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ACADEMIC WRITING AND AUTOMATED WRITING EVALUATION TOOLS. AN EXPLORATORY STUDY OF EFL LEARNERS' MOTIVATION

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1. INTRODUCTION

The writing skill has been reported as challenging in English as second and foreign language (ESL and EFL respectively) learning contexts (Alameddine & Mirza, 2016, Munoz-Luna, 2015). Nacera (2010) suggests that the writing process entails cognitive and metacognitive strategies that make the task arduous for students to master. In addition, structural, grammatical, mechanical and vocabulary writing needs have been identified as complex areas (Bulqiyah et al., 2021) that require considerable effort for EFL learners and may cause affective problems such as anxiety and demotivation (Driscoll & Powell, 2016). EFL students may see these difficulties increased in higher education (HE) learning contexts due to the need to write more analytical, critical, and creative essays and assignments, which may differ from their secondary education stages. Then, writing becomes a process through which the discovery and reformulation of ideas to attain the objective of creating and communicating meaning is of paramount importance. Hyland (2008) outlines process writing by describing the stages of pre-writing, planning, drafting, editing, feedback, revision and proofreading as the processes writers undergo to produce their written texts, being recurrent revision and editing.

In these educational contexts, EFL students have to become familiar with different writing registers, and master academic writing as they are asked to write academic assignments to accomplish clear-cut course syllabus objectives and educational curriculum demands. Jo (2021, p.

208) compares general English and the academic register by referring to language use specificity and proficiency as the main differences between them: “academic English proficiency (i.e. a specific set of language skills that supports academic literacy) and general English proficiency (i.e. a wide range of language skills undifferentiated by context that are measured by traditional assessments)”.

Davidson (2019) construes academic writing as a topic-focused and audience-addressed type of writing that requires the fulfilling of specific rules and writing conventions e.g. punctuation, grammar and spelling norms, formal structure, in-text citations and referencing systems. By the same token, Kovaks (2019, p. 29) defines it as a “standardised, accurate, normative form of language” that is instrumental to several (sub)fields and requires research, analysis, summarising, paraphrasing, editing and proofreading. Bailey (2015) as cited in Bulqiyah et al. (2021) depicts this writing register as a hands-on process in which students first choose, read and make notes from previously selected sources for a posterior plan, outline, paragraph organisation, rewrite and proofread of their manuscript.

Accordingly, EFL students in HE contexts may feel overwhelmed with academic writing tasks due to their complexity. It is the instructors’ role to gradually introduce the aspects involved in this written register as the number of specific requirements and conventions exceed topic-based writing development. Given the need to tackle academic register-specific features progressively, recent advancements in information and communication technologies (ICTs) applied to the writing skill (Hockly, 2019) and the applicability of the task-based language teaching approach (TBLT) with that aim, may well motivate students in mastering this writing register.

1.1. MOTIVATION AND TBLT

The use of ICTs (e.g. computers, mobile phones, projectors) and Web 2.0 technologies (e.g. Moodle, educational blogs, educational software and web pages) have been linked to students’ increase of motivation and engagement in task accomplishment (Kaharuddin, 2020; Tavakoli et al., 2019). Nonetheless, EFL learners’ individual differences such as

their learning styles may differ and the degrees of motivation towards the same task may vary (Rodríguez-Peñarroja, 2021). Correspondingly, the association between today's learners considered as digital natives and the application of their digital competence to the educational context is still under debate (Sommer, 2014). Their condition of digital learners has been related to an increased ease of use of new technologies; however, the transference of their digital competence to the learning contexts may not always fulfil instructors' initial expectations since technology is mainly used for entertainment purposes (Waycott et al., 2010). Thus, it is not only teachers but learners that need support in the use of new technologies if applied to the educational context (Ali, 2020; Vrasidas, 2015).

Instruction in the use of ICTs applied to learning contexts in general and EFL learning is, therefore, necessary. Among the different ESL and EFL teaching methodologies, the TBLT is a communicative language teaching approach that supports experiential learning and highlights meaning communication (Ellis, 2009). The core element of this language teaching approach is the integration of task design in the planning of instructional units. Samuda and Bygate (2008, p. 69) define a task as a "holistic activity which engages language use in order to achieve some non-linguistic outcome while meeting a linguistic challenge, with the overall aim of promoting language learning through a process or product or both." TBLT-designed tasks require a previous analysis of students' needs, the design and sequencing of materials, tasks and instructional sessions in addition to specific teaching techniques and assessment criteria (Norris, 2009).

As for the integration of TBLT and the use of ICTs in language learning, González-Lloret and Ortega (2014) suggest that task design incorporating the use of ICTs may have a positive motivational impact on language learners while promoting language learning, which concurs well with Tavakoli et al.'s (2019) assumptions of communicative tasks design and their sequencing that may enhance motivation by the experiential learning implied in task accomplishment.

1.1 AUTOMATIC WRITING EVALUATION (AWE) TOOLS IN THE EFL LEARNING CONTEXT

As reported in Huang and Chen's (2019) review of literature, the growing popularity and use of ICTs has emerged in their application in the field of EFL education. The authors refer to the social changes brought about by technology, which have resulted in the widespread use of electronic tools – especially in EFL learning contexts – worldwide. Some of the learning limitations outlined and discussed as regards EFL learners and the digital age are i) *students' lack of interest* due to more traditional teaching practices that may not befit digital learners' needs, ii) *space*, which is related to the limited in-class communication between language instructors and students, iii) *class time*, which constrains teachers' attention to students' individual needs, and iv) *practice* which corresponds to the traditional concern of learning by exposure to real situations and not being limited to in-class practice. The authors suggest computer assisted language learning (CALL), mobile assisted language learning (MALL) and augmented reality (AG) as three main key technological innovations that may increase students' interest in and exposure to EFL learning, allow for materials design and enhance teacher–student communication.

The integration of new technologies to aid and ease writing skill development has led to the use of already existing technologies and the design of new ones with that aim. Li et al. (2017) classify the current L2 writing technologies into three main general categories, i.e. Web 2.0 applications, AWE systems and corpus-based tools. For the purposes of this chapter, attention will be paid to AWE systems only. Automated written corrective feedback (AWCF) tools, also termed automated writing evaluation (AWE) systems, (Ranalli, 2018) use “(a) natural language processing (NLP) tools to extract linguistic, syntactic semantic or rhetorical features of text related to writing quality, and (b) statistical or machine-learning algorithms to generate scores and feedback based on patterns observed among those features” (Wilson & Roscoe, 2020, p. 88). Yet, the usefulness of these technologies in the EFL context is still under debate as drawbacks and advantages have been revealed.

As for the disadvantages, AWE tools have been reported as not taking into consideration contextual and social aspects (Zhang, 2020) since the feedback provided is mainly addressed to low-level writing subskills i.e. lexico-grammatical aspects (Link et al., 2020). The second major drawback is related to the effects of the feedback provided in students' revision as it has been described as extensive (Ranalli, 2018) and having a low impact if it is not integrated as a part of the instruction (Cotos, 2014; Chapelle et al., 2015).

On the other hand, these systems grant instantaneous and corrective feedback to students (Wang et al., 2013) along with an objective and holistic scoring of their writing (Li et al., 2015; Shermis & Burstein, 2003). Additionally, students may see their autonomy increased since AWE technologies allow initial draft multiple revisions, editing and polishing (Liao, 2016; Wang et al., 2013). Ranalli (2018) and Link et al.'s (2020) studies on teachers' perception of the use of AWE tools indicated that instructors can devote more time to tackling writing instruction and focus their corrections and feedback provision on the meaning conveyed by students, rather than its form. Last, these tools have been also reported to heighten motivation and students' writing self-efficacy (Roscoe et al., 2018; Wilson & Roscoe, 2020).

Consequently, there is no broad consensus that AWE feedback provision is convenient and easy to use and understand by EFL learners. Nonetheless, scholars seem to agree that the plausible benefits derived from AWE tools use are subsumed to their incorporation in EFL instructional models. Some studies have found EFL students' positive perception and increased motivation when AWE tools are introduced in EFL instruction.

Lee (2020) has investigated the effects of the use of the AWE software Criterion[®] in the EFL learning context; advanced and intermediate EFL learners participated in the study. Participants' writing improvement, writing proficiency development and their perceptions of the AWE programme were examined over a year through a test–retest experimental research design, interviews and journal entries. Results confirmed a decrease in writing errors, and style and grammar progress. Word count and T-units also increased over instruction. Participants reported the

perceived usefulness and helpfulness of Criterion feedback, which reduced their writing time and bolstered their confidence as EFL writers.

Koltovskaia's (2020) study delved into EFL students' engagement with Grammarly AWE feedback. The author examined participants' i) behavioural engagement i.e. revision operations, ii) cognitive engagement i.e. noticing writing issues, and cognitive and metacognitive processes, and iii) affective engagement i.e. emotional and attitudinal responses to automated written corrective feedback. Results on revision operations were not effectively accomplished by students as moderate changes on their final drafts were made. Cognitive engagement as a result of cognitive and metacognitive processes in essay revision was described as proficiency-level dependent. Thus, higher proficiency allowed for the use of wider revision strategies and a better understanding of the feedback provided by the system, which may have resulted in more accurate revisions. Similarly, affective engagement seemed to depend on student proficiency level. The author identified the lower proficiency participant to rely deeply on the feedback provided. On the contrary, the higher proficiency student tended to question AWE feedback and checked external resources to confirm the writing issues highlighted.

The evidence reported in the studies point to the likelihood that students' positive perception of AWE feedback provision may increase their motivation towards EFL writing tasks and promote multiple revisions. Nevertheless, to our knowledge, few studies have directly addressed EFL students' motivation towards academic writing tasks if AWE tools are cogently integrated into instruction. This research aims to study EFL learners' motivation through the integration of academic writing in the EFL curriculum, by implementing a TBLT technology-mediated task under the five key principles postulated by González-Lloret and Ortega (2014): (i) focus on meaning, (ii) the design of a goal-oriented task, (iii) addressing learners' needs, (iv) real language use and (v) experiential learning.

2. OBJECTIVES

With the connection between students' positive perceptions of AWE use for their EFL writing (Lee, 2020; Zhang, 2020), TBLT technology-mediated task design (González-Lloret & Ortega, 2014) and the need for further research into the use of AWE tools in ELT contexts (Hockly, 2019), the purposes of this research are twofold. First, the pedagogical objective is to introduce EFL university students to the academic writing register by overcoming a writing task designed on a TBLT approach basis integrating Grammarly, ProWritingAid and Proofreading Tool AWE online applications. The main aims are i) instructing learners in the academic writing register, ii) promoting students' digital competence directed at their writing skill development, iii) increasing their motivation towards academic writing using technology, and iv) fostering multiple revisions of their initial drafts.

Last, this paper aims to examine students' motivation towards the technology-mediated writing task designed and the use of AWE online tools to revise and rewrite their academic writing. Based on the assumption that motivation is of crucial importance in language learning, this research studies motivation from the self-determination theory perspective (Deci & Ryan, 2012). In addition, the relationship between students' EFL language exposure, their language proficiency and their motivation mean scores will be investigated.

3. METHODOLOGY

3.1. PARTICIPANTS

The data for this study was collected from a total of eighty-six ($N = 86$) students that voluntarily participated in the study. Thirty-six students ($N = 36$) enrolled in the English Studies Bachelor's Degree (henceforth named 'ES group') and fifty students ($N = 50$) enrolled in the Advertising and Public Relations Bachelor's Degree (hereafter 'AP group') at Universitat Jaume I.

The groups that participated in the study present differences which are presumed to have an impact on their motivation towards task

accomplishment. The first difference is the bachelor's degree they study, which directly affects their EFL exposure. The ES group take university courses in English, yet the AP group instruction is mainly in Spanish. Besides, their English proficiency level also differs: ES ($M = 42.00$ $SD = 6.59$) and AP ($M = 33.20$ $SD = 6.04$), which corresponds to B2 and B1 levels respectively (Council of Europe, 2018).

3.2. INSTRUMENTS FOR DATA COLLECTION AND ANALYSIS

The instruments for data collection and analysis used were i) the Quick Placement Test (UCLES, 2001) to measure students' proficiency in English, ii) an adaptation of the Self-Determination Theory's Intrinsic Motivation Inventory (SDT, n.d.) that include 26 items divided into the subscales of interest/enjoyment, perceived competence, effort/importance, pressure/tension, and value/usefulness to be completed on a 1 to 5 Likert scale, iii) Google Forms to complete the IMI questionnaire after task accomplishment, and iv) the SPSS v.26 software to compile and analyse the data. In order to study the differences between groups, a series of independent sample *t*-tests, one-way ANOVA and ANCOVA parametric analysis were used. The internal consistency of the IMI questionnaire was measured using Cronbach's alpha coefficient as shown in Table 1.

TABLE 1. *IMI reliability.*

Subscale	Items	Cronbach α
Interest/enjoyment	5	.816
Perceived competence	5	.897
Effort/importance	3	.867
Pressure/tension	3	.842
Value/usefulness	10	.930
IMI mean	26	.892

Based on Taber (2018), results for Cronbach’s alpha were found reliable for the subscales of perceived competence, effort, pressure and the total questionnaire. The subscale of interest is robust and the usefulness subscale presents strong values of reliability.

3.3. INSTRUCTIONAL TREATMENT DESIGN

The instructional treatment has been designed on a TBLT approach, which highlights experiential learning by problem-solving while enhancing motivation (González-Lloret & Ortega, 2014; Tavakoli et al., 2019). Particularly, a technology-mediated writing task has been designed directed at instructing learners on basic aspects of academic writing and the use of AWE online tools. The task has been divided into four sessions as presented in Table 2.

TABLE 2. *TBLT instructional treatment outline*

Task	Sessions	Instruction	Objectives
Pre-task	2 × 90 min.	Abstract writing seminar Identification activities First draft abstract writing	Abstract writing instruction Raise awareness Produce a written abstract
Task	1 × 90 min.	AWE workshop	Promote digital competence Produce AWE-revised abstracts Enhance multiple revisions
Post task	1 × 90 min.	AWE feedback revision	AWE feedback self-assessment Final abstract version
IMI			

In the pre-task sessions, students attended a seminar on the academic writing genre in which the main conventions were described and exemplified. Then, students were explicitly instructed on the parts that an academic research abstract may include. After the seminar, some identification activities were carried out, for example students were told to identify the parts of previously selected abstracts and discuss the contents with their peers. At the end of the first session, students were told

to read two extra research abstracts at home and answer some awareness-raising questions related to the written title, abstracts sections and structure, and the use of keywords. The second session in the pre-task was devoted to discussing and checking their answers to the awareness-raising questions set as homework. Next, students spent the whole class planning and writing a 250-word first draft of their abstracts. Extra time was provided to those who could not finish their task in class.

The task was aimed at promoting students' digital competence through the use of AWE online tools. Students were first given a checklist to self-check their abstract drafts, which included aspects such as parts of the abstract, long sentences cohesion, and coherence and contraction use. Having self-checked their abstracts, students attended a workshop on the use of the AWE online tools of Grammarly, Prowriting Aid and Proofreading Tool, in which the teacher described the tools and their characteristics as writing checkers. Then, students transferred their self-revised drafts to the three different AWE tools to get computer-mediated feedback. After that, they saved the three different versions with the accepted changes and corrections in a Word file.

The post task involved students' revision of their original drafts and the revised versions from the AWE tools. Students wrote a final version of the abstract after revising the three versions derived from the automated feedback provision tools. Their final drafts were uploaded on the institutional Moodle platform for final assessment. Having completed the task, students took an adaptation of the IMI in which they answered 26 motivation-related items on Google Docs.

3.4. RESEARCH QUESTIONS AND HYPOTHESES

This study examines students' motivation towards the academic writing task described above. Taking into account the differences in participants' English proficiency and EFL exposure related to their degree studies, we hypothesise that the ES group will show higher motivation towards the academic writing task and the use of AWE online tools when compared to the AP group. In order to study the differences in motivation between groups, the following research questions and hypotheses are stated:

RQ1: What is students' motivation towards the academic writing task and the use of AWE tools? Does language exposure influence their motivation scores?

H1: The ES group will show higher mean results with reference to the subscale of *interest/enjoyment* when compared to the AP group.

H2: The ES group will present higher mean scores with regard to the subscale of *perceived competence* when compared to the AP group.

H3: The ES group will reflect lower *effort/importance* mean results when accomplishing the task than the AP group.

H4: The ES group will reflect lower *pressure/tension* mean results when accomplishing the task than the AP group.

H5: The ES group will show higher mean results as regards the subscale of *value/usefulness* of the task than the AP group.

H6: The ES group will present overall higher mean results with reference to the *IMI questionnaire* when compared to the AP group.

RQ2: Are there statistically significant differences in students' motivation towards academic writing and the use of AWE tools depending on the instructional group they belong i.e. ES and PU, controlling their English proficiency level?

H7: The ES group, in which English proficiency is upper-intermediate, will present higher motivation scores than the AP group in which English proficiency is lower-intermediate.

4. RESULTS

The results section has been structured around the research questions and subsequent hypotheses. To interpret participants' answers to the IMI questionnaire, the following motivation parameters have been established in Table 3.

TABLE 3. Mean range and motivation degrees' interpretation

Mean range	Scale range	Motivation degree
1.00–1.80	Strongly disagree	Lower
1.81–2.60	Disagree	Low
2.61–3.40	Neutral	Moderate
3.41–4.20	Agree	High
4.21–5.00	Strongly agree	Higher

4.1. RQ1: PARTICIPANTS' MOTIVATION TOWARDS THE TASK

The first research question addresses participants' overall motivation towards the task and whether there are differences in students' motivation considering their language exposure. To do so, IMI subscales mean scores and standard deviations are first presented for each hypothesis, i.e. motivation subscale, in Table 4.

TABLE 4. Descriptive statistics

HYPOTHESES	ES GROUP (N = 36)	AP GROUP (N = 50)
H1. Interest/enjoyment	M = 3.34, SD = .80	M = 3.35, SD = .58
H2.P. Competence	M = 2.55, SD = .86	M = 3.45, SD = .59
H3. Effort/importance	M = 3.91, SD = .91	M = 4.32, SD = .54
H4. Pressure/tension	M = 3.05, SD = .91	M = 2.56, SD = .91
H5. Value/usefulness	M = 3.91, SD = .80	M = 4.09, SD = .59
H6. Mean IMI	M = 3.44, SD = .57	M = 3.67, SD = .37

As shown in Table 4, both groups present slight differences in their mean scores for the subscale of task interest/enjoyment, i.e. ES group M = 3.34; and AP group M = 3.35, which confirms moderate interest towards the task. In relation to the subscale of perceived competence, the ES group (M = 2.55) shows lower perceived competence than the AP group (M = 3.45). As regards the effort required, it was the AP group (M = 4.32) that perceived they made a greater effort when completing the task if compared to the ES group (M = 3.91). The students in the AP group felt under lower pressure (M = 2.56) when carrying out the task than those in the ES group (M = 3.05), in which pressure

perception was moderate. Both groups considered the task as highly useful: ES group $M = 3.91$ and AP group $M = 4.09$. Last, overall results of the IMI questionnaire show high motivation mean scores towards the task itself: ES group, $M = 3.44$; AP group $M = 3.67$.

In order to compare motivational subscales results and check if the differences between groups are statistically significant, a series of independent samples t -tests were computed. The Kolmogorov–Smirnov normality test and the Levene’s test of homogeneity of variances were calculated on SPSS to satisfy the requirements of the parametric statistics for the t -test.

TABLE 5. Kolmogorov–smirnov test results

	Statistic	df	Sig.
Interest/enjoyment	.106	86	.171
Perceived competence	.122	86	.139
Effort/importance	.153	86	.105
Pressure/tension	.141	86	.189
Value/usefulness	.112	86	.162
Mean IMI	.154	86	.116

Results of the Kolmogorov–Smirnov test show a normal distribution of the data with reference to the IMI questionnaire subscales and the mean score calculated from the subscale items results ($p > .05$)

TABLE 6. Levene’s test results

	Levene’s Test for Equality of Variances	
	F	Sig.
Interest/enjoyment	3.705	.058
Perceived competence	6.507	.013
Effort/importance	7.884	.006
Pressure/tension	.344	.559
Value/usefulness	2.490	.118
Mean IMI	8.154	.005

Results from the Levene's test of homogeneity of variances reveal that the motivational subscales of perceived competence, effort/importance and the IMI questionnaire mean scores are not approximately equal or homogenous, albeit the subscales of interest/enjoyment, pressure/tension and value/usefulness have meet the assumption for homogeneity of variances. Taking these results into account, *t*-tests were computed in order to statistically test hypotheses 1 to 6 that concern the role of language exposure in motivation.

TABLE 7. *T-Test results*

		t-test for Equality of Means						
		t	df	Sig*	MD	SED	95% CI of the Difference	
							Lower	Upper
H1. Interest/ enjoyment	1	-.051	84	.960	-.00756	.14935	-.30455	.28943
	2	-.048	60.657	.962	-.00756	.15703	-.32160	.30649
H2.P.Competence	1	-5.722	84	.000	-.90044	.15735	-1.21336	-.58753
	2	-5.386	57.655	.000	-.90044	.16718	-1.23513	-.56576
H3.Effort/ importance	1	-2.593	84	.011	-.41000	.15814	-.72449	-.09551
	2	-2.399	53.025	.020	-.41000	.17088	-.75274	-.06726
H4.Pressure/ tension	1	2.480	84	.015	.49556	.19983	.09816	.89295
	2	2.483	75.896	.015	.49556	.19959	.09803	.89308
H5.Value/ usefulness	1	-1.188	84	.238	-.17889	.15057	-.47832	.12054
	2	-1.133	61.578	.261	-.17889	.15783	-.49443	.13665
H6.IMI Mean	1	-2.270	84	.026	-.23355	.10288	-.43813	-.02896
	2	-2.122	55.653	.038	-.23355	.11009	-.45411	-.01299

*Sig (2-tailed)

Note: Parameter 1 refers to equal variances assumed and 2 refers to equal variances not assumed

H1 assumed that the ES group will show higher mean results with reference to the subscale of interest/enjoyment when compared to the AP group. As shown in Table 7, results from the t-test revealed that there are no statistically significant differences in task interest/enjoyment between the ES group ($M = 3.34, SD = .80$) and the AP group ($M = 3.35, SD = .58$), $t(84) = -.051, p = .96, d = 0.01$.

H2 postulated that the ES group will present higher mean scores with regard to the subscale of perceived competence when compared to the AP group. Results were found statistically significant with the AP group participants perceived competence ($M = 3.45, SD = .59$) higher than that in the ES group ($M = 2.55, SD = .86$), $t(57.655) = -5.38, p = .001, d = 1.25$. The effect size for this analysis was found to exceed Cohen's convention for a large effect. These results indicate that the ES group's perceived competence was statistically significantly lower than in the AP group.

H3 stated that the effort required to overcome the task by the ES group will be lower than that of the AP group. Results from the t-test revealed statistically significant differences between the ES group ($M = 3.91, SD = .91$) and the AP group ($M = 4.32, SD = .54$), $t(53.025) = -2.39, p = .020, d = 0.56$. These results suggest that the ES group effort to overcome the task was significantly lower than the AP group, being a medium effect size.

H4 predicted that the ES group will experience lower pressure/tension when accomplishing the task than the AP group. Results from the independent samples t-test were found to be statistically significant and the ES group ($M = 3.05, SD = .91$) indeed felt more pressure than the AP group ($M = 2.56, SD = .91$), $t(84) = 2.48, p = .015, d = 0.54$ when doing the task. Cohen's effect size was medium.

H5 concerned participants' perception of the value/usefulness of the task. Results indicate that there are no statistically significant differences between the ES group ($M = 3.91, SD = .80$) and the AP group ($M = 4.09, SD = .59$), $t(84) = -1.18, p = .238, d = 0.26$. Nonetheless, mean results suggest that the AP group has perceived the task slightly more useful than the ES group, having a medium effect.

H6 predicted that the ES group will show higher overall motivation towards the writing task than the AP group. Results unveiled that the AP group ($M = 3.67$, $SD = .37$) showed statistically significant higher motivation levels towards the task when compared to the ES group ($M = 3.44$, $SD = .57$), $t(55.653) = -2.12$, $p = .038$, $d = 0.49$; the Cohen's effect size was close to medium.

4.2. RQ2: ENGLISH PROFICIENCY AS A PREDICTOR OF MOTIVATION

The second research question aimed to examine the extent to which participants' motivation towards the academic writing task using AWE tools is statistically significant depending on the group they belong to, and controlling their English proficiency level.

H7 predicts that there will be statistical differences in motivation between groups controlling their English proficiency level. Thus, their English proficiency as a covariate will significantly influence their motivation towards the task.

To analyse the effect of the covariate English proficiency, a univariate ANOVA was first run to examine the motivation differences between groups without taking into account potential biases. Results are presented in Table 8 below.

TABLE 8. *Anova results*

ANOVA					
IMI_Mean_Score					
	Sum of squares	df	Mean square	F	Sig.
Between groups	1.142	1	1.142	5.154	.026
Within groups	18.608	84	.222		
Total	19.750	85			

Results from the ANOVA indicate that there are statistically significant differences in motivation between the ES group ($M = 3.44$, $SD = .57$) group and the AP group ($M = 3.67$, $SD = .37$), $F(1.84) = 5.15$, $p = .026$.

In other words, motivation mean scores significantly differed for the different groups. Thus, to study the effect of the covariate English proficiency level, a one-way ANCOVA was conducted to determine a statistically significant difference between the ES and PU groups (independent variable) on motivation (dependent variable) controlling for their English proficiency (covariate).

TABLE 9. *Ancova results*

Tests of Between-subjects Effects						
Dependent Variable: IMI_Mean						
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial eta squared
Corrected model	1.945 ^a	2	.972	4.533	.014	.098
Intercept	20.374	1	20.374	94.977	.000	.534
Proficiency	.803	1	.803	3.745	.056	.0430
Group	1.929	1	1.929	8.992	.004	.098
Error	17.805	83	.215			
Total	1121.442	86				
Corrected Total	19.750	85				

a. R Squared = .098 (Adjusted R Squared = .077)

ANCOVA results, including EFL language proficiency as a covariant, show that there is no statistically significant effect of groups' motivation after controlling for their English proficiency: ES group ($M = 3.44$, $SD = .57$) and PU group ($M = 3.67$, $SD = .37$), $F(1,83) = 3.745$, $p = .056$, partial eta squared = .09. It turns out that English proficiency is close to being statistically significant, but it is not a significant predictor of the dependent variable of motivation in the task performed by our groups.

5. DISCUSSION

One of the goals of this research was to study EFL students' motivation towards academic writing after implementing a TBLT technology-mediated writing task that integrated the use of AWE tools. As illustrated in Table 4, H6 mean score results, which indicate students' overall motivation scores, support the assumption that the use of technology i.e. AWE tools in the EFL teaching and learning contexts has a positive impact on student motivation. This result concurs well with previous studies where motivation was seen to be improved after students used ICTs (Kaharuddin, 2020; Tavakoli et al., 2019) and the potential of technology-mediated TBLT task design to enhance motivation (González-Lloret & Ortega, 2014).

For the first research question, results both negate and support some of the hypotheses. Initially, participants in the ES group were expected to outperform the AP group in the motivation subscales studied due to a higher EFL exposure and their degree studies specificities, being the ES group which, a priori, should reflect higher mean scores in the different motivation subscales. Contrary to expectations, participants in the AP group presented higher interest towards the task (H1) and perceived its value/usefulness (H5) more representatively than the ES group. In addition, AP students showed statistically significant perceived competence (H2) and low pressure (H4) in task accomplishment along with overall motivation scores (H6). Results for the effort subscale (H3) fulfilled the researcher expectations and it was the ES group that presented statistically significant lower effort towards the task.

The second research question was aimed at unveiling motivation differences between groups, taking into consideration EFL language proficiency. It was hypothesised that language proficiency as a covariate would influence participants' overall motivation mean scores. Results from the one-way ANOVA illustrate statistically significant motivation differences between groups, yet their EFL proficiency has not been found to be a statistically significant predictor of motivation.

Findings from this exploratory study suggest that the differences observed in the motivation mean scores subscales are not related to

language exposure or language proficiency. The reason for these rather contradictory results can be accounted for in part by Kovoltoskaia's (2020) conclusions with respect to cognitive and affective engagement with the feedback provided by AWE tools, the extensive feedback provided by the AWE tools (Ranalli, 2018) and its limited scope for spelling and grammar corrections as suggested by Link et al. (2020) and Zhang (2020). This would appear to indicate that lower proficiency students in the AP group accounted for higher motivation mean scores in the motivation subscales as a result of a wider reliance on the extensive feedback provided by the AWE tools and the perception of low-level corrections as useful. On the contrary, we hypothesise that upper-intermediate students in the ES group may have relied less on the AWE feedback provided and applied their own revision techniques, along with the perception that the AWE feedback provided is restricted to lexicogrammatical aspects.

These results should be treated with caution as it is possible that some limitations could have influenced the results obtained. To begin with, time constraints have been found when designing the writing task as the need to meet course curricular demands has considerably reduced participants' instruction in academic writing and the time devoted to the task. An additional limitation is the lack of a control group and the number of participants since the groups are not completely homogenous, which could have affected the validity of results to a certain degree. Last, the use of open-ended questions as a part of the questionnaire could have shed light on the rationale for students' answers to the IMI.

6. CONCLUSION

The evidence from this study supports the idea that integrating AWE tools in writing task design can promote different motivational aspects in EFL students as previously suggested by Roscoe et al. (2018), Wilson and Roscoe (2020) and Lee (2020). The importance of our contribution lies in the results, which may have confirmed that EFL exposure and English proficiency differences do not have a significant impact on motivation and the use of AWE tools. That assumption may reinforce

the suitability of this type of task for tertiary education students. Besides, we recommend the implementation of technology-mediated tasks under a TBLT approach in EFL teaching and learning contexts due to its active-learning enhancement, awareness-raising potential and task-design sequencing (Tavakoli et al., 2019), not to mention the need to avoid the digital divide when carrying out these types of tasks.

To sum up, we recommend the implementation of AWE tools for EFL writing as a complement to more traditional writing instruction and practice techniques. The key aspect involved in the use of AWE tools is their potential to foster students' self-revision and autonomy through the provision of corrective feedback and recommendations for improvement (Liao, 2016; Wang et al., 2013), which can reduce their dependence on language instructors' feedback provision. Nevertheless, students must be instructed on AWE tools usability and their limitations (Ali, 2020).

Further research on motivation should adopt a mixed-methods approach for the study of both quantitative and qualitative data results. Some important issues to resolve for future studies are i) the relationship between EFL students' motivation towards AWE systems and their writing performance, ii) the impact of multiple revisions fostered by AWE tools on students' final drafts, iii) the typology of mistakes corrected by students and iv) the effect of different feedback conditions on students writing revisions i.e. teacher and/or computer generated, or a combination of both.

7. REFERENCES

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