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ONLINE LANGUAGE LEARNING AND ENGLISH FOR ACADEMIC PURPOSES

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Introduction

The field of online language learning has developed apace in recent years, with significant advances taking place, following educators' widespread engagement with educational technology amid the COVID-19 pandemic. This watershed moment influenced and reshaped many fields of study, including language education and English for Academic Purposes (EAP), although it should be noted that interest in online learning and EAP predated the pandemic. In fact, a steady body of work had already emerged surrounding computer-assisted language learning (CALL), web-enhanced language learning (WELL), mobile-assisted language learning (MALL), and blended learning, *inter alia*, following the proliferation of accessible technologies such as personal computers in the 1990s and mobile technologies in the 2000s.

These developments mark a critical period in online language learning research and constitute an important foundation for the exploration of digital pedagogies for language learning and EAP. Yet, despite such advances, in the bigger picture, online and distance education remained somewhat peripheral in the language education landscape for some time, wherein technology, for the most part, was seen as a resource to be used in classroom contexts. For EAP, for example, the use of interactive whiteboards to present course materials typifies such practices. However, the limited centrality of online learning was to change during the pandemic as the need to move educational activities online forced all those involved in education to reckon and reconcile with digital pedagogies. This second, critical period in online education encapsulates a mass transition to online learning during which pedagogies ranged from research-driven digital pedagogies to crisis pedagogies, with the latter being shaped largely by the overnight move to online platforms.

Since then, much work has sought to disentangle crisis and digital pedagogies, with a view to identifying ways forward for online pedagogies that build on the well-established body of knowledge surrounding online language learning. Nowadays, regardless of disciplinary focus, it is difficult to imagine a programme of study that does not contain some online component. The online education industry continues to grow exponentially, with private educational bodies, schools, and universities all trying to make use of online platforms to facilitate a variety of educational activities. For EAP, online learning is now commonplace, and research in this area has investigated

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changes in course and assessment design, fostered developments in learning technologies, and advanced pedagogies for grammar, vocabulary, and skills development, for example.

In light of the major influence of the COVID-19 pandemic on online learning and digital pedagogies, in the following section, we organise the review chronologically, identifying key developments in digital pedagogies before, during, and following the COVID-19 pandemic. To operationalise this review, in the third section, we present a case study, drawing on previous work we completed on the development of written language and writing competencies in online EAP contexts. We use this case study to illustrate both the affordances and challenges associated with the use of digital pedagogies for online EAP. To close this chapter, we reflect on the future of online EAP, offering a critical perspective on the digital divide and the need for social justice perspectives to inform critical online EAP.

Online approaches to teaching EAP

Digital pedagogies and online learning have gained increased prominence and attention in the field of language education over the last 30 years (Carrier & Nye, 2017), not least in the context of EAP (Bérešová, 2015; Harker & Koutsantoni, 2005; Meri Yilan, 2019). Broadly understood, digital pedagogy for EAP encompasses all aspects of research on language teaching and learning facilitated by technology, and incorporates insights from various research domains, such as DDL (Pérez-Paredes, 2019), the development of educational technologies (Thorne & May, 2017), and the implementation of intelligent or traditional CALL (Curry & Riordan, 2021) to support the acquisition of academic language and academic practices. Online teaching and learning constitute one specific branch of these digital pedagogies wherein learners engage in the language learning process through online platforms and technologies, using synchronous or asynchronous approaches, or a mixture of synchronous and asynchronous approaches.

Initial research in this area framed online pedagogies primarily as teaching approaches that aimed to replicate the interactions typical of physical classrooms in digital environments, emphasising the alignment between technologies and instructional objectives (Selwyn, 2011), or the so-called 'goodness-of-fit'. In this way, online learning was seen not as a potential site of revolution in language education, but a site of reproduction, wherein the affordances of technology were merely sought to substitute an analogue reality. However, as the field of digital pedagogies developed, researchers moved beyond initial concerns of substitution and began to test the potential affordances and shortcomings of online learning, highlighting how approaches to teaching and learning online differed from those applied in traditional classroom settings.

Wichadee (2017), for example, found that learners participating in blended online instruction tend to achieve higher outcomes than their peers in conventional classrooms, a finding reminiscent of earlier work by Harker and Koutsantoni (2005), who noted that web-based learning environments for EAP were found to increase learner retention. Elsewhere, evidence emerged that online contexts facilitated increased engagement among learners (Croxton, 2014). Online education has been further linked to enhanced learner autonomy (Curry & Riordan, 2021) and increased motivation (Gao & Ma, 2020). Additionally, through bite-sized learning with MALL, online learning has been argued to make education more accessible (Godwin-Jones, 2018) and enable personalised and adaptive learning experiences (Kerr, 2016), as well as authentic cultural exchange (Chapelle, 2003).

Online education has made use of emergent technologies, such as virtual reality, to enable learners to immerse themselves in digitally constructed or annotated environments (Driver et al., 2020). Within language education and EAP, Asoodar et al.'s (2014) work on online blogging

revealed the need to modify assessments for online contexts to respond to the parameters of online education. Elsewhere, Bérešová (2015) identified the critical affordances of online education for developing learners' cultural awareness of academic practices. This same value attributed totechnologies for their capacity to enhance cultural immersion is also reported in Dhillon and Murray (2021), who note that the cultural parameters of EAP can be enhanced through online education when programmes are linked to learners' future academic needs.

However, adopting digital pedagogies for EAP presents several challenges. Issues such as digital inequality, as discussed by Hockly and Dudeney (2018), have become more pronounced, as growing disparities in educational access, linked to socioeconomic status, render online education something of a commodity. Additional long-standing concerns surrounding online education include improper technological applications (Kerr, 2015), complexities in clearly differentiating between the role of technological platforms, instructional approaches, and user experience in online education (Claypole, 2016), and ethical implications surrounding data use in educational technologies (Sharkey, 2016). Many of these issues are recapitulated in Hodges et al. (2022), who note that technological challenges, limited teacher and learner digital literacies, and a lack of preparedness can hamper the effectiveness of online EAP programmes.

Such literature on digital pedagogies often contrasts online and face-to-face teaching to assess their effectiveness, emphasising the primacy of pedagogy over technology (Fullan, 2013). This notion is now well established and is premised on the understandable view that one should put the pedagogy first and not be swayed by the allure of what technology can do unless it adds some pedagogical value. However, Tsui and Tavares (2021) provide a valuable alternative perspective, arguing that pedagogy and technology should not be seen as distinct entities in a one-way relationship but rather as mutually shaping factors. Through enabling this reciprocal relationship, they argue that technology can help educators to design flexible, context-specific approaches suited to their learners' particular needs and local contexts. In this way, digital pedagogies for online learning can be viewed as evolving frameworks, offering diverse theoretical foundations alongside insight into both the advantages and challenges of teaching EAP online.

Despite their clear limitations, digital pedagogies can positively contribute to EAP by fostering learner autonomy, creating authentic intercultural virtual environments, overcoming geographical limitations, and enabling meaningful intercultural exchanges. Notably, the non-linear development of this field is reflective of the wider story of continual transformation and flux in language education – a field long-recognised for being buffeted by changing winds and resting upon shifting sands (Marckwardt, 1972). Although it is clear that digital and online teaching approaches were gradually becoming more prevalent as the field progressed (Carrier & Nye, 2017) and that much has changed since the wider proliferation of technologies in the 1990s, there is no doubt that the COVID-19 pandemic dramatically accelerated their prominence in language education.

COVID-19 significantly disrupted global education due to social distancing mandates, economic pressures, and shifts to remote learning that revealed crucial distinctions between crisis-driven emergency remote teaching and deliberate digital pedagogies (Adedoyin & Soykan, 2020; Curry, 2021, 2022; Hodges et al., 2022). The crisis particularly exacerbated equity, mental health, and educational access issues, disproportionately affecting economically disadvantaged learners and reducing international mobility and employment opportunities essential for many learners (Koris et al., 2021; The Edge Foundation, 2020). Within language education specifically, the pandemic accelerated the adoption of digital methods (Bruce and Stakounis, 2021), yet scepticism and perceived negative impacts emerged (Subekti, 2021). This disconnect likely stemmed not from

the inadequacies of technology but rather from educators' insufficient preparation and theoretical grounding during the rapid transition to emergency teaching (Adedoyin & Soykan, 2020).

In the context of EAP, providers were tasked with moving their programmes online, with little to no notice (Bruce & Stakounis, 2021). The main purpose of this emergency remote teaching was to avoid disrupting learning. Understandably, it was not always possible to engage in a systematic design process during this hurried attempt. Managers rationalised this approach, acknowledging that it was an "emergency conversion done at great speed with no skill and no knowledge" (Bruce & Stakounis, 2021, p.18). Reflective of earlier developments in digital pedagogies, this shift to online teaching involved moving towards online delivery, often attempting to replicate traditional face-to-face teaching through synchronous online sessions and providing materials for autonomous learning (Bruce & Stakounis, 2021). Many different design solutions for online EAP were developed at this time, ranging from interim contingency measures to complete course redesign and renewal.

To facilitate the former, teachers had to get to grips with various technological tools such as video conferencing platforms (e.g., Zoom, Microsoft Teams), learning management systems (e.g., Blackboard, Moodle), interactive websites, and mobile apps (e.g., Kohnke & Jarvis, 2021; Kohnke & Zou, 2021). A frequently adopted pedagogical strategy was flipped learning (Bruce & Stakounis, 2021), which involved learners engaging with learning activities asynchronously before a synchronous online class. At this time, online collaborative writing and feedback tools became increasingly important (Kohnke & Jarvis, 2021). For the latter, teachers had to adapt their pedagogical approaches to undertake curricular revisions, as a seamless migration from face-to-face to online was not always possible (Toland & Cripps, 2024). In some cases, the number of assignments was reduced, and traditional tasks were replaced by virtual alternatives – typically substitutions and augmentations of existing tasks (Romrell, 2014).

Amid the sudden shift online, teachers found it difficult to communicate with learners and monitor their learning (Kohnke & Jarvis, 2021; Kohnke & Zou, 2021). A major challenge at this time was the lack of face-to-face interaction, which teachers valued highly and felt could not be replicated online (Kohnke & Jarvis, 2021). This lack of authentic interaction for many posed a threat to the development of interactional skills and spoken English. Less proficient learners were liable to fall behind, and adapting content for specific learners online was challenging (Kohnke & Zou, 2021). Issues with internet connectivity and accessibility also presented significant challenges for both communication and access to materials for international EAP learners (Bruce & Stakounis, 2021). Despite these challenges, the forced transition led to pedagogical innovation and accelerated the adoption of technology. Educators discovered unexpected capabilities in themselves, and the experience of teaching online sometimes exceeded expectations (Bruce & Stakounis, 2021).

The experience of EAP in 2020 was described as a 'game-changer' (Bruce & Stakounis, 2021), suggesting there may be no "going back" entirely to the pre-COVID form of delivery. For many, it seemed that online elements of delivery were likely to remain, and blended programmes would emerge, necessitating hybrid teaching. The majority preference for delivery modes following the pandemic, as noted in Bruce and Stakounis (2021), was for blended learning (71%), with only a small percentage preferring fully online (4%) or fully face-to-face (13%). This suggests that successful online strategies and technologies adopted during the pandemic had already begun to reshape educational practices in EAP.

As we emerged from the COVID-19 pandemic, this prediction was borne out as virtual classrooms and online resources became normalised in EAP teaching. This transition fundamentally changed the methods of teaching EAP and boosted the search for new strategies (Ivashchyshyn

et al., 2024), often through the use of needs analysis (e.g., Target Situation Analysis) to systematically assess learners' needs as a means of informing the creation of EAP courses. This focus on needs analysis is one example of a clear departure from the crisis pedagogies that epitomised the pandemic years.

This move to online learning has led to extensive methodological transformations in EAP (Ivashchyshyn et al., 2024), including alterations to course content, the promotion of new pedagogical approaches, and the incorporation of additional-input resources and interactive activities, like video and audio resources and online tests and assignments. This transition also impacted teachers' identities, as their growing capacity to deliver education online using a range of technological and multimedia resources constituted an important stage of development for many educators (Fallah et al., 2024).

The integration of innovative offline and online methodologies is now increasingly common in EAP teaching, as the creation of online learning environments has become more widespread (Rahman et al., 2024). With its greater proliferation, research on online EAP provision is now more concerned with the development of digital literacies, whereby learners and teachers alike are required to develop competencies in using a range of tools and platforms for supporting both the assessment and teaching of EAP online (Erdel, 2024; Hakim & Rima, 2024).

In the context of assessment in online EAP, much research to date has centred on the assessment of written and oral skills. Two assessment techniques regularly discussed in the literature pertain to synchronous timed-writing exams and home assignments (e.g., Erdel, 2024). Learner perceptions indicate a preference for home assignments due to the absence of strict time limits and the opportunity to utilise online resources for planning, organising, revising, and editing. The use of plagiarism and artificial intelligence detection software in home assignments has also been an important development for online EAP, as they can serve to diminish the physical distance between teachers and learners by creating a sense of accountability and alleviating concerns about authenticity. In line with a focus on assessment, a parallel concern with online feedback delivery remains a mainstay of online EAP research (Moni et al., 2024). With regard to assessing oral skills online, AI-driven tools are having an impact, for example, Zou and Wang (2024) draw on the *EAP Talk* tool as a means of enhancing learners' speaking abilities and communicative competence, while also reducing speaking anxiety.

In terms of teaching, EAP is concerned with learners' integrated skills (cognitive, informational, socio-cultural, professional, and general competence), disciplinary communicative skills, and academic English proficiency (Ivashchyshyn et al., 2024; Rahman et al., 2024), regardless of the mode of delivery (Hakim & Rima, 2024). In online contexts, contemporary research focuses on the skills needed to write assignments (focusing on style, organisation, grammar) and communicate orally (phrasing, intonation, discussing subject-field topics), as well as on vocabulary building, and improving reading comprehension and analytical skills. Echoing the advice from Tsui and Tavares (2021), there is a trend now in EAP research that focuses on moving past simple substitution and augmentation techniques towards modification and redefinition, in the SAMR module (Romrell, 2014). With the advent of AI, this is all the more pronounced as technology is being considered not for how it can replicate existing approaches, but for how it can help us develop new and innovative approaches to language teaching and learning (see Curry et al., 2025 for a summary of AI use in language education).

Generally, online EAP continues to boast many advantages and opportunities for language learners, owing to its potential ubiquity, convenience, and cost-effectiveness (Ivashchyshyn et al., 2024). Its accessibility makes it an attractive option for learners, and recent developments in technology have facilitated the creation of platforms that can effectively host and deliver online

programmes (Erdel, 2024; Ivashchyshyn et al., 2024). With AI, there is much optimism about the potential affordances of Generative AI (GenAI) for developing EAP even further, as GenAI tools are noted for their potential capacity to personalise learning, provide instant feedback, and create bespoke, engaging content for learners (AbuSahyon et al., 2023; Betal, 2023).

Alternatively, the efficiency of online EAP can be undermined for a plethora of reasons, including learners' dislike of online learning, challenges in sustaining concentration and managing distractions, the time-consuming nature of online delivery, and persistent issues resulting from technology, limited digital literacies, and poor digital resources (Erdel, 2024; Fallah et al., 2024). Similar problems with AI are also emerging. For example,questions of ethics and ownership have raised concerns about learner writing and the role of assessment in determining language aptitude (Creely, 2024) – especially in a context in which it may not be possible to determine whether or not learners a) wrote the text being assessed and b) possess the linguistic competencies that the written text reflects. Likewise, issues of language representation emerge, as GenAI tools are beholden to the data on which they are trained, creating potential for the reproduction of biases and the erasure of marginalised perspectives (Choi, 2022; Curry et al., 2025). Thus, questions of effective GenAI use by learners have become wrapped up in discussions of critical AI literacies (Pérez-Paredes et al., 2025a, 2025b) and amid this ongoing AI boom, queries surrounding the impact of such tools on the development of creative and critical thinking skills abound in the literature (Creely, 2024; Pérez-Paredes et al., 2025a, 2025b). Examining specific areas such as assessment and skills development within this new context, and considering fundamental processes, like needs analysis and teacher professional development that underpin effective online EAP, are crucial. Overall, post-pandemic EAP education has already made great strides, grappling with the rapid shift to online environments, exploring the new methodologies and technologies adopted, and unpacking the implications of the GenAI boom. Increased consideration of online forms of academic communication in academic discourse studies (e.g., Curry & Pérez-Paredes, 2025; Mur-Dueñas & Lorés, 2022) can also serve to advance online EAP, as movements towards redefining, as opposed to substituting practices, will require those teaching and learning EAP to better understand emergent, digital academic genres. Asoodar et al. (2014) already noted the value of engaging online learners in tasks that make use of digital genres. Thus, in online EAP, these emerging forms of public-oriented research communication are only likely to become more important. In continuing to analyse the challenges and opportunities that ongoing developments in digital academic communication and online pedagogies present for both teachers and learners of EAP, we can continue to critically and reflexively advance the field.

Using write & improve in online EAP

For this case study, we reflect on Curry and Riordan (2021), which presents a study on the use of the Intelligent CALL (ICALL) system, Write & Improve. Write & Improve supports a range of writing tasks, including, for example, essays, reviews, letters, emails, proposals, and reports. The system uses machine learning algorithms and data from the 30-million-word, error-annotated Cambridge Learner Corpus (Cambridge University Press & Cambridge Assessment, 2020) to identify grammatical, syntactic, and lexical errors in learners' writing with over 90% certainty. It also provides varied types of feedback to learners, for example, a CEFR level is assigned to the learner's work, giving an overall assessment of their writing proficiency. The system also highlights areas of the text that might need improvement, encouraging learners to notice (Schmidt, 1990) and self-correct errors. It also tracks learner progress over time, allowing them to gauge development. Moreover, teachers can create virtual classrooms and assign specific workbooks to

their learners, allowing for structured learning and progress tracking, and they can add their own feedback to learners' work, enabling a blended approach to feedback that combines automated and human input (see also Stevenson, 2016).

Project and outcomes

The case study we describe here concerns one way in which digital tools can be used for developing writing practices online. This was a project conducted in two Turkish universities with 140 learners and eight teachers over a six-week period (Curry & Riordan, 2021). The study investigated the impact of the Write & Improve system on learners' motivation, writing behaviours, and language proficiency, as well as its influence on teachers' practices. We used learner and teacher surveys before and after the study (134 learner pre-study and 97 learner post-study surveys, and 4 teacher pre- and post-study surveys) to examine behaviour and perceptions, and we used Write & Improve task data to study learners' writing development.

Learners were given two writing tasks per week, covering various genres, like essays, reviews, letters, and reports (140 learners used the system). Data was collected on the number of attempts or drafts submitted for each task, including the timing of attempts (immediate vs. delayed) to gauge learner engagement, motivation, and feedback utilisation. As the system automatically assigned a CEFR level to each learner's writing based on the Cambridge Learner Corpus data, we tracked score changes between the first and last tasks to assess potential writing proficiency development over the study period, and we analysed the frequency and types of errors identified to understand the system's focus and proposed areas for improvement. Lastly, learner and teacher focus groups were held after the study was completed (30 learners and eight teachers participated in the focus groups) as a means of gaining more in-depth insights into their impressions of the tool.

To this end, from a learner perspective, we noted increased motivation and engagement, as has been found elsewhere (Gao & Ma, 2020). Learners demonstrated high engagement with Write & Improve, using it an average of nine times per week, and some learners used the system up to 151 times for a single writing task. Surveys and focus groups revealed that learners felt more excited about writing in English and found the system's feedback useful and enjoyable. The immediate feedback and progress tracking features of Write & Improve, which are typical of ICALL systems, contributed to this increased motivation. This automated feedback can be particularly beneficial for learners who may feel apprehensive about and demotivated by receiving direct correction from teachers (Ryan & Henderson, 2018). Additionally, the system's reliance on a large corpus of learner errors ensures that the feedback is targeted and relevant to the specific challenges faced by learners, thus enhancing motivation. Moreover, we found evidence of improved writing processes in that learners exhibited greater engagement with the writing process, showing an increased tendency to plan, draft, edit, and redraft their work. This improvement in writing processes aligns with the goals of ICALL systems that focus on writing, which are often designed to promote more effective writing strategies (Mehri Ghahfarokhi & Tavakoli, 2020). We also noted enhanced language proficiency, as a significant majority (78%) of learners improved their writing proficiency, as measured by Write & Improve's CEFR scoring system. The system was particularly effective at identifying and providing feedback on grammatical, syntactic, and lexical errors.

With regard to the teachers, they reported spending less time on sentence-level feedback due to Write & Improve's ability to manage basic error correction. This enabled them to provide more in-depth feedback on higher-level aspects of writing, such as discourse, coherence, and argumentation, which suggests that ICALL systems can support teachers in implementing more effective feedback practices. This approach reflects the combined use of automated and teacher feedback

that Stevenson (2016) addresses, while also tackling the concerns raised by Lu (2019) as the teachers free themselves from sentence-level feedback to focus on more complex issues. Indeed, the use of Write & Improve in this way counters the claim within the literature that ICALL systems do not allow teachers to focus on more complex issues in feedback (Link, Mehrzad & Rahimi, 2020). Teachers thus perceived Write & Improve as a valuable time-saving tool, enabling them to dedicate more time to other aspects of their teaching.

However, challenges were also evident. For example, feedback could often be ambiguous as agreed upon by both learners and teachers (see also Ranalli, 2018). This ambiguity occasionally made it challenging to understand the nature of the error or suggestion. Furthermore, teachers expressed reservations about the system's CEFR scoring, feeling that it did not always accurately reflect learners' actual proficiency. This points to a potential need for clearer communication regarding the capabilities and limitations of the system, and the teachers' expectations thereof.

Our findings provide valuable insights into the potential and challenges of using technology for language learning, in particular, how online technology can play a significant role in motivating and engaging learners by providing immediate feedback, personalised learning experiences, and progress tracking through flipped learning. We found that the ICALL system can support the development of effective writing processes, by encouraging learners to plan, draft, edit, and redraft their work, and that the automated feedback it provides can assist in improving language accuracy. We also noted that ICALL systems, such as Write & Improve, can free up teacher time, by allowing them to focus on other areas of language development But that clear expectations, adequate training, and ongoing system development are essential for maximising the effectiveness of such language learning technologies. The Write & Improve case study offers a promising example of how technology can be leveraged to support writing development in online environments.

Considerations for EAP

Several features of Write & Improve can be beneficial for academic writing, albeit with limitations. As noted, crucial aspects of academic writing can be practised with ICALL systems, namely a focus on spelling, punctuation, grammar, and vocabulary choice. The system is particularly effective at identifying errors typical of learners of English, which can be beneficial in EAP contexts wherein accuracy may play a more important role than other areas of language education and practice. By highlighting errors and suggesting improvements, the system guides learners to notice their mistakes and self-correct, promoting metacognitive awareness (Mehri Ghahfarokhi & Tavakoli, 2020) and language learning. Moreover, the use of this tool affords multiple revisions and refinements, fostering a more iterative and reflective writing process. Motivation and engagement, emerging as high in this study and others (Gao & Ma, 2020), are particularly important in academic writing, which can be a demanding area of study as it requires sustained effort. Also, we found that Write & Improve aims to foster learner autonomy by providing immediate feedback and encouraging learners to take ownership of their writing development (Ghufron & Nurdianingsih, 2019). As mentioned, the system's ability to manage basic error correction allows teachers to focus on providing more in-depth feedback on aspects such as discourse, coherence, and argumentation, which are critical for academic writing.

However, while Write & Improve is effective at addressing sentence-level errors, it does not provide feedback on discourse-level issues, such as argumentation, structure, coherence, cohesion, or academic style, and the ambiguity of some feedback as perceived by both teachers and learners, can hinder the learning process, especially in the context of academic writing, where clarity and

precision are essential. Although Write & Improve offers a valuable foundation for supporting language development and the writing process, further development and customisation are needed to fully realise its potential for English for Academic Purposes. One example would be to allow teachers to customise the system with discipline-specific grading criteria, academic word lists, and writing conventions to render Write & Improve more relevant and effective for different academic subjects. Revisiting the use of Write & Improve alongside emergent GenAI tools would also be of interest, as it may be possible to combine such resources to support learners better.

Considerations for online teaching and learning

Write & Improve demonstrates how AI-powered tools can play a significant role in providing personalised feedback and supporting language development (Choi, 2016). By drawing on a vast corpus of learner data, the system identifies common errors and provides targeted feedback that can help learners improve their accuracy and develop a better understanding of lexicogrammatical patterns. This suggests that such digital tools can offer scalable solutions for providing individualised feedback, which can be challenging for teachers with large class sizes – a value appended to many contemporary AI tools (e.g., Betal, 2023), though potentially erroneously as noted in Pérez-Paredes et al. (2025a).

Additionally, as was noted, a key takeaway from the Write & Improve study is its positive impact on learner motivation and engagement. The system's instant feedback, progress tracking features, and gamified elements contributed to increased effort, more positive attitudes towards writing, and a willingness to engage in multiple drafts and revisions – practices that are important for effective academic writing (Munoz-Luna, 2015). This highlights the importance of designing digital learning experiences that are engaging, interactive, and that provide a sense of achievement and progress. In the context of EAP, the project underscores the role of digital tools in facilitating a process-oriented approach to writing instruction. The system's feedback helps learners identify areas for improvement and guides them in refining their writing, ultimately leading to better quality texts. This reinforces the idea that digital tools can be valuable for scaffolding the writing process and for helping learners develop metacognitive strategies for self-regulation and improvement (Mehri Ghahfarokhi & Tavakoli, 2020).

The use of Write & Improve also resulted in a significant shift in the teacher's role, allowing them to move away from basic error correction and focus on higher-level aspects of writing. By managing the more mechanical aspects of feedback, the system freed up teachers to provide more personalised and meaningful guidance on the content and organisation of learners' writing. This suggests that digital tools can be valuable for facilitating a more blended approach to teaching, where technology and human interaction work together to create a richer and more effective learning experience (see also Stevenson, 2016).

While the Write & Improve project highlights the potential of online EAP, it also underscores the importance of careful integration and teacher training. Successful implementation of digital tools requires a clear understanding of their capabilities and limitations. This can only truly be acquired through ongoing professional development for teachers that empowers them to effectively integrate ICALL toolsinto their pedagogical practices. The Write & Improve study thus reinforces the importance of grounding digital pedagogies in sound pedagogical principles while benefiting from technological and AI-driven advances. The system's success in motivating learners and supporting their writing development is rooted in features that align with established theories of language acquisition and writing instruction, such as the importance of feedback, engagement, and a process-oriented approach. This suggests that digital tools are most effective when they are

designed with a clear understanding of how learners learn and how teachers can best facilitate that process.

The insights from this project also have broader implications for digital pedagogy across various disciplines; digital tools offer opportunities to personalise learning experiences at scale, providing individualised feedback and support to learners with diverse needs and learning styles. By automating routine tasks and providing foundational knowledge, digital tools can free up teachers to focus on important thinking skills, such as critical thinking, problem-solving, and creativity. As digital tools should be viewed as complements to, not replacements for, human interaction in education, effective digital pedagogy involves finding a balance between technology-mediated learning and teacher-led instruction to create a holistic and engaging learning environment. It is therefore crucial to engage in ongoing development, evaluation, and research to ensure that digital tools effectively meet the needs of learners and teachers and are being used in ways that align with best practices in education.

The future of online EAP

In this chapter, we have demonstrated how the field of research on online EAP has developed in recent years with a view to identifying the current state-of-the-art and future directions in EAP research. Yet, we must remind ourselves that EAP is truly a global phenomenon – one that is unfolding all over the world, online and face-to-face. Thus, an overarching review of research may leave us with the sense that the field is more homogenous than it in fact is. A more nuanced conclusion to this chapter should instead point to the plurality of futures before us and the importance of taking a critical view of technological progress.

Throughout this chapter, we have entertained a form of double-think, whereby, for example, research evidences the capacity for online education to improve educational access and also to limit such access. While seemingly contradictory, it is entirely plausible that both may be true. The digital divide does not happen solely at a national level. Rather, it can occur within and across countries where access to technology and online education is often governed by learners' socio-economic backgrounds. This means that, as online learning becomes increasingly more central to EAP provision, there is potential for it to disadvantage or exclude more vulnerable members of society. For example, producing EAP resources that require specific technologies (recent models, up-to-date operating systems, *inter alia*) may mean that high-quality resources will become more exclusive and commoditised.

This, ultimately, is a social justice issue, as those teaching and learning in low-resource contexts may struggle to access relevant resources that are housed behind paywalls and in subscription models. Across the world, the likes of the second-hand book market, for instance, play a key role in making relevant resources accessible to learners. Yet, in a future in which online education is more central to EAP provision, such resources may become less relevant, useful, prevalent, and accessible. In a world of massive conflict, power shortages, and more limited resources, it will be important to consider how we can best support all learners and anticipate the plurality of futures before us.

While AI and GenAI may offer some solutions for generating online and digital resources and adaptive learning pathways for EAP programmes, they also pose social justice issues of their own – issues pertaining to representation and the language of large language models, as well as issues of resource. For example, the environmental impact of GenAI tools can be staggering, and the server farms that power these tools are often built in parts of the world that are already disadvantaged. Critical engagement with AI and GenAI is crucial, and already there is evidence

of important gaps in learners' knowledge and understanding of GenAI tools (Pérez-Paredes et al., 2025a, 2025b). Though it remains to be seen, the advent of accessible AI and GenAI may constitute the third critical period in digital and online language learning. Thus, looking forward, we must consider how we can best balance the use of technology in the learning process to ensure a critical approach to online EAP provision.

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