

“Look, ma, no hands!” Writing without typing: speech-recognition tools for future translators in the English language classroom

“¡Mira, mamá, sin manos!”: Herramientas de reconocimiento de voz para
futuros traductores en la clase de lengua inglesa. Escribir sin teclear

“Olha, mãe, sem mãos!” Escrever sem digitar. Ferramentas de reconhecimento
da fala para futuros tradutores na aula de língua inglesa

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Abstract

Writing proficiency in a foreign language has been increasingly demanded in the workplace due to the value of multilingualism; thus, it cannot be neglected in the English classroom. ICTs have gained momentum in the development of competences in the target language as a motivational asset, not least writing skills. In that sense, this paper seeks to inspect the effects speech recognition tools have in terms of motivation and written production. This study was conducted at a Spanish university with 55 first-year Translation and Interpreting undergraduates who were surveyed about the applicability of the dictation tools available in Microsoft Word® and Google Docs® to compose a written text. Results suggest that, despite its limitations, speech recognition can prove useful for learners and can result in a motivational innovative strategy to engage them in the writing process.

Keywords: writing; speech-to-text; speech recognition; English as a Foreign Language (EFL); dictation.

Resumen

La demanda de una buena competencia escrita en una lengua extranjera es cada vez mayor en el ámbito laboral debido a la importancia del multilingüismo en nuestra sociedad actual. Por lo tanto, tampoco podemos obviar la necesidad de desarrollar la expresión escrita en el aula de lengua inglesa. El uso de las TIC ha adquirido cierto protagonismo en el desarrollo de las competencias en la lengua meta como factor motivador, y no menos en el desarrollo de la expresión escrita. En ese sentido, con este estudio pretendemos analizar los efectos que tienen las herramientas de reconocimiento de voz en lo que respecta a los niveles de motivación y a la mejora de la producción escrita. Este estudio se realizó en una universidad española con 55 estudiantes de primer curso de Traducción e Interpretación, quienes completaron una encuesta sobre la aplicabilidad de las herramientas de dictado disponibles en Microsoft Word® y Google Docs® en la redacción de textos escritos. Los resultados sugieren que, a pesar de sus limitaciones, los sistemas de reconocimiento de voz pueden ser de gran utilidad para el alumnado, al constituir una estrategia innovadora y motivadora que permite implicarlos en el proceso de escritura.

Palabras clave: escritura; voz a texto; reconocimiento de voz; inglés como lengua extranjera; dictado.

Resumo

A demanda de uma boa competência escrita numa língua estrangeira está a aumentar no local de trabalho, devido à importância do multilinguismo na sociedade de hoje. Por conseguinte, a necessidade de desenvolvimento da expressão escrita na aula de língua inglesa não pode ser também ignorada. A utilização das TIC adquiriu uma certa proeminência no desenvolvimento das competências linguísticas-alvo como factor motivador, inclusive no desenvolvimento da expressão escrita. Neste sentido, este artigo visa analisar os efeitos dos instrumentos de reconhecimento da fala em termos de motivação e produção escrita. Este estudo foi realizado numa universidade espanhola com 55 estudantes do primeiro ano de Tradução e Interpretação, os quais completaram um questionário sobre a aplicabilidade das ferramentas de ditado disponíveis no Microsoft Word® e Google Docs® para a composição de textos escritos. Os resultados sugerem que, apesar das suas limitações, o reconhecimento da voz pode ser muito útil para os estudantes como uma estratégia inovadora e motivadora que os envolve no processo de redação.

Palavras-chave: produção escrita; fala para texto; reconhecimento da fala; inglês como língua estrangeira; ditado.

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1. Introduction

Being able to express ideas or thoughts accurately has become an important asset in academic and professional domains. The productive behaviour of writers and speakers is extremely relevant when there is a need for communicating in a language other than one's first language, as occurs in bilingual or multilingual settings. Actually, undergraduate students may find it difficult to express themselves even in their first language (Gonzales, 2015). Given that the labour market is in search of highly skilled employees (Koval *et al.*, 2018; Walkinshaw *et al.*, 2017), learning how to be fluent and convey meaning in a foreign language have been at the core of curricular design in higher education (Stöhr, 2015).

Previous research on writing has been concerned with learners' views and satisfaction (Abbas, 2018; Basturkmen & Lewis, 2002; Leki & Carson, 1994; Storch & Tapper, 2009). For instance, the findings obtained in Abbas's (2018) study about the strengths and weaknesses students identified in a blended-learning programme were key for the accommodation of the curriculum. In addition, the quality of the writing may also be determined by motivational and anxiety factors (Aula, 2016; Graham *et al.*, 2017). Other issues involve the impact of these courses on academic discourse, especially in the development of writing and speaking (Basturkmen, 2002; Leopold, 2016; Storch & Tapper, 2009). As reported by Storch and Tapper (2009), undergraduates enrolled in English for Academic Purposes (EAP) courses improved their writing skills at accuracy, structural and lexical levels. It should be noted that a variety of strategies have been implemented in the EFL classroom to prompt the acquisition of communicative, intercultural and interactive skills through writing (Vigil *et al.*, 2020).

The curricular integration of visual aids and other digital tools has increased substantially in the field of education. In recent years, it is evident that Information and Communication Technologies (ICTs) have been considered when implementing teaching pedagogies in the classroom setting since they may be adequate to engage students in the learning process and connect the subject-matter with their interests (McDougald, 2017). With these revolutionary tools, there is an endless number of learning opportunities; for example, not only may their use strengthen the competences required in the area of foreign language learning but also help consolidate disciplinary knowledge

(Drigas & Charami, 2014; McDougald, 2009). In this scenario, challenges may arise when there is neither careful planning nor clear definition of objectives (Azmi, 2017). However, it has been shown that educators have integrated ICTs in their modules with the aim of fostering effective practices, promoting students' production and autonomy (Álvarez & Bassa, 2013; Bakeer, 2018; Gottardi *et al.*, 2022; Warni *et al.*, 2018).

In this sense, text editing appears to be another area that has triggered scholars' interest, more specifically the use of collaborative strategies and machine translation. As pointed out by Elola and Oskoz (2010), chats and wikis allow for the development of collaborative writing skills, thus helping students focus on relevant text elements. On the other hand, Dongyun (2017) reviews the usefulness of machine translation engines in terms of post-editing. However, literature dealing with the development of future translators' writing and speaking skills seems to be non-existent.

Thus far, online courses on writing seem to be necessary in order to meet the needs of individuals who are or will be immersed in English as a Foreign Language (EFL) environments. Taking this into consideration, this paper sets out to explore the positive and negative impact speech recognition software may have not only in developing linguistic skills (*i.e.*, writing and pronunciation) but also in boosting EFL learners' motivation. This study was conducted at a Spanish university with first-year Translation and Interpreting undergraduates who were meant to make use of the dictation tools available in Microsoft Word® or Google Docs®. Reviewing the outcomes provided by these technological resources will help professionals in the field of Translation to get better at editing, on the grounds that they will need to analyse their written texts critically.

2. Literature review

The growing demand for professionals with a multilingual repertoire has resulted in courses devoted to the improvement of academic skills, not least writing which has been regarded as the most complex skill for learners (Bellés-Calvera & Martínez-Hernández, 2021; Demir, 2021; Nosratinia & Razavi, 2016). In fact, high anxiety levels can be identified when there is a lack of metacognitive knowledge as well as unclear topics or guidelines (Aula Blasco, 2016; Balta, 2018; Lew & Tang, 2017). The lack of immediate feedback when errors are made in relation to accuracy as well as the different planning, drafting, reviewing and revising phases may explain the difficulty to convey meaning effectively (Azmoon, 2021; Richards & Schmidt, 2002).

As argued by Demir (2021), self-editing appears to be neglected in practices intended to improve writing proficiency once provided with corrective feedback, either from their peers or from the teacher. This process could be approached as a post-activity in order to enhance learners' autonomy and raise their linguistic awareness about the errors produced in the target language. Unfortunately, the belief that teachers are responsible for error correction seems to be preferred among language learners instead of providing them with indirect corrective feedback fostering critical thinking (Lee, 2005), which has proven to be beneficial when it comes to grammatical gains (Van Beuningen *et al.*, 2012).

Scholars have largely investigated error correction from grammatical and lexical perspectives, even though additional errors related to typing could be considered at a technical level (Lastres-López & Manalastas, 2017). A well-known strategy aiming at raising awareness of linguistic structures is that

of dictogloss. With this innovative and collaborative dictation technique based on the reconstruction of texts, it was proven that learners feel more enthusiastic about it and could reflect upon language use, thereby providing them with the necessary training to acquire writing skills (Azmoon, 2021; Lozano *et al.*, 2014; Prince, 2013).

The potential of dictation activities in teaching writing may be transferred to online media, which have now become normalised in language education (Balchin & Wild, 2020; Bax, 2003, 2011; Gottardi *et al.*, 2022). Tools like Voki, Bombay TV, Twitter, Kahoot or Word Clouds have been employed for pedagogical purposes, particularly with the aim of making lessons more appealing and boosting learners' written and oral performance in the foreign language (Bellés-Calvera & Bellés-Fortuño, 2018a, 2018b; Bellés-Fortuño & Martínez-Hernández, 2019; Boumediene *et al.*, 2018). Actually, assistive technology in the language classroom may serve as the basis to aid students with the quality of their written compositions (Xu *et al.*, 2019; Zou & Xie, 2019), for example, through the use of spell checkers (MacArthur, 2006). Although gains in syntactic complexity may not be perceived in the final written outcome, assistive technology software appears to have a positive impact in terms of fluency (I.X.C. Lee, 2011), which is highly advisable to boost learners' communicative competence in the language classroom. Clear examples of tools that can contribute to developing writing skills effectively involve the use of Google Docs or Paragraph Punch, which may be employed during the pre-writing, writing and post-writing phases given that it helps learners identify grammatical, spelling and punctuation errors, among others (Ariyanto *et al.*, 2019; Handayani & Handayani, 2020; Selvarasu *et al.*, 2021). Not only may these supportive tools complement face-to-face support (Moore *et al.*, 2019), but also suit the needs of students with functional diversity following Universal Design for Learning principles (Lee, 2011; Martínez-Hernández & Bellés-Calvera, 2021;). Speech dictation software can be employed as an alternative for braille writing, thus assisting visually-impaired individuals (Kway *et al.*, 2010), as occurs in areas like Mathematics (Attanayake *et al.*, 2013). These assistive devices have also been introduced as pre-tasks in webinars, or online presentations, that have become popular during the current pandemic and have proven their usefulness at the pre-task stage, as indicated by participants in Selvarasu *et al.*'s (2021) research.

Educational practices integrating speech-to-text tools can lead to the correction of phonetic and lexical errors in which L1 interference may be prominent. At the same time, learners have the opportunity to expand their vocabulary, as illustrated in Meddeb & Frenz-Belkin's study (2010), and complete assignments in less time (MacArthur, 2009; Pennington, 2020; Snider, 2002). Overall, future professionals working in EFL settings may be able to improve their competence in proofreading texts.

3. Objectives of the study

In light of the potential of speech recognition tools that existing literature reports, this paper analyses the use of said tools implemented in the English language classroom. The purpose of this research is multifold. The study attempts to explore the advantages that might be gained, or the disadvantages learners might encounter when using these tools for writing their compositions, in tandem with how appropriate speech recognition tools can be to raise pronunciation awareness in EFL learners. Furthermore, the level of motivation in students will be explored. Hence, the research questions (RQ) this study departs from are as follows:

RQ(1): What benefits can learners and teachers reap from using dictation tools for writing?

RQ(2): Is speech-to-text an efficient writing method?

RQ(3): How popular was the writing-through-dictation process among learners? Are learners likely to use it in the future?

In order to obtain answers to these questions, participants replied to a questionnaire which gathered data on their experience of writing by means of voice. Before proceeding to examine the results that cast some light on these questions, the context and the profile of the participants in the study will be provided below. Additionally, a detailed account of the methodology and research instruments is also provided in the following section.

4. Methodology

In this section, a detailed description of the context and the participants of this study is provided. Furthermore, the research instruments and procedures adopted to provide a quantitative analysis of the data collected are also thoroughly outlined.

4.1. Context

The study presented in this paper was conducted in the English language classroom in the Translation and Interpreting degree at a Spanish university. During the Covid outbreak, all services were forced to either temporarily cease or adapt. The latter was the case of education in Spain, which was moved to an online setting during the national lockdown and the early stages of the subsequent new normality, although tuition returned to the onsite modality progressively. In order to proceed with caution, the corresponding authorities decided that a middle stage should be adopted to make the transition to onsite learning, that of hybrid learning. This teaching and learning methodology was applied to the English for Translators and Interpreters module for a period of time until fully onsite learning was safe.

For those lessons imparted on campus, the safety measures had to be strictly followed; therefore, the interaction between participants was limited, and the use of facemasks was mandatory, among others, with the handicaps that might entail in communication, not least in language learning (Homans & Vroegop, 2021). On the one hand, facemasks concealed some non-verbal communication. Not only did that affect classroom dynamics, but also pronunciation accuracy and the chance to perfect it, considering the teacher could not see lip position. On the other hand, and most importantly, they obscured and muffled sound, which affected communication in general.

According to the course syllabus, learners enrolled in this language module need to attain a B2 level, as described in the Common European Framework of Reference (CEFR). Hence, all skills must be developed and practised throughout the course to aid them in achieving this goal, including pronunciation and writing. In order to overcome the barriers that Covid posed, the traditional procedure of written composition was altered: learners would speak into a speech-recognition tool in lieu of typing on a blank document.

4.2. Participants

The task described in this paper was addressed to first-year Spanish undergraduate students in the above-mentioned language-based degree. The module in question is a *sine qua non* to obtain said university degree; therefore, there is usually a high enrolment rate. Regarding enrolment requirements in this course, even though there are no language-level preconditions, learners are highly recommended to have obtained a passing grade in the first part. This would ensure all learners have attained a solid linguistic foundation at a B2.1 level, which would avoid frustration at higher levels.

Learners come from different social and academic backgrounds; some have already acquired an upper-intermediate level via private and extracurricular means, while others have the linguistic knowledge delivered in non-compulsory secondary education. First-year English for Translators and Interpreters is taught in two modules, each one running in each semester. The English course at hand is the continuation of the first part.

In relation to the sample obtained, 80 first-year undergraduate participants submitted the dictated writing task out of 91 enrolled in the module. Of that initial cohort of students, the overall response rate to the survey was 55.

4.3. Procedure

The task learners were presented with to conduct this study consisted in composing a written piece, a review to be precise, via dictation. This text type was deemed appropriate for this task on the grounds that some of its features, such as the level of formality, are shared with standard oral language.

In order to reach the final dictated composition, learners were guided through a series of steps that had to be thoroughly followed in order to avoid undesired frustrations that the software might cause due to their non-native pronunciation (Gottardi *et al.*, 2022). Firstly, participants were furnished with a sample task and its corresponding written production, which was analysed in class so as to demonstrate what was expected. Secondly, learners brainstormed ideas to include in the actual task, for which the learners were allotted 5 minutes. Then, they were encouraged to plan their piece of writing, which included anticipating what lexis or grammatical structures they would use to express their message to the target audience. This step was completed in under five minutes. It should be noted that the writing was the culmination of the unit, where a demonstration of the lexis and syntax acquired thus far should be included. Therefore, learners were encouraged to incorporate some of the recently gained linguistic knowledge in accordance with expectations, such as a new phrasal verb, a collocation or a grammatical structure, amongst others.

Additionally, participants had to plan paragraphing and establish a clear flow between the ideas to ease the reader into their review, which dealt with a concert experience. Such detailed and precise planning was of paramount importance in an effort to reduce anxiety and frustration when facing the blank paper. Thirdly, the tools to be explored for this assignment were explained by means of illustration in the (virtual synchronous) classroom. They were presented with two options to compose their dictated texts, namely MS Word and Google Docs, both of which incorporate dictation software in their latest versions, which are facilitated to all education stakeholders by courtesy of the higher institution where this study was conducted. Therefore, access to the tools was guaranteed. The learners were given a one-week deadline to submit their dictated reviews.

Finally, a survey was conducted as a means to collect data for later analysis, which would reveal the tool's usefulness to learners in the EFL environment. The following section delves into this research instrument's design.

4.4. Research instruments

The preferred data collection method employed for this study was a questionnaire, which contained 24 questions in total. This section provides a detailed description and the purpose of the questions posed in the survey.

After completing their writing, the survey was distributed among participants before furnishing them with corrective feedback to avoid any form of bias. The questionnaire, made available through a shared link on the virtual platform, was to be completed outside the classroom, where the presence of the researchers would not interfere with informants' replies in any way. This would ensure straight, relevant, and trustworthy data.

This research instrument was designed to include closed-ended questions, namely yes/no and scale questions, to name a couple. That would facilitate a quantitative analysis of the data, although an open-ended question was added at the end to allow for further comments. This last question would collect information on the respondents' experiences to furnish this study with qualitative data. The configuration of the questions for the questionnaire consisted of four blocks. The first (Q1-Q6) gauged learners' perceptions about writing and their familiarity with dictation tools. The second set of questions (Q7-Q11) aimed to document general impressions of the tool used in contrast with traditional forms of writing. The third block (Q12-18) was designed to elicit detailed statistics on students' experiences with the tool. Lastly, the fourth block (Q19-Q24) closed with questions related to students' attitudes towards the new writing approach. These questions sought to measure their motivation and prospects of its utilisation and adoption for future writing tasks. To conclude the survey, an open-ended question provided participants with more space to report their experience with said tool. Table 1 presents the questions and the possible answers for closed-ended questions.

Table 1
Student survey

Block	Question No.	Question	Possible Answers
Block one	Q1	You communicate with your environment via text all the time (e.g., WhatsApp, email, social networks posts). Would you consider this writing?	a. Yes b. No
	Q2	Had you used Speech Recognition tools for academic assignments before?	a. Yes b. No
	Q3	Which tool did you use to do the activity?	a. MSWord b. GDocs
	Q4	Do you believe writing is important to succeed in your career?	a. Yes b. No
	Q5	Are you a proficient writer in your mother tongue?	a. Yes b. No
	Q6	Are you a proficient writer in English?	a. Yes b. No

Table 1: *Continuación...*

Block	Question No.	Question	Possible Answers
Block two	Q7	How long does a piece of writing usually take you, approximately?	a. Under 30 min. b. About 30 min. c. Between 30 and 45 min. d. About 1h e. Between 1h and 1h15min f. More than 1h15min
	Q8	How long did this writing (dictated review) take you approximately?	a. Under 30 min. b. About 30 min. c. Between 30 and 45 min. d. About 1h e. Between 1h and 1h15min f. More than 1h15min
	Q9	Which of these statements is true for you?	a. I had to adapt the pace of my speech to the tool's speed. b. The speed of the tool was appropriate.
	Q10	About the errors made by the tool, choose which one applies to you.	a. The tools made no errors. b. The tool made occasional small errors I post-edited. c. The tool made a couple of mistakes in the same paragraph. I post-edited them. d. The tool consistently made mistakes throughout the text. The post-editing process required a lot of effort. e. There were mistakes, but I was not able to correct them.
	Q11	I could obtain a draft of the text faster.	a. Agree b. Disagree
Block three	Q12	I had the feeling words flowed more naturally than when I type them.	a. Agree b. Disagree
	Q13	I was more concentrated on the text I was composing.	a. Agree b. Disagree
	Q14	I felt more confident.	a. Agree b. Disagree
	Q15	I did not feel comfortable talking to a computer.	a. Agree b. Disagree
	Q16	I had the feeling it wasn't me doing the writing.	a. Agree b. Disagree
	Q17	I realised I made some pronunciation mistakes and the tool did not understand me.	a. Agree b. Disagree
	Q18	I realised I had to articulate sounds more clearly. I had to enunciate.	a. Agree b. Disagree
Block four	Q19	Were you excited to use a new tool to write?	a. Yes b. No
	Q20	Were you motivated?	a. Yes b. No
	Q21	Do you prefer Speech Recognition to typing?	a. Yes b. No c. It makes no difference to me
	Q22	Will you use this tool in the future?	a. Yes b. No
	Q23	Why would you or wouldn't you use it again? You can name advantages or disadvantages.	
	Q24	Other comments	

Note: Own elaboration

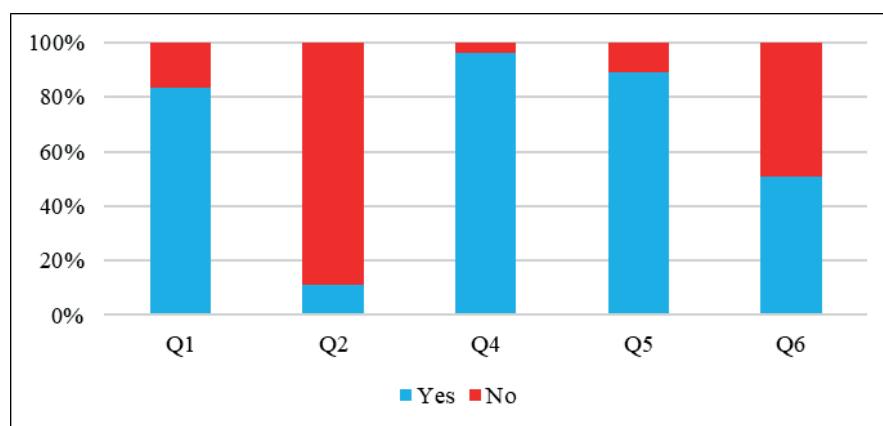
This section has reviewed the aspects related to the methodology developed and applied in this study. The following section explores, analyses and discusses the results obtained in the survey.

3. Results and discussion

The results obtained from the student survey are analysed in this section. All items concerning learners' experiences with speech recognition tools applied for writing are discussed below.

In regard to the first set of questions that informants were presented with, which provides a general overview of participants’ writing preconceptions, only a relative minority of students (*i.e.*, 9 out of 55) did not consider everyday written interaction as the act of writing per se. In the communication era where people are writing more than ever, it is interesting that 16.4% of the participants did not consider said written communication as writing. This could be attributable to the level of exigency academic writing supposes in contrast to everyday language. Replies to Q2 report that the majority of participants (89.1%) were not acquainted with a dictation tool, least for written compositions, although they were familiar with the word-processors used for this task, namely MS Word (81.8%) and GDocs (18.2%) (Q3). Answers to Q4 were virtually unanimous; 96.4% of the respondents believed having a masterful command of writing skills was paramount in their future careers as translators, while 3.6% disagreed with that statement. This second percentage is counterintuitive, as it would have been expected to obtain an undivided positive response in a language-based degree. Furthermore, not all learners agreed on their mastery of writing skills in their mother tongue. Another striking result can be found in Q5 where 10.9% of the students in this language module believe they are not proficient writers in Spanish or Catalan. These findings appear to be alarming, given that a good command of communicative skills is key in the field of Translation and Interpreting. Likewise, answers were divided when the same question was asked (Q6) about the foreign language, *i.e.*, English. Half of those surveyed (50.9%) reported they were skilled English writers, whereas the other half (49.1%) do not think of themselves as competent. The graph below (see Figure 1) provides a summary statistics for the first block of questions.

Figure 1
Block 1: Summary statistics

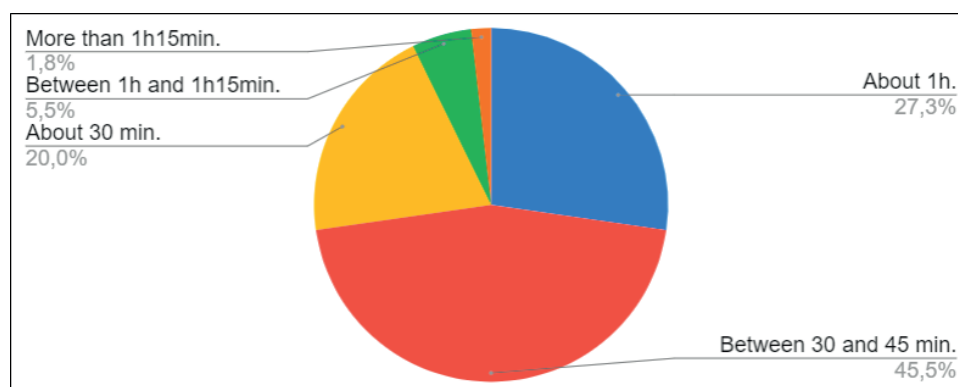


In connection with students’ proficiency in writing, namely the second group of questions, Q7 collected data on the amount of time producing an academic written output of the same characteristics as the activity at hand usually takes them. Figure 2 below provides the breakdown of replies. About two-thirds of the respondents require under forty-five minutes to compose a written text, whereas approximately one-third of the participants could attain the same result when granted thirty minutes more. Only one person (1.8%) among the surveyed responded to take longer than that. Notwithstanding, it is worth noting that nobody chose the option “under 30 min”. From the pie chart in Figure 2, it is apparent that, even though it is assumed that all learners share the same interests in language, their writing proficiency levels might vary within the group by virtue of their different learning and academic backgrounds, resulting in a heterogeneous group. This result is of paramount importance

as it provides context for forthcoming questions, results, and lesson plans. The fact that a third of the students need more than forty-five minutes to compose a piece of writing reveals that these students in the study might require further training in order to be more time-efficient. Therefore, there might lie a probable explanation for possible frustration resulting in subsequent questions in the survey. In addition, training students on how to make use of speech dictation tools can provide them with time-saving strategies that will be profitable in the labour market.

Figure 2

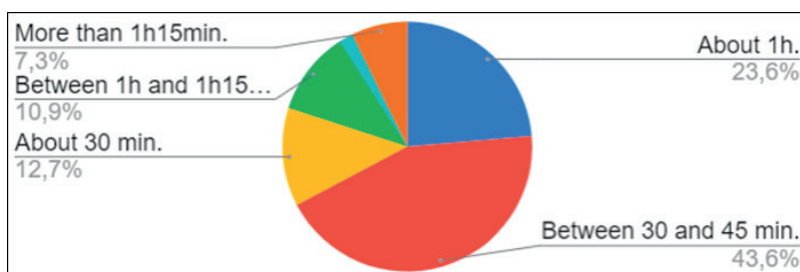
Responses to "Q7: How long does a piece of writing usually take you, approximately?"



Nevertheless, Q8, which was designed based on the hypothesis that departed from previous research where higher speed was reported to be attained in writing through dictation (Snider, 2002), reveals almost identical results to Figure 2 above (see Figure 3). The most significant data worth highlighting is the representation of the answer "under 30 min.", which did not appear in the first. Therefore, it can be said that Sinder's (2002) findings in previous studies about higher speed only apply to a low percentage of learners. The response rate for "about 1h", "between 30 and 45 min." or "about 30 min." is relatively consistent with the previous question, although showing smaller percentages this time around. Additionally, the extent to which the answers "between 1h and 1h15min." and "more than 1h15min." have increased can be observed below.

Figure 3

Responses to "Q8: How long did this writing take you, approximately?"



A possible explanation for the increase in the time dedicated to the writing process might be found in the responses to Q9. About half of the informants in the survey (49.1%) replied that they had to adapt their speed to the tool's speed, whereas the other half were content with its speed. For proficient typers, slowing down the dictation pace might be exasperating as they might be able to

type faster than the speech recognition software does, to quote one of the participants' comments: "I would not use it again if I had to make a task fast. I mean, I think you finish faster when you type it". By contrast, other learners acknowledged its utility to use time more efficiently: "it is a useful tool in case of being in a hurry. I'm [one of] those who could spend hours hand-copying"

Another possible explanation for the results in Figure 3 might be the inaccuracies that either the learners or the software made, which translated into post-editing time; thus, making this approach to writing more time-consuming than the traditional typing or hand-writing methods, where the participant is in control. In fact, said interference of the software was reported in Q10 and in the open-ended question (Q24) where learners could comment on the advantages and disadvantages they found. Just below half of those surveyed (49.1%) reported minor errors committed by the tool in the whole text, which were later post-edited, while 38.2% informed about more than one error per paragraph and 12.7% communicated the unreliability of the tool and the consequent laborious post-editing process:

... It worked quite well for me, but I had to make a few changes, so I had to spend more time than usual on the task. I believe that some practice is required not only with the pronunciation but also with the tool.

... it's horrible to dictate the punctuation signs because the machine doesn't usually recognise comas or the two dots or even quotes. Besides, if you want to rephrase or redictate something because the machine had done it wrong, you should delete [it] manually to not waste ten minut[e]s just saying the word "delete".

Regarding participants' experience with the tool, *i.e.*, block three, 61.8% of the informants agreed with the literature mentioned in this study, namely MacArthur (2009), Pennington (2020) and Snider (2002), in that they obtained a draft of the final text faster than they would with traditional writing methodologies (Q11), despite the inaccuracies and the time invested in the corrections. However, they (56.4%) encountered some difficulty producing an oral text with the characteristics of a written text (Q12). Opinions were divided in this regard, as 56.4% of learners struggled to compose a written text with the finesse and intricacy unique to print language. The remaining 43.6% took a different stance. From their experience, writing through dictation let words flow smoothly onto the screen. In spite of the challenges the first group might have encountered, participants realised that producing a written text using oral skills led, on some occasions (56.4%), to higher concentration levels (Q13). Furthermore, just over three quarters (78.2%) of the respondents concurred that their spelling errors were reduced. Some others reported the presence of those inaccuracies despite efforts to articulate and enunciate properly. Additionally, in 30.9% of the cases, their confidence levels diminished (Q14) when following the dictated-writing method described in this paper. A couple of informants reported:

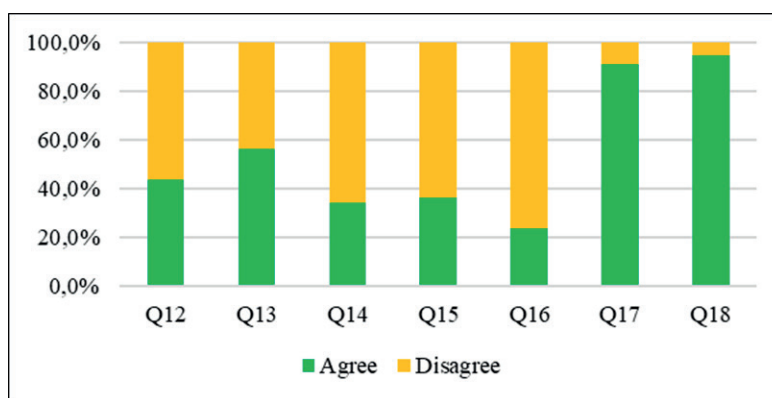
... it wasn't a tool I've felt comfortable using. It made me feel a little bit self-conscious about my pronunciation and spelling, and I was so focused on those aspects I think it affected negatively the overall quality of the [writing]...

... I felt a little pressured to think faster as the machine was listening to me...

Furthermore, a similar percentage (36.4%) of the learners who responded to the questionnaire was discomfited when speaking into the microphone with no purpose of oral communication but composing a written text instead, whereas the remaining 63.6% were not (Q15). In relation to this disquietude in front of this new technique, 23.6% of the respondents reported an impostor feeling, as they perceived that the text was not being composed by them (Q16). Nevertheless, the majority of the participants (76.4%) understood that they were the ones producing the written output with the support of a machine.

Another advantage researchers hypothesised that could be gained from this tool is pronunciation awareness (Gottardi *et al.*, 2022). Considering that the tool types the closest word in sound to the one articulated by the student, researchers believed it could be convenient, for instance, to raise awareness of minimal pairs, such as *heat* and *hit*. The questionnaire was completed to avoid any possible bias before any feedback was given to the participants on this aspect. Q17 and Q18 aimed to gather learners' testimony in this regard. 90.9% and 94.5%, respectively, are in lockstep with the hypothesis from which researchers departed. The vast majority of participants acknowledged that the speech-to-text tool could not replicate their message in written form due to some possible pronunciation errors (Q17). Thus, to facilitate the task, they made an effort to enunciate and articulate sounds more clearly, possibly making a more apparent distinction between long and short vowels (Q18). The results obtained in this set of questions are presented in Figure 4.

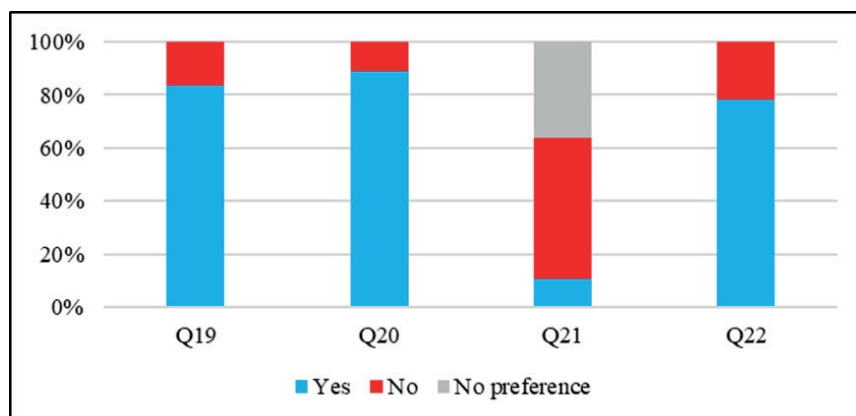
Figure 4
Block 3: summary statistics



As for the fourth set of questions, these are concerned with participants' attitude toward the speech-to-text tool for writing purposes. Regardless of the barriers that learners might have encountered due to the considerable dearth of knowledge on the workings of dictation tools, learners were motivated in the face of novelty. The results obtained in the questions composing block four, which dealt with learners' motivation, are illustrated in Figure 5. Despite some sense of possible frustration triggered amongst respondents, as seen in the comments quoted above, interestingly, the tool aroused enthusiasm for writing in 83.6% of the students (Q19); 89.1% of the individuals admitted to being motivated to write (Q20). Nevertheless, a little over half of the group surveyed (52.7%) expressed their preference for traditional writing over dictation tools (Q21), although 10.9% see the potential in speech-to-text and would prefer it in light of its advantages (*i.e.*, pronunciation awareness, speed or spelling accuracy). The remaining 36.4%, over a third of the respondents, expressed no preference.

Figure 5

Block 4: quantitative data



In view of those results, it was surprising that only 21.8% (12 students) would not endorse this tool for writing, on the grounds that they prefer conventional typing, while 78.2% (43 students) were inclined to employing it again in the future (Q22), mainly because it resulted in a faster method, although not with the same purposes, as one informant reported (Q23):

I think that I would use it again but only for certain things, like taking notes. I wouldn't use it for writings because[,] for me[,] personally, it was harder to find the words I wanted to say and it also took me longer than when I type it myself.

In response to Q24, encouraging comments were elicited that further support the potential of this tool as a motivational asset to bring writing to the EFL classroom, and more specifically in the field of Translation and Interpreting. Learners were appreciative of the assignment and the discovery of the tool. Responses to this question included:

This has been a really interesting activity that I probably wouldn't have tried if it wasn't for this. It has also made me think about the disable[d] people who really need this tool to actually write on their computers and how important it is to keep creating [this] kind of tools for them to be able to do any kind of activity that a non-disable[d] person can do so that they are not conditioned by their situation.

I would've never imagined that I would work with this type of tool and it would be so easy to use. I don't really know why, but while doing the task I felt happy and motivated. I felt it was an activity that filled me and that I enjoyed doing.

Despite the effectiveness of this tool for the purposes of academic writing, many respondents acknowledged the value of its features, useful for note-taking or even for the promotion of an inclusive setting. Moreover, participants were appreciative of a new methodology that intrigued and motivated them to do the task.

4. Conclusions

The aim of the present research was to assess the potential of dictation tools for academic writings in the EFL classroom. To attain this goal, this study set out to answer three research questions: RQ(1): *What benefits can learners and teachers reap from using dictation tools for writing?*, RQ(2): *Is speech-to-text an efficient writing method?* and RQ(3): *How popular was the writing-through-dictation process among learners? Are learners likely to use it in the future?*

Regarding RQ(1), data suggests that there are several advantages to this new form of writing. For instance, participants found it useful to generate a rough version of the text. In other words, dictating the main ideas onto the blank paper delineated the skeleton of the text, which allowed for a preliminary view. This approach encouraged the development of post-editing skills in learners. Additionally, findings provide some insight into the tool's potential to promote pronunciation in the classroom, which could be another line of research in its own right.

Dealing with RQ(2) and RQ(3), evidence from this study suggests that writers are required to be meticulous in the post-editing process, thus converting writing into a strenuous task. Therefore, even though surveyees do not discard the option of using dictation tools in the future (RQ3), the results of this study indicate that typing is still the preferred choice.

Pedagogically speaking, this study has opened an area for research that has not been exploited in the field of translation and interpreting studies or EFL, for which literature is scarce. Even though the current study has shown the value of dictation tools in the English for translators and interpreters classroom to an extent, considerably more work will need to be done to determine how writing via speech recognition tools can be of use to develop the skills the professionals of this area need. Practical tasks and assignments with these devices could also be transferred to other English-language programmes, taking into account that writing and speaking skills are intended to be developed in both EAP and ESP courses.

This study is not without its limitations. One of the main weaknesses of this study was the paucity of both participants in the study and text variety. The study was reduced to a specific text genre, which means that the findings cannot be extrapolated to all types of writing in the academic context. Furthermore, the results are evaluated based on the students' experience, which does not offer a broad and accurate scope on its pedagogical use, thus requiring further investigation. Another limitation to take into consideration is the instrument's reliability. Speech-to-text tools require training, which would imply higher accuracy over time. Therefore, the results in this study could not be replicated with the same group of learners, as their tools would have become more precise.

The use of speech-to-text tools could be a fruitful area for further work. Future research needs to be done regarding the role of speech-to-text software to attain equity and non-discrimination in the classroom to comply with the Sustainable Development Goals included in the UN Agenda 2030. In that regard, the sentence in the title of this paper, namely *"Look, ma, no hands." Writing without typing*, was deemed appropriate to emphasise the possibility of developing writing skills via other less traditional means with a humorous touch to captivate the reader.

Moreover, further studies should be conducted to analyse spelling and word-choice errors originated in learners' mispronunciations. Additionally, further investigation could focus on how advantageous these tools are, not only as regards teaching pronunciation but also in terms of fluency and lexical variety in the English as a Foreign Language classroom, among others. Furthermore, research should be undertaken to consider other textual aspects, namely punctuation, organisation of ideas or need for re-editing, when using text-to-speech tools. Another line of research could focus on the tool's accuracy, the need to develop text-editing skills, and how the tool could be of value for that purpose.

Author contributions

Ana-Isabel Martínez-Hernández has participated in the data collection process, analysis of data, and the writing of the article. She has also reviewed the article prior to submission. Lucía Bellés-Calvera has participated in the analysis of data and writing of the article. She has also reviewed the article prior to submission. The authors approve the version of the article published in the journal.

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Conflict of interest

All authors declare that they have no conflicts of interest.

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Annex

Abbreviations used

CEFR	Common European Framework of Reference
EFL	English as a foreign language
ICT	Information and Communication Technology
Q	Question
RQ	Research question

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Ana-Isabel Martínez-Hernández holds a PhD in Applied Languages, Literature and Translation. She graduated in English Studies in 2013 at University of Alicante. She has also collaborated in the organization of different academic events as a member of the organising committee, and is a member of the research group GENTT (Géneros Textuales para la Traducción) and the Research Interuniversity Institute of Modern Applied Languages (IULMA). She currently teaches English to undergraduate Translation and Interpreting students at Universitat Jaume I. Her research interests focus on applied linguistics, the acquisition of foreign languages, teaching English to students with special needs, as well the implementation of ICTs in the EFL classroom.

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