing to perceptions of task difficulty." Robinson assumes that tasks with higher complexity will be perceived by learners as of higher difficulty, hence influencing their production. Moreover, Robinson (2007) focuses on learners' factors towards the influence on the perception of task difficulty, as individual factors, such as ability and affective factors, will also contribute to their perception of task difficulty. In this sense, task difficulty will be influenced by mainly two different factors. The first one is the complexity of the task itself, and it seems to be a positive relation, which the learners' perception of task difficulty will grow as the task complexity grows. Another factor has to do with learners' own status. This could pose various influences on the perception of the task difficulty and should be carefully measured for the validity of the test result.

2.5 Difficulty and writing production

The relationship between difficulty and writing production is obvious. Afroogh (2015) studies the relationship between task difficulty and writing production. One conclusion drawn is that when participants perceive one task as difficult, their frequency of code-switching may grow much higher, which may indicate more obstacles participants encountered during the writing.

2.6 Research gap

Robinson (2001) conducts a study on the relationship between task difficulty and task difficulty. The focus of the research is on speaking, and the participants are from Japanese universities. Guo et al. (2021) studied the writing production of 60 non-English major university students with different settings of task complexity. Though this research is a duplicate of Robinson's research method, there are still two gaps to be filled.

The first gap is in the form of production. Robinson based his research on speaking, while this research will focus on writing production. Another gap falls in the participants. In this research, the participants are from the same high school in mainland China

and are also learners of English as a second language. In this context, there seems to be a lack of relative research. Hence, this paper will manage to fill this gap through research and figure out the correlations between task complexity, task difficulty and writing production from the perspective of mainland China high school students.

3. Research questions and hypotheses

This research will mainly focus on how task complexity influences students' writing production and student's perception of task difficulty. The implication for teaching is also one of the focuses. There are three research questions.

3.1 Research question one

"How does task complexity affect the writing production of high school students in Mainland China?" We hypothesize that students' writing production would be hindered by more complex tasks: a smaller number of T-units in each sentence, shorter sentences and subordinate clauses, smaller subordinate sentences and TTR, and less language accuracy.

3.2 Research question two

"Is the task complexity always consistent with the student's perception of task difficulty?" It is hypothesized that the complex version would be rated harder overall, more stressful, and less able to perform the task than the simple version in three of the four areas covered by the questionnaire.

3.3 Research question three

"What are the implications for English education in high school?"

4. Method

4.1 Participants

The participants of this research are from Sancang High School of Jiangsu Province. The 10 participants are currently in Year 3 and are from the same class. The reason to choose Year 3 high school students is that they have relatively complete training in different genres of writing. All 10 participants, three male students and seven female students, volunteered to participate in this study and were randomly chosen by their teacher. The participants in this study were born and bred in Mainland China, and all started learning English at or before the age of 10. The average age is 18.6, ranging from 17 to 19. Their most recent English monthly test scores ranged from 105 to 134 out of 150.

4.2 Instruments

Participant background questionnaire. (See Appendix section 2) Participants' language backgrounds were collected by means of a background questionnaire. The information collected included the age of acquisition of English, the mark of the most recent English test, the writing mark of the test, and the frequency of communication with native English speakers (if any).

Writing Tasks. (See Appendix section 3) A set of three writing tasks was administered to all participants in a sequence from simple, intermediate, to complex. The design of the practical writing task, the argumentative writing task, and the story continuation task followed Robinson's measures of task complexity (2001), as seen in Table 2.

- *Practical writing task***.** Participants were asked to write a letter to a foreign friend to introduce traditional Chinese culture. 100 words were required for this task.
- *Argumentative writing task.* Participants were asked to talk about the pros and cons of surfing the Internet. 100 words were required for this task.
- *Story continuation task.* In this test, participants were presented with a story of about 340 words, and they were required to continue the story within 150 words after reading the story.

Table 2: The complexity of three writing tasks

Tasks	Genre	Prior Knowledge	Reasoning	Task structure	Task complexity
Write a Letter	Letter	+++	---	Single	Low-level
Discuss the pros and cons of surfing the Internet	Argumentative essay	+++	+++	Single	Intermediate level
Continue the given story	Reading and story continuation	---	++	Integrated	High-level

Likert Scale Questionnaire. The Likert scale is a tool for quantifying psychometric data that is difficult to measure. Joshi et al. (2015) claim that the Likert scale is "one of the most fundamental and frequently used psychometric tools in educational and social sciences research". As part of our study, we used a measure developed in Robinson's (2001) study to measure students' perceptions

of task difficulty. This measure was chosen because it could yield sufficient information to analyze how high school students perceive task difficulty. Its original scoring scale was changed from 10-points to 5-points, which did not substantially change the original measurement. It was intended to keep the questionnaire brief to avoid the slight differences among options which may confuse the participants, and to avoid disrupting performance on the three tasks. A 5-point Likert scale was used to rate each item. The items were written as follows:

1. I thought this task was easy;
2. I felt relaxed doing this task;
3. I do well on this task;
4. This task was interesting;
5. I want to do more tasks like this.

All the instruments above have been piloted by a high school student, a high school English teacher, and a current Ph.D. in education and reversed accordingly.

4.3 Procedure

Consent was gained from the parties concerned, including school principals, teachers, and students. They were given information about the study, the tasks they should complete, the purpose of the research, the significance, and so forth. Their identities were kept private, and their participation was entirely voluntary. They were also informed that they could stop the research at any time due to ethical concerns. During the time of self-study, 10 participants were seated in the classroom and given a more detailed explanation of the process. All participants, first, were given a background questionnaire and then a sheet of paper of Task 1 with the answer sheet, the paper-based Likert scale, Task 2 with the answer sheet, the Likert scale, Task 3 with the answer sheet, and finally, the Likert scale. According to the teachers, they are able to finish the first two tasks within 15 minutes and the last one within 30 minutes. Therefore, the corresponding time was assigned to the three tasks.

After the participants completed the tasks and questionnaires above, all the papers were collected by the teacher and sealed and mailed to us directly. During the whole process, only the teacher and researchers were in touch with these papers for confidentiality. Then the papers were scanned into computers and were accessible only by researchers and the teacher. To reward all the concerned parties, a certificate of merit was given to the 10 participants, and the analysis of their writing production was given to the teacher to monitor their teaching and learning.

5. Data analysis

5.1 Data analysis procedure

Participants writing production was assessed for language complexity[1] and language accuracy. Language complexity is concerned with syntactic complexity and lexical complexity. Syntactic complexity was assessed by a measure of average sentence length (ASL), average subordinate clauses length (ASCL), T-units per sentence (TPS), and the subordinate sentences per T-unit (SSPT). It is generally accepted that the more difficult it is to process cognitively when the syntactic structure is more complex, and the syntactic unit is longer. To measure lexical complexity, a general measure, token type ratio (TTR), was used. According to Polio and Shea (2014), error-free units and error counts are two of the measures of language accuracy. Therefore, accuracy was assessed by the ratio of grammatically wrong sentences to all sentences and the ratio of correct sentences to all sentences.

The Likert scale questionnaires were assigned to students immediately right after the completion of each task. This assessment of task difficulty is based on the learner responses to five questions designed to assess their perception of task difficulty, their perception of stress, their perception of their ability to complete the task, and their motivation to complete this task or other similar tasks.

5.2 Results

5.2.1 Research question 1: Task complexity and task production

We calculated the probability of the means of these criteria using the T-test to compare the difference between every two tasks, i.e., Task 1 and Task 2, Task 2 and Task 3, and Task 1 and Task 3. The result of the T-test for Task 1 and Task 3 was found to be significantly different. A similar result was also found for Task 2 and Task 3. However, no obvious relationship between Task 1 and Task 2 was shown.

Results of a repeated measure MANOVA, using four measures of writing production (ASL, ASCL, TPS, and SSPT) as dependent variables, show no significant interaction of task complexity and syntactic complexity measure ($p = 0.128$).

MANOVA results using five measures of writing production (ASL, ASCL, TPS, SSPT, and TTR) as independent variables did not demonstrate an interaction between task complexity and language complexity (p = 0.108).

Task complexity and language accuracy exhibited a significant interaction (p = 0.007) based on a repeated measure MANOVA with two measures of writing production (the percentage of mispronounced words and the percentage of correct words).

ANOVA was used to calculate the probability of the mean scores of each criterion listed below (see table 3). The results indicate a significant interaction between task complexity and the average sentence length. Moreover, a significant interaction between task complexity and the TTR was also found based on the result of ANOVA. In other words, lexical complexity was significantly correlated with task complexity.

Table 3: Descriptive statistics for language complexity on three tasks.

	Syntactic Complexity				Lexical Complexity
	ASL	ASCL	TPS	SSPT	TTR
	M/SD	M/SD	M/SD	M/SD	M/SD
Task 1	14.11/4.04	6.49/2.44	1.09/0.22	0.52/0.28	0.79/0.08
Task 2	13.44/3.13	7.10/4.40	1.14/0.09	0.42/0.21	0.72/0.09
Task 3	10.24/2.56	6.76/1.84	1.27/0.20	0.323/0.15	0.62/0.10
Probability	*P=0.032*	*P=0.908*	*P=0.083*	*P=0.169*	*P=0.002*

Key:
ASL: Average sentence length
ASCL: Average subordinate clause length
TPS: T-units per sentence
SSPT: the subordinate sentences per T-unit
TTR: token type ratio

Table 4: Descriptive statistics for language accuracy on three tasks.

	Correct Sentences	Wrong Sentences
	M/SD	M/SD
Task 1	0.66/0.26	0.31/0.23
Task 2	0.61/0.30	0.39/0.30
Task 3	0.75/0.22	0.22/0.18
Probability	*P=0.007*	*P=0.005*

5.2.2 Research question 2: Task complexity and task difficulty

A repeated measure MANOVA, using responses to the task difficulty questionnaire items as dependent variables, shows no significant interaction between difficulty measure and task complexity (p = 0.322).

The probability (as seen in table 5) of the means of each item listed below was calculated using ANOVA. The results show no significant interaction between task complexity and perception of task difficulty, ratings of stress, perceived ability to complete the task, interest in task content, and motivation to complete these and other tasks like them, respectively.

Table 5: Descriptive statistics for questionnaire responses on three tasks

	Difficulty	Stress	Ability	Interest	Motivation
	M/SD	M/SD	M/SD	M/SD	M/SD
Task 1	3.2/1.033	3.2/1.229	3.1/1.101	2.9/1.197	2.7/1.418
Task 2	3.1/0.994	3.1/1.197	3.1/0.876	3.4/0.966	3/1.155
Task 3	3.4/1.075	2.9/1.197	2.9/1.287	3.3/1.252	2.6/1.075
Probability	*P=0.806*	*P=0.853*	*P=0.896*	*P=0.592*	*P=0.751*

6. Discussion and findings

6.1 Research question one

The first research question is about the relationship between task complexity and writing production. It is hypothesized that more complex tasks will impede students' writing production: a smaller number of T-units in each sentence, a less average length of sentences and subordinate clauses, a smaller subordinate sentence/T unit and TTR, and less language accuracy. Among our ten participants, the data kind of supports the hypothesis. Table 3 and Table 4 show that among the ten samples, the task complexity is significantly related to the average length and TTR, and there is no obvious relationship between task complexity and other aspects. As the mean score shows in Table 3, when the task is more complex, the sentences are shorter on average. As for TTR, the data indicate that when the task is more complex, the vocabularies tend to be less diverse ($p<0.05$). But through T-test, there is no obvious relationship between Task 1 and Task 2, while things are quite different when Task 3 is involved ($p<0.05$). Thus, Task 3 is an important factor that influences the results.

Based on the observation above, Task 3 was discussed, and an interview was conducted to explore the nature of Task 3. First, Task 3 is indeed more complex than the other two since it requires reasoning, prior knowledge, and dual task. Second, Task 3 is special due to its special genre. Based on the interview, the teacher said that students wouldn't start writing this kind of story rewriting narrative until senior high school, and before that, how to write letters and argumentation is the focus of teaching and learning. Therefore, Task 3 is relatively new to the participants. Third, according to the analysis of the writing samples, some oral expressions are repeatedly used, such as "thank you" and "he said", which results in short sentence length. Because Task 3 is a continuation of a story and there was already a lot of dialogue in the existing story, it continued to take up most of the margins of the essay in the story that students continued to write. The average sentence length in task 3, therefore, differs markedly from the sentence lengths of the previous two tasks. This explains the fact that there is no obvious relationship between Task 1 and Task 2, while things are quite different when Task 3 is involved. TTR is similarly influenced by dialogue. This is because there are many words said and repeated in the dialogue, so the vocabulary complexity of task 3 is also very significantly different from that of the first two tasks. For instance, some personal pronouns and oral vocabularies are used, such as "and" and "then", which leads to low TTR. Taking all the factors mentioned above into consideration, we'd like to consider the genre as a contextual factor.

6.2 Research question two

The second research question explores the relationship between task complexity and task difficulty. It is hypothesized that task complexity is not fully relevant to students' perception of task difficulty. And our results are in accordance with our hypothesis. First, students' perception of stress catches our attention. Based on the means in Table 5, when the task is more complex, the 10 participants feel more stressed, while no obvious relationship is observed in the table. As seen in Table 6, in Task 3, which is the most complex task, only 3 students felt that they were not stressed; only 3 students felt that they had the ability to finish the task well; only 2 students felt that they had the motivation to do more tasks. For the most difficult task in writing, students generally felt pressured to complete it on their own and were not motivated to complete more such tasks. We believe that there is a positive correlation between complexity and students' perceptions of task difficulty in the current study. The data in Task 3 indicate that in some items, task complex is related to task difficulty.

In Table 7, stress can stand for the affective level of the participants during the task. As is shown in Table 7, task 3, which is designed to be the most complex task among the three tasks, does not always have the lowest Likert scale level. Among Student Number 1, 2, 5, and 10, the item level is the same as tasks 1 and 2; item 3 even has a higher item level than task 2. In this sample group, task 3, with the highest complexity, does not always have the lowest score, and task 1, with the lowest complexity, does not always have the highest score. In conclusion, to some extent, it demonstrates that task complexity is partly, not fully, related to their perception of task difficulty.

By comparing the means in Task 3 in terms of "difficulty" (M=3.4) and "stress" (M=2.9), the results show that the participants thought Task 3 was easy after reading the topic requirement but felt very stressed after actually doing it. At first glance, the reading materials are easy to understand with clear requirements, and it seems that it is an easy task. But when starting to do the task, the learners find that the task is not as easy as they have thought. Therefore, when teachers choose the tasks that are given to learners to practice, they should really do the writing task or think carefully about what to write and how to write rather than just reading the title hastily. This discussion is based on the results of the Likert scale. In order to confirm the reasons for the differences in items 1 and 2, future studies may conduct post-interviews to investigate the learners' interpretations of their choices.

Table 6: Data of questionnaire responses on task 3

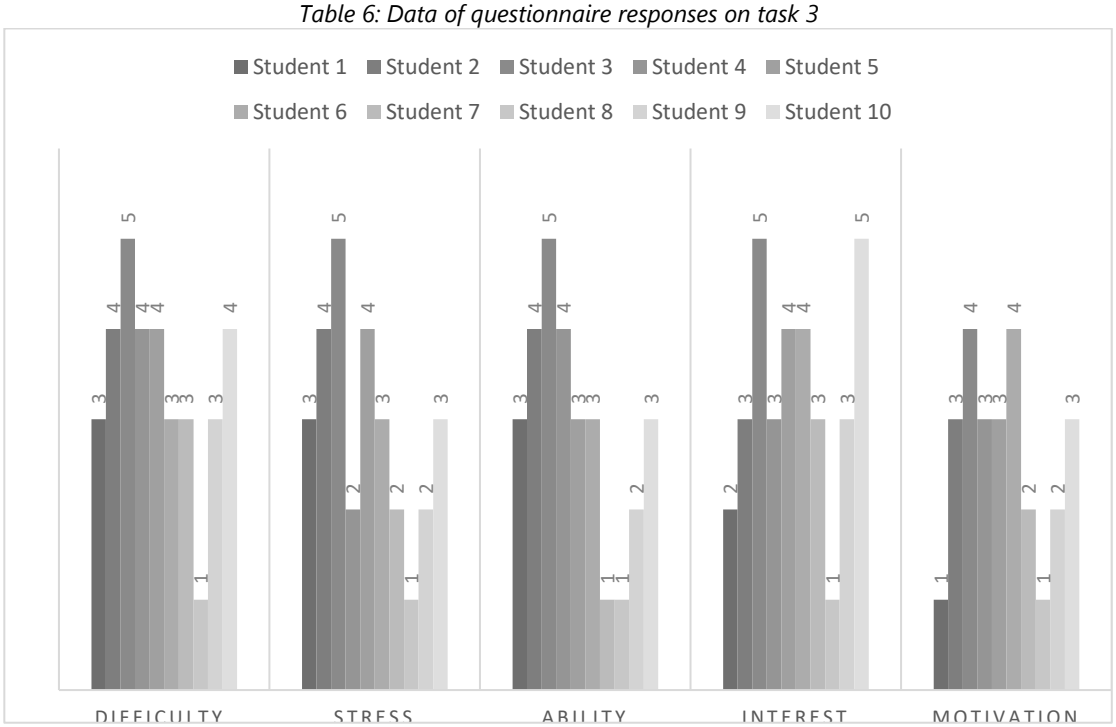
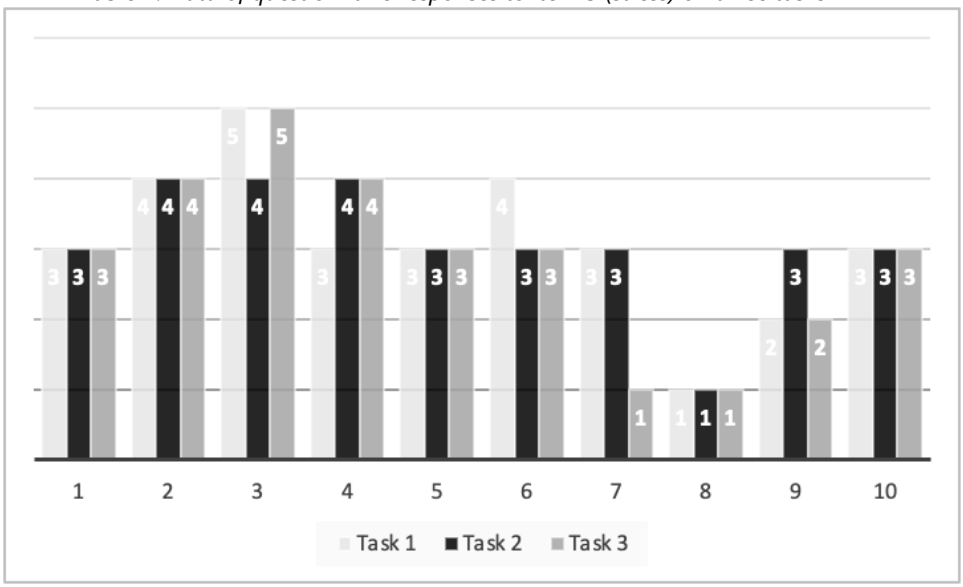


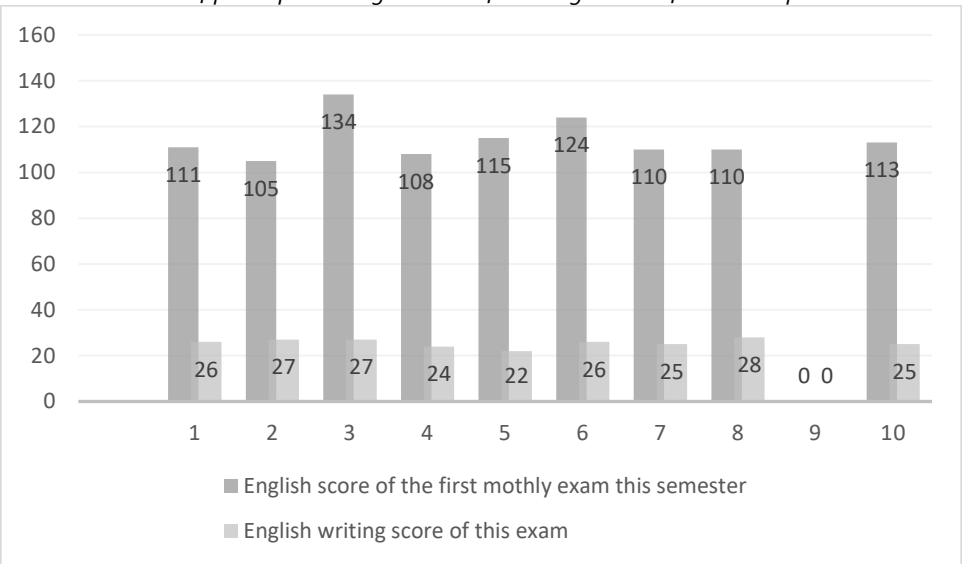
Table 7: Data of questionnaire responses to item 3 (stress) on three tasks



An interesting finding is observed in the onto-analysis. As seen in Table 8, Student Number 3 had the highest English score among 10 participants. In the Likert scale of the current study, all three tasks were not stressful or less stressful for her. However, she did not complete the first two tasks but did very well in the third one. Her third task was well written, with few grammatical errors and 9 correct sentences out of ten. Also, although she did not complete the first two tasks, the only two sentences in her second task

were both long and correct. This finding displays a certain mentality of overachievers. They have the ability to complete certain tasks, no matter whether they are easy or difficult. But when they are faced with easy tasks, they don't try their best to do them or don't have a proper attitude since they regard these tasks as unchallengeable. Instead, they will try to complete the more complex ones. During teaching practice, teachers should pay attention to such overachievers and choose suitable tasks for them when easy ones cannot satisfy them.

Table 8: Data of participants' English score for background information questionnaire



6.3 Research question three

The focus of the third research question is on the teaching implications, which is a more practical perspective of the research and aims to draw conclusions from the research results on the teaching philosophy for high school teachers. One important factor is that the following content will be specified to the 10 samples of this research and should be careful if it is used for broader groups of students in different contexts.

The first implication that the writing proficiency of a particular genre can be heavily influenced by the amount of practice is based on the observation of research question one. As mentioned before, in this research, TTR is used to calculate the variety of vocabulary of the writings, and the TTR of Task 3 is constantly lower than the other two tasks, which means the production of task 3 is simpler compared with the other two tasks. And we concluded it was a contextual factor influenced by the genre, the nature of story-rewriting and students' unfamiliarity with it. Their poor performance in Task 3 indicates that their proficiency in writing certain genres of tasks seems not able to automatically transfer to other genres. Hence, as a high school teacher, it is necessary to have different sorts of training specified in different genres if students are required to acquire different genres of writing. In the context of high school teaching, teachers need to understand that the proficiency of one certain genre will not migrate themselves, and training on different genres is necessary if students need to acquire different genres in order to have higher marks in College Entrance Exams.

The second implication from the research data is that there is a mismatch between task complexity and task difficulty. As mentioned before, task complexity is more about the nature of the task itself, which stands for the extent of demand towards the participants. Task difficulty stands for the perception of participants towards the task, which is more subjective and can be influenced by the affective factors of the participants. Robinson (2001) points out that tasks with higher complexity will bring higher stress and difficulty, along with lower confidence in students, which means there is a positive correlation between task complexity and task difficulty, as the higher task complexity will bring a higher perception of difficulty from participants.

However, there are mismatches in the data from the participants. This result suggests that teachers should constantly revise and adjust their teaching strategies, and evaluate the teaching effect more comprehensively and carefully, so as to avoid the phenomenon that teachers think the task is difficult while students feel the opposite. In writing practice in senior high school, teachers should adjust the task complexity flexibly to promote students' writing ability. At the same time, following the principle of complexity from low to high, students' interest is gradually cultivated, their motivation is stimulated, and their ideological pressure is relieved so as to comprehensively and steadily improve their English writing ability.

The third implication is based on the analysis of Student Number 3. Teachers should pay attention to the affective factors of different levels of students. If needs be, teachers could assign different levels of writing tasks based on students' different needs. However, sometimes, teachers may not have so much time and effort to assign different tasks, and they should be considerate of the demands of the majority. Under such circumstances, teachers should encourage the overachievers to take the tasks seriously and cherish the practice opportunities.

7. Future Recommendations and Limitations

Several limitations should be acknowledged in the present study. For example, due to the time and energy limit, the sample we chose is too small, with only 10 students participating in the study. In our case, the small sample size led to a less than valid probability for several of our results (p-values higher than 0.05) and left our conclusions lacking validity and generalization. It will be better to have more participants to generate a larger amount of valid data.

In addition, we found that writing type may influence the language complexity of students' writing. As this variable was not controlled in the present study, the results cannot rule out the influence of writing type on language complexity, and they are not able to provide valid evidence of a relationship between the two. Therefore, future research could focus on whether writing genre is a factor that affects language complexity.

Furthermore, based on our onto-analysis of individual students, we found that learner factors influenced task difficulty, but our study was not able to explore this issue in greater depth. In order to explore subjective perceptions of task difficulty in further depth, methodologies such as interviews and the General Self-Efficacy Scale (Schwarzer, 1994) are encouraged in future studies, as they will provide a more thorough and comprehensive examination and conclusions concerning the particular causes of task difficulty for individuals. This will also shed light on how learners interpret tasks differently.

Finally, the generalization of the present findings must be demonstrated, both with regard to the participants, the content of the tasks and certain contexts.

8. Conclusion

The research has shown some interesting results and provided evidence for the cognition hypothesis. In the first question, the data analysis supports the hypothesis that higher task complexity may bring a hinge on the production of writing, such as lower sentence complexity and TTR. One exception came from task 3, which has a different genre (descriptive task) from the first two tasks, which may bring extra variables to the research result. The second question mainly focuses on the relationship between task complexity and task difficulty. The result was based on the Likert scale data, and it has shown that the complexity of a task is not necessarily in accordance with task difficulty, which means students' perception of task difficulty is rather independent of the designated complexity. There were even examples of one student with higher language proficiency who chose not to treat the first two tasks properly, which may stand for lower motivation. The third question is mainly concerned with the pedagogical perspective. Through the first question, teachers should be aware that the genre of writing task can influence the writing production, while it takes a certain amount of training to reach a certain level of proficiency, which cannot migrate to other genres automatically. Another thing is the mismatch between task complexity and task difficulty, which means teachers need to be aware of how students actually perceive the task through various methods.

This research, though, still has its own limitations, including the scale of the sample, extra variables that exist in the research and cause differences in the results, etc. Further studies should be conducted based on the results. Larger sample-based studies could generate more valid data, and the onto-analysis of individual students, as well as teachers combined with the interview, could shed more light on the interpretation of writing tasks.

Note:

1. There are two types of complexity in this paper: task complexity, which is concerned with the subject matter and content of the writing task, and language complexity, which includes syntactic complexity and lexical complexity.

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Consent Form

XXX High School:

This research will focus on high school students' perception of the difficulty and complexity of writing tasks. This research is an empirical study in task complexity and task difficulty in L2 English writing production.

Chinese students have long been known for having certain problems, difficulties, and challenges in writing in English, such as lacking cohesion and coherence, improper use of conjunctions and linking verbs, etc. All of those potential problems may bring hedges to the development of the English writing skills of students, and their further language use. Moreover, there is a research gap of those two elements in high school English teaching in China. In this sense, tasks can be very useful tools for both language teaching and Second Language Acquisition (SLA) research. Through pre-designed writing tasks with certain difficulty and complexity ranking, data will be elicited and analyzed to study the influence on the students.

This research will be conducted by LI Shangyan, YE Zhicheng and HE Kai, as part of their MA ILE (International Language Education) dissertation. The research will be carried out using tests with three writing tasks, and one questionnaire. The papers will be distributed to teachers, and teachers will decide when to start the writing task. It is recommended to be finished within 30 minutes. The 10 participants will be selected from the same class, and they will need to finish 3 writing tasks and one simple questionnaire. The actual writing content will be only be accessed by the three authors. In publishing the results of this research, all participants will be anonymized and given an alias. Participation in this research is voluntary, and the participants have the right to withdraw consent at any point of the research.

Consent

1. I confirm that I have read and fully understand the information provided on the preceding page.
2. I understand that I can ask additional questions should I wish to do so.
3. I understand that I am allowed to withdraw consent at any point in the research.
4. I agree to participate in this research.

Please check this box if you agree with the claims.

Name:_____
Date:_____
Signature:_____

同意背书

本研究将重点关注高中生对写作任务难度和复杂性的认知。本研究是对二语英语写作生产中任务复杂性和任务难度的实证研究。

长期以来，众所周知，中国学生在英语写作中存在一定的问题、困难和挑战，例如缺乏连贯性，连词和连接动词使用不当等。所有这些潜在的问题都可能对学生英语写作能力的发展以及他们进一步的语言使用带来障碍。而且，这两个要素在我国高中英语教学中也存在研究空白。从这个意义上说，任务对于语言教学和第二语言习得（SLA）研究都是非常有用的工具。通过预先设计的具有一定难度和复杂度排名的写作任务，研究者可以得出数据并进行分析，以研究对学生的影响。

这项研究将由李尚妍、叶芷呈和何恺进行，作为他们硕士学位（International Language Education）论文的一部分。该研究将使用包含三个写作任务和一份问卷的测试来进行。论文将分发给教师，教师将决定何时开始写作任务。建议在 30 分钟内完成。10 名学员将从同一个班级中选出，他们需要完成 3 个写作任务和一份简单的问卷。实际写作内容只能由三位作者访问。在发布这项研究的结果时，所有参与者都将被匿名并赋予假名。参与本研究是出于自愿，参与者有权在研究的任何时候选择退出。

同意内容：

1. 我确认我已阅读并完全理解前一页提供的信息。
2. 如果我愿意，我可以提出其他问题。
3. 我明白我可以在研究的任何时候退出。
4. 我同意参与这项研究。

如果同意请在方框内打勾。

姓名 日期

签名

Section 2 - Background questionnaire

General information (信息收集)

Student ID (学号): _____

Gender (性别): _____

Grade (年级): _____

Age of acquisition (开始学习英语的年龄): _____

English score of the first monthly exam this term (本学期第一次月考英语成绩): _____

English writing score of the first monthly exam this term (本学期第一次月考英语写作成绩): _____

*Two scores above should be accurate to bits. (以上两个考试分数均需精确到个位。)

Do you have any communication with English native speakers, either oral or written? (是否与英语母语者有过口头或书面英文交流?):

☐Yes 是 If yes, how often? 如果有，多久一次?

- ☐More often than twice a week (多于两周一次)
- ☐Twice a week (两周一次)
- ☐Once a week (一周一次)
- ☐Once a month (一月一次)
- ☐Less than once a month (少于一月一次)
- ☐Others (其它) _____

☐No 否

Section 3 – Tasks

Task 1

假定你是李华，你校计划举办介绍中国传统文化（例如：春节、剪纸、传统书画，戏剧等）的主题班会，并在英语网站上展示，请你给外国朋友 Chris 写封信，向他了解哪些中国传统文化更吸引外国朋友，内容如下：

1. 阐明写信事由；
2. 征求建议；
3. 表达感谢。

注意：

1. 词数 100 左右；
2. 可以适当增加细节，以使行文连贯。

Dear Chris,

I am Li Hua.

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Best regards,

Li Hua

Task 1 (English Translation)

If you are LI Hua, and your school plans to hold the classroom activity with the theme of traditional Chinese cultures, such as Spring festivel, paper cutting, traditional painting, and drama, the content will be presented on the English website. Please write a letter to your foreign friend Chris, and learn from him which of the traditional culture is more appealing to foreigners.

1. State the reason for writing this letter.
2. Ask for suggestions
3. Show your appreciation.

Tips:
1. Write in about 100 words
2. Add proper details for cohesion and coherence.
Dear Chris,
I am Li Hua.
_____

Task 2

在最近的一次主题为中学生课余时间上网的英语班会上，同学们对上网的利弊争论不休，意见不能统一。作为班长，请你根据下列信息，作总结性发言。

要求：

1. 覆盖以上内容，可作适当发挥；
2. 发言的开头和结尾已给出（不计入总词数）；
3. 词数：100 字左右

Attention, please! I'm going to give you summary of today's discussion about whether we should go online in our spare time.

Task 2 (English Translation)
At a recent English class meeting, whose topic was surfing the Internet in their spare time for, middle school students debated endlessly about the advantages and disadvantages of surfing the Internet. As a monitor, please make a concluding speech according to the following information.
Requirements:
1. The writing should cover the above content, and you can write other things relevant;
2. The beginning and end of the speech have been given (not counted in the total number of words).
3. Number of words: about 100 words
Attention, please! I'm going to give you a summary of today's discussion about whether we should go online in our spare time._____

Task 3

阅读下面材料，根据其内容和所给段落开头语续写两段，使之构成一篇完整的短文。

Twenty years ago, I drove a taxi for a living. One night I went to pick up a passenger at 2:30 a. m. When I arrived to collect, I found the building was dark except for a single light in a ground floor window.

I walked to the door and knocked, "Just a minute," answered a weak, elderly voice. After a long time, the door opened. A small woman in her eighties stood before me. By her side was a small suitcase.

I took the suitcase to the car, and then returned to help the woman. She took my arm and we walked slowly towards the car.

She kept thanking me for my kindness. "It's nothing," I told her. "I just try to treat my passengers the way I would want my mother treated."

"Oh, you're such a good man." She said. When we got into the taxi, she gave me an address, and then asked, "Could you drive through downtown?"

"It's not the shortest way," I answered quickly.

"Oh, I'm in no hurry," she said. "I'm on my way to a hospice (临终医院). I don't have any family left. The doctor says I don't have very long. "

I quietly reached over and shut off the meter (计价器). For the next two hours, we drove through the city. She showed me the building where she had once worked, the neighborhood where she had lived, and the furniture shop that had once been a ballroom where she had gone dancing as a girl.

Sometimes she'd ask me to slow down in front of a particular building and would sit staring into the darkness, saying nothing.

At dawn, she suddenly said, "I'm tired. Let's go now." We drove in silence Lo the address she had given me.

"How much do I owe you?" she asked.

"Nothing." I said.

"You have to make a living," she answered. "Oh, there are other passengers," I answered. She said thanks to me, but she looked so sad.

注意：

1. 续写词数应为 150 左右；
2. 请按如下格式作答。

Almost without thinking, I bent and gave her a hug. _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Task 3 (English Translation)
Read the material below and write two paragraphs based on the content and the beginning of the paragraphs to make it a complete article.
Attention：

1. Number of words: about 150 words；
2. Please follow the sentences below.

Almost without thinking, I bent and gave her a hug. _____
I was on my way to visit her._____

Section 4 – Likert scale

学号：

完成写作任务后，请根据问题，在选项上勾选出你对于写作任务的真实感受。

注意：

- 每个选项代表不同的态度。-2 代表强烈不认同；-1 代表不认同；0 代表中立；1 代表认同，2 代表强烈认同。
- 答案没有对错之分，只需根据自己的实际情况进行勾选。

	1 强烈不认同	2 不认同	3 中立 （既不认同也非不认同）	4 认同	5 强烈认同
Q1 我认为这项任务很容易。					
Q2 在做这项任务的时候我感到很轻松。					
Q3 我认为我在这项任务中表现良好。					
Q4 我觉得这个任务很有趣。					
Q5 我想做更多这样的任务。					

(English translation)

Instruction: After completing the writing task, please tick off your true feelings about the writing task according to the questions.

Note:

• Each option represents a different attitude. 1 indicates strong disagreement; 2 indicates disapproval; 3 stands for neutral; 4 on behalf of agreeing; 5 means strongly agree.

• There are no right or wrong answers; just tick them according to your situation. If you think that the option does not completely fit you, in this case, select the closest option.

1：strongly disagree
2：disagree
3：neutral
4：agree
5：strongly agree

1. I thought this task was easy;
2. I felt relaxed doing this task;
3. I do well on this task;
4. This task was interesting;
5. I want to do more tasks like this.