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Online assessment via LMS and the Importance of Portfolio assessment: A Study on the Effects of Test Taking Skills, Buoyancy, Techno-Stress, and Language Achievement

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Abstract

The term online assessment refers to digital testing in which students complete tests, quizzes, or other types of evaluations using a device linked to the internet. In recent years, there has been a significant increase in attention paid to online education and online assessment, affecting many cognitive and emotional aspects of students' overall academic well-being. Different applications were introduced for virtual instruction; each has its own positive or negative factors that may attract educationalists' attention to employ or reject them. The current research intended to picture the effects of test-taking skills, buoyancy, techno-stress, and language achievement in online assessment via LMS (Learned Management System) and portfolio assessment. The participants of this study were 87 upper-intermediate EFL students from Saudi Arabia. The participants in the experimental group (n=45) took both an online assessment and portfolio assessment, while the other group, the control group (n=42), passed the online assessment. The results of data analysis via Independent Samples T-test indicated that the participants in the experimental group outperformed their peers in the control group in test-taking skills, buoyancy, and language achievement. They can also manage their techno stress much better than the control group. The ramifications of this study are discussed further in-depth.

***Keywords**:* Online assessment via LMS, Portfolio assessment, Test Taking Skills, Buoyancy, Techno-Stress, Language Achievement, EFL Learners

Introduction

The constant evolution of modern tools necessitates fresh approaches to education and assessment. In the last 50 years, studies on technology in education have flourished, especially in the wake of the COVID-19 Pandemic Crisis, which caused almost all schools to close and limited social interaction among members of the public. Technology in language education has the potential to affect the psychological well-being of learners as well as educators. Students' minds and emotions might be negatively impacted by taking tests online. Online assessments have grown in importance due to their increased

applicability in online classrooms and instructors' increased ability to monitor students' development instantly (Ritonga et al., 2023). Teachers may better monitor the advancement of their learners and provide supportive feedback using assessment resources online. Online versions of these tests offer educators a more accurate picture of their students' engagement and development. Educators, curriculum designers, and policymakers all have a role in creating secure settings for students to study and be evaluated online. In addition, test-taking techniques should be planned and practiced regularly during the semester.

In the context of learning, the term "portfolio" refers to a compiled set of resources that a student may use to demonstrate their skills and knowledge. Students' abilities are evaluated using this portfolio in a portfolio evaluation. Douglas (2000) defines portfolio assessment as the deliberate, chosen collecting of learners' work that reflects self-evaluation and is used to track learners' advancement and achievement across a period of time concerning particular objectives. Students get experience in presenting a variety of real-world activities via the use of portfolios. Learners who participate in portfolio assessment (PA) show considerable improvement in higher-order abilities, including critical thinking (Farahian et al., 2021).

As Efendi et al. (2017) highlighted, standardized and norm-based evaluations lack attributes like creative thinking, introspection, diversity, and individuality, all of which may be found in portfolios. Learners develop an awareness of their strengths and areas for improvement as trainees by writing reflective comments regarding their learning experiences (Tyas, 2020). Students' perspectives on their academic ability and personal growth changed during the year, as shown by their reflective writings. Consequently, EFL students who use portfolios become more independent in their academic pursuits (Segaran & Hasim, 2021). Bataineh and Obeiah (2016) examined how PA may help teachers save time while evaluating and guiding more engagement and negotiation. The effect of PA on EFL students' metacognitive knowledge of their writing processes was also investigated by Farahian and Avarzamani (2018).

Furthermore, Sulistyo et al. (2020) examined PA's effects on learners' writing skills and their mindsets. The results demonstrated that after introducing the portfolio evaluation, learners focused on their understanding of the topic and structure rather than their vocabulary, syntax, and mechanics. Their results indicated that PA was beneficial in students’ advancement in writing skills and a positive mindset. Tyas (2020) conducted a further analysis. She examined how one of Indonesia's top colleges uses PA to encourage student independence in the classroom. She found that students were able to become more independent in their learning with the help of PA because it gave them opportunities for internal assessment and reflection, facilitated participation in peer review procedures, and helped them become more aware of their strengths and weaknesses.

In addition, students have greater leeway to use meta-cognitive techniques and build higher-order thinking abilities via PA. Based on previous findings, a vital part of any effective educational process is the usage of portfolios to reflect student and instructor progress, as well as any areas of weakness that require further attention to be addressed. Students may learn to perceive themselves not only as readers or writers but as distinct people with specific interests and needs, which opens up exciting new possibilities for their education due to their portfolios. Considering all the positive aspects of PA, instructors still overlook and avoid portfolio settings, whether in the form of a developing portfolio or a showcase, in favor of more traditional assessments like examinations,

quizzes, and presentations. It is possible that educators do not use alternative evaluation strategies due to a combination of a lack of time and knowledge about how to implement them effectively (Pitri, 2021).

Someone's buoyancy might be considered an evaluation of how well they bounce back from setbacks. Academic buoyancy (AB) is a term in psychology that describes a student's readiness to overcome common academic obstacles (Martin, 2013). Resilience is a comparable notion, but it is fundamentally different from buoyancy because it relates more strongly to acute misfortune or crippling challenges to development, such as prolonged isolation and self-disability in the educational context (Martin & Marsh, 2009). Learners' AB may approach when they are engaged and interested in the content, as stated by Xu and Wang (2022) and Heydarnejad et al. (2022). Thus, they believe that teachers have a substantial role in determining the level of academic success that children attain.

To describe the nature of AB, Zhang (2021) found that pupils were more engaged when their language teachers were upbeat. As a result, it is plausible to infer that buoyancy may be helpful for both teachers and pupils and that efforts to apply beneficial techniques to increase AB levels are of utmost importance in any educational setting. Buoyant people, in other words, don't only react to setbacks; instead, they work to improve their state of mind over time, allowing for psychological development as a consequence (Yun et al., 2018). Learner-oriented assessment relies heavily on AB and reflective thinking, as Nurjamin & al. (2023) discovered. Similarly, Alazemi et al. (2023) conducted research along similar lines and found that buoyant EFL students were more in control of their emotions and had more grit tendencies. After using technology-based education, Zheng et al. (2023) concluded that students' ability to regulate their attention and emotions is fundamental in determining the level of language accomplishment achieved by EFL learners participating in online training.

Technostress is a phenomenon that has emerged due to a growing acceptance of technology, leading to the rise of phenomena damaging to users. Brod (1984) was the first person to coin the term technostress, which he defined as an adaptive sickness produced by an inability to cope with emerging computing technology efficiently and healthily. To be more exact, technostress may be defined as any adverse impact on individual mental states, behaviors, or physiological processes brought about directly or indirectly by technology (Yan et al., 2013). Even while research on technostress has previously been conducted in several different settings, the phenomenon has not yet been investigated in higher education, where computer technology is becoming more pervasive. Technostress has been linked to long-term health problems such as burnout, depression, and tiredness (Maier et al., 2019). An unfavorable technostress consequence need not result from working in a technologically challenging setting. These negative effects of technostress may be reduced via several means (Chen et al., 2019). For this reason, it is essential to deal with technostress not only after its unfavorable effects have been shown but at every step it goes through.

The effects of technostress on people's propensity to accept new technologies have also been studied. Technostress, as researched by Qi (2019), is one factor that has been shown to have a detrimental impact on educators' propensity to use technological solutions. Moreover, Zhao et al. (2022) also discovered that technostress is a negative mediator between the perceived utility of digital textbooks and the desire to purchase them. This means that the influence of a sense of utility on intent to adopt is reduced when technostress levels are high. Technostress and other unpleasant mental states may

influence how people evaluate new technologies, according to research by Steelman and Soror (2017). Divergent results on the connection between perceived norms and behavioral intention may be explained by the fact that people's levels of technostress may differ owing to their features (Wang et al., 2022).

Perspectives of this Research

Integrating new technologies into the realm of education, including its incorporation into instructional methods and assessment practices, may potentially upset the psychological equilibrium of students and provide a variety of novel challenges. The objective is to develop and implement effective instructional strategies that enable students to create and use techniques to overcome potential obstacles that may impede their learning and assessment progress. Despite recognizing the efficacy of both pa, test taking skills, and buoyancy in assisting students in managing their techno-stress and enhancing their educational attainment, no research has been conducted to examine the associations between these factors.

This research gap is readily apparent within the current corpus of academic literature in EFL assessment. Given the gaps mentioned above in research and the importance of learners' attributed variables concerning their academic performance, the objective of this study was to examine the influence of utilizing online assessment through a Learning Management System (LMS) and the consequences of portfolio assessment on test- test-taking skills, buoyancy, techno-stress, and language achievement. Keeping these considerations in mind led to the formulation of the following research question:

RQ: Does portfolio assessment influence test-taking skills, buoyancy, techno-stress, and language achievement?

Method and Materials

Procedure and Participants

The objective of the research may be described as quasi-experimental in its design. The participants in the study were all of the students who were enrolled in the language institutes to learn English as a foreign language in 2022. Students were divided into the control group (CG) and the experimental group (EG). The experimenting station was a high school for boys that belonged to the private sector and was located in the city of Jeddah.

The students' current level of English was determined by giving them the Oxford Quick Placement Test as the first stage. An upper intermediate level was defined as a score between 0.7 and 0.9. Then, the CG (n=45) was taught via the LMS, and their assessment was also via LMS, whereas the EG (n=42) was exposed to instruction through LMS and PA. The CG was assessed for mid-term and final exams via LMS. Considering EG, the aims and procedures of PA are described—every three sections, their progress was checked, and the necessary feedback was provided. There was a total of 16 sessions throughout the process. The first session was used to establish group cohesion, the second for pretesting, and the next 14 to provide the treatment. A posttest on test-taking skills, buoyancy, techno-stress, and language achievement was applied as the final step.

Measures

The Oxford Quick Placement Test (OQPT) determined the students' English competence. Students who scored between 0.7 and 0.9 on this test (where possible values range from 0.1 to 0.9) are deemed to have upper intermediate-level English language skills. The OQPT was subjected to a Cronbach's alpha reliability test, with satisfactory findings showing a reliability of 0.91.

The Test-taking Skills Scale (TTSS), developed to assess test-taking abilities (Dodeen, 2008), was used to assess the test-taking skills of the participants. This scale comprises an overall 31 items, broken down into four different subscales: before the test, time management, during the exam, and after the test. If a student achieves a high score on the TSS, it demonstrates that they have test-taking abilities that are at an appropriate level. This scale's internal consistency was satisfactory, with values ranging from 0.81 to 0.87 on its scale.

The Academic Buoyancy Scale (ABS) investigated the participants' buoyancy. Using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), Jahedizadeh et al. (2019) created and tested this instrument with 27 questions. It has four components: long-term viability, regular adaptation, personal eligibility, and academic acceptability. In addition, the ABS's dependability was within reasonable limits (between 0.79 and 0.83).

The level of technostress among the EFL learners was evaluated using the Techno-stress Scale (T-S S) by Wang et al. (2020). This scale was developed with eight different products in mind. Utilizing a 5-point Likert scale, where one represents strongly disagreeing, and five represents strongly agreeing. T-S S reliability also fell within acceptable ranges (0.79 and 0.83).

A researcher-created exam, based on Top Notch 4's themes, was given to participants before and after the study to get insight into their language progress. There were 40 questions on this exam, ten each for listening, speaking, reading, and writing. Two psychometricians and three EFL teachers evaluated the test's face and content validity, and the results informed revisions to the exam. The test-retest reliability was then examined using a sample of 37 EFL students at the upper intermediate level of English competence. This test was given to the same subject again a few weeks later to ensure the results held up over time. Pearson's R was reported, which was very helpful ($r = 0.913$, $p < 05$).

Statistical Analyses

An Independent Samples T test was used to investigate the effectiveness of portfolio assessment on anxiety reduction in online review through LMS. Before executing the analysis, the related assumptions were analyzed and assessed. These included normality, sample size, outliers, linearity, and homogeneity of regression, among others.

Findings

After checking the normality distribution of the gathered data through the Kolmogorov–Smirnov test ($p > 0.05$), the independent samples t-test was run to check the performance of the two groups on the pretests and posttests.

Table 1

Descriptive Statistics for the Pretest of TTS, Buoyancy, TS, and LA

	Groups	N	Mean	Std. Deviation	Std. Error Mean
TTS Pre	EG	45	73.17	14.31	2.13
	CG	42	75.66	19.55	3.01
Buoyancy Pre	EG	45	69.68	77.23	11.51
	CG	42	74.45	22.11	3.41
TS Pre	EG	45	31.46	7.79	1.16
	CG	42	30.47	20.18	3.11
LA Pre	EG	45	26.64	16.86	2.51
	CG	42	29.61	16.61	2.56

NOTE: TTS (**Test Taking Skills**); TS (**Techno-stress**); LA (**Language Assessment**); Pre (Pretest)

Table 1 presents the descriptive data about the pretest scores of learners in the experimental group (EG) and control group (CG) across many domains, including test-taking skills, buoyancy, techno-stress, and language assessment. To determine the statistical significance of the disparity in mean scores and, therefore, the distinction between the two groups on the pretests, it is necessary to do an independent samples t-test (Table 2).

Table 2

Results of Independent-Samples t Test Comparing the Pretests of EG and CG

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
TTS Pre	Equal variances assumed	2.87	.09	-.68	85	.498	-2.48	3.65
	Equal variances not assumed.			-.67	74.80	.50	-2.48	3.69
Buoyancy Pre	Equal variances assumed	5.30	.02	-.38	85	.70	-4.76	12.36
	Equal variances not assumed.			-.39	51.64	.69	-4.76	12.00
TS Pre	Equal variances assumed	2.61	.11	.30	85	.76	.99	3.23
	Equal variances not assumed.			.29	52.26	.76	.99	3.32
LA Pre	Equal variances assumed	.03	.84	-.82	85	.41	-2.97	3.59
	Equal variances not assumed.			-.82	84.74	.41	-2.97	3.59

According to the data in Table 2, there was no statistically significant difference between EG and CG regarding their TTS, buoyancy, TS, and LA. As a result of the fact that the p-value was more than the significance threshold ($p > .05$), this conclusion was reached. As a result, one may conclude that the students in both groups were operating at the same level before getting the treatment.

The only objective of the study was to answer the research question of whether portfolio assessment impacts test-taking skills, buoyancy, levels of techno-stress, and language achievement. To discover an answer to this study question, the posttest scores of the students who participated in the CG and the EG were compared using an independent samples t-test.

Table 3

Descriptive Statistics for the Posttests of TTS, Buoyancy, TS, and LA

	Groups	N	Mean	Std. Deviation	Std. Error Mean
TTS Post	EG	45	117.33	20.11	2.99
	CG	42	99.59	17.87	2.75
Buoyancy Post	EG	45	106.57	18.71	2.79
	CG	42	82.40	23.07	3.56
TS Post	EG	45	25.06	8.61	1.28
	CG	42	30.04	5.23	.80
LA Post	EG	45	41.26	22.66	3.37
	CG	42	29.69	4.92	.76

NOTE: Post (**Posttest**)

It is apparent from Table 3 that there was a substantial discrepancy between the posttest results of the learners of EG and CG. It is essential to look at the t-test table below (Table 4) to determine whether the difference in post-test scores between the EG and CG learners was statistically significant.

Table 4

Results of Independent-Samples t Test Comparing the Posttests of EG and CG

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
TTS Post	Equal variances assumed	2.01	.16	4.33	85	.000	17.73	4.09
	Equal variances not assumed.			4.35	84.80	.000	17.73	4.07
Buoyancy Post	Equal variances assumed	.61	.43	5.38	85	.000	24.17	4.49
	Equal variances not assumed.			5.34	79.04	.000	24.17	4.52
TS Post	Equal variances assumed	20.78	.00	-3.231	85	.002	-4.98	1.54
	Equal variances not assumed.			-3.28	73.33	.002	-4.98	1.51
LA Post	Equal variance	17.38	.00	3.23	85	.002	11.57	3.57

	s assumed					
	Equal variance s not assumed.	3.34	48.43	.00	11.57	3.46

Table 4 revealed that there was a statistically significant difference between the mean scores of the EG and CG learners on the posttests of TTS, Buoyancy, TS, and LA since the *p*-value was smaller than the significance level (i.e., .00 < .05). This indicates that the treatment (using portfolio assessment) was effective as it improved the test-taking skills, buoyancy, and language achievement and decreased the techno-stress of Saudi Arabian upper-intermediate EFL learners.

Discussion, Conclusions, and Implications

According to what was highlighted earlier, this research aimed to investigate the effects of PA on test-taking skills, buoyancy, techno-stress, and overall academic success in the EFL setting. To achieve this goal, a comparison was made between the results of two sets of pre-and post-tests and the outcome of two different CG and EG. The results of data analysis demonstrated that the EG and CG posttests were significantly different from one another. The findings indicated that the EG considerably surpassed the CG in test-taking skills, buoyancy, controlling techno-stress, and language achievement, which demonstrates the efficacy of using PA in the EG.

It indicates that when EFL learners practice effective ways of managing their assessment and display their real proficiency, they feel inclined to succeed and less apprehensive during online assessment. This is because they can demonstrate their actual level of knowledge and skills. To succeed in this endeavor, it is vital to learn the knowledge needed to effectively manage the time running up to, through, and after an examination. For the learners to get to this stage, they must be provided with beneficial techniques. By engaging in practice, they can learn how to manage their anxiety, perform the evaluation well, and keep track of the time. This finding is supported by Ritonga et al. (2023), who highlighted that engagement in online assessment was achieved when test-taking skills, resilience, and autonomy were practiced.

It would not be unreasonable to assume that students' linguistic abilities would increase if they were allowed to participate in online language sessions at their own pace and under their own direction. The findings of Ismail and Heydarnejad (2023) came to the same conclusion about the direct links between self-efficacy and personal best objectives. Self-reliance and autonomy may be fostered in students by ensuring they are granted access to the facilities they will need to be profitable in their learning efforts. More importantly,

When practiced regularly, critical thinking may help with things like attention, mood, focus, and general well-being (Namaziandost et al., 2023). Thus, EFLs with a high-thinking strategy are more likely to respond favorably to obstacles by setting attainable objectives and deliberately assimilating into their new social networks' social and cultural expectations.

The analytical abilities of learners may be improved via self-examination and reflection, and EFL students need to participate in the creation of evaluation portfolios. This finding is in accord with Deeba et al. (2023) and Pitri (2021). They asserted that

reflection allows students to learn from their errors and amend their work. They are evaluated based on their highest achievements throughout a particular period of time. The findings also reflected that the portfolio paints an accurate image of the learning objectives that have been reached and involves both teachers and students in defining and developing educational objectives and assessing the degree to which these goals are being met. Based on Aysu (2021), the purpose of utilizing a portfolio in conjunction with other methods of assessment is to acquire a reliable reflection of the students' work, to stimulate critical thinking and self-evaluation among students, and to evaluate the achievement of learners based on authentic work produced by the learners themselves.

The outcomes also mirrored that applying a convenient assessment strategy involving EFL learners in their own evaluation also decreases their techno-stress while attending virtual classes. PA gives EFL students an inside look at their strengths and weaknesses, and the findings of this study imply that emotional and cognitive balance is necessary for modulating techno-stress. Another rationale for the acquired results can be that the portfolio evaluation method provides the students with more flexibility, enables them to build and strengthen their higher-order thinking abilities, and encourages them to choose meta-cognitive techniques. EFL students can perceive themselves not just as readers or writers but also as unique persons with their own needs and requirements, and portfolios offer students one-of-a-kind educational possibilities to further their education.

This outcome is supported from a theoretical standpoint. According to Desyatova (2020) and Nezakatgoo (2011), the philosophy of PA is founded on self-determination and individual autonomy. In various manners, EFL learners might benefit from a more student-oriented assessment strategy. It has a domino effect on the pupils' ability to get along with one another and other people. Students who participate in PA have their minds opened; they become aware of both the beneficial and adverse aspects of the experience. In this approach, a significant portion of worry, particularly the concern associated with anxiousness in language lessons and evaluation, will reduce, while pleasure will increase.

As a supplementary finding of this research, the PA was revealed to be able to lend support to the AB improvement. The results demonstrated that PA has the potential to alter AB among EFL students studying via LMS. To put it another way, buoyant pupils used practical methods to think critically and regulate the sensations they were having emotionally. This indicates that AB is essential for positive psychological qualification and a favorable view of the educational environment. There was a lot of room for discovery regarding the connection between PA and AB since no identical research was performed in this regard. Jia and Cheng (2022) looked at the impact of AB via the prism of social support in higher education. This research showed that both AB and social support boosted the motivation of university-level EFL students. As a result, enthusiastic pupils are highly motivated and actively participate in extracurricular activities. In the same vein of research, Nurjamin et al. (2023) argued that fulfillment in self-assessment and test-taking anxiety control was required.

The overarching purpose of this study was to shed light on the effects of PA on the impacts of test-taking skills, buoyancy, techno-stress, and language achievement. The findings displayed that implementing PA could improve test-taking skills and buoyancy and decrease techno-stress in online assessment vis LMS. Despite the difficulties that arise while learning a new language, it has been discovered that cultivating traits like test-taking skills and buoyancy is vital. Teachers and students of foreign languages benefit from familiarity with self-improvement strategies and technological literacy and the goals

they represent. Educators and scholars may have access to the required knowledge via in-service and pre-service education courses. Language education and assessment based on virtual instruction and self-help strategies should be considered by policymakers, curriculum designers, content producers, test developers, and language teachers. This will guarantee the prosperity of students and, most importantly, society as a whole in terms of academic achievement.

More empirical study may benefit this field, which seems to be in its infancy, by illuminating a route that improves students' academic performance and guarantees efficient instruction. Policymakers, curriculum designers, content producers, test developers, and language educators need to recognize the advantages of including psychological features that might reduce the potential stress experienced by students during language assessment. Work that helps EFL students apply effective self-help frameworks outside the classroom is also encouraged. Self-regulation and self-awareness should be honed right from the start of language study, especially in online instruction. This way, EFL students will have a higher chance of succeeding with technology, teachers can tailor their instruction to individual learners better, and everyone will reap the benefits.

Results from this study were acquired using quantitative methods; however, future studies might benefit from using qualitative methods to ensure the accuracy of their findings. In addition, the following studies can investigate the impacts of different educational platforms and tools on language subskills. Future research on the same topic may focus on language proficiency levels, as this one did on upper-intermediate students. There were no female participants in this research. The inclusion of both genders may be the subject of future study. Language students were the subjects of this investigation. Future research should investigate how PA could influence the level of students' buoyancy and test-taking skills in different subject areas attending online assessments.

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