Academic Writing of Saudi Graduate Students: Issues and Improvements

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Abstract
This study investigates research writing difficulties encountered by Saudi graduate students at a Saudi university and seeks to offer interventional guidelines accordingly. A fuller understanding of these difficulties will contribute to the development of instruction aimed at improving students' research writing skills. The main question this study addresses is this: What are the major academic writing problems facing Saudi graduate students? The investigation used an explanatory sequential mixed methods approach involving 87 participants at the University of Jeddah, Saudi Arabia. The data were collected through a 20-item Likert scale questionnaire completed online by 85 Saudi graduate students (37 males, 48 females; 69 majoring in English, 16 majoring in other subjects) and semi-structured interviews conducted with two faculty members. The quantitative data were analyzed statistically using the Statistical Package for Social Sciences (SPSS), and the qualitative data were analyzed thematically. Results revealed that most students experienced difficulties related to language, argumentation, and research-article genre when composing research reports in English. Both the participating students and teachers thought the most serious academic writing challenges for Saudi graduate students were presenting complex information in clear sentences and building strong arguments. In contrast, the least problematic task was finding and documenting sources. Regarding evaluating sources, writing Literature reviews, and using technical vocabulary, most students were unsure of their abilities. Besides, English majors and other majors had similar perceptions of difficulties in three out of four significant aspects of research writing. As far as documenting sources is concerned, the perception varied significantly between the English-major and other-major students. The findings of the present study can assist stakeholders in identifying instructional needs in research writing in the Saudi Arabian context, and our guidelines will make research writing less difficult for Saudi students.

Keywords: Academic writing, English as a Foreign Language, Foreign Language, English as a Second Language, graduate students, research writing difficulties

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Introduction

A primary concern for Saudi graduate students is academic writing which is directly linked to success in college and beyond (Freedman, Hull, Higgs, & Booten, 2016; Lahuerta, 2017; McDonough & Crawford, 2018; Rosário, 2019). However, writing clear, coherent, and syntactically-developed prose is a student challenge (Hamzaoui, 2021; Harris et al., 2017; Ruscetti, Krueger, & Sabatier, 2018) as it requires the writer to fulfill a number of distinct but related tasks: gathering and ordering content; shaping content into correct and clear expressions; and, meeting the genre requirements. Many researchers (Hanauer, Sheridan, & Englander, 2019; Hyland, 2016; Lin & Morrison, 2021) have studied the academic writing problems facing First Language (L1) and Second Language (L2) writers. Whys and wherefores for L2 writers’ academic English writing difficulties are the following: writing in ESL or EFL; weak educational background; non-traditional nature of the graduate student (Haggis, 2006; Owler, 2010). Of the specific sources of L2 writing difficulties identified in the literature, the following are the major ones: vocabulary, grammar, and mechanics of writing; (Ferguson, Pérez-Llantada, & Plo, 2011; Phuong, 2021; Singh, 2017); discourse organization (Flowerdew, 2019; Hanauer & Englander, 2013; Komba, 2015; Mahammoda, 2016); and, genre conventions (Bitchener & Basturkmen, 2006; Finn, 2018; Kao & Reynolds, 2017) amongst others.

Although researchers such as Hyland (2016) and Maxwell-Reid and Kartika-Ningsih (2020) maintain that academic writing in English is as much a challenge for L1 writers as it is for L2 writers, other experts, such as Alsied and Ibrahim (2017), Hanauer, Sheridan, and Englander (2019), and Lin and Morrison (2021) have argued that L2 writers experience greater difficulties composing research reports compared with their native counterparts.

Academic writing problems faced by Saudi L2 graduate students remain a sparsely-studied subject. While many researchers have investigated L2 students’ issues with writing paragraphs and essay assignments, few have investigated whether these problems haunt L2 writers. This study was also conducted because anecdotal evidence in Saudi Arabia suggests students' notions about their research writing difficulties are often fuzzy. These students say research writing is challenging but cannot specify why. Finally, to our knowledge, few studies in Saudi Arabia have explored research writing difficulties of Saudi students in Saudi universities. Our online search for background literature for this study returned many works exploring Saudi college students' issues with constructing sentences, paragraphs, and essays. Still, we could find few inquiries into research-writing problems of Saudi students in Saudi universities.

This study aims to identify the research-writing difficulties encountered by Saudi graduate students at a Saudi University. To collect quantitative data, we designed a Likert-scale questionnaire, which was completed online by the volunteering students. The qualitative data for the study came from semi-structured interviews conducted with two in-service faculty members at the University of Jeddah in Saudi Arabia. Based on our findings, we also offer guidelines to make research writing less difficult for Saudi graduate students. This study, thus, sets out to foreground the significant obstacles to research writing in English experienced by Saudi students and to identify the instructional needs in L2 research writing within the Saudi Arabian context.

This study set out with the aim of assessing Saudi graduate students' academic writing. Hence, the overarching research questions of this study are:

1. What are the major kinds of problems graduate students at Jeddah University face when writing up their first research paper?
2. What are the major characteristics of the research-writing problems facing graduate students at the University of Jeddah?
3. What guidelines can be offered to make research writing less difficult for graduate students at the University of Jeddah?
4. To what extent do the English Major and the Other-Major students differ in their perceptions of research-writing difficulties?

This study provides an significant opportunity to advance the understanding of the specific research-writing problems facing Saudi graduate students in Saudi universities. A fuller account of these difficulties will contribute to developing instruction aimed at improving students' research writing skills. Additionally, this study could be used to identify areas of enhancement in academic preparation programs offered for Saudi graduate students in Saudi universities and highlight the characteristics of effective writing.

The rest of this paper is organized as follows. First, the literature review section discusses relevant past studies on academic writing difficulties encountered by L2 students, identifying gaps in the literature. Next, the study participants, research instruments, and methods of data analysis are described. The findings are then presented and discussed, followed by recommendations for stakeholders and the limitations of the study. The paper concludes by recapitulating the major findings of this study.

**Literature Review**

**Writing Difficulties for L2 Students**

Looking to ascertain English-writing issues with Vietnamese students, Phuong (2021) analyzed data from 50 English Majors at Tay Do University, Vietnam, and concluded that the participants found timed-writing tasks most difficult, followed by vocabulary and grammar. Poor background in English was also a noticeable problem. The least difficult task was reported to be the ordering of information. This study is relevant to the present one as it concentrates on graduate students and hence the results of our research could indeed be comparable to those of Phuong's (2021).

While Phuong (2021) focused on academic English difficulties, Riadil (2023) investigated the difficulties the students perceived and the steps they took to surmount those difficulties. Analyzing data from students (n=25) from the English department, Universitas Tidar, in the academic year 2021/2022, this study found that the students experienced the most serious issues with grammar, followed by difficulties associated with the writing style and English vocabulary. To overcome the problems, the students used four strategies (independent writing, think-aloud, modelled writing, and guided writing strategy) of which independent writing was practiced most commonly.

In a related research, Hirano (2014) studied students in an American college and found that writing tasks in disciplines other than English were easy, but the ones in Freshman English class were hard for the students. The students' problems were in vocabulary, grammar, and mechanics of writing. However, according to faculty feedback, these linguistic lapses only occasionally led to communication breakdowns, and students often surmounted these obstacles. A follow-up to the study of Hirano (2014) could have led to more fruitful findings in the sense that students' level, educational background and opportunities are relevant in accounting for academic performance including academic writing.
Research-writing Difficulties for L2 Students

Language-specific Issues

Surveying 85 supervisors across 28 departments at Stanford University, Casanave and Hubbard (1992) concluded that L2 students writing doctoral research encountered more difficulties than their native counterparts and that these shortcomings related to the sentence than the paragraph. Similarly, Sadeghi and Khajepasha (2015), examining the research-writing problems facing Iranian postgraduate students found that major difficulties related to grammar and style. In contrast, Cooley and Lewkowicz (1995, 1997), investigating supervisors and students at the University of Hong Kong, found that faulty argumentation affected research reports more than linguistic errors. Likewise, Dong (1998), investigating L2 postgraduate students at two American colleges, concluded that students struggled with developing and ordering ideas. Similarly, Manchishi, Ndhlovu, and Mwanza (2015) examined the research-writing problems confronting Zambia University graduate students and identified the following problems: vague research topics; unfamiliarity with the subject register; and, weak literature review. As is evident here, the foregoing discussion of the literature on L2 researchers' writing issues reveals divergent perspectives, with some studies finding surface errors to be the major issue while other studies finding discourse-level issues to be the formidable challenge. It means that fresh inquiries are needed to determine what kinds of writing difficulties trouble specific student samples in specific settings the most.

Genre-specific Issues

Besides the sentence and paragraph level problems, L2 students experienced difficulties specific to the research article genre. For example, Many L2 students did not discern the appropriate content for their sequencing in a research-report element (Parry, 1998; Thompson, 1999). In one study, focused on the Discussion section of the RA, Bitchener and Basturkmen (2006) interviewed students and their supervisors and found that students struggled with composing the Discussion for three main reasons. First, they thought, wrongly, the Discussion should summarize results and explain them in isolation. Secondly, some students were unaware of the appropriate content for the Discussion section. Thirdly, students had difficulty rendering numerical data into clear, well-developed English sentences. Likewise, Alsied and Ibrahim's (2017) study of 42 Libyan EFL undergraduates and their four teachers at a Libyan university found that students experienced difficulties meeting several genre requirements of research writing, such as formulating a research problem, gathering and analyzing data, and writing a cogent literature review.

Besides selecting the wrong content, students sometimes inflated the relative worth of their work by making inadequately-supported big claims about their topic and conclusions. In contrast, some other L2 students have been reported to underplay the significance of their study. This imbalance has been attributed to the students' limited proficiency in English (Parry, 1998; Thompson, 1999) or failure to consider the expectations of the discourse community (Hirvela & Belcher, 2001).

The Saudi Arabian Context

Writing Issues with Saudi Students

Many researchers have investigated writing problems confronting Saudi learners. In his case study, Yassin (2023) investigated the challenges facing Prince Mohammad Bin Fahd University undergraduate students in writing topic sentences for the argumentative essays they
wrote for a writing course they took in 2018. The findings revealed five issues: imprecision, wordiness, lack of orientation, faulty mechanics, and shaky grammar. In another study, involving 109 Saudi female undergraduates at King Abdulaziz University, Khadawardi (2022) identified the following issues: spelling mistakes; shaky grammar; and faulty discourse organization. In another study, Alzamil (2020) analyzed 48 compositions by 24 Saudi English major students and found that many texts suffered surface errors: errors in capitalization, spelling, and the articles. In a related study, Alharbi (2019), surveying 74 Saudi undergraduates, reported that many students found sentence and paragraph writing problematic. They listed these problem areas: capitalization; punctuation; sentence structure; topic sentence; supporting details.

While the studies by Yassin (2023), Khadawardi (2022), Alzamil (2020), and Alharbi (2019) had undergraduate students as participants, Al Fadda's (2012) analyzed academic writing challenges facing 50 postgraduates at King Saud University and reported that many students could not write correct English. The problem areas included pronoun usage, subject-verb agreement, and sentence combining.

Research-writing Issues with Saudi Students

Qasem and Zayid (2019), investigating 60 undergraduates and a few of their teachers at the University of Bisha reported that composing the Results section and documenting sources were the hardest-to-surmount obstacles for students. Significant as it was, this study did not distinguish the major problems from the minor ones and did not associate student perceptions with supervisor perceptions. Compared with the findings from Alsied and Ibrahim's (2017) study, it is clear that different student samples perceived different research-writing tasks to be the most daunting. This points to the need for further, and extensive, research before any meaningful generalizations can be made about research-writing challenges facing L2 students.

To sum up, the foregoing review of the relevant past studies carries two core implications. One, L2 learners, including Saudi graduate students, face multifaceted challenges when writing research reports in English, ranging from issues with grammar and writing style to argumentation and genre conventions. Two, the studies discussed above identify discrepancies vis-a-vis the kinds of writing difficulties and their relative seriousness. Coupled with the fact that the literature on the research-writing challenges facing Saudi L2 learners is unusually sparse, what is needed is further inquiries to provide a clearer view of what kinds of writing challenges trouble the Saudi L2 researchers the most.

Method

This study used an explanatory sequential mixed methods design. In this approach, quantitative data collection is followed by qualitative data collection to expand on the quantitative findings (Creswell, 2013). In the quantitative phase, we administered a Likert-scale questionnaire, which the participating students completed online. In the qualitative phase, we conducted semi-structured interviews with the faculty members. The justification for this approach is that the quantitative data and findings furnish an overall picture of the research problem; further analysis, through qualitative data collection, is required to sharpen the general picture. In addition, it allows an inclusive investigation of the studied phenomenon and provides a more thorough assessment of the participating students' academic writing.

Participants

Employing purposive sampling, a total of 85 Saudi graduate students (37 males and 48 females; 69 Majoring in English, 16 majoring in other subjects) and two serving members of the
Faculty, all at the University of Jeddah, Saudi Arabia, participated in this study voluntarily. All the student participants identified themselves as L2 speakers of English. The participating instructors hold doctoral degrees in English and are experienced in research supervision.

**Research Instruments**

Following its piloting, a Likert-scale questionnaire was finalized, comprising 20 items (statements) divided into four sections of five statements each: the process of research; the elements of a research report; the writing of a research report; the documenting of sources in a research report. Each section represented a major aspect of research writing, and statements therein were framed to elicit students' perceptions of their own competence in specific research-writing tasks. As for the semi-structured interview, upon our invitation, two in-service faculty members at the University of Jeddah agreed to be interviewed. The idea behind using two different data collection instruments was to obtain a nuanced understanding of the issue at hand by using two different data sources, allow the exploration of diverse perspectives, and address the present study's multilayered research questions.

**Research Procedures**

A total of eighty-five students completed the questionnaire online. The response rate, thus, was 100 percent. The students ranked their responses on a five-point psychometric Likert scale ((1=strongly disagree; 2= disagree; 3= neutral; 4= agree; 5 = strongly agree). The semi-structured interviews were conducted face-to-face in English with two members of the faculty. To make each interviewee feel as comfortable as possible, the interviewees were timely contacted, informed of the interview protocol and briefed about the study focus and objectives. Each of the two instructors was interviewed twice. Each interview lasted 30-40 minutes.

**Data Analysis**

A combination of quantitative and qualitative approaches was used in the data analysis. The quantitative data were analyzed in the SPSS. The general characteristics of the distribution of scores were obtained by calculating means and standard deviations for each item (see Tables one to four). The quantitative data were subjected to an independent sample t-test too to see if the English-Major group and the Other-Major group differed in self-perceptions of research-writing difficulties (see Table five).

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know what a strong research question is and how to create one</td>
<td>2.84</td>
<td>0.9</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how to craft a strong thesis statement from a research question</td>
<td>2.31</td>
<td>1</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how to search for and record information from online and print sources</td>
<td>4.1</td>
<td>0.8</td>
<td>Agree</td>
</tr>
<tr>
<td>I know how to evaluate information gathered from various sources.</td>
<td>3.2</td>
<td>.9</td>
<td>Neutral</td>
</tr>
<tr>
<td>I know how to avoid logical fallacies in a research argument.</td>
<td>2.6</td>
<td>1</td>
<td>Disagree</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td>2.9</td>
<td>0.71</td>
<td><strong>Disagree</strong></td>
</tr>
</tbody>
</table>
### Table 2. The elements of a research report

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am conversant with the elements and structure of a research report</td>
<td>2.51</td>
<td>0.9</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know the basis on which information is included in or excluded from</td>
<td>2.35</td>
<td>0.9</td>
<td>Disagree</td>
</tr>
<tr>
<td>I can construct a cogent narrative of relevant previous work on the</td>
<td>3.00</td>
<td>0.87</td>
<td>Neutral</td>
</tr>
<tr>
<td>I know how to translate data into sentences and paragraphs.</td>
<td>1.79</td>
<td>1.01</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>I know how data analysis differs from data discussion.</td>
<td>2.6</td>
<td>1.1</td>
<td>Disagree</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td>2.45</td>
<td>0.71</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

### Table 3. The writing of a research report

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am familiar with the jargon of my chosen research field.</td>
<td>3.00</td>
<td>1.1</td>
<td>Neutral</td>
</tr>
<tr>
<td>I know how to construct syntactically mature sentences of different</td>
<td>2.3</td>
<td>0.97</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how to match a specific idea to a specific sentence type</td>
<td>2.96</td>
<td>0.9</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how to develop and link paragraphs and sections of a research</td>
<td>2.65</td>
<td>0.9</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how to revise a research report for focus, content, style, and</td>
<td>2.75</td>
<td>1.17</td>
<td>Disagree</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td>2.73</td>
<td>0.81</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

### Table 4. The documenting of sources in a research report

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am familiar with the different documentation styles used in academic</td>
<td>2.93</td>
<td>1.1</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how different kinds of sources are cited within the text in the</td>
<td>3</td>
<td>1.01</td>
<td>Neutral</td>
</tr>
<tr>
<td>I know how to avoid pitfalls in the APA in-text citation</td>
<td>3.0</td>
<td>1.1</td>
<td>Neural</td>
</tr>
<tr>
<td>I know how different kinds of sources are recorded in the APA References</td>
<td>2.95</td>
<td>1.01</td>
<td>Disagree</td>
</tr>
<tr>
<td>I know how to avoid pitfalls in preparing the APA list of References</td>
<td>2.75</td>
<td>1.01</td>
<td>Disagree</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td>2.93</td>
<td>0.88</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

### Table 5. t-test for the difference between English language major        |
| contributors and other major in terms of perceived difficulties         |

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
</table>
The qualitative data were analyzed thematically. We first read the transcripts to obtain a general sense of the interview. Next, we coded them manually, breaking the text into parts and labelling them to develop descriptions and themes (Saldana, 2021). We especially looked for information that echoed, extended, or contradicted the students' responses, adding depth to quantitative data through concurrence, complementation, or contradiction. Themes and codes were checked and piloted by colleagues and were described to be representative, valid and reliable.

Results

Quantitative Findings: Students' Perceptions of their Research-writing Difficulties

To collect quantitative data, a 20-item Likert-scale questionnaire was administered. Divided into four parts of five statements each, the parts represented major aspects of research writing, and statements therein were formulated to elicit students' perceptions of their competence in specific research-writing tasks.

Showing the descriptive statistics, Tables one to four list the means and standard deviation for each item in the questionnaire, summarizing the descriptive statistics relating to the participating students' perceptions of their research writing competence. Table one focuses on the process of research, and Tables two to four concentrate on the elements, the composing, and the documenting of the research report, respectively. Table five presents the t-test results on the difference between the English-Major and Other-Major students concerning the perceived problems in the major aspects of research writing.

Most students reported facing challenges in all four major aspects of research writing. On average, the toughest aspect was 'the elements of a research report' (M = 2.45 SD = 0.71), followed by 'the writing of a research report' (M = 2.73 SD = 0.81), 'the process of research' (M = 2.90 SD = 0.71) and 'the documenting of sources in a research report' (M = 2.93 SD = 0.88). To 13 questionnaire items, the average response was 'disagree', to five, 'neutral', to one, 'agree', and to another one item it was 'strongly disagree'. This indicates that, as it stood, the students could not fulfill most of the research-writing tasks. For them, shaping data into sentences and paragraphs was the toughest task. The least problematic task was finding and recording information.
Regarding evaluating sources, writing a Literature Review, using jargon, and APA in-text citation, the students, on average, were unsure of their abilities.

**Process of Research**

Table one summarizes the students' perceptions of their understanding of the research process. As the table shows, on average, the students had a relatively poor understanding of research process (M = 2.9, SD = 0.71). Of the five aspects of research process, on average, three -- creating strong research questions (M = 2.84, SD = 0.9), crafting strong thesis statements (M = 2.31, SD = 1), and avoiding logical fallacies (M = 2.6, SD = 1.0) -- were perceived to be difficult, and one -- finding and recording information (M = 4.1, SD = 0.8) was perceived to be easy. About one aspect, information evaluation (M = 3.2, SD = 0.9), the average response was that of uncertainty.

**Elements of the Research Report**

Table two provides descriptive statistics on the students' perceptions of their competence in developing the elements of a research report. As the table shows, most students found the task difficult (M, 2.45 SD, 0.71). Of the five aspects of developing research report elements, shaping discrete information into clear and well-developed sentences and paragraphs was labelled the toughest task (M, 1.79 SD, 1.01). The other difficulties were the following: appropriate content for the Literature Review (M = 2.35 SD = 0.9); the understanding of the research report structure (M = 2.51 SD = 0.9); and, the difference between findings and their interpretation (M = 2.6 SD = 1.1). Concerning crafting a cogent literature review, most students were unsure of their abilities (M = 3.00 SD = 0.87).

**Writing of a Research Report**

Table three summarizes the students' perceptions of their ability to compose a research report. As the table shows, most students found the writing of a research report problematic (M = 2.73 SD = 0.81). The toughest task was writing syntactically-developed sentences of different types (M = 2.3 SD = 0.97), followed by developing and linking discourse units (M = 2.65 SD = 0.9), revising the paper for focus, content, style, and correctness (M = 2.75 SD = 1.17), and expressing ideas in appropriate sentence types (M = 2.96 SD = 0.9). Regarding their familiarity with the subject register, the students, on average, were unsure of their competence (M = 3.00 SD = 1.1).

**Documenting of Sources in a Research Report**

Table four summarizes the students' perceptions of their understanding of research documentation. Most students found the task difficult (M = 2.93 SD = 0.88). Of the specific aspects of documentation, preparing the APA list of References correctly was perceived to be the most challenging (M = 2.75 SD = 1.01), followed by familiarity with different documentation styles (M = 2.93 SD = 1.1) and recording different kinds of sources in the APA References list (M = 2.95 SD = 1.01). To the in-text citation of sources in the APA style (M = 3.00 SD = 1.01) and avoiding pitfalls in the APA in-text citation (M = 3.00 SD = 1.10) --- the average response was 'neutral': the students were unsure of their skills in those aspects of documentation.
Difference between the English major and other Major in Terms of Perceived Difficulties in Research Writing

Table five provides data on the difference between the English major and the other major in terms of perceived writing difficulties. For three areas of difficulty, there was no significant difference between the two groups: the process of research (t=0.81, sig=0.41); the elements of a research report (t=0.22, sig=0.82); the writing of a research report (t=0.98, sig=0.32). For one area, documenting sources, there was a significant difference between the two groups (t = 2.1, sig= 0.03).

Qualitative Findings: Teachers' Perceptions of their Students' Research Writing Difficulties

Qualitative data were collected through face-to-face semi-structured interviews conducted in English with two members of the faculty. Each interview lasted 30-40 minutes. The interview transcripts were read for patterns of similarities and differences. From the analysis of the interview data, three themes emerged: linguistic challenges; argument-specific challenges; and, genre-specific challenges. Overall, based on their experience, the interviewees thought that research writing was considerably hard for students and that presenting complex information in clear, syntactically-developed prose was the biggest challenge. The second most serious problem, again according to both interviewees, was the students' difficulty with crafting a cogent research argument. The interviewees regarded surface errors as a noticeable but only occasionally serious weakness in students' research writing.

Linguistic Challenges

Difficulties in Matching Linguistic Structure to Rhetorical Purpose

Describing the toughest research-writing issue with his students, T1 (Teacher 1) mentioned the students' inability to match sentence structure to rhetorical purpose. Elaborating, he said students sometimes expressed closely-related ideas in choppy sentences and unrelated information in long, ill-structured sentences. Moreover, T1 said, excessive nominalization and overstuffed sentences were also noticeable.

Often, students would tell me they could present complex ideas well in Arabic but communicating the same in English was difficult. They did not quite know how to capture complex information in a single, or a couple of, well-written English sentences. (T1)

Commenting on the most prominent shortcoming in the students' research writing, T2 (Teacher 2) identified a similar problem. He said, "his students' paragraphs felt choppy." When asked to revise, the students often ended up creating hard-to-read sentences with excessive coordination, unnecessary subordination, or information overload. Moreover, many students could not reduce clauses to phrases.

Our students need to master some basic stuff in rhetorical grammar such as matching grammatical subject to logical subject and putting the main action in verb. Students also need to master cohesive devices. Finally, they should learn the basic sentence patterns for these patterns capture the basic kinds of messages. (T2)

Difficulties in Lexis and Grammar

Another category of the linguistic challenge was word-choice and grammar. Both T1 and T2 thought their students struggled with grammar and lexis. However, T1 pointed out that surface errors were usually not serious.
Irritating as they are, surface errors seldom obscure the intended meaning. Even if the draft has errors in articles, prepositions or concord, I would still see the writer's point. This, however, is not to say surface errors can be left unattended. I do believe correctness is a requirement in academic writing. What I do not believe, however, is that correctness is a virtue. (T1)

Sharing his views on difficulties in lexis and grammar, T2 (Teacher 2) made a slightly different point. For him, depending upon their type, surface errors could be serious too.

Well…some surface errors do hinder communication. For example, when students use faulty clause structures, wrong verb tense or wrongly-positioned adverbs – these lapses obscure meaning. (T2)

**Argument-specific Challenges**

Both instructors pointed out that many student research reports were weak in argumentation. The most serious lapse was the weak claim-support structure (T2) and logical fallacies (T1).

**Lack of Claim-support Structure**

T2 reported that sometimes the students left their topic sentences and thesis statements unstated or vaguely worded. On other occasions, there would not be enough supporting details to prove the point.

Academic writers should state their thesis clearly and then establish it with adequate details. However, I have found student texts where the thesis is missing or the evidence is inadequate. When this happens, the reader fails to grasp or accept the point being made. (T2)

**Presence of Logical Fallacies**

T1 regarded logical fallacies as a generic problem with student research writing, mentioning cherry-picking the evidence and hasty generalization as the two most frequently-occurring fallacies.

Sometimes, when checking the student Literature Review against the literature, I would discover that the gap identified by the student has already been addressed by the studies excluded from the student paper. Besides, I have also seen papers making big recommendations based on scant evidence. (T1)

**Genre-specific Challenges**

The instructors identified two genre-specific problems. First, many students did not know the appropriate content for sections of the research report. In this regard, T1 spoke about the absence of a research gap in student papers. Secondly, T2 referred to the Discussion sections not relating findings to the relevant literature.

**Lack of Demonstration of the gap in the literature**

T1 (Teacher 1) referred to the Introductions as merely summarizing the literature, without identifying the research gap. Such Introductions, T1 asserted, failed to justify the studies they were part of.

In my experience, student papers almost always introduce the subject, establish its importance, and describe previous studies. But, many RAs fail to establish the rationale. The writer fails to convince the reader there are important questions that need to be addressed. (T1)
Logical disconnect between findings and previous studies in the Discussion section

Mentioning a frequently-noted flaw in the student research papers, T2 remarked that many Discussion sections simply restate findings and then summarize the relevant previous studies, not showing where the findings fit in the ongoing discussions on the subject.

In the Discussion section, students should tell the reader how their findings interact with the literature. But many students, perhaps because they do not understand the function of the Discussion, merely repeat results and literature review there. (T2)

**Discussion**

This study aimed to foreground research-writing problems confronting Saudi graduate students at a Saudi Arabian university. We surveyed students and interviewed faculty members. The data were analyzed statistically and thematically. Here, we return to our research questions, bringing together the findings of this investigation and contextualizing them within a discussion of relevant previous studies.

**RQ 1: What are the major kinds of problems graduate students at Jeddah University face when writing up their first research paper?**

We began our study by asking: “What are the major kinds of problems graduate students at Jeddah University face when writing up their first research paper?” Our results show that Saudi graduate students experience linguistic, rhetorical, and genre-specific difficulties. In both student perception and supervisor opinion, linguistic problems marred students' writing more than rhetorical or genre-specific problems. The toughest problem was rendering complex information into clear, syntactically-mature sentences. This shortcoming took many forms: choppy sentences; excessive coordination; illogical subordination; information overload; and inappropriate sentence structure. These findings resonate with the following studies on L2 research-writing issues: Casanave and Hubbard (1992), Sadeghi and Khajepasha (2015), and Bitchener and Basturkmen (2006). Our findings align closely with Casanave and Hubbard's (1992) conclusion that L2 writers struggle more with grammar and style than with argumentation. To explain the precedence of linguistic challenges over other kinds of challenges, we argue that L2 writing places an additional cognitive burden on the writer (Flowerdew, 2019; Lin & Morrison, 2021). L2 writers find it harder to write as effectively in L2 as they would in L1 because they have to master both linguistic resources and rhetorical conventions of a different culture.

The next challenge, in both the students' and the supervisors' views, was crafting an effective research argument. Many student papers had lapses in argumentation: facile claim-support structure; weak rationale for the project; and, logical fallacies. These shortcomings produced negative consequences: a research report reading more like a collection of inadequately-supported claims than like a well-developed argument. This finding generally supports the conclusions of researchers such as Cooley and Lewkowicz (1997), Dong (1998), and Qasem and Zayid (2019): failure to develop, organize, and connect ideas weakens students' work more than surface errors do.

Vis-à-vis evaluating sources, writing a literature review, and using jargon, most of the students were unsure of their abilities. Here, our findings are at some variance with the conclusions reached by Manchishi, Ndhlouvu, and Mwanza (2015), who investigated research-writing problems confronting graduate students at Zambia University and found that the students could not compose a strong literature review and were not quite familiar with the subject register. This discrepancy is linkable to students' heterogeneous educational backgrounds and the temporal gap between the
two studies. The Zambia University participants did not have prior acquaintance with the research report elements, which led to issues with the literature review section. In contrast, the University of Jeddah has a research-methodology course in place at the undergraduate level, which introduces students to research methods and research-report elements.

**RQ 2: What are the major characteristics of research-writing problems facing graduate students at Jeddah University?**

From the students' self-reporting and the supervisors' opinions, it emerged that many students experienced linguistic, rhetorical, and genre-specific difficulties when writing research reports in English. Specific linguistic difficulties included the following: faulty sentence structure; choppy sentences; information overload; faulty concord; wrong use of articles, prepositions, verb tenses (past and present), and adverbs. Overall, these findings corroborate much of the previous scholarship on the subject. For instance, inappropriate sentence structure figures as a serious shortcoming in L2 research writing (Casanave & Hubbard, 1992; Sadeghi & Khajepasha, 2015). Besides the sentence-construction issues, the students, sometimes, misused articles, prepositions, pronouns, verb tenses, and concord. These findings are consistent with the findings from the following previous studies: Alharbi (2019) identified the articles, prepositions, and irregular verbs as major areas of difficulty; Hind Al Fadda (2012) concluded that grammaticality was difficult for Saudi postgraduate students. The problem areas included pronoun usage, subject-verb agreement, and sentence combining.

Besides the linguistic issues summarized above, students faced rhetorical and genre-related issues, too. Specific rhetorical issues included developing, organizing, and connecting ideas in discourse units. Many students struggled with topic sentences and supporting details. Some students did not know much about the role of cohesive ties in crafting units of discourse. These results are consistent with previous findings that identified discourse organization and paragraph construction as major areas of difficulty for L2 writers (Alsied & Ibrahim, 2017; Cooley & Lewkowicz, 1997; Dong, 1998). Regarding genre-related issues, many students experienced difficulties in the following areas: appropriate content for elements of a research article; apt hedging; and, convincing evidence to justify the need for their proposed research. These findings bolster the assertions made by the following researchers: Thompson (1999) argued that many L2 students did not know what kinds of information combined to form the elements of a research report and how to sequence ideas in a research paper; Hirvela and Belcher (2001) found that some L2 students failed to match the voice (linguistic stance) in their writing to the expectations of discourse community partly because they were not proficient users of hedge-creating modal auxiliaries; Alsied and Ibrahim's (2017) found that formulating a research problem was a major problem for Libyan undergraduates because they did not quite know how to highlight gaps in the literature and present them as a rationale for their research.

**RQ 3: What guidelines can be offered to make research writing less difficult for Jeddah-University graduate students?**

From our quantitative and qualitative findings, the toughest difficulties for the students were expressing complex information in clear, syntactically-mature sentences and building a cogent argument. We offer the guidelines accordingly. To write clear sentences, make the logical subject the grammatical subject, express action in the verb, keep the whole subject short (six to eight words), and keep the subject and verb close together. The following examples illustrate the point.
a. There is a belief among some researchers that consumers’ choices in fast food restaurants would be healthier if there were postings of nutrition information on their menus. (Unclear)

b. Some researchers believe that consumers would choose healthier foods if fast food companies posted nutrition information in their menus. (Clear)

These guidelines resonate with several other studies (Bacon, 2018; Harris, 2018; Williams & Bizup, 2014). For example, Williams and Bizup (2014) warns writers against using empty or long subjects and not putting action in verbs. He also warns against long gaps between the subject and the verb. Likewise, Bacon (2018) recommends matching grammatical subject to sentence subject, using only necessary modifiers, and putting the core predication in the main verb.

To write syntactically-developed sentences, combine sentences and manipulate sentence structure. When combining sentences, ensure you have chosen the appropriate conjunction. For example, the sentence 'The patient was alive, but he was critically ill' relates equal ideas. However, the sentence 'Although John tried hard, he failed the exam' relates unequal ideas. Regarding sentence-structure manipulation, follow these guidelines: When using a complex sentence, express your main point in a short (10-20 words) independent clause; explain key ideas in free modifiers; and, reduce clauses to phrases and phrases to words.

These guidelines are in line with the advice contained in other works on sentence style (Broadhead, 1981; Harris, 2018). For example, Broadhead (1981) advises technical writers to put the core message in the independent clause, peripheral details inbound modifiers, and key explanations in free modifiers. Harris (2018) advises writers to express complex information thus: select propositions; identify the key proposition; determine the relationship between propositions; express the key proposition in the independent clause and put the remaining propositions in phrases or words; link propositions into a shapely sentence.

To craft a cogent argument, follow these basic guidelines. Avoid selection bias; show the gap in the literature; make specific, manageable claims; acknowledge the counterpoint; and, link your findings to relevant past studies. Our guidelines on argumentation echo the advice contained in the following other studies (Faigley & Selzer, 2018; Lunsford, Ruszkiewicz, & Walters, 2022; Salkind, 2018). For example, Salkind (2018) regards the lack of a research gap and sparse description of the research problem as major weaknesses in research reports. Likewise, Lunsford, Ruszkiewicz, and Walters (2022) warn the writer against selection bias.

RQ 4: To what extent do the English-Major and the Other-Major students differ in their perceptions of research-writing difficulties?

We ran a t-test to see whether English-major and other-major students perceived research writing difficulties differently. For all but one major area of difficulty, there was no significant difference between the two groups. For one domain, Documenting Sources, English-major and other-major students differed significantly. For the process of research, the elements of a research report, and the writing of a research report, the difference between the two groups was insignificant. One reason English majors and other majors reported largely similar research-writing experience is that their educational background from school to college is largely similar as far as the English curriculum is concerned. At college, both English majors and other major students learn research writing by trial and error rather than systematically. Therefore, their problems are largely similar.
Recomme ndations of the Study

Based on our overall findings, we recommend the following: First, Saudi graduate students should be imparted sustained training in rhetorical grammar. This will enable them to choose grammatical structures best fit their communicative needs. Secondly, argumentation should be integrated into courses of study so the students understand discipline-specific aspects of argumentation. Thirdly, instructors should prioritize students' research writing problems. We have found the most serious problems for students are the ones concerning the clarity and coherence of the message and the ones concerning selecting and sequencing information within the elements of a research report. Finally, peer reviewing should be emphasized in research programs as it would make students look at the drafts of their classmates with a critical eye, and in identifying areas of improvement in others' work, the students would improve their own selves as writers of research article given that a peer review would pave the way for the work to be assessed for quality, relevancy, and accuracy.

Moreover, this research has thrown up questions requiring further investigation. What is now needed is a cross-national study involving graduate students from various universities in Saudi Arabia. A natural progression of this study is to develop a model of academic writing for Saudi graduate students that caters for their needs and goals.

Limitations of the Study

Several important limitations need to be considered. First, the numbers of participating students and teachers were relatively small. Second, this study involved participants from a single Saudi university, which means the conclusions of the present study cannot be safely generalized to other Saudi students and universities. Finally, since the conclusions of this study flow partly from the analysis of students' perceptions of their own research-writing competence, the possibility of at least a few erroneous student responses affecting, albeit mildly, the findings of the present study cannot be completely ruled out.

Conclusion

The main aim of this study was to identify the research-writing difficulties encountered by Saudi graduate students at a Saudi University and offer remedial guidelines accordingly. The findings from this research can be summarized thus. As regards the quantitative findings, most of the students reported facing challenges in all four major aspects of research writing. For them, presenting complex information in clear sentences was the toughest and finding and recording information was the least problematic task. Regarding the qualitative findings, overall, the interviewees thought that research writing was considerably hard for students and that presenting complex information in clear, syntactically-developed prose was the biggest challenge. The second most serious problem, again according to both interviewees, was the students' difficulty with crafting a cogent research argument. The interviewees regarded surface errors as a noticeable but only occasionally serious weakness in students' research writing.

Findings from this study resonate with the conclusions reached by other researchers exploring the research-writing problems confronting L2 writers as well as offering insights into the kinds and seriousness of Saudi research-writing difficulties. One such insight was that translating complex information into clear and syntactically-mature sentences and crafting cogent paragraphs troubled Saudi students the most. Another major finding was that weak argumentation (facile claim-support structure, failure to establish the need for the project, and logical fallacies)
impaired student research frequently. Many research reports by Saudi graduate students suffered from lapses in argumentation. Moreover, failures to develop, organize, and connect ideas impaired students’ work, too. About some aspects of research writing, namely evaluating sources, writing a strong literature review, and using technical vocabulary, most of the participating students were not sure of their abilities. Interestingly, the least problematic aspect of research writing for most students turned out to be finding and recording information. Finally, we also found that the English major and other-major students had largely similar perceptions of their research-writing issues. According to the t-test results, for all but one (Documenting of Sources in a Research Report) major areas of difficulty, there was no significant difference between the English major and the other-major students.

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