Iranian EFL Learners’ Perceived Writing Anxiety and the Complexity, Accuracy, and Fluency of their Task-based Writing: Are they Correlated?

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Abstract
This paper reports on a research which was conducted to examine the association between English as a foreign language (EFL) learners’ ratings of their writing anxiety and the quality of their task-based written production in terms of complexity, accuracy, and fluency. To this aim, 45 Iranian high-intermediate EFL learners were asked to complete the Second Language Writing Anxiety Inventory (SLWAI) (Cheng, 2004) in order to rate their perceived level of anxiety while writing in English. In addition, to elicit samples of their written production, they were required to perform the narrative task of writing down a story based on a sequenced set of picture prompts. Having collected the data, Pearson correlation coefficient was run to establish the statistical significance of the correlations among the variables. The results displayed that participants’ perceived level of second language (L2) writing anxiety is negatively associated with the complexity, accuracy, and fluency of their task-based written output. The significance and implications of the outcomes are discussed in the light of relevant theoretical rationale and empirical evidence.

Keywords: writing anxiety, task, complexity, accuracy, fluency

INTRODUCTION
The study of affective factors contributing to second language acquisition (SLA) has been a lively line of investigation since the 1970s. As one of the factors involved in SLA, anxiety has been shown to play a significant role in learning an L2. In this vein, foreign language anxiety refers to “a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process” (Horwitz, Horwitz, & Cope 1986, p. 125). There is no consensus as to the effect of anxiety on language learning. Nevertheless, the dominant view is that anxiety negatively impacts on L2 learners’ output (MacIntyre & Gardner, 1991, cited in Ellis, 2015). Specifically, it has been observed that high levels of anxiety...
influence L2 learners’ accuracy of production by virtue of preventing them from effectuating self-repairs (see Sheen, 2008). This finding raises an interesting question as to the possible relationship between language anxiety and other equally important dimensions of L2 performance, namely, its complexity and fluency. Thus, this research was developed to address this issue by exploring the interplay between Iranian EFL learners’ perceived level of anxiety and performance areas of complexity, accuracy, and fluency (CAF) in their (written) production. The study is of significance in that the findings could shed more light on and broaden our perspective on the role of affective factors in developing different aspects of L2 production.

BACKGROUND

Language anxiety

Psychological factors, e.g., language anxiety, have been of interest to SLA researches as they consistently explain learners’ rate and success in L2 learning. According to Ellis (2015, p.37), these factors can be categorized in terms of cognitive, conative, and affective variables. Cognitive factors like language aptitude, Ellis posits, influence processing, storing, and retrieval of information. Conative factors, e.g., motivation, on the other hand, impact on language learners’ establishing a goal and channeling efforts towards achieving it. Lastly, such affective factors as anxiety determine learners’ positive or negative reaction to a particular situation. In this connection, language anxiety is conceptualized as a type of ‘situation-specific’ anxiety, i.e., caused by the learning conditions in a particular situation, which can be either facilitative or debilitating (Ellis, 2015, p. 38). According to MacIntyre and Gardner (1994, p.284), L2 anxiety is “the feeling of tension and apprehension specially associated with second language contexts, including speaking, listening, and writing.”

As stated by Ellis (2015), previous research (e.g., Bailey, 1983; Horwitz, Horwitz, & Cope, 1986; Horwitz, 2001) has proposed tests, spontaneous communication in an L2, comparison with peers, and fear of negative evaluation as primary sources of language anxiety. As for the influence of this affective factor on SLA, adds Ellis, the general agreement is that there is a negative correlation between language anxiety and L2 achievement. Put differently, high anxiety impedes L2 development (MacIntyre & Gardner, 1991). For instance, Sheen (2008) reported that low-anxiety learners effectuated more error-correction following recasts, a finding which the researcher attributed to the debilitating effect anxiety exerts on language learners’ processing of input in their working memory.

L2 writing anxiety

Writing, the most challenging L2 skill to develop, involves a complex process of planning, generating and organizing ideas. This skill is especially difficult to master when L2 learners’ proficiency level is low (Richards & Renandya, 2002). One of the factors which has been demonstrated to impede L2 writing development is writing anxiety. L2 writing anxiety (SLWA) pertains to “a general avoidance of writing and of
situations perceived by the individuals to potentially require some amount of writing accompanied by the potential for evaluation of that writing” (Hassan, 2001, p.4). The study of this construct emerged from research on anxiety associated with oral communication. In their study, Cheng, Horwitz, and Schallert (1999) were able to distinguish writing anxiety from foreign language classroom anxiety.

Given the distinction among anxiety linked with different L2 skills (Cheng, 2004; Chen & Lin, 2009; Daly & Miller, 1975; Pajares, Johnson, & Usher, 2007), to date, several measures have been developed to tap this construct. The first test of writing anxiety (WAT) was designed by Daly and Miller (1975). Though this test has been the most widely used measure of L2 writing anxiety (Cheng, 2004), concerns regarding its validity have been raised. It has been argued that this measure confounds the construct of writing anxiety with other variables (e.g., positive feelings towards writing, writing self-efficacy, perceived value of writing, and writing behaviors) and, as such, cannot be employed as a valid measure of L2 writing apprehension. In response to this concern, Cheng (2004) devised an alternative triadic conceptualization of anxiety Inventory (SLWAI) featuring cognitive, somatic/physiological, and avoidance behavior. The validity and reliability of this instrument were established by means of correlation and factor analysis (Cheng, 2004). As reported by Cheng, this scale displayed high internal consistency reliability, significant test-retest reliability, adequate convergent and discriminant validity, and satisfactory criterion-related validity. She also ensured the reliability of the measure reporting a high internal consistency (Cronbach alpha coefficient of 0.91).

The issue of L2 writing anxiety has been the subject of a number of studies. Daly and Miller (1975b) observed that, compared with their low writing apprehensive counterparts, learners with high levels of writing apprehension showed lower perceived prospects of achievement in writing courses and were consequently less motivated to take writing courses. Investigating the association between writing anxiety and other affective variables, Pajares and Johnson (1996) were able to show that elementary learners’ ratings of self-efficacy beliefs about writing capability predicted their writing performance and influenced their writing apprehension in their first language (L1). It was also found that learners with high self-efficacy ratings displayed lower levels of perceived writing anxiety.

In a seminal study, Cheng (2004) examined the impacts of participants’ writing anxiety on such writing processes and behaviors as physiological effects in terms of feelings of tension or nervousness, cognitive interference in the writing process, and avoidance of writing. The results of participants’ performance on a timed English essay writing task revealed a statistically significant negative association between anxiety and performance. Elsewhere, Chen and Lin (2009) explored the relationship between writing self-efficacy, writing anxiety, and participants’ performance on a general English proficiency test. The results indicated that writing anxiety was negatively correlated with both writing self-efficacy and test scores. The correlation coefficient between writing self-efficacy and test score, however, was found to be positive.
Erkan and Saban (2011) conducted a study to see whether writing performance correlated with writing apprehension, self-efficacy in writing, and attitudes towards writing. The findings revealed a negative relationship between writing apprehension and writing performance, writing apprehension and writing self-efficacy, and a positive relationship between writing apprehension and attitude towards writing. In 2012, Singh and Rajalingam sought to explore the relationship among students’ ratings of their writing apprehension, self-efficacy beliefs, and their writing proficiency. Generally speaking, the outcomes displayed a reverse relationship between self-efficacy and writing apprehension level. Interestingly, it was found that the higher the apprehension level, the better the respondents’ writing performance.

In an Iranian context, Sarkhoush (2013) studied the relationship among self-efficacy in writing, attitude towards writing, writing apprehension, and Iranian EFL learners’ writing performance. This researcher reported negative relations between the following variables: (a) writing self-efficacy and writing apprehension; (b) writing apprehension and attitude towards writing; and (c) writing apprehension and writing performance. The results of this study also demonstrated positive correlation between self-efficacy and attitude towards writing as well as between self-efficacy and writing performance. The findings presented by Sanders-Reio, Alexander, Reio, and Newman (2014) who studied the possibility of predicting writing performance through students’ beliefs about writing, writing self-efficacy, and writing anxiety showed that writing self-efficacy moderately predicted writing performance. From among the facets of writing apprehension, anxiety about being criticized was not found to be of any significance; even so, being apprehensive about grammar negatively predicted performance.

In a more recent research, Alluhaybia (2015) observed that students with positive attitudes towards writing showed moderate apprehension levels and self-efficacy beliefs in writing. Surprisingly, however, none of these variables correlated with or predicted the participants’ writing competence. Lastly, Tola and Sree (2016) showed that while writing self-efficacy and writing performance were positively correlated, writing apprehension and writing performance had a negative relationship.

**Task-based L2 production: Complexity, accuracy, fluency in focus**

In task-based L2 education, achieving higher levels of CAF has been suggested as part of the general goal for L2 learners to achieve native-like language performance and develop the ability to communicate effectively (Skehan, 1996). Accuracy, as stated by Skehan (1996), relates to “a learner’s capacity to handle whatever level of interlanguage complexity s/he has currently attained”, complexity entails restructuring of interlanguage and concerns “the stage and elaboration of the underlying interlanguage system”, and fluency has to do with “the learner’s capacity to mobilize an interlanguage system to communicate meanings in real time” (p. 46). Put another way, accuracy caters for control of a learner’s interlanguage, complexity demonstrates and pushes restructuring and stretching of the interlanguage, and fluency involves a normal speed of accessibility of the interlanguage.
As a lively strand of work within task-based research, the study of task design, implementation variables, and task takers’ characteristics with the aim of examining their concomitant effects on complexity, accuracy, and fluency of L2 discourse has yielded interesting findings clinching the variant effects these variables exert on different dimensions of language learners’ production (see Skehan, 2016, for a comprehensive review).

Previous studies have generally shown, among other things, that provision of different types of planning, be it pre-task, careful online or task repetition, differentially influences learners’ task-based production. Available empirical evidence confirms the generally beneficial effects for giving language learners planning time to prepare their massage before performing a task on fluency and complexity of discourse, with the findings for accuracy being mixed. Besides, researchers have demonstrated the overall favorable effects allowing learners to engage in careful online planning while carrying out a ask causes on the accuracy and complexity of the resultant production. The effects on fluency, however, have been negative. Previous research findings have also indicated positive effects for repeating the same task with a one-week interval in between (i.e., task repetition) on fluency and complexity (see Ellis, 2009).

As for the design features of tasks, research findings reported to date speak to the effects of structure and information grounding in picture-based narrative tasks on the CAF in L2 learners’ output. With regard to task structure, researchers have observed that the existence of a clear structure underlying the events unfolding in a picture story assists task performers to produce more fluent and accurate L2. As regards information grounding, it has been delineated that the existence of both foreground and background information in picture stories induces learners to produce more syntactically complex language (see Tavakoli & Foster, 2008).

Regarding the interaction between the task and learner (cognitive) variables, Guara´-Tavares (2008) investigated the relationship among pre-task planning, individual’s working memory capacity (WMC), and L2 speech performance. Results of her study showed significant correlation between WMC and the measures of fluency in the planning group. The association was not significant when participants were not allowed to plan before performing the same task. Regarding complexity, the researcher reported that WMC was significantly correlated with complexity when planning was permitted but not when there was no opportunity for planning. In this study, WMC was not found to correlate to accuracy. To complement these findings, Ahmadian (2012) examined the way WMC interacted with careful online planning to impact on L2 speech production. He found that whereas WMC positively correlated with the measures of fluency and accuracy, the results for the measures of complexity were not statistically significant.

THE STUDY

Given the above mentioned empirical evidence and theoretical framework regarding the variables of the study, an interesting question arises pertaining to the possible relationship between EFL learners’ writing anxiety and complexity, accuracy, and
fluency in their task-based written production. Thus, the study reported in the remainder of this paper sought answers to the following research questions:

Is there any relationship between EFL learners’ perceived writing anxiety and the complexity of their task-based written production?

Is there any relationship between EFL learners’ perceived writing anxiety and the accuracy of their task-based written production?

Is there any relationship between EFL learners’ perceived writing anxiety and the fluency of their task-based written production?

Methodology

Participants

Some 45 MA candidates in Teaching English as a Foreign Language (TEFL) volunteered to participate in the study. At the time the data were being collected, these participants were in their first and second year of the program at Amin Institute for Higher Education and Payame Noor University of Najafabad in Iran, respectively. To make sure they were homogeneous in terms of their general English proficiency, these candidates were given the grammar part of the Oxford Placement Test (OPT). Based on their performance on the test, they were categorized as high intermediate learners.

Procedure

To elicit participants’ perceptions of their writing anxiety, they were asked to complete the Second Language Writing Anxiety Inventory (SLWAI) (Cheng, 2004). As was mentioned earlier, Cheng designed this multidimensional L2 writing scale to assess writing anxiety in terms of three dimensions, namely, physiological, behavioral, and cognitive. The SLWAI consists of 22 items which respondents rate on a Five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The SLWAI has been shown to be a valid and reliable measure of L2 writing anxiety (see Cheng, 2004) and, for this reason, it was employed as the appropriate tool for measuring participants’ writing anxiety for the current study. As the next step, the participants were asked to write down a story developing in a sequenced set of picture prompts, i.e., they were asked to perform a narrative task. To control for the effects of careful online planning (Yuan & Ellis, 2003), participants were given only three minutes for task completion. Following task performance, the researchers segmented, and analyzed the collected data in terms of the three production measures of CAF (see the following section for the operational definitions of these variables). The authors also had an experienced colleague double check 10% of the total data so as to ensure the reliability of the segmentations. Results showed an inter-rater reliability coefficient of greater than 0.9 on each measure of complexity, accuracy, and fluency.
Measures of L2 performance

In the related literature, previous studies have used a variety of measures to gauge accuracy, complexity, and fluency of task-based performance (see Housen, Kuiken, & Vedder, 2012, for an exhaustive review). To obtain more comparable results, in the present study the following measures were employed:

Complexity

Syntactic complexity was calculated as the measure of complexity. This measure refers to the ratio of clauses to AS units in the participants’ production. Foster, Tonkyn, and Wigglesworth (2000) define an AS unit as “a single speaker’s utterance consisting of an independent clause, or sub-clausal unit, together with any subordinate clause(s) associated with either” (p. 365). By way of illustration, the following examples, cited from Foster et al. (p. 366), exemplify AS units and related clauses:

[I have no opportunity to visit] (one clause, one AS unit)

[It is my hope / to study crop protection] (two clauses, one AS unit)

Accuracy

The percentage of error-free clauses to the whole number of clauses was used to assess the accuracy of each participant’s performance. Following previous studies, all syntactic, morphological, and lexical errors were taken into consideration.

Fluency

Rate of production was calculated by dividing the number of syllables by the total number of seconds each participant’s performance took and multiplied by 60.

Data analysis

As the study employed a correlational design, it was decided to run the Pearson Coefficient Correlation (r) as the appropriate statistical tool to examine the relationship between the variables mentioned in the research questions. In doing so, the correlation coefficients among participants’ ratings of writing anxiety and the complexity, accuracy, and fluency in their task-based writings were calculated.

RESULTS

The present study was carried out to examine the association between Iranian EFL learners’ perceived anxiety and the complexity, accuracy, and fluency in their task-based written production. In what follows, the obtained results and answers to the research questions are provided (see Table 1).
Table 1. Descriptive statistics: complexity, accuracy, fluency, and writing anxiety

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>1.05</td>
<td>.02</td>
</tr>
<tr>
<td>Accuracy</td>
<td>28.18</td>
<td>2.08</td>
</tr>
<tr>
<td>Fluency</td>
<td>43.7</td>
<td>1.73</td>
</tr>
<tr>
<td>Writing anxiety</td>
<td>48.44</td>
<td>14.29</td>
</tr>
</tbody>
</table>

The first research question was posed to investigate the relationship between EFL learners’ perceived writing anxiety and the syntactic complexity in their task-based writing. As shown in Table 2, there is a statistically significant reverse association between writing anxiety and the measure of complexity. In other words, the higher EFL learners’ perceived level of writing anxiety, the lower the syntactic complexity of their writings was.

Table 2. Correlation coefficients between the CAF and writing anxiety

<table>
<thead>
<tr>
<th>Complexity</th>
<th>Accuracy</th>
<th>Fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing anxiety</td>
<td>-.47**</td>
<td>-.42**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the .01 level (2-tailed).

The second research question concerned the relationship between EFL learners’ writing anxiety and the accuracy of their written production. The outcomes showed a negative relationship between these two variables. Put differently, writing anxiety and accurate L2 performance are negatively related (see Table 2).

The third question asked whether there was a significant relationship between EFL learners’ writing anxiety and the fluency of their written discourse. The results revealed a significant negative association between these variables. In other words, higher ratings of writing anxiety correlated with lower levels of fluency in writing performance.

To sum up, the findings of the study revealed that EFL learners’ ratings of their writing anxiety were significantly related to the linguistic quality of their task-based written performance as measured by its complexity, accuracy, and fluency.

DISCUSSION

The present study explored the relationship between the psycholinguistic variable of EFL learners’ perceived level of writing anxiety and the linguistic quality of their task-based written discourse in terms of complexity, accuracy, and fluency. In general, the findings showed that L2 writing anxiety is negatively related to all performance dimensions. Succinctly put, the higher EFL learners’ perceived level of writing anxiety, the lower complexity, accuracy, and fluency of their task-based writings are. The findings are in line with those previously reported by some researchers (e.g., Cheng, 2004; Erkan & Saban, 2011; Sarkhoush, 2013; Tola & Sree, 2016) speaking to negative correlation between students’ writing apprehension and quality of their writing. The results, however, run counter to the findings of Singh and Rajalingam (2012), Alluhaybia (2015), Pajares and Johnson (1994), and Chen and Lin (2009) reporting
either a positive or non-significant association between learners’ apprehension level and their writing performance.

The negative correlation coefficients among the psycholinguistic learner variable and linguistic production measures can be captured from a psycholinguistic vantage point. One may argue that writing is a manifestation of a number of underlying psycholinguistic processes involving the Planner/Proposer, Translator, and Evaluator/Reviser (Chenoweth & Hayes, 2001). According to Chenoweth and Hayes, written production involves, inter alia, the components of Planner/Proposer that includes the intentions, goals, plans and ideas to be expressed; Translator that converts the delivered prelinguistic idea into an unarticulated surface linguistic string by selecting lexical items and the appropriate structure; and, Evaluator/Reviser that assesses the product of the writing processes with the writer's goals. Building on this model, it seems plausible to deduce that whereas elaborate planning/proposing makes for more fluent and complex discourse, effective translating and evaluating/revising of a message results in more accurate production. By extension, it might be logical to assume that those EFL learners’ with lower levels of perceived writing anxiety, by virtue of being less inhibited by the affective filter of anxiety, can more effectively and elaborately engage in the cognitive processes of planning/proposing intentions, translating those prelinguistic unarticulated surface linguistic strings, and, at the same time, evaluating/revising the writing output against the intended goals, hence more complex, accurate, and fluent L2 production.

CONCLUSION

The purpose of this correlational study was to explore the relationship between the affective variable of perceived writing anxiety and Iranian EFL learners’ task-based L2 written production. The results indicated a negative association among these variables. These outcomes further underscore the central function psycholinguistic factors (e.g., affective variables) serve in aiding or inhibiting SLA. Theoretically, the negative coefficients observed uphold MacIntyre and Gardner’s (1991) hypothesis according to which high anxiety impacts negatively on different stages of the learning process, namely, input, processing, and output. The outcomes reported here in a way accorded with these observations by showing that when language learners judge a (writing) task as stressful this anxiety provoking experience is likely to produce a debilitating effect on the ‘output’ phase, hence less accurate, complex, and fluent L2 (written) production. Pedagogically, the outcomes imply that practitioners need to be more cognizant of and take into account individual differences that may differentially affect students’ performance on the assigned (writing) tasks. That being so, raising teachers’ awareness of the complicated interplay among individual variables and performance dimensions will hopefully enable them to arrive at a more objective, comprehensive framework for monitoring and evaluating language learners’ academic performance by pinpointing the sources of anxiety in their classroom and developing strategies to address students’ concerns and identify their attitudes towards certain learning tasks, e.g. writing. The aforementioned implications notwithstanding, the study had some limitations and these
should be acknowledged. Given the correlational design of the research, the results simply indicate interrelatedness and, therefore, do not reveal anything as to the potential causal effect anxiety might have on different aspects of L2 writing. Besides, other data collection tools, e.g., participants’ retrospection or verbal reports could have been utilized to triangulate and, consequently, help the researchers elicit more dependable data. Finally, distinct, yet complementary measures could have been used to more accurately tap the CAF.

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