How to Cite:
Aljafen, B. S. (2021). EdTech and the Saudi EFL learners: Bane or boon?. *Linguistics and Culture Review*, *5*(S2), 1630-1642. https://doi.org/10.21744/lingcure.v5nS2.2251

EdTech and the Saudi EFL learners: Bane or boon?

Bandar Saleh Aljafen
Department of English and Translation, College of Arabic Language and Social Studies in Buraydah, Qassim University, Saudi Arabia

***Abstract*---**Educational technology in the English as a Foreign Language (EFL) classroom has great potential to usher in innovativeness and authenticity in the language instruction and learning processes apart from facilitating collaboration, cooperation, and engagement. Consequently instruction can take newer pathways that ensure these qualities along with enhancing learners' language skills. Data on the application of edtech tools were gathered from 60 undergraduate EFL learners and four teachers at Qassim University, Saudi Arabia. The free version of Grammarly was found to be the one most accessed by the participants for grammar and language enrichment in academic writing assignments, followed by Writer, Scribens, and Ginger, in that order. Teachers, on the other hand, were apprehensive of learners' dependence on apps and perceived these as hurdles in their learning as they got corrected and improved versions of their writing but without detailed explanations which encouraged a tendency in the learners to rely on these free apps. Moreover, writing grades did not show any significant improvement in the post and during intervention writing output after the teachers encouraged use of an app of their choice for academic writing for one full semester which shows that online assistance tools serve the purpose superficially to tackle poor English writing and not a sustainable gradual solution for improving the language ability. However, learners reported feeling motivated and significantly less stressed to take up writing assignments when institutional support for using edtech apps was provided, though they informally depended on these apps for writing assistance earlier too.

***Keywords*---**EdTech, Grammarly, perception, Saudi EFL learners.

Introduction

English as a Foreign Language is a heavily government sponsored academic field next only to Science and Technology (Tryzna & Al Sharoufi, 2017). It is one of the

***Corresponding author**: Aljafen, B. S.; Email: jfn@qu.edu.sa*
Manuscript submitted: 27 May 2021, Manuscript revised: 09 July 2021, Accepted for publication: 18 August 2021

stated aims of the education policy to “Ensure alignment of educational outputs with labour market needs” under the Human Capability Development Program (Saudi Vision 2030, 2021) which “aims to prepare Saudi citizens for the job market and to be able to compete globally. It will do this through developing basic and future skills, developing knowledge and values that enhance the 21st century and global citizenship skills.” It is under this vision that educational institutions are directed to develop make every Saudi citizen capable of interacting meaningfully with his world counterparts. The Vision document also acknowledges and announces the transformational changes that ensured continued education as part of the human capability development program during and since the Covid-19 pandemic (Dwivedi et al., 2020). In other words, the nation took to technology as an empowering tool in educational and other sectors like the proverbial fish takes to water. The sector covered many milestones and set new benchmarks for guidance with educational technology taking the centre stage especially in higher education (Alghamdi et al., 2021; Hazaea et al., 2021). As per Alhawsawi (2014), EFL learners and teachers are encouraged by the government to improve the quality of language by extensively using of educational technology to optimally develop language skills of learners. At the same time, educational technology in EFL cannot replace the teacher because of its three unique features: Input, process, and output. Input is the teacher’s domain and hence, edtech cannot do away with the teacher completely (Tarling & Ng'ambi, 2016). Yet, it can be a massive tool in developing the cognitive domain while the teacher tackles the affective domain which is a factor of student-teacher interaction. The general objectives of edtech in EFL at the macro level (Aamri & Anquad, 2020), are i. to identify the educational needs of the learners; ii. to achieve the objectives of foreign language education; iii. to earmark suitable language learning strategies in the technological framework; iv. to identify human and non-human resources; v. to locate the hurdles in language learners’ development. Towards the optimization of foreign language learning endeavours, both software and hardware mechanisms are involved in edtech. To be precise, the components of edtech are fourfold: Methods (such as micro-teaching, Learning Mechanism Systems etc.), media (such as audio, visual, etc.), materials (such as, programmed books, medial tools, etc.), and manpower (to operate, choose, and control edtech) (Wan et al., 2020).

Though the scope of edtech can be vast in EFL, especially given the changed learning paradigm, the national education policy of KSA as reflected in Vision 2030 broadly recommends that edtech be employed in the dissemination of purposeful information, pre and in-service training of teachers, improving the quality of learning with special emphasis on the changed and emerging status of the country in the developing geopolitical roadmap, and inculcating Saudi values and culture in both formal and informal sectors of English language education. Thus, it envisions all-round development of the EFL learner base in the country (Alhuthaif, 2019). In contemporary knowledge society driven by massive technological innovations, edtech operates like a sub-system of education replete with systematic and scientific knowhow that can spur the educational objectives in the arena of EFL like never before. It lies at the other extreme of passive instruction, what we call as the conventional or traditional education (Sampson, 2016). As opposed to the former wherein all educational decisions lay in the hands of the providers including decisions on content, time, sequence, and

schedule of curricular movement, the edtech praxis has diminished or obliterated the boundaries between entertainment, information, knowledge, and the time-space limitation of the earlier model (Meabon, 2013). It offers a highly interactive interactional model which facilitates language specific or skill specific directional teaching, a system in which the learner interacts with the device, allowing the instructional mechanism to vary the pace of learning, selection of alternate sequences of information presentation, authentic testing mechanisms, all tailored to learner needs (Woolf, 2010). Four factors that immensely boosted the use of edtech in the past few years are the rapidly declining costs of tech devices, the escalating labor-intensive costs of traditional education, the development of alternative delivery mechanisms that link the computer to other, supportive technologies, such as virtual and mobile classrooms in a highly interactional learning environment, and an improved understanding of how to create instructional packages that optimally integrate educational technology.

In the aftermath of the Covid-19 pandemic, application of edtech in the language classroom has enabled teachers for the first time to put knowledge and practice of language within reach of the learners, at the time and place where they need these (Williamson et al., 2020). Whereas teachers in the traditional model performed as a "sage on the stage", the new edtech paradigm helps them create a "guide on the side" model (Lee & Tan, 2018). These expressions, though cliched, succinctly describe the difference between teacher-centric and learner-centric foreign language classrooms (Sohmen, 2016). Educational technology even in its very nascent form such as classes available on the internet has enabled learners to select their own learning style, order their learning as they like, and pursue the learning outcomes that are most significant to them. This is immensely significant: Cognitive, affective, and psychomotor learning objectives in EFL can all be achieved with edtech and teaching that may be graduated from memory level to reflective level, helping EFL learners 'think in the target language'. Lastly, computer technology removes all barriers and facilitates opportunities for communicative language learning and practice, and with the vast array of tech-tools and devices to suit every taste, pocket, and need, it has brought the EFL learner closer to the learning objectives. This study aimed to evaluate the efficacy of edtech apps freely available online in enhancing EFL learners' academic writing ability, and the perceptions of teachers and learners towards their institutionalized use for this purpose. The six parameters that the instruments were targeted to measure were: i. Contribution of edtech in enhancing the efficiency of the learning process; ii. Enhancement of learner engagement; iii. Facilitation of individualized practice opportunities; iv. Nudging learners towards greater autonomy; v. Modification of learning materials; vi. Undue dependence on edtech apps.

Research questions

This study aims to answer the following research questions:

1. Which edtech app is the most frequently used by EFL learners in their academic writing?
2. How effective is educational technology in improving EFL learners' writing ability in English?

3. What are the teachers and learners' perceptions about using edtech apps for academic writing?

Literature review

Though studies embedded in edtech have only mushroomed in and after the pandemic, the early years of the last decade set the tone for educational technology integration into education. Akyuz and Yavuz (2015) summed up a review of literature by aptly concluding that in the times to come, educational technology will take the shape of an "adaptable aid" rather than a "complicated tool" which will change the face of the classrooms completely. The study recommended edtech integration into the conventional pedagogy and classroom practices to make the learning experience more effective.

Computers and the tools and apps that can run on them have long been hypothesized as excellent motivators for young learners of English compared to other approaches. Vasileiadou and Makrina (2017) shed light on the role of new technologies in the classrooms of learners graduating to the middle school in Greece, specifically by using computer games. Findings suggested that learner preferences can be central to motivating, engaging, and involving learners in the courses and hence, teachers need to be active in incorporating these elements into their pedagogies. This factor is most active at the start of the academic year, and in this study, learners found the practice opportunities that computer games offered enjoyment in learning.

In a study with Indonesian EFL students, Arigusman et al. (2018) found that students mostly use five kinds of technology tools: Television, social networking sites, MP3 player, mobile devices, and internet browser. Respondents in this study unanimously agreed that English learning became more effective with tech integration but lack of knowledge of tools that can be used in education was a major setback in using technology for better outcomes.

Gyamfi et al. (2019) importantly pointed out that merely learners' attitude and conducive learning environment cannot ensure alone do not influence self-study practices in edtech situations, especially as far as self-study is concerned. Further, the objectives or learning targets set by instructors are of equal significance.

With a wide array of tech tools available in the contemporary times, teachers sometimes opt for those that best suit institutional or teaching needs. However, in a study with 113 EFL teachers in Saudi Arabia, Al-Johali (2019) found that teachers were open to the use of mobile applications in vocabulary instruction, and also because of their capabilities and high learner acceptance. Another significant finding was that teachers did not see the use of mobile applications in the classrooms as any kind of challenge to their competence. An indirect finding was that vocabulary learning apps cater to all categories of learners and are a great source for fostering collaborative learning.

As part of developmental research, Putra et al. (2019) undertook a series of steps to develop PowerPoint as an effective product in language learning with young

learners of EFL. The study used a theme with other sub-themes using ICT with elementary school learners (who are conventionally taught with concrete media) with the aim to improve the quality of teaching and learning. Results indicated that learners felt thoroughly engaged with high degree of learning satisfaction and happiness evident in their participation when ICT was used to deliver language content.

A relatively simple tech tool namely video chat was used effectively in a student exchange between English and Spanish as a foreign language learners from California and Ecuador respectively by Sevy-Billion and Chroman (2019). Though fraught with many human and technological challenges, this international student exchange program proved highly successful in enhancing participants' confidence in speaking and motivation to improve which led to better fluency and communication skills. Pre and post-tests established that the opportunity to use authentic language with native speakers adds to the interest that tech tolls create in foreign language learners and helped them discover their own language use capabilities.

In a study with teachers and learners in the EFL setting of public and private schools in Ecuador, Medina (2021) investigated how far it was plausible for complete integration of ICTs in education. Access to ICTs was found to be a key deciding factor with private high schools being better equipped with complete access of teachers and students to technology and devices while public schools lagged far behind with little or no access at all. Therefore, in the specific setting, it was concluded, only private schools could fully integrate educational technology into the curriculum and practice.

Teng and Wang (2021) explored the application, advantages, and disadvantages of Learning Management Systems (LMS) and Social Networking Systems (SNS) as educational tools in three dimensions of learner engagement in higher education EFL courses in China. Emotional engagement was found to have the strongest positive effect on educational technology engagement though there were gendered differences in favour of males in cognitive engagement.

In a unique study, Ikram et al. (2021) examined the integration of pedagogical videos as adaptive educational hypermedia adjusted to learner profiles. The biggest benefit of adaptive hypermedia lies in their flexibility to modify to suit learner needs which are often varied and diverse. The authors quote Brusilovsky's (1996) definition of Hypermedia System as "Any hypertext or hypermedia system that reflects certain aspects of the user in the user's model, and uses that model to adapt different visible aspects of the system". The study concludes with pointing out the new role of AI technologies as e-learning tools and proposes the development of adaptive hypermedia learning systems with learning styles in focus.

Methods

Research design

A quantitative research was conducted in this investigation. The study explored the perceptions of 60 EFL students as well as 4 teachers at Qassim University for the Academic year (1441 AH).

Instruments

These parameters were identified as those central to decision making in edtech integration into EFL classrooms in the available literature. Based upon these factors two questionnaires were prepared to gather data on the perceptions of teachers and learners: The assumption was that this would enable the gauge the effectiveness of edtech in fulfilling each of these aims. The questionnaires comprised eighteen items with three redundant items and the remaining twelve loading onto the six parameters/ factors under study. Of the items that loaded onto the same factor, one was negatively worded to decrease potential response set bias and ensure that all responses were true and relevant. Both the questionnaires were validated by three professors with established track record in materials preparation for MOOCs in EFL in Saudi Arabia, Indonesia, and Portugal.

Modifications and adjustments were made as recommended and the questionnaire for learners was also translated into Arabic to ensure zero ambiguity in learners' comprehension of items. Participants were free to add their views freely (in less than 100 words) at the end of the questionnaires. Finally, Cronbach's Alpha was computed to check item consistency and appropriate loading of items onto the intended factors (5 in this study). Consequent to these results, two of the items in the learners' questionnaire and one item in the teachers' questionnaire were found to be unacceptable as the values came to 0.93.

Participants

There were two sets of participants in this study: Teachers (n= 4) and learners (n= 60) of EFL at Qassim University. The researcher opted for a convenience sample as he had access to this learner group which comprised his two tutorial classes. This made it convenient for him to administer the questionnaire and apply the intervention: Formal use of freely available edtech apps for academic writing assistance through a period of six weeks, with three classes of one hour each per week, totaling to 18 hours.

Procedures

During the intervention period, the researcher encouraged the learner sample to use an online app of their choice for the following modifications to their scripts:

- Improvements in presentation style
- Changes in sentence structure
- Weeding out wordiness

- Spell check
- Coherence and cohesion
- Gender neutral language
- Word choice

Over the total intervention period, one academic writing assignment was to be submitted by each participant at the end of the week. The previous two classes in the week were devoted to individual consultations on the topic chosen for the week, and in-class research on the topic. The participants were also free to approach the researcher for help and guidance if need be. They were warned not to plagiarise materials as it is part of the University requirements to attach a Similarity Index Report with each writing assignment. Thus, it was ensured that the output was original and learners exerted themselves to complete the task. Moreover, to gather data on the edtech apps most frequently used for academic writing, the participants were asked to generate the SIR on the app used. All academic writing assignments in EFL at Qassim University are allotted marks that go towards the semester grade aggregation. This enabled the researcher to generate data on changes in academic writing performance, if any. The questionnaires were administered physically at the end of the intervention period to both teachers and learners. The four teacher participants were also the homeroom teachers for this group.

Data analysis

Descriptive analysis was used to display the findings regarding students as well as teachers' perceptions on edtech in the Saudi context. Percentage was the main statistical measure applied in this study. The responses were elicited on a 5 point Likert Scale, corresponding to the following numeric values for positively worded items: Strongly agree= 5/Strongly disagree= 1. All negatively worded items loading onto the factors were reverse numbered. Neutral responses in all cases were dropped while responses that indicated positive perceptions (agree, strongly agree) were clustered as 'Positive', and all responses that indicated negative perceptions (disagree, strongly disagree) were clustered under 'Negative' responses. The aim was to gain perceptions of the two categories of participants such that they could be compared for the same factor.

Results

RQ1: Which edtech app is the most frequently used by EFL learners in their academic writing?

Learner feedback corroborated with SIR generated from edtech apps used during the intervention in this study revealed the use of the following apps as summarized in Table 1 below.

Table 1. Edtech apps used in English academic writing during intervention

App	Ginger	Scribens	Grammarly	Jetpack	Zoho writer	Writer
Frequency of use	9%	16%	83%	2%	8%	17%

Table 1 shows that Grammarly was the most popular edtech app for academic writing amongst EFL learners at QU and was used 83% of the times in the study, followed by Writer (17%), Scribens (16%), Ginger (9%), Zoho writer (8%), and least of all Jetpack (2%). Grammarly, thus, is the most frequently used of the available English language apps for free.

RQ2: How effective is educational technology in improving EFL learners' writing ability in English?

Table 2 below summarizes the mean scores of the group on a scale of 1-10 just prior to the intervention and for each week during the intervention period.

Table 2. Mean scores of the group in academic writing

Pre intervention	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
5.3	4.9	5.5	5.1	5.6	5.1	5.1

As seen from the mean scores, it is evident that there is no remarkable change in the mean scores during the intervention as compared to the pre-intervention scores. In fact, no discernible pattern or trend appears which can mean one of the two things: 1. The participants did not consult any edtech app during or before the intervention, or 2. The participants consulted one or more edtech apps before and during the intervention. Since, the intervention period writing submissions required the use of edtech apps counter-verified by the SIR generated from the app, it can be assumed that the participants consulted similar or same app(s) in the pre-intervention period also.

RQ3: What are the teachers and learners' perceptions about using edtech apps for academic writing?

Table 3 presents the comparative perceptions of teachers and learners about freely/ institutionally using edtech apps in academic writing in English.

Table 3. Comparative perceptions of participants on edtech

	Teachers' Positive Perceptions	Learners' positive perceptions	Teachers' Negative Perceptions	Learners' Negative perceptions
Contribution of edtech in enhancing the efficiency of the learning process	55	82	19	9

Enhancement of learner engagement	69	86	17	5
Facilitation of individualized practice opportunities	46	77	39	15
Nudging learners towards greater autonomy	63	58	13	16
Modification of learning materials	61	15	19	17
Undue dependence on edtech for language learning	88	72	4	13

Discussion

Technology is an indivisible part of the learning environment today with the recognition of its many, hitherto, unexplored contributions to the learning process. At the same time, the generation that comprises the teaching community naturally has certain reservations to the unbridled use of technology for education as they adopted its use later in their lives. Findings show that the majority of students use Grammarly in correcting their writing. This finding is in line with Miranty and Widiati (2021) in which Indonesian students reported the benefits they got from Grammarly in detecting the errors in their writing. Similarly, Al-Ahdal (2020) reported that some software help learners to find out their errors.

Findings also indicated that there was no improvement in students' writing due to the use of edtech. This needs more exploration into the reasons behind such lack of improvement. This contradicts many previous research (Al-Ahdal & Alharbi, 2021; Sevy-Billion & Chroman, 2019). Sevy-Billion and Chroman (2019) reported the positive enhancement that students experienced due to the use of technology in their learning.

Findings established the positive perceptions of the EFL learners in using these apps thought they admit the danger of over dependence on these, the favorite app being Grammarly. Teachers, on the other hand are not totally opposed to their use either but with the caveat that it should not interfere with their learning or encourage dependence on the apps. This finding matches with Al-Johali (2019) who found that teachers were open to the use of mobile applications in vocabulary instruction. Likewise, Gyamfi et al. (2019) pointed out that merely learners' attitude and conducive learning environment cannot ensure adoption of self-study practices in edtech situations. On all the six parameters, teachers reported negative perceptions to 'Facilitation of individualized practice opportunities', the reasons for which could not be gathered in this study. Learners, on the other hand, reported positive perceptions to all but one parameter, 'Modification of learning materials', which was perhaps beyond their calling materials development is not their domain.

Conclusion

This study used three instruments to test the null hypothesis that edtech apps had no role in the learning models currently in practice in an undergraduate EFL learners' class. The perspectives of teachers and learners were examined using a set of survey items that contained the same components but presented differently to fit their individual perspective. However, excessive use of edtech from a teacher-centred perspective is still an issue, demanding reflection on the pedagogical potential and purpose of technology-assisted language learning. Within the framework of Educational Design Research, this study reports findings from the implementation of an edtech enabled academic writing program involving EFL students from an undergraduate course at Qassim University, KSA. It aimed at finding evidence of edtech apps' contributions for the promotion of academic writing of learners, and their teachers' perceptions of their free access and use for this purpose. Data were collected by means of surveys and analysed with the support of descriptive statistics and content analysis. Findings suggested edtech tools' effective role in promoting the criteria under analysis in the learners' perceptions, despite the reservations of teachers.

Results further established that Grammarly is the most widely accessed tool that allows spell-check, sentence coherence etc. However, pr and during intervention writing grades showed that the online assistance tools served the purpose superficially to tackle poor English writing and not a sustainable gradual solution for improving the language ability. Students' conception of and approaches to writing are affected by their previous writing experiences of positive perception. Being deeply comfortable with tech use in their daily lives, learners exhibited positive perceptions to the use of these in English language writing. Teachers, however, had some reservations especially so far as heavy dependence on edtech apps is concerned. Surprisingly, the learners in this study also recognize this trait in their performance. To conclude the EFL learners must not completely rely on the online tools instead use it to teach oneself.

Recommendations

The full potential of educational technology cannot be realized without addressing some significant challenges. The quality of instruction and relevance of technology integration are paramount. Many of the integration methods are superficial as data in this study has also established. If learner engagement is targeted to be ensured with edtech in the language classroom, the curriculum has to be streamlined with learning objectives aligned with course modules and pedagogy. Credibility and acceptance of edtech by teachers can be ensured with governmental and institutional support for the same as an alternative to traditional campus-based education, particularly for working adults, and also for rural students who may not have access to traditional college or university. Educational technology has vast potential to make a significant difference in workforce development and viability in a changed geopolitical equation. Accordingly, the following are recommended:

For administrators and institutions:

1. Ensure that teachers are well advised on their changed and not necessarily redundant role with edtech integrated curricula.

2. Train in-service teachers in both theory and practice of educational technology in the language classroom.
3. Modify financial aid eligibility rules to support qualified e-teachers.
4. Recommend that national fund allocation supports e-learning.
5. Support the development and acceptance of alternative measures in learning alongwith quality assurance rubrics.
6. Modify and formulate teaching theories based upon outcomes of edtech in language learning research.

For teachers:

1. Learning is an ongoing process for teachers and this sentiment should be developed during the pre-service stage.
2. Reaching the learning objectives for modern learners cannot be in a classroom divorced from technology, and with this knowledge, teachers need to open up to keeping pace with the latest in educational technology.
3. Action research at fixed intervals should be undertaken by teachers to correct their course using learners' feedback and this should be seen as an opportunity for professional development.
4. Teachers can utilize edtech to address unusual education needs such as accelerated or slackened courses for the gifted or differently-abled English language learners so that no category of students may be left behind.
5. Edtech in EFL can be especially used by teachers to create job-oriented and training-in-the-workplace courses which will ready the Saudi nationals to take up their place as global citizens.

Limitations

Gender can be a deciding factor in studies pertaining to language learning, but this was not considered in this study though for extraneous reasons. Moreover, a larger sample base, especially of teachers can give a deeper understanding of the place of edtech in EFL and it is hoped that future studies will be sensitive to these limitations.

References

Aamri, S. M. S. A., & Anquadi, S. A. (2020). The power of educational technology on teachers' professional development. *In The Proceedings of the 24th and 25th Annual TESOL Arabia International Conference and Exhibition,* (50-59). TESOL Arabia.

Akyuz, S., & Yavuz, F. (2015). Digital learning in EFL classrooms. *7th World Conference on Educational Sciences (WCES-2015),* 05- 07 February, Athens, Greece.

Al-Ahdal, A.A.M.H. (2020). Using computer software as a tool of error analysis: Giving EFL teachers and learners a much-needed impetus. *International Journal of Innovation, Creativity and Change, 12*(2), 418-437.

Al-Ahdal, A. A. M. H., & Alharbi, M. A. (2021). MALL in collaborative learning as a vocabulary-enhancing tool for EFL learners: A study across two Universities in Saudi Arabia. *Sage Open*, *11*(1), 2158244021999062.

Alghamdi, A. K., El-Hassan, W. S., Al-Ahdal, A. A. M. H, & Hassan, A. A. (2021). Distance Education in Higher Education in Saudi Arabia in the Post-COVID-19 Era. *World Journal on Educational Technology: Current Issues, 13*(3), 485-501.

Alhawsawi, S. (2014). *Investigating student experiences of learning English as a foreign language in a preparatory programme in a Saudi university*, (PhD Thesis). University of Sussex.

Alhuthaif, A. (2019). *International mindedness within intercultural competence: a collective case study of faculty's conceptualizations and practices of international mindedness in one Saudi EFL higher education institution in an effort to achieve Saudi Arabia's vision 2030,* (PhD Thesis). The George Washington University.

Al-Johali, K. Y. (2019). Using mobile applications to teach vocabulary: Saudi EFL teachers' perceptions. *Global Journal of Foreign Language Teaching*, *9*(1), 51–68.

Arigusman, A., Purnawarman, P., & Suherdi, D. (2018). EFL students' use of technology in English lesson in the digital era. *Indonesian Journal of Curriculum and Educational Technology Studies,* 6(2), 77-86

Brusilovsky, P. (1996). Methods and techniques of adaptive hypermedia. User Modeling and User-Adapted. *Interaction, 6(*2-3), 87-129.

Dwivedi, Y. K., Hughes, D. L., Coombs, C., Constantiou, I., Duan, Y., Edwards, J. S., ... & Upadhyay, N. (2020). Impact of COVID-19 pandemic on information management research and practice: Transforming education, work and life. *International journal of information management, 55*, 102211.

Gyamfi, G., Sukseemuang, P., Tantiwich, K., & Kaewkong, P. (2019). Self-study with the educational technology *Tell me more*: What EFL learners do. *Open Praxis*,*11*(1), 103-116

Hazaea, A. N., Bin-Hady, W. R. A., & Toujani, M. M. (2021). Emergency remote English language teaching in the Arab league countries: Challenges and remedies. *Computer-Assisted Language Learning Electronic Journal*, *22*(1), 201-222.

Ikram, C., Mohamed, E., Souhaib, A., & Mohamed, K. (2021). Integration of pedagogical videos as learning object in an adaptive educational hypermedia systems according to the learner profile. *International Journal of Computer Trends and Technology, 69*(6), 1-6.

Lee, W. O., & Tan, J. P. L. (2018). The new roles for twenty-first-century teachers: Facilitator, knowledge broker, and pedagogical weaver. In *The teacher's role in the changing globalizing world* (pp. 11-31). Brill.

Meabon, S. L. B. (2013). *Teaching with social media: a multiple case Foucaudian discourse analysis of participatory and Egalitarian Potential* (PhD thesis). Miami University.

Medina, J. C. (2021). The integration of ICTs in EFL teaching in Ecuadorian high schools: One country, two realities. *Journal of English Language Teaching and Applied Linguistics,* 3(8). https://doi.org/10.32996/jeltal

Miranty, D., & Widiati, U. (2021). An automated writing evaluation (AWE) in higher education. *Pegem Journal of Education and Instruction*, *11*(4), 126-137.

Putra, Z. H., Witri, G., & Yulita, T. (2019). Development of PowerPoint-based learning media in integrated thematic instruction of elementary school. *International Journal of Scientific & Technology Research, 8*(10), 697-702.

Sampson, R. J. (2016). *Complexity in classroom foreign language learning motivation: A practitioner perspective from Japan* (Vol. 101). Multilingual Matters.

Saudi Vision 2030, (2021). *Media Document Human Capability Development Program 2021-2025*. Saudi Arabia. https://www.vision2030.gov.sa/media/nfob33q5/hcdp_mv_en-1.pdf

Sevy-Billion, J., & Chroman, T. (2019). Authentic use of technology to improve EFL communication and motivation through international language exchange video chat. *Teaching English with Technology, 19*(2), 44-58.

Sohmen, V. S. (2016). *Towards a model of accelerated Project-Based Learning (PBL) for innovative technology projects*. Drexel University.

Tarling, I., & Ng'ambi, D. (2016). Teachers pedagogical change framework: a diagnostic tool for changing teachers' uses of emerging technologies. *British Journal of Educational Technology, 47*(3), 554-572.

Teng, Y., & Wang, X. (2021). The effect of two educational technology tools on student engagement in Chinese EFL courses. *International Journal of Education Technology in Higher Education, 18*(27). https://doi.org/10.1186/s41239-021-00263-0

Tryzna, M.M., Al Sharoufi, H. (2017). English language education policy in Kuwait. In: Kirkpatrick, R. (eds) *English Language Education Policy in the Middle East and North Africa. Language Policy*, (Vol 13, pp 77–91). Springer, Cham. https://doi.org/10.1007/978-3-319-46778-8_6

Vasileiadou, I., & Makrina, Z. (2017). Using online computer games in the ELT classroom: a case study. *English Language Teaching*,*10*(12),134-150

Wan, K. K., Leung, A. W. Y., & Wong, A. K. L. (2020). Technology teacher education in Hong Kong. *International Technology Teacher Education in the Asia-Pacific Region*.

Williamson, B., Eynon, R., & Potter, J. (2020). Pandemic politics, pedagogies and practices: digital technologies and distance education during the coronavirus emergency. *Learning, Media and Technology, 45*(2), 107-114.

Woolf, B. P. (2010). *A roadmap for education technology*. National Science Foundation.