

EFL Students' Anxiety in Writing Scientific Papers for Publication: Levels and Types

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Abstract

In recent years, some universities have required their students to publish scientific papers as one of the graduation requirements. These scientific papers can be in the form of articles published in scientific journals or in proceedings. Several factors affect the success of students in writing these scientific papers. One of them is writing anxiety. The study aims to investigate EFL students' writing anxiety when writing scientific papers. The respondents were English Education and English Literature Study Program students (N=61). The data were collected with a questionnaire. The study found that the students have a moderate level of writing anxiety. The mean score of anxiety is 61.82, indicating a moderate level of writing anxiety. Somatic anxiety score ranged from 8.00 to 35.00, with a mean of 20.10 and a standard deviation of 5.29, while avoidance anxiety showed a mean of 17.80 with a standard deviation of 4.10. Cognitive anxiety scores ranged from 17.00 to 36.00, with a mean of 23.92. This was the highest mean score, followed by somatic anxiety, with avoidance being the least prevalent. The results of this study show that the majority of EFL students experience significant levels of anxiety when writing scientific papers for publications, and the three types of anxiety, namely cognitive anxiety, somatic anxiety, and avoidance behavior, play roles in the general level of writing anxiety. Implications of these findings suggest that educational institutions should provide academic support, particularly in helping students develop effective strategies to manage cognitive anxiety and improve topic selection processes, which could lead the students to enhance their writing performance and have a greater likelihood of successful publication.

Keywords: Anxiety; EFL students; scientific papers; writing for publication

INTRODUCTION

Lately, many universities in Indonesia have encouraged their students to write and publish scientific papers in journals or conference proceedings. It is hoped that, by writing scientific papers, students can express ideas effectively and creatively, improve their writing skills, enhance academic knowledge, and open up opportunities to participate in the scientific community (Febriana et al., 2023). Universitas Islam Sultan Agung, especially the English Education Study Program, has also encouraged its students to write and publish scientific papers. Before graduation, students of the English Education Study Program must write and publish their research projects' results in a scientific journal or conference proceeding. The writing is done under the guidance and supervision of a lecturer.

The writing project starts when a student is in the 6th semester, in which a student is required to propose a topic for the paper. During the work, a student has close consultations with a supervisor so that by the end of the semester, the draft of the paper, which at least covers the abstract, introduction, and method, can be presented before the board of examiners who will assess the quality of the writing and offer suggestions or advice for further completion of the paper. When the draft is approved, the student can continue with the writing project by collecting and analyzing data and writing the results in a research paper ready to be submitted to a journal or conference. In a rather slightly different way, the students of the English Literature Department of the university are also required to write a scientific paper for publication in a journal or conference proceeding. However, the students of this department are required first to complete the research, then write a final project of *skripsi*, and finally write a paper for publication.

However, not all English Education and English Literature Study Program students are academically ready to work on the writing project. Many students face difficulties in writing scientific papers. The problems can be personal and affective, such as motivation, interest, anxiety, and self-efficacy. Some face problems with content or what to write, while others may have problems with language. Budjalemba and Listyani (2020) mention that topic mastery, which concerns the content of the writing, and language mastery, which concerns how to write the topic in intelligible English, are problems for many students.

Some students seem to have low motivation for writing, and others may not have a strong interest in writing. The mastery of the topic being written contributes to the level of difficulty. Chokwe (2013) mentioned several factors influencing students' writing of scientific papers. They include under-preparedness caused by ineffective teaching of writing at the school level, socio-economic issues, and inadequate reading. Budjalemba and Listyani (2020), in a study involving 22 students taking an Academic Writing course, found that students faced internal and external problems when writing academic papers. The internal problems are related to motivation, self-confidence, lack of knowledge, and feeling under pressure. The external problems are the teacher's teaching style, classroom atmosphere, material, and writing aspects. Writing scientific papers is important in language learning, and students should develop their writing skills and understand the languages. Even though students often consider writing scientific papers very challenging, teachers can help them by explaining and applying effective teaching methods during instructions.

One of the factors affecting foreign language writing, which attracts much attention from researchers in second or foreign language writing, is anxiety. It is a subjective feeling, apprehension, anxiousness, and worry related to an arousal of the automated anxious level (Hortwiz et al., 1986). English writing anxiety is a subjective feeling of hysteria, apprehension, anxiousness, and fear experienced by a student while he is assigned to write in a foreign language. Levels of anxiety in the context of psychological assessment are mild, moderate, severe, and very severe (Cheng, 2004). Writing anxiety itself is divided into three kinds: cognitive anxiety, somatic anxiety, and avoidance behavior. Somatic anxiety is someone's belief in the psychological outcomes of the anxiety. The developing feelings of tension and anxiety are the symptoms of this sort of anxiety. Cognitive anxiety is the cognitive component of tension experience, which covers terrible expectations, preoccupation with ordinary overall performance, and issues about others' perceptions. The last one is avoidance behavior, which refers to the behavioral factor of anxiety.

On the other side, according to psychologists, there are three types of anxiety. They are trait anxiety, state anxiety, and situation-specific anxiety. Trait anxiety is a stable individual feature that arises even when somebody faces a demanding situation that he/she perceives as threatening or dangerous. The second one, state anxiety, is the anxiety that arises due to a certain frightening stimulus. A person may additionally feel annoyed, fearful, and worried as he is

experiencing a triggering situation. The third, situation-precise anxiety, is the only one that is aroused when any individual is in a particular state of affairs (MacIntyre & Gardner, 1994).

In the literature on second language writing, some experts and researchers investigate second language writing anxiety (SLWA), defined as a person's overall avoidance of situations in which they believe they must write to be evaluated on their writing (Hassan, 2001). This anxiety is derived from the idea of writing apprehension and situation-specific anxiety, considering that a venture or project of writing in a foreign or second language may also trigger the arousal of the anxiety (Daly & Wilson, 1983). It is a type of mental predisposition that results in anxiety about writing in a second or foreign language.

Previous studies show that writing anxiety negatively affects overall writing performance and is inversely correlated with writing motivation. There can even be a correlation between educational procrastination and writing anxiety (Onwuegbuzie & Collins, 2001). Cheng (2002) found that language learners with a high level of writing anxiety tend to become discouraged when doing writing tasks, have a negative attitude towards writing tasks, and produce low-quality written tasks. Learners with a moderate level of foreign language tension can also have an intellectual block, which impacts their capability to process information in foreign language contexts (Liu, 2006). Additionally, they write papers that accumulate lower assessments (Lee & Krashen, 2002). Hassan (2001) also found that ESL writing anxiety affects beginners' writing performance. Low-anxiety students may want to compose better, high-quality, and longer writing than students with high anxiety. Other studies, for example, by Cheng (2004), found that writing anxiety affects both the writing system and writing behavior. Using timed English writing responsibilities to index individuals' overall writing performance, Cheng concluded that there could be a tremendous negative correlation between anxiety and beginners' performance.

Previous research by Miri and Joia (2018) examined student skills with writing anxiety. Several studies conducted by Balta (2018) and Mulyono et al., (2020) found that students' writing anxiety experiences, the relationship between anxiety in writing scientific papers and article writing skills, and the types and levels of writing anxiety in several universities. The main focus of this study is on final-semester students who are completing scientific papers for publication. In addition, this study focuses on the levels and types of anxiety in students in the English Education study program and English Literature education study program in higher education in Central Java.

From this phenomenon, the author is interested in conducting research with the title "EFL Students' Anxiety in Writing Scientific Papers for Publication: Levels and Types." Based on the above background, the study aims to investigate the levels and types of anxiety experienced by EFL students while writing scientific papers for publication, shed light on the underlying factors contributing to their apprehension, and propose strategies for alleviating this anxiety. This study proposed two research questions. They are: 1) What types of English writing anxiety are mostly faced by EFL students? 2) What levels of English writing anxiety are experienced by EFL students?

This research is essential and has both pedagogical and practical significance. From a pedagogical perspective, this research on studying students' anxiety about writing scientific papers for publication lies in its potential to inform and enhance the teaching and knowledge of the process of scientific writing. Teachers can adapt their teaching methods to deal effectively with such challenges by using expertise in the fear and worry that students experience. The findings of this study can help educators develop lessons, especially for educational writing. On the practical side, this study presents findings that educators can utilize to improve their skills in developing articles for publication. In addition, the results of this study have the potential to contribute to curriculum development, particularly for academic writing courses, to produce

modules that specifically target the identified fears, help students develop academic paper writing skills, and help increase self-confidence.

METHOD

Research design

This research adopted a quantitative descriptive research design using survey techniques. Quantitative analysis deals with the organization and analysis of data presented in the form of numbers. The main purpose is to improve the accuracy and rigor of statistical analysis (Goertzen, 2017). Based on the objectives and problems of this study, the writers made the choice to conduct survey research.

Respondents

The participants in the study were the sixth-semester students of the English Education (EE) and English Literature (EL) study programs who were enrolled in an academic writing course (N=61). Based on gender, 8 were male students, while the rest 53 were female. Based on their ages, they were between 20 and 23 years old. The researchers considered them to be suitable because they would have to write scientific papers for publication. The researchers distributed an adapted questionnaire on second language writing anxiety (SLWA) to obtain the research data.

Instruments

In this study, SLWA, which was adapted from Cheng (2004), was used to collect data. The SLWA is an instrument to measure one's writing anxiety, especially in a second language. In addition, it is considered valid and reliable for use in this study. SLWA instrument has been used to measure writing anxiety in many previous studies. The data collection instrument in this study was a closed questionnaire written in Indonesian to ensure that the respondents could understand each statement accurately. It was designed to determine students' anxiety levels in writing articles for publication. The questionnaire contained 22 statements requiring responses on a five-point Likert scale that ranged from "Strongly Disagree" (SD) to "Strongly Agree" (SA). Following Ary et al. (2017), the questionnaire was distributed online so that the respondents could fill it out and collect the responses.

Data collection procedure and analysis

This study used a survey questionnaire, in which data were collected by giving written statements to respondents to get answers (Creswell, 2012). The researchers first asked permission from the lecturer and faculty to conduct research. After that, they contacted the English Education and English Literature study program's class coordinators to inform them and ask them to distribute questionnaires. Researchers employed descriptive statistics for data analysis. Effective data presentation usually makes it evident whether the writer collected and assessed the information correctly and in compliance with the accepted field (Spriestersbach et al., 2009).

Descriptive statistical computation was applied to analyze the data, and SPSS version 25 was used. In order to address the research questions, every piece of data gathered was also thoroughly reviewed. As a result, an extensive investigation was conducted to gather pertinent data from additional sources. The level of anxiety was categorized into three: low, moderate, and high. The division was conducted by dividing the possible anxiety total scores into three tertiles. The first one-third on the top of the tertile was categorized as high. The second third in the middle was moderate, and the last third in the bottom was categorized as low.

RESULTS AND DISCUSSION

Results

This study involved 61 EFL students at Sultan Agung Islamic University. During the study, all respondents were in the process of writing scientific papers for publication. This study aimed to provide an in-depth insight into the development and challenges faced by EFL students in preparing their scholarly works. Considering the demographic composition of the respondents and their academic situation, the findings from this study can contribute significantly to the understanding of the dynamics of scientific writing among EFL students.

Table 1. The Research Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	EE	21	34.4	34.4	34.4
	EL	40	65.6	65.6	100.0
	Total	61	100.0	100.0	

Table 1 shows that of the 61 respondents, 21 students, or 34.4% of the total respondents, were from the English Education (EE) study program, while 40 students, or 65.6% of the total respondents, were from the English Literature (EL) study program. There was no missing or invalid data, so the percentages obtained were fully valid and corresponded to the total. The cumulative percentage presented also gives an accumulative picture of the distribution, where after including data from English Literature, the total percentage reaches 100%.

Table 2. Descriptive Statistics of Students' Anxiety in Writing English for Publications

	N	Minimum	Maximum	Mean	Std. Deviation
Anxiety total score	61	36.00	106.00	61.8197	11.86101
Valid N (listwise)	61				

Table 2 presents one of the results of the study. It shows that the majority of EFL students experience anxiety when writing scientific articles. The students have a moderate level of anxiety, indicated by the mean score of 61.89, which is between 51.27 and 102.52. This indicates that they are in a moderate level of anxiety. Their anxiety level can be categorized as moderate because they often feel doubtful, anxious, and worried in various situations. These anxiety levels were measured using a Likert scale from 1 to 5. The data obtained showed a significant variation in anxiety levels among the respondents, with the lowest anxiety score reaching 36 and the highest score reaching 106. The mean anxiety level of the respondents hovered around 61.82, indicating the general trend of the anxiety levels experienced. In addition, the standard deviation of 11.86 indicates that most anxiety scores were spread over a reasonably wide range around the mean, reflecting significant variation among respondents. These descriptive statistics provide an overview of the distribution of anxiety scores in the analyzed sample, highlighting the diverse levels of anxiety faced by EFL students in their scientific writing process.

Table 3. Descriptive Statistics of Cognitive Anxiety

	N	Minimum	Maximum	Mean	Std. Deviation
Cognitive Anxiety	61	17.00	36.00	23.9180	4.43582
Valid N (listwise)	61				

Table 3 presents the cognitive anxiety score among the respondents. The minimum score is 17.00, and the maximum score is 36.00. The mean score of cognitive anxiety is 23.92, which provides an overview of the mean of the distribution. The standard deviation is 4.44, indicating that the total cognitive anxiety scores are spread relatively wide around the mean, reflecting the significant variation in cognitive anxiety scores among respondents. These descriptive statistics provide an overall view of the distribution of total cognitive anxiety scores in the sample analyzed, emphasizing that there is a considerable difference in the level of cognitive anxiety experienced by the respondents. The students have a moderate level of cognitive anxiety, as indicated by the mean score of 23.92, which falls within the range of 18.65- 29.6.

Table 4. Descriptive Statistics of Somatic Anxiety

	N	Minimum	Maximum	Mean	Std. Deviation
Somatic anxiety	61	8.00	35.00	20.0984	5.29372
Valid N (listwise)	61				

Table 4 presents the data on the somatic anxiety scores among the respondents. The minimum score was 8.00, and the maximum score was 35.00. The mean Somatic Anxiety score was 20.10. It gives an overview of the center value of the distribution. This figure depicts a central tendency where most of the respondents are centered. However, the standard deviation 5.29 indicates a significant spread around the mean, meaning that somatic anxiety scores varied quite widely among the respondents. This standard deviation confirms that not all respondents experience somatic anxiety at the same level; rather, there are significant differences in the somatic anxiety they experienced. The students have a moderate level of somatic anxiety, as indicated by the mean score of 20.10. This score falls within the range of 16.32 to 25.62. The symptoms of this are rapid heartbeat, trembling, and excessive sweating. In other words, although there is a mean value that provides a general indication, the differences in individual experiences show that the factors that influence somatic anxiety vary significantly among respondents.

Table 5. Descriptive Analysis of Avoidance Behavior

	N	Minimum	Maximum	Mean	Std. Deviation
Avoidance behavior	61	9.00	35.00	17.8033	4.09805
Valid N (listwise)	61				

Table 5 presents the data obtained from the study. It shows that the avoidance behavior scores among the respondents varied over a fairly wide range, from 9.00 to 35.00. The mean score is 17.80, which gives an overview of the middle position of the distribution of values. This average figure reflects the general trend where most respondents fall within the spectrum of avoidance

behavior values. The students have a moderate level of avoidance, as indicated by the mean of 17.80. This score falls within the range of 16,32 to 25,62, which indicates that they are in the moderate of avoidance. Their level of avoidance can be categorized as moderate because they feel unable to handle the stress or anxiety that arises in certain situations, avoid situations that increase on previous trauma or experience, and fear failure or rejection. In addition, the recorded standard deviation of 4.10 indicates that while there is variation in Total Avoidance values among respondents, most of the values are distributed in a relatively close range around the mean. This standard deviation indicates that the differences in avoidance behavior among respondents are not extreme but rather within a fairly narrow range around the mean. These descriptive statistics provide an overall picture of how the avoidance behavior of anxiety is distributed, showing that there is variation in the measured values among respondents. However, the variation does not show very large differences. In other words, while there are some individual differences in the level of avoidance, the distribution of values shows that most respondents have levels of avoidance that are not too far from the mean, reflecting the relative uniformity in avoidance experienced by the group.

To classify anxiety levels based on the mean score, the standard deviation can be utilized as a guide to assign anxiety categories of low, medium, and high. This classification process involves several important steps to ensure data grouping is done systematically and accurately. Furthermore, to classify anxiety levels, the mean score and standard deviation are used to define the boundaries of the categories. The "low" category includes scores below the mean minus one standard deviation, while the "high" category includes scores above the mean plus one standard deviation. The "medium" category includes scores that fall between the boundaries of the low and high categories.

Table 6. Group Statistics of Anxiety Scores by Study Program

	Major	N	Mean	Std. Deviation	Std. Error Mean
Anxiety Total Scores	EE	21	65.4762	10.44806	2.27995
	EL	40	59.9000	12.22608	1.93311

Table 6 presents a comparison of the mean scores between the students of the English Education Study Program (EE) and the English Literature Study Program (EL). The table shows that students from English Education have a higher average anxiety level, at 65.4, compared to students from English Literature, whose average is 59.9. Although EE students showed higher anxiety levels on average, the variation in anxiety levels, as measured by standard deviation, was slightly greater in the EL Study Program, with a score of 12.23 compared to 10.5. This suggests that anxiety scores in EL majors are more dispersed compared to EE majors. In addition, the standard error of the mean, which reflects the accuracy of estimating the mean anxiety, shows a smaller value in EL (1.93) compared to (2.28), although this difference is relatively small. These descriptive statistics provide an overall picture of how anxiety levels vary between students from the two different majors, with students generally experiencing higher levels of anxiety than EL students.

Table 7. The Results of the Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference		
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Anxiety total	Equal Variances assumed	.004	.949	1.776	59	0.81	5.576	3.140	-.708	11.860
	Equal variances not assumed.			1.865	46.712	.068	5.576	2.989	-.438	11.591

Levene's test showed that the variances between the two groups, namely students majoring in English Language Education and English Literature, were considered equal with a p value of 0.949, indicating that the assumption of equal variance was met. Furthermore, the t-test indicated that there was no significant difference in mean anxiety between the two groups, either when the variances were considered equal or unequal, with p values > 0.05 in both tests. The 95% confidence intervals for the mean difference include zero in both cases, supporting the conclusion that the difference in mean anxiety between EE and EL students is not significant. Thus, the results of this analysis indicate that the average anxiety levels between students from both majors are not significantly different, confirming that the anxiety experienced by students from both majors is at a similar level.

Discussion

The results of this study revealed that EFL students experience significant levels of anxiety in the process of writing scientific papers for publication. With an average overall anxiety score for the English Education Study Program of 65.4762 and the English Literature Study Program of 59.9000 on the Likert scale, this data suggests that anxiety is a major issue faced by students during this process. This study identified several main types of anxiety experienced by students, namely cognitive anxiety, somatic anxiety, and avoidance behaviors. Cognitive anxiety includes concerns regarding their intellectual abilities and the quality of their writing (Willfors et al., 2021), while somatic anxiety relates to physical reactions and stress felt during writing. In addition, avoidance behavior refers to students' tendency to avoid scientific writing tasks due to high anxiety. The identification of these types of anxiety provides deep insights into the different aspects that contribute to anxiety problems, thus enabling the development of more effective strategies to support EFL students in overcoming their scientific writing challenges.

Thus, based on the mean score of the total anxiety data that has been given, the second group of English Language and English Literature Education students can be categorized as having a moderate level of anxiety. This shows that, in general, their anxiety levels are somewhere between low and high, reflecting that although they may experience some level of stress or worry, it does not reach very high levels of anxiety.

This study also aims to distinguish between the various forms of anxiety experienced by Universitas Islam Sultan Agung, sixth-semester students preparing to submit their scholarly work for publication in a journal. The results of this study show that the general anxiety levels of the two groups, English Education (EE) and English Literature (EL), show that anxiety level is at a

moderate level. This is in line with research conducted by Elaldi (2016) that students' foreign language anxiety level is at a moderate level, with slightly higher anxiety in the sixth semester (6) compared to the initial semester.

In this study, results show that cognitive, somatic, and avoidance anxiety play an important role in affecting individual well-being. Cognitive anxiety, which includes excessive worry and persistent negative thinking, can interfere with concentration and decision-making processes, leading to decreased productivity and quality of life. These effects are often exacerbated by somatic anxiety, which includes physical symptoms such as rapid heartbeat and tension in writing English scientific articles for publication. These somatic symptoms not only exacerbate physical discomfort but also potentially increase cognitive worries by creating a continuous cycle of anxiety. This is in line with the research by Syarifudin (2020), which revealed that the most dominant type of writing anxiety was cognitive anxiety. The second most dominant type of anxiety is somatic anxiety, and avoidance behavior is the third most.

In addition, avoidance behaviors, whether they take the form of avoiding particular circumstances or activities, have a significant impact on escalating the effects of anxiety. People who shy away from anxiety-inducing circumstances frequently find themselves in fewer social interactions and have fewer opportunities to practice coping mechanisms. This might ultimately make them feel more anxious and make it more difficult for them to overcome obstacles. This avoidance can also lead to feelings of isolation and low self-esteem, exacerbating the impact of overall cognitive and somatic anxiety. This research points to the importance of a comprehensive approach to treating anxiety, which not only focuses on addressing physical and cognitive symptoms but also reducing avoidance behaviors that make things worse. Moreover, the therapy that can be used to overcome social anxiety is Cognitive Behavioral Therapy with cognitive restructuring techniques and deep breath relaxation techniques. Cognitive restructuring aims to replace negative thoughts with positive thoughts, while relaxation techniques aim for the subject to have the skills to control anxiety (Haikal, 2022).

CONCLUSION

Sultan Agung Islamic University students pursuing English as a Foreign Language (EFL) showed a range of anxiety levels when it came to writing. However, there were notable variations in physical anxiety as well, ranging from 8.00 to 35.00, with a mean of 20.10 and a standard deviation of 5.29. The range of avoidance anxiety was less variable, with a mean of 17.80 and a standard deviation of 4.10, spanning from 9.00 to 35.00. These results suggest that writing anxiety varies significantly across EFL students, with cognitive anxiety having the highest mean score and physical and avoidance anxiety coming in second and third. According to the results, avoidance anxiety is the least common type of anxiety among sixth-semester English Education Program students, whereas cognitive anxiety is the most common. The difficulty students have choosing relevant research topics for publishing has been noted as a key challenge, indicating a need for more specialized support.

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