E-learning under COVID-19: Interrogating the past for a brighter future

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Abstract

The COVID-19 pandemic prompted a surge of studies focused on the limitations of distance education during lockdowns. However, there is a significant gap in research comparing students' academic achievements under normal circumstances with those in emergency remote teaching environments. Addressing this gap is crucial to identify shortcomings in e-learning during crises and to develop strategies for improving technology-mediated education. This study aims to fill this gap by comparing two groups of Moroccan university-level EFL (English as a Foreign Language) students in terms of grammar knowledge transfer to writing ability. A convenience sample of 315 students' argumentative essays was evaluated based on various measures of writing quality and grammar application. Findings indicate that students in the traditional classroom setting outperformed their peers in the e-learning group, particularly in writing quality and grammar knowledge transfer. The study attributes these differences to factors such as student psychology, teacher training, attitudes toward technology, and socio-economic challenges. The paper concludes with recommendations for enhancing the effectiveness of emergency e-learning in future crises, with a focus on better preparation, teacher support, and addressing technological barriers.

Keywords: COVID-19; e-learning; impediments; grammar transfer; writing ability.

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1. INTRODUCTION

According to the World Bank (2020), 1.5 billion students in 190 countries were unable to attend school physically during the early weeks of COVID-19. Teachers and students had to migrate to virtual learning platforms to ensure the continuity of the educational process (Malkawi, et al., 2020; Todri, et al., 2020; Younas et al., 2022). In Morocco, the education authorities took several measures to respond to social distancing guidelines. In addition to broadcasting lessons and lectures on mainstream national media, the Ministry of Education granted teachers access to Microsoft Teams to deliver their instruction in the form of video conferencing with students. Several other digitalized formats of instructional delivery were utilized such as learning management systems and social media. Although the emergency use of e-learning did help faculty and students to cover the rest of the academic year, myriad studies have reported that the process was riddled with limitations and drawbacks (Kummitha et al., 2021; Greenhow, et al., 2021; Peimani & Kamalipour, 2021).

Most of the studies exploring the pedagogical outcome of the emergency remote learning intervention have reported unfavorable results due to the factors reviewed above. Although some similarities may exist across subjects regarding the effectiveness of such e-learning approaches in higher education, it may be argued that the teaching of language in an EFL context could be one of the areas more likely to be affected the most. Moreover, despite the extensive research published on the impact of COVID-19 on student learning, fewer studies attempted to compare student learning uptake in remote education with traditional environments before the outbreak of the pandemic. With all this in mind, the present study seeks to compare the effectiveness of the emergency e-learning intervention during COVID-19 with a traditional approach based on face-to-face teaching. More specifically, the study aims to gauge the extent to which knowledge of grammar was successfully transferred to student writing ability. A scholarly undertaking aimed at identifying differences between e-learning in normal vs. emergency circumstances will undoubtedly help illuminate ways for improvement to ensure that the instructional deliverable remains as effective as possible. It should be clarified that the grammar and writing courses were taught in the fall semester of 2019 in a conventional environment and they were taught online in 2020 due to COVID-19.

1.1. Literature review

1.1.1. Access and socio-economic situation

Before the spread of COVID-19, the literature on technology-mediated education suggested that access is key to any effort aimed at technology integration in the educational process (Jo, 2023; Bouziane & Zyad, 2018; Mounjid et al., 2021; Oulmaati et al., 2017; Khan et al., 2024). This issue has become most pronounced since the lockdowns. Several studies have pointed out that a large segment of the student population living in rural and semi-urban areas was left out when universities moved from regular to remote learning (Kruszewska, et al., 2022; Zamir & Wang 2023). The socio-economic situation of students' parents in those locations did not allow them to procure Internet connection and web-based devices for their children (Pickering et al., 2023). Worse still, the pandemic did not only hit education but it also hurt the economy (Bhagat & Kim, 2020). Consequently, several parents lost their jobs permanently or were laid off temporarily, causing most of them to be unable to afford mortgages and rent. In such circumstances, a good number of households began to live on a budget, and students' learning process was negatively affected.

1.1.2. Training and attitude

Notwithstanding the vast amount of research emphasizing the prominence of teacher training, recent studies have revealed that a good proportion of faculty still lacked the technical know-how to successfully engage in e-learning (Mishra & Koehler, 2006; Zyad, 2016). To illustrate, several researchers reported that not all teachers actively engaged in the distance education strategy enacted during COVID-19 lockdowns because they lacked basic computer skills or digital pedagogy (Mishra, et al., 2020; La Velle et al., 2020). While other teachers reported that they knew how to use the computer, they did not show any interest in teaching through technology-supported approaches (Mathe, et al., 2019). Although technical know-how is an important factor

in encouraging technology use in educational settings, the literature suggests that it is not enough to enable faculty to transform the teaching and learning environment (Jimoyiannis & Komis, 2007). For instance, the conceptual framework known as Technological, Pedagogical Content Knowledge (henceforth, TPACK) posits that the nature of knowledge teachers need to develop for effective technology implementation for instructional pursuits transcends the separate knowledge sets out of which it is composed (Koehler & Mishra, 2016). In other words, although there are some common areas between them, conventional and digital pedagogy differ in significant ways.

Importantly, a wide array of studies has highlighted the strong relationship between training and teacher attitude (Jimoyiannis & Komis, 2007). As a case in point, Venkatesh and Davis (2000) show in their technology acceptance model that perceived ease of use, among other factors, plays a salient role in encouraging eventual system use. Accordingly, one way to foster perceived ease of use is through initiating teacher training programs for teachers to learn digital pedagogy. Additionally, further support for the influential role of training in technology-mediated education comes from self-determination theory (Ryan and Deci, 2000). According to this theory, experiencing competence is a prerequisite for information system users to develop motivation and a positive attitude towards ICT utilization for pedagogical ends. Likewise, the will-skill-tool model, developed by Chi and Wylie (2014) associates training with attitude. For users to embrace e-learning, they need to have a will that is tightly related to the skill, which in turn cannot be learned unless teachers receive training in technology-supported methodology.

1.1.3. Psychological well-being

Undoubtedly, COVID-19 circumstances have been testing times for teachers and students alike, especially at the psychological level (Cherkowski et al., 2021; Dodd et al., 2021). It has long been established that student psychology is a fundamental facet of the educational process (Kee, 2021). That is, any disturbance to psychological well-being is highly likely to disrupt the teaching and learning process. For that reason, several studies have started to investigate the impact of COVID-19 on teacher and student psychology (Laher et al., 2021). One of these studies reported that students experienced an acute sense of isolation although they were involved in e-learning efforts (Castellano-Tejedor et al., 2022). According to augmented reality research, isolation may be due to the lack of social presence in virtual learning environments (Browning et al., 2021). Lack of informal discourse, low emotional involvement, and the complexity of human interaction have all been identified as factors reducing the experience of social presence in distance education.

1.2. Purpose of study

This study aims to fill this gap by comparing two groups of Moroccan university-level EFL (English as a Foreign Language) students in terms of grammar knowledge transfer to writing ability. The study is therefore guided by the following research question:

- How does the emergency e-learning intervention compare with conventional forms of learning in terms of grammar knowledge transfer to student writing ability?

To answer this research question, the following hypotheses were formulated and tested:

H1 The students in the traditional environment performed better than the students in the e-learning group in terms of writing quality.

H2 The students in the traditional environment wrote essays with more complex structures than the students in the e-learning group.

H3 The students in the traditional environment wrote essays with more accurate grammar than the students in the e-learning group.

The choice of the alternative hypothesis in favor of the TE group is based on the negative results reported by previous research bearing on the COVID-19 situation as well as awareness of the challenges brought about

by the swift reliance on distance learning. In other words, we assume that students did not benefit maximally from the syllabus given the sweeping circumstances of the coronavirus pandemic.

2. METHOD AND MATERIALS

2.1. Context of the study

In the Moroccan educational system, English is taught as a second foreign language after French while standard Arabic is the official language. In the Departments of English Studies across the kingdom, there is a unified modular system that has become operational since 2014 (Boudlal & Sabil, 2018). Based on convenience sampling, the cohort of participants for the current research was taken from the third semester. The students in this semester are exposed to a syllabus that comprises several modules including Extensive Reading, Composition 2, Grammar 3, Public Speaking and British Culture and Society, and US Culture and Society. Of interest in this regard are Composition 2 and Grammar 3. The digits next to each subject designate the number of instances of the same subject taught in different semesters, albeit with different content foci.

The study took place in a college-level institution in the Casablanca-Settat region, Morocco. Drawing on a short questionnaire seeking to gather data on the participants' background, it was found that, at the outset of the study, the mean age of the participants was 20 years and seven months, spanning an age range from 20 years to 48 years and two months. There was an uneven distribution of males (n = 219) and females (n = 96) in the sample (N = 315). The traditional environment group (henceforth, TEG) consisted of 172 students while the e-learning group included 143 (henceforth, EG). Most students (61%) were from the city where the faculty is located. The rest of the students (32%) came either from the nearby urban areas or other cities (7%). Due to the sensitivity of the question, the students were not asked about their socio-economic situation. Drawing on the researchers' knowledge of the student population in this college, it is nonetheless possible to say that most students came from a middle- or lower-class social background. 39% of the students' parents had a Baccalaureate degree or above, 31% did not reach the Baccalaureate, 18% had minimum literacy skills and the remaining 12% had no formal education whatsoever.

At the outset of the study, the participants voluntarily gave their consent to participate in the study after they were informed that data from the study would remain confidential and that they would be used only for research purposes.

2.2. Design and instructional procedure

The study was framed within a posttest-only causal-comparative research design. This type of design aims to identify causal associations between variables but it does not amount to experimental research where there is the manipulation of variables to create different treatment conditions and tight control over extraneous variables (Denscombe, 2010). The TEG consisted of a cohort of semester 3 students for the academic year 2018-2019. This group of students was taught in normal circumstances using conventional teaching and learning approaches of delivery. They received 14 weeks of instruction with each week comprising 3 hours of face-to-face learning. By contrast, the EG had two-thirds of instruction channeled through distance learning. Around mid-March, the Moroccan education authorities mandated that teaching and learning had to be transferred to virtual education platforms. This means that a relatively smaller part of the syllabus was taught in person. It should be noted that the assessment for the EG was administered face-to-face with strict compliance with social distancing guidelines.

The grammar module for semester three is specially designed to move students to the next level of grammar understanding. It is supposed to prepare the way for the study of syntax which takes place in the following semester. The focus is geared toward understanding sentence structure by learning the different types of English sentences in terms of structure (simple, compound, complex, and complex-compound) and function (declarative, interrogative, imperative, and exclamation). The module also covers types of phrases and clauses. Both the comparison and treatment groups received the same instruction since they were taught by the same

teacher except for the medium of delivery which was completely remote learning in the case of the treatment group.

The writing module also differed in terms of the medium of instructional delivery. The pedagogy employed in helping students improve their writing ability was the process approach (Flowers & Hayes, 2016). Typically, after students were given a mini-lesson on a given essay type, they would be instructed to engage in practice predicated on a series of steps starting from brainstorming and outlining, through drafting to revising and editing. The instructor of the course stressed collaboration and peer feedback. Note that discussion of grammar was not allowed in this course because it was decided that the grammar module would fulfill that purpose. The online course followed the same procedure except for the writing of the first draft which the teacher gave as homework. In each following online session, about 30 minutes were devoted to teacher and peer feedback-giving.

2.3. Data collection and analysis

It should be pointed out that the researchers resorted to archival data to evaluate the writing performance of the TEG students. The essays were written in the spring of 2019 within the context of the final exam. However, the written products of the EG group came from a test that was administered in exam-like conditions under the invigilation of their teachers at the start of the semester in the fall of the 2020-2021 academic year after lockdowns were lifted. The students were required to write a five-paragraph argumentative essay on the impact of social media in today's societies.

To assess the quality of the written products of the students, a rigorous procedure aimed at controlling scoring behavior and enhancing inter-rater reliability was adopted. Four assessors were recruited to score the essays. The courses of writing they taught had a range of different foci, including paragraph writing, essay writing, and research paper writing. After they were briefed about the topic of the study, they had several online meetings with the researchers to calibrate scoring accuracy. Before each meeting, the raters were given a sample essay of high, medium, and low quality so that they would have a collective understanding of what each of those levels meant. Whenever disagreement occurred over how a particular criterion was scored, a discussion ensued to foster consensus. Acceptable inter-rater reliability coefficients emerged so that Cronbach's Alpha was .71 for content, .81 for organization, .72 for tone and voice, .88 for sentence fluency, and .79 for word choice.

2.4. Complexity and accuracy

The improvement of the complexity of students' writing, or lack thereof, was carried out using a host of t-test measures (Bulte & Housen, 2014; Crossley and McNamara 2014; Hunt, 1965). Hunt (1965) defined the t-unit as "one main clause plus whatever subordinate clauses or non-clausal expressions attached to or embedded within it". This unit of analysis came into being in reaction to the limitations of the sentence as a measure to evaluate the complexity of children's writings. Hunt observed that children tended to overuse coordination, which may give a false impression of the complexity of their written compositions. In an EFL context, the language of students in pre-intermediate and intermediate levels may be more or less similar to that of native children in that they tend to overuse coordination as well (Hunt, 1965). Thus, in addition to the mean length of t-unit and number of t-units per sentence, complexity is measured by a set of other indices associated with the clause including the mean length of the clause, number of clauses per t-unit, and number of dependent clauses per t-unit.

Although complexity is an important measure of growth in students' writing, it cannot in and of itself be used to give an accurate picture of quality. Several studies have demonstrated the lack of association between complexity and perceptions of writing quality (Crossley & McNamara, 2014; Mazgutova & Kosmos, 2015). It was therefore decided to supplement measures of complexity with others that gauge accuracy. Specifically, accuracy was evaluated in terms of the mean number of error-free t-units, the ratio of error-free t-units to the total number of t-units, the mean number of error-free clauses, and the ratio of error-free clauses to the total number of clauses. However, empirical evidence exists suggesting that error is a difficult concept to define.

Such difficulty has led researchers to adopt different definitions of "correctness", which makes the comparability of their results quite a thorny task. For instance, Larsen-Freeman and Strom (1977) conceptualize error-free units as those "perfect in all respects, including spelling and punctuation". On the difficulty of defining error, Lennon (1991) argues that "Notwithstanding native-speaker intuitions, errors do not constitute as easily recognizable a feature in production as might be imagined". In this study, an error has been defined as any morpho-syntactically deviant structure that does not conform to the grammatical rules of the English language.

3. RESULTS

3.1. Analytic scores

It should be remembered that the first hypothesis addresses the extent to which the scores of the EG differ from the scores of the TEG in terms of quality evaluated by four raters using analytic assessment. Comparing the mean scores of both groups (see table 1), it could be noticed that medium-achieving students in the TEG group performed better with a mean difference of (.89). Hypothesis testing was conducted utilizing a two-way ANOVA to ascertain whether this mean difference is statistically meaningful (see table two). ANOVA output suggested that between-group mean difference was statistically significant across treatments with $F_{(1, 309)}$ = 6.69, p<.01, η_p^2 = .02, across proficiency levels with $F_{(2, 309)}$ = 734.05, p<.000, η_p^2 = .83, and at the level of the interaction between treatments and proficiency levels with $F_{(2, 309)}$ = 7.21, p<.01, η_p^2 = .04. It is important to indicate that a Bonferroni correction was used because Levene's test of equality of error variances was significant, thus adjusting the alpha level to .025.

Pairwise comparisons of the three proficiency tiers revealed that medium-achieving students scored significantly higher than their counterparts in the EG. This means that out of the three proficiency cohorts, medium-achieving students appear to have benefitted more substantially from the grammar and writing courses' syllabi.

Table 1

Between-group writing quality comparisons

	EG		TEG	
	Mean	S.D.	Mean	S.D.
Low	7.90	1.32	8.28	.93
Medium	11.37	1.21	12.26	1.18
High	15.39	.54	15.15	.35

Table 2

Hypothesis testing of writing quality across subgroups

Source	Sum of squares	df	Mean squares	F
A (Treatments)	7.70	1	7.70	6.69**
B (proficiency level)	1834.79	2	917.39	734.05***
A × B	16.60	2	8.30	7.21**

** p <.01; *** p <.000

3.2. Complexity

The second hypothesis seeks to examine growth in the complexity of students' writings at the level of the sentence. It is worth recalling that complexity was operationalized into five indices: mean length of t-unit, mean length of clause, number of clauses per t-unit, number of dependent clauses per t-unit, and number of t-units per sentence. A MANOVA was run to explore whether there were statistically meaningful differences across the three proficiency levels in the e-learning and TE groups. Since the assumption of homogeneity of covariances was violated as the Box's test of equality of covariance matrices was significant, a more robust

test was used to check out significant score differences (Pillai's test = 1.36, F (25, 1545) = 23.22, p<.000, η_p^2 = .27). This means that 27% of the multivariate variance of the dependent variables is associated with the group factor. A look at the individual ANOVAs suggests that mean length of clause (F (5, 309) = 3.70, p<.01, η_p^2 = .05), number of clauses per t-unit (F (5, 309) = 205.10, p<.01, η_p^2 = .80) and number of dependent clauses per t-unit (F (5, 309) = 114.89, p<.01, η_p^2 = .65) were statistically significant with Bonferroni correction adjusting the Alpha level to p<.01. Pairwise comparisons showed that medium-achieving students in the TEG group significantly outperformed their peers in the EG in the number of clauses per t-unit and the number of dependent clauses per t-unit (Bonferroni correction adjusting the Alpha level to p<.003).

Table 3

Hypothesis testing of between-group differences at the level of complexity

	Sum of Squares	F	Sig.	Partial Eta Squared
The mean length of t-unit	2.073	1.28	.27	.020
The mean length of the clause	.494	3.70	.00*	.057
Mean number of clauses per t-unit	88.581	250.10	.00*	.802
Mean number of dependent clauses per t-unit	4.750	114.89	.00*	.650
Mean number of t-units per sentence	.032	2.61	.02	.041

* Significant at a Bonferroni correction of p<.01

3.3. Accuracy

The third hypothesis aims to investigate growth in the accuracy of students' writings at the sentence level. Four measures were utilized to test out accuracy, namely error-free t-units, error-free t-units per total number of t-units, error-free clauses, and error-free clauses per total number of clauses. A MANOVA indicated that 34% of the multivariate variance of the dependent variables is correlated with the group factor (Pillai's test = 1.36, F (20, 1236) = 23.22, p<.000, η_p^2 = .27). The results of univariate ANOVAs showed that all four indices of accuracy turned out to be statistically significant (see table four). Pairwise comparisons indicated that while medium-achieving students of the EG significantly outperformed the students in the TEG in terms of error-free t-units, both medium-achieving and high-achieving students in the TEG group wrote significantly more error-free clauses (Bonferroni correction reducing the Alpha level to p<.004).

Table 4

Hypothesis testing of between-group differences at the level of accuracy

	Sum of Squares	F	Sig.	Partial Eta Squared
Error-free t-units	298.39	116.76	.000*	.65
Error-free t-units per total number of t-units	.190	7.74	.000*	.11
Error-free clauses	460.5	213.96	.000*	.77
Error-free clauses per total number of clauses	.07	4.14	.001*	.06

* Significant at a Bonferroni correction of p<.012

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4. DISCUSSION

The answer to the research question driving the current study is that the EG did not achieve as well as their TEG counterparts. The results confirmed the three hypotheses that the current study set out to investigate. In other words, the TEG students performed significantly better than the students in the EG. The TEG group's post-test writings were rated significantly higher in terms of analytic assessment and received significantly higher scores on measures of complexity and accuracy. However, a closer examination of the data revealed that the intervention had a differential impact on the three proficiency levels. It appears that medium-achieving students benefitted more substantially from the grammar and writing courses' syllabi than their group-mates in the e-learning group.

Overall, it appears that the dire circumstances surrounding the spread of COVID-19 had a toll on student learning. Learning is a complex process wherein a multitude of intricately interlocking factors determine student achievement. Among such factors, for instance, the psychological well-being of the students is pivotal. Matthew et al., (2021), for instance, argue that the student population is increasingly vulnerable to high levels of anxiety, depression, substance abuse, and disordered eating and that such vulnerability was amplified under COVID-19 circumstances. We learn from exploratory research conducted over the lockdown times that students were in an emotional crisis (Laher et al., 2021). Most importantly, Matthews et al., (2021) reported that there was an acute sense of isolation which caused students to lose focus. In the turbulent moments of the health crisis, a good number of students were left to their means in Morocco, despite all the efforts geared towards covering most of the student population. That was the main reason why the in-person exams covered only subject areas taught before the lockdown came into effect. Largely, this may partially have affected the learning process.

Moreover, the socio-economic situation of students' parents may have played a detrimental part in student performance. Several businesses were hit hard by the consequences of the pandemic, leading them to downsize their workforce (Mounjid et al., 2021). Working-class parents suffered the most as they tried to provide for the necessities of life in addition to new expenses such as buying their children new web-based devices as well as Internet service. Some studies highlighted other household issues including the lack of an appropriate study space (Mounjid et al., 2021). A family with, say, four kids, living in a small apartment must have found it challenging to cope with their children's online learning time when they all had the same schedule. The situation must have been complicated by the availability of only one desktop or laptop.

Relevant to the current study are students' attitudes towards technology-mediated learning which may have impacted their achievement over the lockdown. Several studies have investigated students' attitudes towards ICT in the learning process (Zyad, 2016). In large part, students expressed positive attitudes towards ICTs, reporting that they often used them, synchronous and asynchronous, for personal and entertainment purposes. Despite that, researchers found that ICT was underused when it comes to student-teacher communication and collaboration. For instance, Oulmaati et al., (2017) stated that "more than half of respondents do not use any ICT tool to communicate with their teachers in the teaching-learning process". Coupled with the surrounding circumstances, students' attitudes may have played a negative role in their learning uptake of grammar and writing skills. It may be that they were displaced from their comfort zone and thrust into a new environment fraught with uncertainties. This might have aggravated their already unfavorable perceptions of e-learning in the educational process.

The findings of the current research suggest some implications for policy, curriculum, and teacher professional development. One of the lessons to be learned from the ongoing health crisis is that relying completely on e-learning is no longer a myth. When the circumstances demand enacting distance learning interventions in the future, education stakeholders will not have the now-familiar excuses to justify failures anymore. More rigid policies should now be drafted for a wider implementation of technology for educational purposes. In Morocco, for instance, although the strategic vision 2015-2030 did emphasize the importance of ICT in teaching and learning processes, follow-up initiatives did not translate that policy into an actionable program of execution. However, it appears that the churn brought about by the pandemic was a wake-up call

to decision-makers to devote a significant portion of the curriculum to e-learning in the prospective bachelor reform in Moroccan higher education. While this reform aims to build greater momentum for technology-mediated learning in higher education curricula, the lack of a theory-based and research-validated vision of ICT-oriented teacher professional development may lead head-on to even more failures. Faculty are likely to continue to hold hostile attitudes to educational technology if they do not receive attitude-changing training in best practices of digital pedagogy.

5. CONCLUSION

The present study aimed to examine the differences in learning uptake in terms of grammar transfer to writing ability between students in normal circumstances and those exposed to e-learning under COVID-19. In sum, the present study found that the writings of the TEG significantly improved at the levels of complexity and accuracy. In particular, the improvement was most pronounced in the writings of medium-achieving students. This means that the challenges posed by COVID-19 for distance education may be construed as a valuable occasion for reflection. It has proved to be a moment of wisdom building as it has unveiled several areas that urgently require a structured and focused plan of action. Most likely, the transfer of grammar knowledge to EFL student writing may be only one example among so many others in which student learning uptake might have been severely impacted. When teachers and students had to bear difficulties associated with the teaching and learning of grammar and writing, compounded by the intricacies of digital pedagogy, no wonder student achievement suffered the repercussions. In addition to considerations of infrastructure and access for augmented inclusivity, it is mandatory to change hearts by changing minds with ICT-related skills and knowledge.

Despite the insights gleaned from the current research, the study has a couple of limitations worth pointing out. The participants were selected based on convenience sampling. This type of sampling does not lend itself to generalizability nor is it the intention of the researchers to generalize the results to other contexts. The aim is to obtain a glimpse of the difference in achievement between face-to-face learning and emergency distance education under COVID-19 circumstances. It is only through comparisons with other similar studies that we can draw a more complete understanding of the outcome of the pandemic situation. Still, in line with generalizability, the lack of a pretest prevents the posttest-only design from allowing comparison with a point of departure. Of course, it was impossible to run a pretest because the motivation to do this research came only after the students finished the fall semester of 2020-2021. For these reasons, the results of the current study should be treated with some caution.

REFERENCES

Bhagat, S., & Kim, D. J. (2020). Higher education amidst COVID-19: Challenges and silver lining. *Information Systems Management*, *37*(4), 366-371. https://www.tandfonline.com/doi/abs/10.1080/10580530.2020.1824040

Boudlal, A., & Sabil, A. (2018). Quality in the Strategic Vision 2015-2030. *Quality assurance in English studies in Moroccan higher education*, 21-44.

Zyad, H., Benzehaf, B., Yeou, M. & Daouia, L. (2025). E-learning under COVID-19: Interrogating the past for a brighter future. *Global Journal of Foreign Language Teaching, 15*(1), 43-54. https://doi.org/10.18844/gjflt.v13i2.6483

Bouziane, A., & Zyad, H. (2018). The impact of self and peer assessment on L2 writing: The case of Moodle workshops. *Assessing EFL writing in the 21st-century Arab world: Revealing the unknown*, 111-135. https://link.springer.com/chapter/10.1007/978-3-319-64104-1_5

Browning, M. H., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., ... & Alvarez, H. O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PloS one*, *16*(1), e0245327. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0245327

Bulté, B., & Housen, A. (2014). Conceptualizing and measuring short-term changes in L2 writing complexity. *Journal of Second Language Writing*, *26*, 42-65. https://www.sciencedirect.com/science/article/pii/S1060374314000666

Castellano-Tejedor, C., Torres-Serrano, M., & Cencerrado, A. (2022). Psychological impact in the time of COVID-19: A cross-sectional population survey study during confinement. *Journal of Health Psychology*, *27*(4), 974-989. https://journals.sagepub.com/doi/abs/10.1177/1359105320985580

Cherkowski, S., Kutsyuruba, B., Walker, K., & Crawford, M. (2021). Conceptualizing leadership and emotions in higher education: wellbeing as wholeness. *Journal of Educational Administration and History*, *53*(2), 158-171. https://www.tandfonline.com/doi/abs/10.1080/00220620.2020.1828315

Chi, M. T., & Wylie, R. (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational psychologist*, *49*(4), 219-243. https://www.tandfonline.com/doi/abs/10.1080/00461520.2014.965823

Crossley, S. A., & McNamara, D. S. (2014). Does writing development equal writing quality? A computational investigation of syntactic complexity in L2 learners. *Journal of Second Language Writing*, *26*, 66-79. https://www.sciencedirect.com/science/article/pii/S1060374314000678

Denscombe, M. (2010). The a good research guide for small social research projects. *Ed: Glasgow, McGraw-Hill House*.

Dodd, R. H., Dadaczynski, K., Okan, O., McCaffery, K. J., & Pickles, K. (2021). Psychological wellbeing and academic experience of university students in Australia during COVID-19. *International Journal of Environmental Research and Public Health*, *18*(3), 866. https://www.mdpi.com/1660-4601/18/3/866

Flower, L. S., & Hayes, J. R. (2016). The dynamics of composing: Making plans and juggling constraints. In *Cognitive processes in writing* (pp. 31-50). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315630274-4/dynamics-composing-making-plans-juggling-constraints-linda-flower-john-hayes

Greenhow, C., Lewin, C., & Staudt Willet, K. B. (2021). The educational response to COVID-19 across two countries: a critical examination of initial digital pedagogy adoption. *Technology, Pedagogy and Education*, *30*(1), 7-25. https://www.tandfonline.com/doi/abs/10.1080/1475939X.2020.1866654

Hunt, K. W. (1965). *Grammatical structures written at three grade levels* (No. 8). National Council of Teachers of English.

Jimoyiannis, A., & Komis, V. (2007). Examining teachers' beliefs about ICT in education: Implications of a teacher preparation program. *Teacher development*, *11*(2), 149-173. https://www.tandfonline.com/doi/abs/10.1080/13664530701414779

Jo, H. (2023). From classroom to screen: Analyzing the mechanisms shaping E-learning benefits amidst COVID-19. *Journal of the Knowledge Economy*, 1-22. https://link.springer.com/article/10.1007/s13132-023-01614-0

Kee, C. E. (2021). The impact of COVID-19: Graduate students' emotional and psychological experiences. *Journal of human behavior in the social environment*, *31*(1-4), 476-488. https://www.tandfonline.com/doi/abs/10.1080/10911359.2020.1855285

Khan, W., Sohail, S., Roomi, M. A., Nisar, Q. A., & Rafiq, M. (2024). Opening a new horizon in digitalization for e-learning in Malaysia: Empirical evidence of COVID-19. *Education and Information Technologies*, *29*(8), 9387-9416. https://link.springer.com/article/10.1007/s10639-023-12176-8

Koehler, M. J., & Mishra, P. (Eds.). (2016). *Handbook of technological pedagogical content knowledge (tpack) for educators*. Routledge. https://books.google.com/books?hl=en&lr=&id=CUh-

Zyad, H., Benzehaf, B., Yeou, M. & Daouia, L. (2025). E-learning under COVID-19: Interrogating the past for a brighter future. *Global Journal of Foreign Language Teaching, 15*(1), 43-54. https://doi.org/10.18844/gjflt.v13i2.6483

CwAAQBAJ&oi=fnd&pg=PA1999&dq=Koehler,+M.+J.,+%26+Mishra,+P.+(2008).+Introducing+TPCK.+A ACTE+Committee+on+Innovation+and+Technology+(Ed.),+The+handbook+of+technological+pedagog ical+content+knowledge+(TPCK)+for+educators+(pp.+3%E2%80%9329).+Mahwah,+NJ:+Lawrence+Er lbaum+Associates.&ots=Dz4RD2sCLr&sig=akqY6I9WokH_Ev7ZHHPM04ruwmA

Kruszewska, A., Nazaruk, S., & Szewczyk, K. (2022). Polish teachers of early education in the face of distance learning during the COVID-19 pandemic–the difficulties experienced and suggestions for the future. *Education 3-13, 50*(3), 304-315. https://www.tandfonline.com/doi/abs/10.1080/03004279.2020.1849346

Kummitha, H. R., Kolloju, N., Chittoor, P., & Madepalli, V. (2021). Coronavirus disease 2019 and its effect on teaching and learning process in the higher educational institutions. *Higher Education for the Future*, *8*(1), 90-107. https://journals.sagepub.com/doi/abs/10.1177/2347631120983650

La Velle, L., Newman, S., Montgomery, C., & Hyatt, D. (2020). Initial teacher education in England and the Covid-19 pandemic: Challenges and opportunities. *Journal of Education for Teaching*, *46*(4), 596-608. https://www.tandfonline.com/doi/abs/10.1080/02607476.2020.1803051

Laher, S., Bain, K., Bemath, N., de Andrade, V., & Hassem, T. (2021). Undergraduate psychology student experiences during COVID-19: Challenges encountered and lessons learned. *South African Journal of Psychology*, *51*(2), 215-228. https://journals.sagepub.com/doi/abs/10.1177/0081246321995095

Larsen-Freeman, D., & Strom, V. (1977). The construction of a second language acquisition index of development 1. *Language learning*, *27*(1), 123-134. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-1770.1977.tb00296.x

Lennon, P. (1991). Error: Some problems of definition, identification, and distinction. *Applied linguistics*, *12*(2), 180-196. https://academic.oup.com/applij/article-abstract/12/2/180/212560

Malkawi, E., Bawaneh, A. K., & Bawa'aneh, M. S. (2020). Campus off, education on: UAEU students' satisfaction and attitudes towards e-learning and virtual classes during COVID-19 pandemic. *Contemporary Educational Technology*, *13*(1), ep283. https://www.cedtech.net/article/campus-off-education-on-uaeu-students-satisfaction-andattitudes-towards-e-learning-and-virtual-8708

Mathe, M., Verhagen, H., & Wiklund, M. (2019). From skeptics to advanced adopters: Investigating digital game adoption practices, challenges and needs of teachers in Swedish schools. In *International Conference on Games and Learning Alliance* (pp. 73-82). Cham: Springer International Publishing. https://link.springer.com/chapter/10.1007/978-3-030-34350-7_8

Matthews, B., See, Z. S., & Day, J. (2021). Crisis and extended realities: remote presence in the time of COVID-19. *Media International Australia*, *178*(1), 198-209. https://journals.sagepub.com/doi/abs/10.1177/1329878X20967165

Mazgutova, D., & Kormos, J. (2015). Syntactic and lexical development in an intensive English for Academic Purposes program. *Journal of Second Language Writing*, *29*, 3-15. https://www.sciencedirect.com/science/article/pii/S1060374315000417

Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during the lockdown period of the COVID-19 pandemic. *International journal of educational research open*, *1*, 100012. https://www.sciencedirect.com/science/article/pii/S2666374020300121

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, *108*(6), 1017-1054. https://journals.sagepub.com/doi/abs/10.1111/j.1467-9620.2006.00684.x

Mounjid, B., El Hilali, E., Amrani, F., & Moubtassime, M. (2021). Teachers' perceptions and the challenges of online teaching/learning in Morocco during the COVID-19 crisis. *Arab World English Journal (AWEJ) Special Issue on CALL*, (7). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3904439

Oulmaati, K., Ezzahri, S., & Samadi, K. (2017). The Use of ICT in the learning process among the students of History and Civilization at Abdelmalek Essaadi University, Morocco. *International Journal of Scientific Research & Engineering Technology (IJSET)*, *8*(2), 972-979. https://hal.science/hal-01512370/

Peimani, N., & Kamalipour, H. (2021). Online education and the COVID-19 outbreak: A case study of online teaching during lockdown. *Education Sciences*, *11*(2), 72. https://www.mdpi.com/2227-7102/11/2/72

Zyad, H., Benzehaf, B., Yeou, M. & Daouia, L. (2025). E-learning under COVID-19: Interrogating the past for a brighter future. *Global Journal of Foreign Language Teaching, 15*(1), 43-54. https://doi.org/10.18844/gjflt.v13i2.6483

Pickering, J., Wister, A. V., O'Dea, E., & Chaudhury, H. (2023). Social isolation and loneliness among older adults living in rural areas during the COVID-19 pandemic: a scoping review. *BMC geriatrics*, *23*(1), 511. https://link.springer.com/article/10.1186/s12877-023-04196-3

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, *55*(1), 68. https://psycnet.apa.org/journals/amp/55/1/68/

Todri, A., Papajorgji, P., Moskowitz, H., & Scalera, F. (2020). Perceptions regarding distance learning in higher education, smoothing the transition. *Contemporary Educational Technology*, *13*(1), ep287. https://www.cedtech.net/article/perceptions-regarding-distance-learning-in-higher-education-smoothing-the-transition-9274

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204. https://pubsonline.informs.org/doi/abs/10.1287/mnsc.46.2.186.11926

World Bank. (2020). *The COVID-19 pandemic: Shocks to education and policy responses*. World Bank. https://csrbox.org/media/148198.pdf

Younas, M., Noor, U., Zhou, X., Menhas, R., & Qingyu, X. (2022). COVID-19, students satisfaction about e-learning and academic achievement: mediating analysis of online influencing factors. *Frontiers in Psychology*, *13*, 948061. https://www.frontiersin.org/articles/10.3389/fpsyg.2022.948061/full

Zamir, S., & Wang, Z. (2023). Uncovering COVID-19, distance learning, and educational inequality in rural areas of Pakistan and China: a situational analysis method. *Humanities and Social Sciences Communications*, *10*(1), 1-13. https://www.nature.com/articles/s41599-023-02025-x

Zyad, H. (2016). Integrating Computers in the Classroom: Barriers and Teachers' Attitudes. *International Journal of Instruction*, *9*(1), 65-78. https://eric.ed.gov/?id=EJ1086973