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Aligning perceptions with reality: Lebanese EMI instructor perceptions of students' writing proficiency

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ABSTRACT

With the rise of English as the language of global communication, English is increasingly being adopted as the Medium of Instruction (EMI) in countries where it is not the first language. When implementing EMI, a primary concern is students' lack of English proficiency and the impact this has on teaching content (Bradford, 2016; Hu & Lei, 2014; Kim, Kim & Kweon, 2018; Macaro et al., 2018). One country where EMI has been widely adopted across both secondary and higher education is Lebanon. While research has documented Lebanese EMI instructors' perceptions of their students' proficiency and their perceived role in the classroom, research into Lebanese EMI students' academic writing proficiency remains limited (Khachan & Bacha, 2012). The present study seeks to build on this research by examining the challenges Lebanese EMI students face when writing for academic purposes through an analyses of students' assignments in a discipline course and triangulating them with teachers' perceptions of students' writing challenges. This comparison revealed that the instructors' perceptions aligned with students' performance on two of the three perceived challenges noted in the interviews. These conclusions may serve to inform EMI policy and curriculum design by reconciling instructors' perceptions with the reality of their students' linguistic proficiency and learning needs.

1. Introduction

English as the Medium of Instruction (EMI) has been adopted across secondary and tertiary institutions across the globe. EMI policy and practice vary greatly across the globe, but in principle, Dearden's (2015) definition captures its primary aim: "The use of the English language to teach academic subjects in countries or jurisdictions where the first language (L1) of the majority of the population is not English" (p. 6). The emergent status of English as the language of academia, the globalisation of higher education, and increased student mobility have culminated in an exponential expansion of English-taught programmes in countries where English is not the mother tongue (Aizawa & Rose, 2018; Dearden, 2015; Groblinger, 2017; Kim et al., 2018). With this exponential growth of EMI across the globe, English has become the most important language for instruction in universities (Coleman, 2006; Groblinger, 2017).

As EMI continues to gain momentum, so does the need to explore how this policy is interpreted and implemented to examine extant gaps between EMI policy and its actual implementation at the coalface. Such an exploration is further necessitated by the "remarkable speed" at which the EMI phenomenon is emerging, "often beyond the control of policy-makers and educational researchers" (Macaro, 2018, p. 20). The implementation of EMI is a complex pedagogical process that

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requires consideration of students' and instructors' English language proficiency and EMI-specific pedagogical practices (Bradford, 2016; Hsu, 2014). Without sufficient attention to these issues, there may be adverse effects on the teaching and learning of content (Margić & Vodopija-Krstanović, 2018).

The most salient issue is students' English language proficiency (Hsu, 2014; Macaro et al., 2018). Although a 'proficient' level of English may be presumed for studying in an EMI context, there is little consensus or standardisation as to what constitutes an acceptable level of proficiency (Dafouz-Milne et al., 2014; Dearden & Macaro, 2016; Leong, 2017; Macaro, 2015; Wilkinson, 2012). Further, even when a minimum standard is set as a prerequisite, many argue the level is too low for learning content knowledge, with several studies highlighting the linguistic challenges students with low or intermediate proficiency face in the EMI context (Dearden, 2015; Doiz et al., 2012; Leong, 2017; Nguyen et al., 2016; Tatzl, 2011). Specifically, research highlights how knowledge is encoded in language and to construct knowledge, the language representation of that thought is necessary, as Hernandez-Nanclares and Jimenez-Munoz (2017) point out:

> Students need sufficient linguistic skills in order to sustain the cognitive processes necessary for their learning. Secondly, they have to use the second language as a vehicular instrument for the specific knowledge to be grasped, plus technical and academic terminology inherent to that content (p. 886).

Notably, although the four language sub-skills of listening, speaking, reading and writing are considered equally important in language learning, academic success in university hinges on academic *writing* (Giridharan, 2012; Rao, 2019). The importance of writing in content courses is two-fold: it aids students in acquiring content knowledge, and it is the means by which comprehension of that knowledge is communicated (Annous & Nicolas, 2015; Hernandez-Nanclares & Jimenez-Munoz, 2017). In other words, students develop their high-level cognitive skills through writing, and they are evaluated on their level of knowledge through written assessments (Bacha, 2002; Fageeh, 2011; Hyland, 2013; Javid & Umer, 2014; Mohammad & Hazarika, 2016). Despite the importance attached to academic writing, it remains a particular challenge for EAL students, as Alderson et al. (2004) note, "the ability to write in a foreign language is one of the most difficult to develop, and one of the least often taught" (p. 53; see also, Astroga, 2007; Evans & Morrison, 2011; Giridharan, 2012; Hyland, 2007; Rao, 2019).

This difficulty is often attributed to students' lack of grammatical accuracy, with research documenting students' struggle with writing grammatically accurate sentences (Alanazi, 2017; Burns & Knox, 2005; Evans & Green, 2007; Giridharan, 2012; Gonye et al., 2012; Macken-Horarik et al., 2011; Singh et al., 2017). Students' vocabulary breadth and appropriate use of vocabulary is another cited challenge. When instructed in their L1, the percentage of new vocabulary students are exposed to is relatively small and restricted to the specialized terminology of the discipline. Also referred to as technical vocabulary and discipline-specific terminology, specialized terminology refers to those words that are specific to a particular discipline/field. In contrast, students receiving instruction in a second/third language are faced with a comparatively larger number of unfamiliar lexical items, including specialized terminology (Macaro, 2015). Specifically, knowledge of academic words, those words that occur frequently across different disciplines and not typically found in basic general English texts (Coxhead, 2000), plays a "key role" in academic success for students at the tertiary level (Cobb & Horst, 2001; Coxhead & Nation, 2001; Nation, 2001; Laufer & Nation, 1995). Scholars have explored students' struggle with specialized vocabulary (Alanazi, 2017; Evans & Morrison, 2011; Fang, 2006; Kaur, 2013; Schleppegrell, 2001), emphasising that a lack of academic and technical lexical variety impacts students' overall writing development (Alanazi, 2017; Hyland, 2007). Students are also more likely to experience difficulties in producing an academic text if they are unfamiliar with the specific discourse of a discipline (Fang, 2006). This results in writing that lacks "lexical resources that enable them to express higher level complex thoughts, opinions or concepts" (Alanazi, 2017, p. 10).

Another obstacle to the effective implementation of EMI is the lack of a cohesive teaching framework and a dearth of pedagogical training specific to EMI instruction. Delivering academic content through a language other than the L1 is not as simple as "switching the vehicle of communication and continuing as usual" (Bradford, 2016, p. 340). To ensure content is thoroughly understood, EMI instructors require skills similar to those of an EFL instructor, creating an atmosphere where students do not hesitate to participate in class discussion, and employing teaching strategies that "assure comprehension via student-initiated interactional modifications" (Bradford, 2016, p. 340; Dearden, 2015, p. 23; Doiz et al., 2012; Hahl et al., 2016; O'Dowd, 2018). Non-language instructors may not be familiar with the shift in methodology that is necessary in EMI contexts (Cots, 2012).

Instructors from across the globe have lamented the lack of EMI pedagogical support (Dearden & Macaro, 2016; Fenton-Smith et al., 2017) with many noting they receive no guidelines on how to teach content using English (Dearden, 2015). As a result, instructors often resort to a variety to self-reported teaching strategies to mitigate language difficulties and ensure content comprehension. Such strategies include syllabus modification, reduced content coverage, dilution of disciplinary content, reduced spontaneous interaction or improvisation, and appropriation of textbook language (Hsu, 2014). In instances where the mother tongue is shared, code switching is a common language-related accommodation employed to facilitate and ensure understanding of the content (Alhamami, 2015; Cogo & Dewey, 2006; Costa, 2012; Dearden & Macaro, 2016; Gotti, 2015; Joe & Lee, 2013; Klimpfinger, 2007; Tarnopolsky & Goodman, 2014). However, these strategies are not necessarily "conducive to disciplinary and language learning" (Hsu, 2014, p. 561) with a significant gap between policy objectives and classroom practices. Notably, this gap has emerged largely because of an absence of clear EMI measures for managing EMI programs. Although O'Dowd (2018) argues that "teachers should not be expected to work out the skills of teaching through English intuitively" (p. 561) this seems to be precisely the case.

The present study seeks to contribute to this space by investigating Lebanese discipline instructors' perceptions of their students' academic writing skills, and aligning these perceptions with an analysis of students' writing.

1.1. EMI in Lebanon

One context in which EMI has been widely adopted is Lebanon, a pluralistic and multilingual society (Bacha & Bahous, 2011) where Arabic is the official language, and French and English are spoken widely. As noted by Bacha and Bahous (2011), "although Arabic is the native language of most Lebanese, it is very common for people to use French during daily conversation (English increasingly used recently), and it is also 'natural' that in almost all sectors of society, a mixture of languages is in daily use with frequent code switching among languages" (p.1321). This multilingualism carries over into education where the medium of instruction in schools is either French or English, with Arabic "restricted" to a few humanities subjects (Orr, 2011, p. 2). Historically, the adoption of French or English as a Medium of Instruction (MOI) has been a distinguishing feature of the higher educational institutions in Lebanon for more than a century (Annous, Nicolas & Townsend, 2017, p. 89). At present, of the 32 universities in Lebanon, 24 offer EMI courses; ten are exclusively EMI, eight are EMI or French medium instruction, and six offer instruction in all of the three languages (Esseili, 2017).

The most commonly cited problem is students' English proficiency when studying subject matter through EMI. In Lebanon, all students must sit a standardised English exam such as the SAT or TOEFL iBT, the results of which reveal that many are not able to secure the minimal English proficiency entry requirement[1]. As a result, despite many years of exposure to English as a foreign language (i.e., in some cases up to 12 years; Al-Khatib et al., 2012; Bahous et al., 2011; Esseili, 2017; Nasser & Goff-Kfouri, 2008; Orr, 2011), all EMI universities offer intensive, remedial English programs intended to prepare students for their EMI academic coursework. The prevalence of these courses is testimony to the need for further English preparatory instruction for EMI in the Lebanese context.

Notably, the skill that EMI learners find most challenging is that of academic writing (Evans & Morrison, 2011), often attributed to the multilingual landscape which "creates a challenging literacy conundrum" (Annous et al., 2017, p. 91). Many Lebanese students may be able to orally communicate in Arabic, French and English, but lack the ability to write proficiently in all three languages (Annous et al., 2017). This is often attributed to negative transfer (i.e. interlingual errors) from students' L1 (Arabic) in their English writing, which is likely given the extensive differences between the two languages (Nunan, 2001). Vocabulary breadth, appropriate use of vocabulary and knowledge of academic words are further difficulties students experience when writing in an EAL (Cobb & Horst, 2001; Khachan & Bacha, 2012; Laufer & Nation, 1995; Macaro, 2015).

One of the most critical questions surrounding EMI is whether students possess adequate proficiency in English to effectively study the content (Annous et al., 2017; Bacha, 2002; Bacha & Bahous, 2008; Kim et al., 2018; Nicolas & Annous, 2013). While this question has been explored across various EMI contexts, most of these studies focus on teachers' perceptions of their students' abilities. Given that most EMI instructors are disciplinary experts with little or no pedagogical training specific to EMI or English language instruction, this alignment, or possible *dis*-alignment, between perceptions and reality merits further attention.

Often it is teachers' perceptions that directly shape their teaching practices and motivate them to adapt their methodology and the overall delivery of content (Kim et al., 2018). If their perceptions are misaligned with the reality of their students' needs, these pedagogical adaptations may diminish the efficacy of EMI implementation. As such, this intercept between perceptions and performance is a valuable area for exploration. Currently, there is no documented alignment of instructor-held perceptions of students' English writing proficiency with students' actual performance in the Lebanese context. As a result, decisions concerning students' linguistic needs are based on instructors' intuitions and assumptions. This is particularly precarious for EAP courses intended to improve students' English language proficiency and prepare them for their academic studies in English. Despite the importance of these courses, decisions concerning syllabus design, learning objectives and teaching strategies are made on the basis of instructor-held perceptions. Empirically verifying these perceptions through an examination of learner achievement is vital to support and guide syllabus design decisions for EAP courses and shed light on the current challenges EMI content instructors face in the Lebanese context.

The study will address the following questions:

1. In a Lebanese EMI context, what do content EMI instructors perceive as the challenges their students face when writing in English?
2. What linguistic challenges do students face in their written assignments?
3. Is there alignment between content instructors' perceptions and the students' actual performance?

2. Material and methods

Two groups of participants were recruited; the first group consists of four Psychology Professors (see Table 1), who teach 2nd and 3rd year psychology courses through EMI in an undergraduate program in Lebanon. The Department of Psychology

[1] At the university of this study, the cut-off score for placement into the Intensive English program is 360–380 on the SAT and 64–70 on the iB-TOEFL, equivalent to B1 CEFR. For admittance into the remedial English program, the cut-off score is 380–430 and 71–87 on the SAT and iB-TOEFL, respectively, equivalent to B2 CEFR.

was chosen because it is the largest established department in the social sciences at the university of study. Two of the instructors (James and Rosie) self-identified as 'native' speakers of English (L1), and two (Pam and Sam) use English as an Additional Language (EAL). Their years of experience as content instructors spans 3–28. Instructors participated in a 45-minute semi-structured 10-question interview designed to elicit perceptions of their role as an EMI instructor and the challenges they face. Given that perceptions are not observable, these semi-structured interviews are an effective means for attaining and exploring such a construct (Kvale, 1996). The instructors' interviews were audio-recorded and transcribed for purposes of accuracy and as part of the qualitative analysis. Braun and Clarke's (2006) six-phase Thematic Analysis approach was employed to identify key themes. The sample size it is suitable to achieve the objective of obtaining an in-depth understanding of the perspectives these instructors hold (Clearly et al., 2004; Patton, 1990; Punch, 2013).

Table 1
Instructor participants.

Instructor	First Language	EMI teaching experience (years)
James	English	20
Pam	French EAL	3
Rosie	English	10
Sam	Arabic EAL	28

The second group of participants are 39 students enrolled in one of the courses the four instructor participants teach. Ten students each were recruited from Rose, Pam and Sam classrooms and nine from James' classroom. Students were asked to submit one of their written assignments for the given class, providing the data for an authentic textual analysis of students' writing proficiency. The assignments were considered a graded mid-term task of a second or third-year major psychology unit. Although the students' texts are located within the same domain, the tasks assigned vary in length and genre (see Table 2). As the focus of this study is not genre specific but rather to identify the general challenges Lebanese students face when writing in English, this variation does not impede the objective of addressing RQ2 and RQ3. The texts were transcribed into word documents and labelled according to their instructors' pseudonym initial (e.g., J1-J9 for James' students). All student participants (25 females; 14 males) are EAL learners and share the same mother tongue: Arabic. Students are in their second and third year of study in an undergraduate psychology program and have been using English for academic purposes for a minimum of two years. They have also been exposed to English as a foreign language for a minimum of five years[2]. The purpose of examining students' texts was to triangulate the findings elicited from the instructor interviews.

Table 2
Student texts.

Instructor	Genre	# of students	Av.# words per text	Av. # sentences per text
James	Essay: analysis	9	698	41
Pam	Essay: reflection	10	523	23.5
Sam	Short answer: open-ended	10	532.5	29.6
Rosie	Short answer: discrete response	10	68.5	4.6

3. Findings and discussion

3.1. RQ1: in a Lebanese EMI context, what do content EMI instructors perceive as the challenges their students face when writing in English?

The instructors generally agreed that their students' written English proficiency is *not* adequate for effective content learning in the EMI context, with three of the four instructors evaluating students' proficiency as "weak", "poor", "not good enough", "requires a lot of work" and "far from adequate for academic studies". Instructors' comments highlight a general sense of dissatisfaction with students' English abilities for the purposes of studying the content (i.e., psychology).

The generally negative assessment of students' language proficiency is especially problematic for teachers when it prevents students from expressing meanings clearly, thus impacting their ability to assess students' content knowledge and influencing their pedagogical choices. For example, two instructors (James and Sam) feel "limited" because of their perceptions of students' language proficiency and have to "put in the effort to make [the content] simple". They adapt their teaching approach "tremendously" including using simpler language and simpler teaching materials, even "skipping a

[2] In the curriculum of French-medium schools, English is taught as a foreign language for an average of 2–3 h a week.

chapter" because of a need to "prioritise information". In response to these changes, they note that the "dynamics" and "pace" of the classroom are impacted. More importantly, how much material they can cover, how "deep" into a concept they can engage, and the ensuing changes to the syllabus are all impacted. The impact of these pedagogical changes on content integrity is particularly concerning and raises the question of whether academic knowledge is stymied because of this epistemological challenge. Further, instructors (James and Rosie) noted that students' language proficiency often impacts their ability to understand the content of the assignments. As a result, instructors have felt the need to adapt the kinds of assessment they design to more narrowly evaluate content knowledge without the impediment of low language proficiency. For example, one instructor (Rosie) refrains from giving students written tasks apart from somewhat narrow open-ended questions in quizzes.

Arguably, by minimising the focus on writing in assignments, the ability to determine if content knowledge has been adequately developed is limited as it is through writing that students demonstrate their progress and content knowledge (Javid & Umer, 2014). As Hyland (2013) argues, it is the key way students are able to "consolidate and demonstrate their understanding of their subjects" (p. 3). The skill of writing is therefore central to teaching and learning in higher education (Hyland, 2013).

When asked to elaborate more specifically on the writing challenges their students face, eleven initial codes were identified: Translating from Arabic to English, Interference of French, Forming a sentence, Basic grammar, Subject-verb agreement, Spelling, Word order, Technical vocabulary, Structure of a text, Expression, and Limited vocabulary. They were collated into four themes: Grammatical accuracy, Structure of a text, Interference of another language, and Vocabulary. The themes Grammatical accuracy and Structure of a text were merged into one theme "Lexico-grammatical structure and accuracy" as the coded data reflected a close relationship between the two and did not reflect significant external heterogeneity (Patton, 1990). The themes were further refined to identify what aspect of the data it captures. During this stage, the theme Vocabulary was renamed Specialized terminology as it embodies the coded data more accurately than Vocabulary, a theme which might ambiguously embrace the sub-theme of Expression. The three final key themes that were created form the initial eleven codes and refined with their sub-themes were: Lexico-grammatical structure and accuracy (Forming a sentence, Basic grammar, Subject-verb agreement, Spelling, Word order, Structure of a text, Expression); Interference of another language (Translating from Arabic to English, Interference of French); and Specialized terminology (Technical vocabulary, Limited vocabulary). In total, when analysing the data for evidence of the dominance of these themes, 40 distinct mentions were categorised under the following three main themes: Lexico-grammatical structure and accuracy (16 mentions), Interference of another language (13 mentions), and Specialized terminology (11 mentions).

3.1.1. Lexico-grammatical structure and accuracy

The most prominent and frequent challenge the instructors identified is the grammatical structure of a written text. Instructors lamented students' lack of awareness of the basic macro-structural elements of a written assignment, such as the need to structure a text with an introduction and the need to separate a text into paragraphs:

> *"They don't know that they have to introduce their topic... Even the structure of their text is a problem..... That bothers me more than the spelling mistakes" (Pam)*
>
> *"They haven't learnt how to write an essay.... Sometimes they don't even know how to write an introduction" (James)*
>
> *"I might have to remind students of the process they should use to put together their assignment" (Sam)*

This general lack of awareness of the structural elements of a written text compels instructors to dedicate class time to teaching students the basics of academic writing:

> *"This is an introduction...this is what goes an introduction and these are the elements of an essay and structure. I have to tell them you have to include the WHAT, WHY and HOW in an essay. Some of them are weak and I need to explain" (James)*
>
> *"I would be ready to give them some of my time in reminding them how to structure it..... I give them the outline so they know what is expected" (Sam)*
>
> *"I will mention it in class". I have to "tell them what is appropriate. I tell them that need to follow the APA format and what is expected like the correct citations and structure" (Pam)*

Notably, all four instructors noted that they spend class time clarifying what is expected when structuring an academic text. This practice is an example of how lesson plans are adapted to respond to students' knowledge gaps. It is also an example of content EMI lecturers overcoming territorial knowledge boundaries and assuming responsibility for improving students' writing skills.

Beyond the challenges of structuring a text at the macro level, instructors also identified grammatical accuracy at the level of the sentence and clause as problematic. For example, Rosie notes that "*The biggest problem is forming a sentence..... It is the very basic English they have a problem with*", a sentiment echoed by Pam: "*For me, the biggest problem is their sentences. They don't understand the minimum elements in a sentence.... It is the basic sentence structure*".

Overall, students' lexico-grammatical accuracy and lack of familiarity with the grammatical structure of academic writing were cited as a key theme that impacts their overall writing proficiency.

3.1.2. Interference of another language

When discussing the causes of this grammatical inaccuracy on both a macro and micro level, a second theme emerged, highlighting the impact of students' L1 on their English writing. As noted, the majority of students at NDU speak English as an additional language, and often as their 'third' language, following Arabic (L1) and French (L2). It is not surprising, then, that three instructors observed interference of another language as a significant hurdle affecting students' writing proficiency:

> *"Sometimes, yes, I don't understand because they are translating from Arabic into English something that they can't - at least not in those terms, not in that way" (Rosie)*
>
> *Students "write with French spelling and that differs – it could be the same word but it is written in a different way, so that adds another problem".... Students "use French words when writing in English thinking that it is an English word" (Rosie)*
>
> *"They express themselves from a French perspective... If they know the technical words and they want to express them, the French or the Arabic interferes" (James)*

For one instructor, interference of Arabic is perceived to be the biggest obstacle students face:

> *"This is of course the biggest problem students have- the direct translation, more than any grammar error or things like that…We write the way we think. And if they are wired to think in Arabic, sometimes I see their sentences are reflecting this" (Sam)*

The multilingual eco-system of Lebanese education and society means students frequently code switch in their spoken conversations; therefore, the manifestation of L1 and L2 interference in their English academic writing is not unexpected. However, the practice of simply translating verbatim from one language to another remains problematic, impacting the clarity and grammatical accuracy of students' writing.

3.1.3. Specialized terminology

The third theme to emerge focused on students' difficulty using specialized, discipline-specific terminology. Instructors noted that students often struggle to use terminology associated with psychology and this requires some pedagogical adaptations. For example, instructors may spend time deconstructing the meanings of the term and/or simplifying their own language or code switching:

> *"I always try to break down the word and ask them: Have you heard of that? When do we use this word?" (Pam)*
>
> *"I put the effort in to make it (language) simple.... I try as much as possible to use terms that are easily understood" (Sam)*
>
> *"Sometimes for them to really understand contextually what the word means, I have to ask them to switch to another language and translate the word into French or Arabic, whichever language they are comfortable with" (Pam)*
>
> *"I know what I can resort to Arabic or French if a have a problem with a word" (James)*

These comments reveal how instructors negotiate meanings and adapt their pedagogy according to their perceptions of students' linguistic limitations. In doing so, they are heeding the recommendations of relevant literature to optimise instruction in this challenging context and ensure content integrity is maintained.

The identification of these particular obstacles highlights the acute awareness instructors have of the challenges of implementing EMI in a foreign language context.

3.2. RQ2: what linguistic challenges do students face in their written assignments?

3.2.1. Lexico-grammatical structure and accuracy

Lexico-grammatical structure and accuracy was measured across four levels: lexical (word substitutions), clause (subject-verb agreement and tense), sentence (run-ons, fragments, comma usage impeding meaning, comma splices) and mechanics (misspellings, capitalisation). Grammatical infelicities can obscure the focus of the main idea of a sentence, confuse the reader, or lead to ambiguous interpretations (Bacha, 2002; Baleghizadeh & Gordani, 2012; Giridharan, 2012). As such, considering students' lexico-grammatical proficiency is important for assessing their overall writing skills. Each error type was identified and tallied, accounting for frequency and prevalence across the 39 texts and normalised to instances per 100 words. Due to the variability of the genres represented, it is difficult to provide a comparative analysis of their macro-structure. Therefore, the present analysis is limited to clause- and sentence-level grammar.

In total, 398 grammatical infelicities were identified, or 2.276 errors per 100 words, with almost half of these errors occurring at the sentence level (i.e., 48.8%). In terms of specific error frequency, comma misuse was the most prevalent and dominant, accounting for 31.4% of all errors and occurring in 32 of the 39 texts, as illustrated in Table 3:

Table 3
Lexico-grammatical errors.

Error type		Frequency count	Prevalence in 39 texts	% grammatical infelicities	Per 100 words
Lexical	*Substitution*	**69**	**28**	**17%**	0.39
Clause level		**50**	**26**	**13%**	0.29
	SVA	35		9%	
	Tense	15		4%	
Sentence level		**194**	**32**	**48.8%**	1.12
	Run-on	38		9.6%	
	Fragment	31		7.8%	
	Comma usage	125		31.4%	
Mechanics		**85**	**22**	**21.2%**	0.49
	Capitalization	23		5.7%	
	Spelling	62		15.5%	
Total		**398**			2.276

The bold gives the cumulative count of error types.

Although lexical and clause-level errors occur relatively less frequently than other grammatical errors (69 and 50 counts, respectively), they are found across the majority of texts examined (28 and 26 of the 39 texts).

3.2.2. Lexical infelicities

When discussing students' problems with word use, instructors highlighted word substitution as a key concern. Although lexical errors such as these are not as prevalent as the other lexico-grammatical infelicities, they highlight a "tenacious problem" for learners of English, most of whom are "unaware of the subtle semantic distinctions among near-synonyms" (Lee & Liu, 2009, p. 214). Further, instructors tend to "judge" lexical errors "seriously as the wrong use of vocabulary impinges directly on content and obscures intended meaning" (Choo, Lin, Singh & Ganapathy, 2017, p. 60).

The following excerpts illustrate such lexical infelicities. These excerpts were produced in the student data and are reproduced in their original form.

In Excerpt 1, *faithful* is used to convey the meanings of *reliable* or *accurate*, whereas the use of *directly* in Excerpt 2 is substituted for a more precise term such as *immediately*. Similarly, *approaching* is used to express *upcoming* or *forthcoming* in Excerpt 3, while *give up* and *hinder* in excerpts 4 and 5 respectively are substituted for the correct terms of *surrender to* and *refute/contradict*.

*1. The psychologist administers this test which is more **faithful** because..... (S28)*

*2. This made her **directly** assume that we were alike (P11)*

*3. ..... they remarkably succeed in the **approaching** academic year (P13)*

*4. ..... she taught me that no matter how bad I feel, I should never **give up** my situation (J5)*

*5. She shares a lot of similarities which **hinder** mythologies (S25)*

3.2.3. Clause-level infelicities

In total, 50 clause-level errors were identified, 35 of which were subject-verb disagreement errors and 15 of which were tense errors. Notably, tense errors were only found in 9 of the 39 texts, whereas SVA errors were found in half of the examined texts (i.e., 20 of the 39 texts).

Excerpts 6 and 7 illustrate subject-verb disagreement (i.e., *she talk,* and *sensation and perception has changed*), while Excerpt 8 demonstrates an error in tense (i.e., *had increased* for *increased*).

*6. This works because of the virtues of life. She also **talk** about opposites (J2)*

*7. Sensation and perception **has** changed my perspective (J8)*

*8. I did a pretty good job in all of my courses and my GPA **had increased** (P17)*

Although clause-level errors such as these are the most infrequent type of structural infelicity in students' assignments, they still merit attention as they can distract from the message being communicated. Accurate written language that effectively conveys the writer's ideas requires proper application of grammatical rules. As Mohammad and Hazarika (2016) point out, "without a solid basis of the formal linguistic system, students cannot hope to develop into effective EFL learners in general and writers in particular" (p. 115).

3.2.4. Sentence-level infelicities

Sentence-level errors are the most frequent and the most prevalent category of grammatical infelicities, with 194 errors identified in 32 of the 39 texts (i.e., 1.12 instances for every 100 words). Of these errors, 125 involved inappropriate comma use (64% off all sentence-level errors), compared to only 38 run-ons and 31 fragments. The most frequent type of comma error

involves the comma splice, the inappropriate joining of two independent clauses with a comma rather than a semicolon or conjunctive adverb (e.g., however), as illustrated in excerpts 9–11:

9. In reality, everything was in the teachers' minds, teachers were convinced that these kids had the highest grades in the first exam.... (P12)

10. We don't know when it shows, it may appear suddenly by a simple stimulus to our neurons (J4)

11. If a test is commercially published then it is available for purchase by certified or trained individuals, they can purchase the manual kit ... (S21)

Other instances of comma misuse involve the omission of a comma when one is necessary to separate phrases to ensure the meaning is clearly communicated:

12. In the bottom-up process sensory receptors register info about the external environment (P19)

13. Psychology is how we think what we do and how to discover ourselves (R35)

The second error identified at the sentence-level is the run-on sentence. An example is found in Excerpt 14 in which the first and second clauses are joined without a word to connect them or a punctuation mark to separate them:

14. Some tests are commercially published it means they are relatively easy to obtain (S26)

The final kind of error identified at the sentence level is fragments. For example, Excerpt 15 is simply a dependent clause, containing no finite verb and thus, no 'complete thought':

15. Testing of normal and positive behavior (S23)

Notably, incorrect comma use is also the most frequent and most prevalent error across all lexico-grammatical infelicities, occurring 0.71 times per 100 words and accounting for 31.4% of all grammatical infelicities. In academic writing, correct comma usage is necessary to clarify meaning and ease comprehension (Nordquist, 2019). Errors in comma use can be a source of confusion and distraction (Nordquist, 2019) and their frequency and prevalence in these students' texts distinguishes them as a discrete area for instructional intervention.

3.2.5. Mechanical errors

In total, 85 infelicities in writing mechanics were identified in 22 out of 39 texts.

Excerpts 16–17 illustrate misspellings (i.e., *mystery* and *psychology*) whereas Excerpts 18–19 demonstrate capitalisation errors (*whenever* and *behaviour*):

*16. The hidden **mistery** of the human (J7)*

*17. **Pyshcology** is a multifaceted discipline (R32)*

*18. **whenever** he remembered it, the memory became less accurate (J3)*

*19. The elements of objectivity are sample of **Behavior** and standardized procedure (S23)*

Of these mechanical errors, the vast majority involve spelling errors (i.e., 62 errors, or 0.35 per 100 words). Thus, compared to capitalisation errors, spelling errors are three times as frequent and twice as prevalent. Although mechanical errors do not impact the overall fluency of a sentence, hinder communication, or prevent the message from being comprehended (Erdogan, 2005), the accuracy of the sentence, which is a measure of language performance, is impacted negatively (Garcia-Pastor, 2018). Such mechanical errors are easily identifiable and may render a text less successful as accuracy is invoked to assess learners' performance in written tasks and their underlying proficiency (Garcia-Pastor, 2018, p. 82).

3.2.6. Interference of another language

A direct comparative analysis of French and Arabic interference would require the consideration of all the constructs that differ between the English and French and English and Arabic (morphological, syntactic, orthographical, sematic, phonological, and lexical). However, for purposes of scope, the analysis in this study is limited to the two patterns identified in the instructor interviews: L2 French lexical substitutions defined in terms of discrete word substitutions and L1 Arabic clausal word-order transfer.

When discussing the interference of French, instructors noted that students unintentionally use French words when writing in English, given the similarity of some words. Oftentimes the similarity is in meaning and pronunciation and the difference is in the spelling (e.g. *gentle* in English vs. *gentil* in French), and other times the similarity is in spelling, and thus pronunciation; therefore, the difference is in the meaning (e.g. *actuel* is a French word meaning *at present* whereas the English word *actual*, means *real; sensible* is a French word meaning *sensitive)*, as illustrated in Excerpts 20–22:

*20. How **stupide** of me, I felt shame for thinking..... (P16)*

*21. If the court, for example, demands a test for a **personne** that can cause him harm... (S25)*

*22. ..... as evaluation to study the effectiveness of a certain **programme** or course of action (S28)*

By identifying instances of 'word for word' substitutions, some insight is provided into how prevalent these types of errors are in the students' texts, and the accuracy of instructors' perceptions of this challenge. In total, such trans-linguistic substitutions occurred 00.17 times per 100 words and were found in only three of the 39 texts.

The second type of interference was characterised only in terms of direct translation from Arabic to English, and not in terms of independent lexical items. Given that Classical Arabic follows a Verb-Subject-Object pattern of sentence construction, any sentences constructed with this word order were considered as interference of students' L1. Any form of such direct translation would result in inappropriate sentence construction as well as a potential change in meaning thus lending to the impression that students struggle with achieving appropriate writing proficiency. The word order analysis of sentences following the Arabic pattern of verb-subject-object revealed no instances of Arabic interference in any of the 39 texts. That is, students do not commit the interlingual syntactic error of word order.

3.2.7. Specialized terminology

To assess students' use of terminology specific to the field of psychology, the web-based Lextutor online analysis tool was used. It allows for individual lexical items to be categorised according to three corpus-driven word lists: the General Service List (GSL; West, 1953), the Academic World List (AWL; Coxhead, 2000), and 'off-list' words (i.e., words that are not included in the previous two lists including proper nouns and low-frequency words [>K2, but not including the AWL] specialist vocabulary, acronyms, abbreviations, titles, and misspellings).

The Lextutor program provides information about students' vocaulary use beyond their breadth of vocabulary knowledge; it "is able to tell us something about the kinds of words they (students) use" (Horst & Collins, 2006, p. 87). From this analysis, conclusions can be reached about students' lexical richness and their writing challenges. More specifically, the basic divide between the proportion of high frequecny words and academic and specialized words has "proved to be a reasonably reliable indicator of proficency" (Horst & Collins, 2006, p. 87).

To analyse the lexical profile of the students' texts, each assignment was transcribed and converted into a TXT file. For purposes of the lexical analysis, all misspellings were corrected, contractions and abbreviations were replaced with the long form, and, following procedures established by Laufer and Nation (1995) who first developed and validated vocabulary profiling as a research instrument, all proper nouns were deleted (Horst & Collins, 2006). Otherwise, such instances would have been relegated to the 'off-list', inflating students' use of low freqeuncy words and providing a skewed profile. Numerous studies profiling students' vocabualry have followed this same procedure (Horst & Collins, 2006; Morris & Cobb, 2004; Tongpoon-Patanasorn, 2018). Further, any instance of quotation marks, question marks, possessive 's', in-text references and citations were deleted as the Lextutor program categorises such instances as off-list words. To identify how many of the 'off-list' words are considered specific to the discipline of psychology, the off-list words were further analysed manually, first by the researcher and second, through a confirmation process with the instructor participants.

The analysis of the student assignments reveals that students' vocabulary usage is somewhat similar to the expected lexical profile of academic texts which is 80% K1 and K2 words (the most frequently occurring 2,000 words), 10% academic words, and 10% off-list words. Of the off-list words, half (i.e., 5% of the total) are discipline-specific words and half (i.e., 5%) are low frequency words.

As seen in Table 4, the student texts rely heavily upon 1K and 2K high-frequency words (84%), followed by academic words (9%) and off-list words (7%).

Table 4
Recommended lexical profile compared to students' lexical profile.

	Recommended lexical profile	Lexical profile of students' texts
1k and 2k	80%	84%
AWL	10%	9%
Off-list	10%	7%

Students' overreliance on more generic, 'high frequency' words suggests that students' lexical breadth is somewhat limited and their knowledge and proficiency using more specialized terminology is not as equally represented. Overusing high frequency words at the expense of academic, more specialized terminology impacts the lexical variety and richness of students' texts (Morris & Cobb, 2004). Although these words are of great importance for students because they make up such a large percentage of the English language overall, students should display increased lexical variety through use of more specialized and sophisticated vocabulary for their writing to be assessed as more proficient (Morris & Cobb, 2004).

When examining the students' use of more specialized vocabulary, their academic word usage was comparable to the standard representation in an academic text (i.e., 9% as compared to the standard 10%). However, their use of 'off-list' words were somewhat lower in comparison (7% as compared to the standard 10%). As displayed in Table 5, the nuanced analysis of the off-list words revealed that only 1.7% of all words found in the students' texts are considered discipline-specific (i.e., 3.3% lower than the norm; eg., schema, psychopathological, impressionistic, sensation, psychotic, repressing, unconsciousness, stimulus). Cumulatively, the use of more specialized and academic lexis is 4% lower than the standard for academic written texts. In interviews it was revealed that attention to the acquisition of terminology specific to the discipline of

psychology is considered as part of 'content learning' by instructors. Therefore, instructors' perceptions of students' writing proficiency and their role as content teachers does not impact students' exposure to discipline-specific lexical items in the classroom.

Table 5
Lexical profile of students' texts including discipline-specific terminology.

	Lexical profile of students' text
1k and 2k	84%
AWL	9%
Discipline-specific	1.7%
Off-list	5.3%

Students' use of terminology specific to the field of psychology (1.7%) falls short of the recommended percentage (5%) and explains why the psychology instructors raise students' use of specialized terminology as an area of weakness. Notably, students struggle less with academic vocabulary, knowledge of which is vital for the comprehesion of content taught at the tertiary level (Choo et al., 2017). Further, the use of these lexical items is considered a key element of an 'academic style' of writing (Hyland & Tse, 2007, p. 235) and the student data of this study reveals sufficient productive knowledge of these words. Interestingly, acquisition of general academic words is often deemed more difficult than acquisition of the specialized vocabulary (Hyland & Tse, 2007). The general academic vocabulary "serves a largely supportive role and the words are not likely to be glossed by the content teacher" (Flowerdew, 1993, p. 236). Specialized vocabulary, in contrast, is "central to students' specialized areas" (Hyland & Tse, 2007, p. 236) and likely to appear more frequently and explained by teachers, thus aiding acquisition. Knowledge of academic words, together with knowledge of the most frequent words is essential for students' academic success (Beglar & Hunt, 1999; Choo et al., 2017).

3.3. RQ3: is there alignment between content instructors' perceptions and the students' actual performance?

3.3.1. Lexico-grammatical structure and accuracy

Instructors identified lexico-grammatical accuracy as a key challenge, noting that poor structuring at the clause- and sentence-level often impeded the clarity of the message, lending to the impression of a lack of proficient writing skills. The textual analysis revealed 398 grammatical infelicities present in all 39 texts, occurring 2.276 times per 100 words. While this number may appear relatively insignificant, 2.276 errors for every 100 words is almost equivalent to one error in every other sentence. As such, this frequency of error may distract from the message being communicated and impact students' ability to express their ideas coherently and successfully, thus validating instructors' perception that students' poor grammatical accuracy is a key theme that impacts their overall writing proficiency.

The importance of grammatical accuracy is "relatively uncontested" with researchers agreeing that "accuracy in writing matters to academic and professional audiences and that obvious L2 errors may stigmatise writers in some contexts" (Ferris, 2006, p.81). Errors of this kind are therefore a contributing factor to students' perceived writing weaknesses and failure to meet international literacy requirements (Bacha, 2002; Giridharan, 2012). While "good writing is certainly beyond grammar manipulation" (Tan, 2007, p. 117), and expecting EAL students to achieve 100% grammatical accuracy is unrealistic (Baleghizadeh & Gordani, 2012), some mastery of grammatical structures is necessary to write clearly, logically, and fluently. Grammatical accuracy contributes to the readability of a written text and compliance with the rules and conventions of grammar is vital "to maintain clarity and avoid ambiguity in expression" (Baleghizadeh & Gordani, 2012, p. 161). A high frequency of such grammatical errors in academic writing contributes to an impression of linguistic inadequacy and feeds the sentiment captured in the instructors' interviews (Baleghizadeh & Gordani, 2012, p. 161; Braganza, 1998; Celce-Murcia, 2005). The results of this study are also in line with others that have concluded students in an EAL context struggle to organise information clearly and accurately at the clause and sentence level (e.g. Alanazi, 2017; Huang, 2001; Kenworthy, 2006). Notably, these findings support the conclusions reached in studies that analysed the writing errors of L1-Arabic EAL learners and found grammar to be the most prominent problem (Al-Shujairi & Tan, 2017; Mohammed & Abdalhussein, 2015; Ridha, 2012; Sawalmeh, 2013). These findings are also consistent with studies examining the challenges EAL students from a variety of L1 backgrounds face when writing (Alanazi, 2017; Evans et al., 2014; Evans & Green, 2007; Garcia-Pastor, 2018; Gonye et al., 2012; Khumphee & Yodkamlue, 2017; Mediero & Robles, 2012; Sermsook et al., 2017; Singh et al., 2017).

3.3.2. Interference of another language

The textual analysis revealed the lexical interference of French occurs with low frequency and low prevalence with only three instances identified (0.017/100 words). Accordingly, this is not a major challenge these students face when writing in English, contrary to instructors' perceptions. Further, the interference of Arabic as defined by instructors, is not a prominent challenge with no such infelicities identified in the student data. This perception is misaligned with students' writing practices and may be explained in terms of progression of language proficiency. Students with a limited proficiency in English tend to rely more on structures that resemble their first language in their written productions (Wang & Wen, 2002). However,

as learners become more proficient and more familiar with the system of the target language, the errors made are predominantly the result of intralingual transfer (misuse of the rules of the target language) such as the errors of grammatical accuracy (Brown, 2006). Therefore, errors of interlingual transfer frequently occur in the beginning stages of language acquisition (Brown, 2006; Jin, 1994; Rutherford, 1983; Wang & Wen, 2002), a stage the students of this study have progressed beyond as 2nd and 3rd year psychology students who have satisfied the English proficiency requirements for study at an EMI university and who have been studying through EMI for at least two years.

3.3.3. Specialized terminology

The textual analysis confirms the perception that students use inadequate specialized terminology in their writing with only 1.7 specialized words per 100 rather than the recommended 5 per 100, an infelicity of 3.3 words per 100. This discrepancy between students' practices and research recommendations highlights a need to develop students' discipline-specific lexical repertoires, mastery of which is an integral part of subject learning (Gablasova, 2015; Hyland & Tse, 2007). It also confirms the instructors' perception that students struggle with using such vocabulary. Notably, students struggle less with the productive use of academic vocabulary in their writing, averaging close to the recommended percentage.

The relevant literature has established this challenge with researchers emphasising the implications of insufficient specialized terminology on academic writing for a particular discipline, including the ability to communicate ideas and higher-level complex thoughts clearly (Evans & Green, 2007; Fang, 2006; Hinkel, 2003; Schleppegrell, 2001). Writing that displays increased lexical variety and sophistication is considered to be of higher quality (Morris & Cobb, 2004) and the use of disciplinary terminology lends to the impression of a more formal style of writing (Liardet, Black & Bardetta, 2019; Turner et al., 2008).

These results are also aligned with other studies that have confirmed this challenge among EAL students (Diaz-Gilbert, 2004; Evans & Green, 2007; Evans & Morrison, 2011; Lessard-Clouston, 2006; Mezek, 2013; Ryan, 2012). In general, compared to native speakers' written academic texts, EAL students' written texts are weaker and of minimal proficiency, typically characterised by simple vocabulary and redundancy (Morris & Cobb, 2004).

Aligning perceptions with performance is critical because instructors adapt their content coverage, teaching methods and classroom practices according to what they perceive to be problematic. Additionally, if instructors perceive something to be a bigger problem than it is, their pedagogical changes in response to such perceptions may be misaligned with students' needs or abilities. Rose et al. (2019) make the point that "the ways in which (EMI) programs are implemented differ due to contextualized educational needs" (p. 3), and as such, EMI policy is not conceptualised or manifested in any particularly consistent manner. Rather, determining optimal implementation strategies and pedagogical approaches first requires identification of students' needs beyond perceptions. Knowledge of the frequency and type of students' errors provides a clearer picture of students' writing proficiency (Garcia-Pastor, 2018, p. 83). With this clearer picture, pedagogical practices can be better informed and oriented toward meeting the needs of students, avoiding what Hsu, 2014 refer to as the "misalignment between policy intentions and actual practices in the classroom" (p. 551).

4. Conclusion

This study investigated Lebanese EMI psychology instructors' perceptions of their students' academic writing and examined how accurately these perceptions align with the results of a text analysis on students' assignments. The instructor interviews revealed a general dissatisfaction with their students' written English proficiency and three specific challenges students face in academic writing: lexico-grammatical structure and accuracy, interference of another language and a lack of specialized terminology. This comparative investigation revealed alignment in two of the three themes: lexico-grammatical structure and accuracy (i.e., at the lexical, clause and sentence-level, and mechanics) and specialized terminology (i.e., discrete lexical items specific to the field of psychology). The instructors' perception that students are unable to effectively and accurately structure their language at the sentence and clause level was reflected in the textual analysis through students' struggle with the construction of correct and complete sentences at the sentence level (i.e., fragments, incorrect comma usage and run-ons), and at the clause level (i.e., SVA and tense errors). Notably, sentence-level errors were the most frequent and prevalent infelicity found in the students' writing, with comma usage posing the most significant challenge for students. Instructors' reference to the challenge of 'basic' grammar was also reflected in the analysed texts, found in the occurrence of mechanical infelicities (i.e., spelling, capitalisation) and lexical errors (i.e., word substitutions).

Instructors' description of their students' "difficulty" using terminology specific to the field of psychology was verified in the lexical profiling of the student data, which revealed that students' use of discipline-specific terminology is proportionately lower than the expected usage in an academic text. A greater reliance on the most frequent core words in English demonstrates limited lexical repertoire and impacts the richness of their writing.

Finally, the theme of linguistic interference was not verified through the text analysis. Instructors commented that interference from both the L1 (Arabic) and the L2 (French) are limiting students' writing performance and inhibiting their proficiency, however instances of linguistic interference were rare revealing a misalignment between teachers' perceptions and students' performance.

By triangulating teachers' perceptions with an analysis of their students' writing, this study serves as an initial step to understanding the writing challenges Lebanese EMI students face. Identifying students' problems with grammar at the sentence, clause, lexical and mechanical level allows for more guided and research-based pedagogical refinement to the

existing curriculum and ensures the English preparatory programs are more appropriately designed to prepare students for success in the EMI context classroom by focusing on the grammatical challenges and linguistic struggles most prevalent in students' writing. Furthermore, the inadequate use of specialized terminology in students' writing emphasises the need to teach students the lexis used in their specific discipline. Syllabus designers of the major psychology courses can address this concern by implementing "vocabulary-related episodes while teaching" (Basturkmen & Shackleford, 2015. P. 95). This can be achieved through the use of word frequency lists specific to the field of psychology (e.g. Safari (2018) developed a list of the 1587 most frequently occurring word families in psychology texts from a corpus of 3.4 million running words) and by evaluating the suitability of texts through Vocabulary Profiling to ensure sufficient coverage of key terms.

5. Limitations

Among the limitations of this study is the sample size of 39 texts, which limits the potential to infer results beyond the study's participants towards the wider population of Lebanese EMI students. Similarly, the sample of instructor participants is limited to four from the same university and the same department. As a result, the findings cannot be generalised to the wider population. Furthermore, the textual analysis was guided by the instructors' perceptions and based on students' performance on one discrete assignment at one point in time. While the features of grammatical accuracy and specialized terminology are a significant problem for the participants of this study, a more extensive textual analysis may reveal other sources of error. Additionally, this study only explored one area of instructor perceptions; investigating EMI content instructors' perceptions of their role as language teachers/facilitators in the classroom would be crucial to the formulation and adoption of EMI pedagogy that accommodates to such perspectives or, rather, works to modify them. With instructors' perceptions and attitudes motivating their classroom practices and pedagogy (Lasagabaster, 2018; Zhang & Liu, 2014), awareness of such perceptions, including the responsibility they assume in improving students' language proficiency, is central to understanding the complex nature of policy implementation at the micro-level and a critical step in facilitating the successful implementation of EMI. Finally, empirically verifying instructors' role perceptions through a comparative analysis of perceptions with teaching practices specific to the feedback they provide on students' written assignments would also be fundamental in examining how instructors' perceptions are reflected in their marking practices and triangulating the results with students' writing proficiency.

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