

# Effects of Scaffolded Peer Assessment and E-Portfolio Assessment on Writing Skills of ESL Undergraduate University Students in Karachi, Pakistan

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## **Abstract**

This study investigates how summative assessment, scaffolded peer assessment, and e-Portfolio assessment affect ESL university students' writing abilities. A quasi-experimental design was used to investigate the impact. In this study, three intact classes were taken for this study. Each class had 25 students. An ANOVA analysis showed a clear difference in post-test scores among the groups ( $p < .001$ ). The findings revealed that scaffolded Peer Assessment group performed better than e-portfolio group and summative assessment group. The e-Portfolio assessment group also made significant progress over the summative assessment group. These outcomes suggest that scaffolded peer assessment and e-Portfolio assessment work better than traditional summative assessment for improving writing skills among ESL university students.

**Keywords:** Scaffold peer assessment, E-Portfolio Assessment, Self-regulated learning theory, Summative Assessment, ESL

## **Introduction**

Assessment is a key component of evaluating someone's knowledge, skills and competence for a particular task (Chudowsky, & Glaser, 2001). In the context of education, assessment serves not only as a tool for assessing students' knowledge but also for informing instructional practices.

(Popham, 2018). In education, assessment has various types such as summative assessment, formative assessment and diagnostics assessment. (Popham, 2018).

Language assessment is a crucial part of overall educational assessment. It focuses on individuals' language proficiency and communication skills. (Bachman & Palmer, 2010). It often involves the evaluation of various language competences such as listening, speaking, reading and writing. It is used to make informed decisions about language learning program and placement. (Bachman & Palmer, 2010).

Portfolio assessment is a subtype of language assessment. It includes gathering students writing and keeping it in a reflective journal. It is preferred to standardized testing and summative assessment as student tend to reflect on their work as they are creating their portfolio.

(Kirkpatrick & Gyem, 2012). Research has shown many advantages of portfolio assessment such as improved learner autonomy, and self-regulation. It helps in social awareness and cognitive awareness as well. (Behbahani et al., 2011). It also has good teacher experiences (Lee, 2017) and its use in editing works-in-progress (Azizi & Namaziandost, 2023).

Similarly, social constructivism-based scaffolded peer evaluation encourages active learning via social interaction and language development reflection. Students interact with each other and develop their skills (Vygotsky, 1987; Lam, 2019). Scaffolded peer review assessment has a lot of advantages for students. It is preferred by students. (Noroozi et al., 2016). It develops students' critical judgment and critical evaluation skills. Because students give feedback to each other by talking to each other and discussing things, they develop their social and critical thinking abilities. (Lipnevich & Smith, 2022) It also informs the teacher a lot about students and how much they know about each other, and the level (Hsia et al., 2016). Scaffolding provides temporary support to learners as students help each other when they are learning something new

or difficult. As some students pick up the topic quickly, they tell others about it (Sawyer, 2006). It is similar with Vygotsky's Zone theory of Proximal Development (ZPD) and facilitates deeper learning (Naserpour & Zarei, 2021).

Even though there are many benefits of e-Portfolio assessment, it faces challenges in implementation due to teacher rigidity. As many teachers prefer traditional assessment methods and are resistant to change. For example, some teachers prefer the old board and chalk method of teaching, so they don't use e-Portfolio assessment.

It is also challenging due to insufficient assessment literacy, as many teachers don't even know about this assessment method. Also, there is the case of low student involvement, complex grading, and a test-driven culture where exam centers are everything (Lam, 2018; Lee & Coniam, 2013; Song & August, 2002; Xu & Brown, 2016).

Students may also doubt their peers' abilities to provide feedback in peer assessment, potentially leading to resistance or skepticism, like some students might downplay their classmates' feedback (Gielen et al., 2010; Mostert & Snowball, 2013). Effective implementation of both portfolio and peer assessment requires careful scaffolding, including clear aims, visualization of progress, tutorials, examples, prompts, extended deadlines, and transparent rubrics (Chappuis, 2014; Gregory et al., 2001; Kusuma et al., 2021; Lam, 2020; Panadero & Romero, 2014; Rezai et al., 2023).

## **Problem Statement**

While the literature suggests the potential benefits of e-Portfolio assessment and scaffolded peer assessment for enhancing various aspects of learning. It includes learner autonomy and critical thinking. There is a notable gap in directly examining their effect on the writing skills of

university students. Furthermore, the existing research lacks a specific focus on the context of Karachi, Pakistan. The educational system in Pakistan often emphasizes traditional, test-driven approaches (Lam, 2018). It potentially creates a disconnect between the theoretical benefits of portfolio and peer assessment and their actual impact on writing proficiency in this environment. It remains unclear how these assessment methods, with their inherent challenges such as teacher training and student engagement (Lee & Coniam, 2013; Xu & Brown, 2016), translate into measurable improvements in the writing abilities of university students in Karachi. To fill this contextual and empirical gap and advance knowledge of how these assessment techniques can be successfully applied to enhance writing outcomes, this study will investigate the effects of e-Portfolio assessment and scaffolded peer assessment on the writing abilities of university students in Karachi, Pakistan.

### **Research Objectives**

To investigate the differential effects of Summative Assessment, Scaffolded Peer Assessment, and e-Portfolio Assessment on the academic writing performance of ESL undergraduate university students.

### **Research Questions**

To what extent do Summative Assessment, Scaffolded Peer Assessment, and e-Portfolio Assessment affect the writing performance of university students?

### **Literature Review**

In education, assessment procedures have changed dramatically. Recently, alternative methods like scaffolded peer assessment and e-Portfolio assessment have gained popularity because they can improve learning outcomes in ways that traditional summative methods cannot. Summative

evaluation has been criticized for its shortcomings in promoting deeper learning and skill development, even though it is still widely used and is typified by its dependence on standardized tests. It doesn't enhance students' critical thinking, and their social skills like peer assessment, or their writing, like e-Portfolio assessment (Lam, 2018).

### **E-Portfolio Assessment**

It is commonly recognized that e-Portfolio assessment, which involves the gathering of student work over time, nurtures learner autonomy, self-control, and reflective practices (Behbahani et al., 2011; Kirkpatrick & Gyem, 2012). Previous research reveals that how well it works to enhance writing skills by promoting self-inspection and helping students identify their areas of weakness (Mphahlele, 2022). But there are several problems associated with e-portfolio assessment for example the lack of student participation, complicated grading processes, and teachers' resistance (Lam, 2018; Xu & Brown, 2016).

### **Scaffolded Peer Assessment**

Scaffolded peer assessment is a type of assessment that has its roots in social constructivism theory. It focuses on social cooperation and active learning. In this type of assessment, the learners give each other feedback and help each other to learn new things. (Vygotsky, 1987; Lam, 2019). When the teachers give students the chance to assess and evaluate each other's work, it leads to better comprehension and improved writing abilities for all students. (Lipnevich & Smith, 2022; Nicol, 2020). Scaffolding is important in order to help students understand the concept of peer assessment. It provides short-term assistance in the form of instructions, examples, and rubrics (Chappuis, 2014; Naserpour & Zarei, 2021). Because scaffolded peer assessment encourages reflection and knowledge construction, empirical research has shown that

it is effective in enhancing both the assessor's and the assessee's writing performance (Noroozi et al., 2016; Malecka et al., 2020).

### **Comparative Effectiveness and Contextual Gaps**

Previous research shows that portfolio and scaffolded peer assessments are more effective than summative methods at developing writing skills (Azizi & Namaziandost, 2023; Lam, 2020).

However, research has mostly been done in Western or East Asian settings, with little attention paid to developing nations like Pakistan, where test-driven educational systems are frequently prevalent (Lam, 2018). Moreover, it is observed that summative assessment hardly improves students' writing skills in Pakistan. To address this gap, a contextualized analysis of Karachi, Pakistan's distinct sociocultural and institutional dynamics is required therefore this study investigate the effect of various assessment types on undergraduate students in Karachi Pakistan

### **Theoretical Framework**

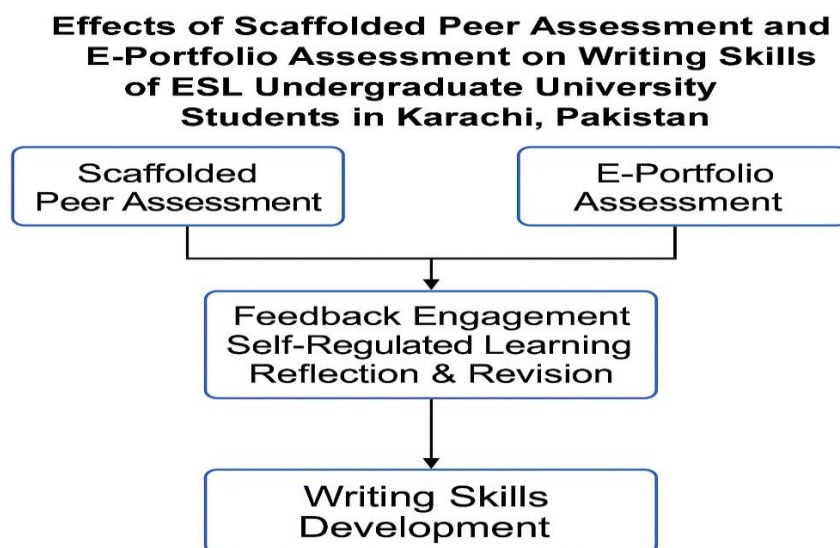
#### **Constructivist Learning Theory**

Constructivist learning theory states that learners create their own knowledge and understanding rather than just passively receiving information. According to Piaget (1976) and Vygotsky (1978), students create and develop their own understanding by integrating new information with what they already know through cooperative learning. This framework is specifically crucial in language learning context where the learners help each other to learn new information. It encourages students to evaluate each other work. Previous research shows that teaching strategies based on constructivist learning theory significantly enhance students' performance as it instills a sense of community and shared responsibility among students. (Johnson & Johnson, 2014).

## Self-Regulated Learning

Self-regulated learning theory states that students should be in charge of their own learning as they learn new information.

Zimmerman (2002) defines SRL as the process by which students establish objectives, track their development, and evaluate their educational experiences. This approach not only promotes independence but also enhances motivation and performance. According to recent research, e-portfolios significantly improve self-regulated learning by allowing students to track their progress and reflect on their writing (Deng & Yuen, 2016).



## Methodology

The purpose of this study was to examine the effects of scaffolded peer assessment and e-Portfolio assessment on university students' writing skills. It is a Quasi-experimental study where a writing essay question was developed to assess students' writing skills.

For this experiment, three university classes were chosen. The target population were 378 undergraduate students in a private university in Karachi, Pakistan. A purposive sample of 75 students was selected for this study, representing the accessible population. The criteria for purposive sampling included students being enrolled in English courses where these specific assessment methods (Summative, E-Portfolio, and Scaffolded Peer Assessment) could be implemented. Three intact classes, each with 25 students, were chosen to form the three groups.

## **Instruments**

### **Writing Test**

For the pretest and posttest, an essay writing test was developed from the book *College Writing with Reading* by John Langan and validated by expert ELTs. It was used to assess students writing performance. This test was administered as both a pre-test and a post-test.

### **Essay rubric**

An Essay rubric was used to evaluate students' essays written before and after the intervention. This was the same rubric that is used in the Cambridge examination. The rubric had 20 marks. Students were given marks based on grammar, organization, and ideas.

## **Procedure**

### **Homogenization**

The Oxford Quick Placement Test was administered to ensure baseline equivalence among the groups.



### **Pre-test**

All groups completed the writing pre-test. The pre-test was checked by expert ELTs, and students were given marks out of 20.

### **Intervention**

The intervention was for 3 months. Students were taught writing skills, and each group was assessed differently.

### **E-Portfolio Assessment Group**

Students developed a writing portfolio over 3 months, including multiple drafts and revisions of their descriptive essays. They received guidance on portfolio construction and self-reflection.

### **Scaffolded Peer Assessment Group**

Students engaged in scaffolded peer assessment of their essays, using structured feedback forms and guidelines. Training was provided on effective peer review techniques. Students gave each other feedback in every class using the structured feedback form. They gave each other advice for improvement and gave each other feedback on their grammar, sentence structure, vocabulary, and also on their organization and ideas.

### **Summative Assessment:**

Students received writing instruction and participated in a traditional midterm and final term exam.

### **Post-test**

All groups completed the writing post-test. Then it was checked by expert Elts, and students were given marks out of 20.

### **Ethical Considerations**

Before the commencement of this study, all necessary ethical protocols were meticulously observed. Informed consent was obtained from all participating university students. Participants were thoroughly briefed on the purpose of the study, the procedures involved, their right to voluntary participation, and their freedom to withdraw at any point without penalty.

Confidentiality and anonymity of all participant data were strictly maintained throughout the research process. All collected data were anonymized and handled with the utmost discretion to protect the privacy of the students. The study design and implementation adhered to the ethical guidelines for educational research, ensuring the well-being and rights of the participants were prioritized.

### **Result**

The aim of this study was to investigate the effect of different assessment types on the writing skills of undergraduate university students. To ascertain whether there were statistically significant variations in the efficacy of the various assessment techniques, the post-test results from the three groups were compared using ANOVA.

### *Descriptive Statistics for Pre-Test Score*

*Table 1*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
SA	25	9.8	2.89	0.58	8.67	11.07	4.6
EPA	25	9.30	3.05	0.61	8.06	10.54	4.6
SPA	25	10.00	3.28	0.66	8.66	11.34	3.33
Total	75	9.73	3.05	0.35	9.04	10.42	3.33

Table 1 shows the baseline writing skill levels of the three groups (SA: Summative Assessment, EPA: e-Portfolio Assessment, and SPA: Scaffolded Peer Assessment) before the intervention. The means are fairly similar across the groups (around 9-10), suggesting that the groups had comparable writing abilities at the start of the study.

### *Comparison of Pre-Test Scores*

*Table 2*

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	15.27	2	7.613	.358	.700
Within Groups	1530.960	72	21.263		
Total	1546.187	74			

Table 2 presents the results of an ANOVA test, which checks if there's a statistically significant difference in pre-test scores between the three groups.

The p-value (Sig.) is .700, which is greater than the typical significance level of 0.05. This indicates that there was no statistically significant difference in pre-test writing scores between the groups before the intervention.

### *Descriptive Statistics for Post-Test Score*

*Table 3*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
SA	25	11.07	3.34	.67	10.14	12.67	5
EPA	25	13.07	2.67	.53	12.94	14.26	8
SPA	25	16.27	2.02	.40	15.15	15.65	12
Total	75	13.47	3.45	.40	12.01	12.39	5

Table 3 shows the writing skill levels of the three groups after the intervention.

The means are different across the groups (SA: 11.07, EPA: 13.07, SPA: 16.27). The SPA group has the highest mean post-test score, followed by the EPA group, and then the SA group. This suggests that the scaffolding peer assessment may have been the most effective intervention.

### Comparison for Post-Test Scores

Table 4

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	774.000	2	387.000	23.028	.000
Within Groups	1210.000	72	16.806		
Total	1984.000	74			

Table 4 shows ANOVA test checks if there's a statistically significant difference in post-test scores between the three groups. The p-value (Sig.) is .000, which is less than 0.05. This indicates that there was a statistically significant difference in post-test writing scores between the groups.

### Multiple Comparisons Dependent Variable: Posttest

Tukey HSD

Table 5

(I) Groups	(J) Groups	Mean	Std. Error	Sig.	95% Confidence Interval	
		Difference (I-J)			Lower Bound	Upper Bound
SA	2	-2.000*	0.773	.021	-3.77	-0.15
	3	-5.200*	0.773	.000	-7.57	-3.36
EPA	1	2.000*	0.773	.031	.15	3.85
	3	-3.200*	0.773	.000	-5.04	-1.36
SPA	1	5.200*	0.773	.000	3.36	7.04
	2	3.200*	0.773	.000	1.36	5.04

Table 5 shows which specific groups differed significantly in their post-test scores.

The asterisk (\*) indicates statistically significant differences. We can see that SA scored significantly lower than EPA and SPA. EPA scored significantly lower than SPA

This suggests that both e-Portfolio assessment and scaffolded peer assessment were more effective than the traditional summative assessment in improving writing skills.

## **Discussion**

The aim of this study was to explore the impact of summative assessments, scaffolded peer evaluations, and e-portfolios on the writing skills of undergraduate students in Karachi, Pakistan.

It was revealed that each assessment type had different effects on the writing skills of the students. First of all, the scaffolded peer evaluation group scored the highest in the post test result. It was followed by the e-Portfolio assessment group, while the summative assessment group had the lowest mean post-test score. The finding showed that scaffolded peer assessment is more vital in improving students' grades.

These findings are consistent with previous studies showing the advantages of social constructivism and active learning for improving writing abilities (Lam, 2019; Lipnevich & Smith, 2022; Nicol, 2020).

Similarly, the e-Portfolio assessment also improved students' writing. So, the idea that e-Portfolio assessment, with its focus on reflection and revision, can have a positive effect on writing development is supported by the research done by Azizi & Namaziandost (2023.)

Moreover, the group that used traditional summative assessment techniques demonstrated the least improvement. It indicates that traditional test-driven approaches are not as effective in

promoting deeper learning and writing proficiency as the other methods of assessment (Lam, 2018)

## **Implications**

The findings from this study have significant implications for Pakistan's educational sector, particularly for higher education across all public and private universities. There is a need for a sharp shift away from traditional summative assessments. The focus should be more on modern assessment techniques.

The finding revealed the effectiveness of scaffolded peer assessment and e-Portfolio assessment in boosting writing skills during our experiment. The education sector should move towards more collaborative and reflective learning practices by integrating these alternative teaching strategies into the curriculum, educators can foster critical thinking, promote student autonomy, and encourage a deeper connection with the writing process.

Furthermore, e-Portfolio tasks and structured peer assessments align well with constructivist and self-regulated learning theories, actively engaging students and supporting a more comprehensive approach to skill development.

## **Limitations**

This study, while a good start for a quasi-experimental design, had a few limitations. The sample size of 75 students, though sufficient for this type of study, means we can't necessarily extend these findings to all university students in Karachi or Pakistan.

Also, we relied solely on quantitative measures like pre- and post-tests. These don't always capture the full, nuanced experiences of teachers and students during the intervention.

And, because the study only ran for three months, it's hard to say what the long-term impacts of e-portfolios and scaffolded peer evaluation might be on writing skills.

Finally, we didn't fully explore other factors that could have influenced the results, such as differences in how teachers facilitated the learning, student motivation levels, or access to technology.

### **Suggestions for Future Research**

The future researcher should tackle this limitation. It means using large sample size and more diverse sample to ensure that findings are relevant in different context. They can also replicate this study in lower classes like school and colleges.

They can also take a mixed-methods approach: blending quantitative data with qualitative method. This would offer a much richer understanding of the processes and challenges involved when implementing e-Portfolio and scaffolded peer assessments. Researchers could also delve into the long-term effects of these strategies on students' writing development and overall academic performance – longitudinal studies would be key here.

### **Conclusion**

This study looked at how different assessment methods—e-portfolio, scaffolded peer, and traditional summative—affected college students' writing skills here in Karachi, Pakistan. What we found was pretty clear: traditional summative assessment was the least effective at improving writing, while scaffolded peer assessment was the most successful, with e-Portfolio assessment



coming in second. These findings really underscore how vital it is to incorporate more reflective and cooperative assessment techniques into our higher education programs if we want to boost students' academic writing.

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