Leveraging Padlet for Developing Writing Skills of I Year Engineering Students

Dr. S. Latha Venkateswari
Professor of English
Government College of Technology
Coimbatore – 641013
Email: drlathagct@gmail.com

==

Abstract

Writing is the most important skill needed for engineering students as engineers have to communicate intricate technical information, deliver reports and proposals to clients and colleagues throughout their career. Effective writing skills nurture critical thinking and problem-solving acumen. Hence, language teachers play a vital role in equipping engineering students with this skill. Though second language learners face challenges in mastering the nuances of English language, Padlet, an interactive and user-friendly platform, assists L2 learners in mastering this skill through a collaborative approach, which motivates them to augment their learner autonomy and competence.

This paper explores the potential of Padlet in enhancing the writing proficiency of engineering students in the light of the theories that support the integration of Padlet and the methods through which teachers can create an interactive and effective learning atmosphere.

Keywords: Padlet, Collaborative learning, Second Language Learners (L2), Peer review and Feedback.

Introduction

The digital era has transformed the educational landscape through its plethora of digital tools. One such tool is Padlet, which enables the users to create virtual bulletin boards on which they can share text, images, digital content, and beneficial web links (Erito, 2022). When teachers incorporate Padlet into their teaching methodology, they can build a dynamic and interactive learning environment. Besides, it makes learners enjoy a more engaging educational experience.

==
Language in India **www.languageinindia.com** **ISSN 1930-2940** **Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   44

Writing is the most ignored skill in schools and colleges as it presents several challenges to the learners. While the traditional method of teaching gives importance to average learners, overlooking the needs of advanced learners, Padlet provides a platform wherein the abilities of heterogeneous groups of learners are tested and proper assistance is offered at regular intervals. Besides, learners get an opportunity to learn and correct their mistakes by reading the content of their peers. By incorporating Padlet into the teaching methodology, teachers can make teaching more effective and improve the learning accuracy of students.

Research Questions

This study is aimed at collecting data on how the use of Padlet can improve the writing skills of engineering students. The following questions support this study further.

1. How does the use of Padlet influence the development of writing skills among engineering students?
2. In what ways does collaborative writing on Padlet impact the quality of engineering students' written assignments?
3. How does the use of Padlet as a writing tool affect the engagement and motivation of engineering students in writing tasks?

Literature Review

Since the launch of Padlet, researchers have been exploring the ways in which it can be useful to improve the writing skills of L2 learners. As a digital notice board, it allows learners to share and collect ideas, promotes creativity and collaboration among students, and helps improve writing skills by saving information on an easy-to-access platform. (Saepuloh & Salsabila, 2020). Periodical research proves that Padlet enhances the writing skills of L2 learners. It supports learners in acquiring new knowledge in a fun and interactive way (Rashid et al., 2019). It encourages student-centeredness and autonomous learning (Ahmadi 2018). Its interactive application helps learners collaborate with one another (Mehta et al., 2021). Padlet allows students to post documents, images, and files related to the topic of discussion. This feature enables students to exchange views on the posts of their peers, along with getting evaluations of their posts from their teachers as well (Shuker & Burton, 2021).

The option to post ideas in an anonymous mode encourages students who have inhibitions (Cutting et al., 2020). This motivates the learners to project their creativity

===
Language in India www.languageinindia.com **ISSN 1930-2940** **Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   45

(Saepuloh & Salsabila, 2020). Padlet is a user-friendly tool for reviewing and giving feedback on students' writing (Jong and Tan, 2021). Besides, it adds value to the writing tasks (Mahmud, 2019). Padlet makes it feasible to have virtual interaction between teachers and students. Hence, the process of teaching and learning is taken up effectively without any time constraints (Baidoo et al., 2022).

Application of Theories to Padlet

Theories such as constructivist learning theory, collaborative learning theory, cognitive load theory, motivation theory, situated learning theory, and connectivism advocate for the integration of Padlet into the teaching and learning process. A brief discussion of these theories and their applications to Padlet will highlight its benefits.

Constructivist Learning Theory

Jean Piaget, a Swiss psychologist, developed this theory in the mid-20th century. Later, Lev Vygotsky, Jerome Bruner, and other theorists developed this theory. According to this theory, learners gain knowledge through experience and active participation in learning activities, which underscores the importance of learner-centeredness. Padlet aligns perfectly with this theory as it gives learners space to participate actively in the tasks posted on the Padlet wall and helps them expand their knowledge through their interaction with one another.

Collaborative Learning Theory

This theory took shape in the 1970s. Scholars like Kenneth Bruffee, David W. Johnson, and Roger T. Johnson formalized this theory and applied it to educational settings. It considers learning as a social process wherein learners interact with one another, gain knowledge through collective efforts, enhance their understanding of concepts, and retain information even after the learning process.

Taking up the collaborative task of preparing an article on a current topic can make learners share ideas, get the views of their peers, develop problem-solving skills, and write a better draft through interaction with one another. The prime importance given to peers' comments supports students in fostering a sense of responsibility towards learning.

Cognitive Load Theory (CLT)

===
Language in India www.languageinindia.com**ISSN 1930-2940****Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   46

John Sweller developed this theory in the late 1980s. His study explored how human cognitive structure can aid learners in learning new concepts. Also, it balances the cognitive overload with the help of designing instructions. This theory gained popularity as it combined the limitations of human memory with the structure of long-term memory. CLT can be applied to different levels of school and collegiate education. It helps in enhancing learning outcomes, since it exploits the human "cognitive architecture" (p.15).

Generally, students get mental fatigue, and they tend to forget the concepts learned in the traditional method of teaching and learning. This is due to cognitive load, as human "cognitive architecture" has "working memory" with limited capacity and "long-term memory" with unlimited capacity to retain information. But when teachers post the relevant content in digital format on the Padlet wall, its visual effect aids students in linking their prior knowledge with the new information, understanding and retaining the concepts, which aids them in completing the writing tasks with precision.

Motivation Theory

This theory has evolved over the years based on the inputs of psychology, sociology, and neuroscience that highlight how human behaviour gets motivated in a variety of contexts. Also, it focuses on the importance of motivating learners, which has the power to enhance their comprehension abilities. Deci and Ryan (1985) framed self-determination theory that emphasizes the need for developing learners' "autonomy, competence, and relatedness" (p.233).

Padlet empowers learners to foster autonomy, which allows them to take control of their learning experience. They enjoy the freedom of selecting topics, collaborating with peers, and expressing their ideas without any hesitation. This process pushes them to learn with increased motivation. Added to this is the facility of providing the learners with immediate feedback. When learners see progress in their writing skills, they become more confident in their ability to reach the desired level of proficiency in writing. They develop confidence through immediate feedback, and their progress in writing makes them confident enough to take up writing skills to their desired level. Therefore, the integration of Padlet into the learning process can develop a sense of connection and camaraderie with peers as well.

===
Language in India www.languageinindia.com ISSN 1930-2940 Vol. 24:7 July 2024
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   47

Situated Learning Theory

John Lave and Etienne Wenger (1991) express the importance of context and social interaction in learning through their work, "Situated Learning: Legitimate Peripheral Participation." This work presents the importance of "communities of practice" (p.73) and how learners have to understand abstract knowledge by engaging themselves in a community.

Being a collaborative tool, Padlet brings users together to create and share their content on its virtual wall, which allows users to learn through social interaction. Initially, they become part of a community, wherein learners start practicing simple tasks and gradually move towards complex ones. This emphasizes the concept of "legitimate peripheral participation" (Lave, 35). Similarly, learners practise "contextual learning," which proposes that knowledge is gained through the social and physical milieu of the learners.

Instructors ought to be facilitators by providing learners with real life tasks that ensure active participation and make learning more meaningful and inclusive. By making students do group projects and discussions, teachers pave the way for students' participation in communities of practice that eventually develop their problem-solving skills. Besides, they must expose the learners to observe and interact with knowledgeable individuals. This practice leads learners to understand concepts better and triggers them to adopt self-directed learning.

Connectivism

This theory elucidates how networks can effectively connect various sources of information to the learning process. In today's digital age, learners are inundated with a plethora of information. But connectivism guides learners in discerning and selecting the most relevant content. The proponents of this theory, George Siemens (2005) and Stephen Downes (2006), reinforce that learning is no longer confined to traditional classroom settings; rather, it can be enriched and expanded through online platforms, social media, and other digital tools.

Online courses, MOOCs (Massive Open Online Courses), and other digital learning platforms rely on this theory. Similarly, the use of Twitter, LinkedIn, Google Docs, and Padlet accelerates networked learning and knowledge sharing. Moreover, it implies that

==
Language in India www.languageinindia.comISSN 1930-2940Vol. 24:7 July 2024
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   48

learning is a continuous process that gets enhanced when learners connect themselves with new sources of information. Given the pervasive influence of technology in our lives, connectivism holds great significance in influencing students to acquire knowledge in this digital age.

Linking Padlet with this theory has several benefits. Initially, teachers have to create specific boards on which students can share relevant resources and gain knowledge through discussion. Also, it acts as a collaborative note-taking tool, which assists students in adding notes, links, and multimedia content. Then, teachers must initiate discussions on course topics, which can make learners interact and exchange knowledge well. Likewise, it creates space for peer reviews and constructive feedback. Finally, Padlet provides the learners with a rich tapestry of knowledge when teachers incorporate it into research projects, which allows learners to have appropriate input for completing their work successfully.

Methods

The author used a mixed-methods approach to study the potential of using Padlet for developing the writing skills of engineering students. This approach utilized both qualitative and quantitative data. A sample of fifty students was taken from various engineering branches such as electrical and electronics engineering, civil engineering, and mechanical engineering at the Government College of Technology. The progress of the experimental group and control group was monitored over a period of four weeks. Students were selected at random to do this experiment. The materials used for this study included Padlet, assignment topics, pre- and post-assessment tests, questionnaires, and feedback forms.

With a view to maximizing the productivity of the experimental group, they were first introduced to the features and functionalities of Padlet. Then tasks were assigned to them based on the first-year English subject "Professional English," which included concepts like how to write simple definitions, complete sentences using appropriate tense forms, and do exercises on voices. Subsequently, the students were given writing practice on transcoding, which comprises descriptions of flow charts, pie charts, bar charts, and tabular columns. Thus, the students progressed from simple to more complex writing tasks, sharing their responses on the Padlet wall as well.

===
Language in India www.languageinindia.com**ISSN 1930-2940****Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   49

On the contrary, the control group performed the same exercises using traditional teaching methods. The teacher explained the concepts using conventional instructional techniques. Later, the teacher gave assignments, corrected the answers, and discussed the common errors made by the learners rather than focusing on individual mistakes, which otherwise may consume more time. Since students could not get individual feedback, they had only partial understanding of the concepts taught to them.

The teacher organized sessions for the experimental group to assist students in providing feedback on their teammates' posts. Collaborative assignments were given to encourage group activities. Students were tasked with co-authoring topics such as creating a flow chart illustrating the various steps involved in the extraction of silver, uranium for nuclear energy, and rare earth element extraction and their applications. Students worked in groups and shared their contributions on Padlet boards. Subsequently, the teacher provided feedback on Padlet, emphasizing the strengths and the areas that needed improvement. The most exemplary description was recognized as a model for high-quality technical writing.

The writing skills of both groups were assessed through pre- and post-tests. The experimental group tracked their progress through the feedback posted on Padlet. In contrast, the control group received comments on the overall performance of their writing skills. The teacher collected qualitative and quantitative data through tests, responses to questionnaires, feedback forms, face-to-face interaction, etc. and assessed the improvement of the students' writing. Priority was given to ethical considerations. Initially, students' willingness to participate in the activities was judged. They were given the assurance to withdraw from the tasks in case they encountered difficulties. The teacher maintained the privacy and confidentiality of the students' posts by limiting their access to Padlet users alone. Hence, this methodology evaluated the effectiveness of using Padlet for imparting writing skills to engineering students.

Findings

The findings of this study stem from qualitative and quantitative data that ensure accuracy in assessing the improvement of writing skills among the learners. Moreover, researchers can use this approach to evaluate the learners' progress and proficiency in writing.

Quantitative Analysis Table

==
Language in India www.languageinindia.com**ISSN 1930-2940****Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   50

S. No	Category	Experimental Group (I)	Control Group (II)	Remarks
1.	Sample size (n)	25	25	Fair comparison with equal sample sizes
2.	Pre-test Mean (%)	60	59	Similar initial performance
3.	Post-test Mean (%)	74	65	Experimental group shows higher mean improvement
4.	Mean Improvement (%)	14	6	Improvement is higher in experimental group

While both groups initially began learning the same content using different methodologies, the first group's facility to interact freely, receive motivation, and obtain immediate feedback significantly contributed to their improvement. This demonstrates that the intervention implemented with the first group was highly effective compared to traditional teaching methods.

Qualitative Analysis Table

S.No	Category	Experimental Group (I)	Control Group (II)	Observations
1.	Sample size (n)	25	25	Equal sample size
2.	Pre-test Mean (%)	60	59	Similar score
3.	Post-test Mean (%)	74	65	Experimental group showed higher post-test score
4.	Mean Improvement (%)	14	6	Experimental group showed higher improvement
5.	Learning Intervention	Padlet	Standard	Technology Vs Tradition
6.	Learner Engagement	Higher	Moderate	Encouraging methodology (I) & Monotonous one (II)
7.	Feedback from learners	Positive	Mixed	Positive response contributed to improvement
8.	Teacher observations	Higher motivation and participation	Lower motivation but consistent participation	Higher motivation (I) resulted in improvement
9.	Influence	Digital mode inspireslearners	Routine methods fail	Exposure to new methods extracted the

===
Language in India www.languageinindia.com**ISSN 1930-2940****Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   51

		to give more efforts	to inspire	best performance of learners (I)
10.	Future Implications	Experimental methods could be effective	Standard methodshave to beimprovised	Experimental methods can bring the desired learning outcome

The analysis, conducted through face-to-face interactions, discussions, and reviews from both groups, indicates that Padlet has significantly boosted the confidence of the experimental group in improving their writing skills. In contrast, it has been observed that the control group has faced challenges in developing their writing abilities due to limited resources and a lack of personalized attention from the teacher.

This study accentuates the need for adapting effective teaching methodologies that can enhance students' learning speed. Also, it emphasizes the idea that educators have to provide adequate resources and individualized support to facilitate desired learning outcomes. By addressing these key factors, educators can empower students to achieve their full potential and excel academically.

Discussion

The results of this mixed methods approach demonstrate that utilizing Padlet to enhance the writing skills of engineering students yields advantages both in terms of writing proficiency and student engagement. This discussion delves into the implications of these findings, the noticeable enhancements, and the obstacles faced, emphasizing the significance of incorporating Padlet into the educational environment.

The quantitative results demonstrate a significant improvement in the experimental group's ability to use the proper tenses and voices required for writing descriptions on graphics. The teacher's efforts in posting learning materials and exercises on the Padlet wall proved to be highly effective since they helped students grasp the concepts accurately.

As "digital natives" (Prensky, 2), the learners completed their assigned tasks promptly, proving their strong engagement with the platform. Besides, prompt feedback fostered a sense of community and collaborative learning, which sustained their interest in the learning process. Therefore, the progress of students in writing can be attributed to the

===
Language in India www.languageinindia.com**ISSN 1930-2940****Vol. 24:7 July 2024**
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   52

features of Padlet that promote a more efficient drafting, revising, and refining process needed for writing, which surpass traditional methods.

The qualitative findings confirm the results of the quantitative data. Students expressed that the user-friendly interface of Padlet, along with its interactive features, enhanced their writing process. Hence, the writing process was more enjoyable and less challenging for them. Moreover, Padlet's motivating factors made peers interact well, which resulted in their progress in writing. The instructor noticed how the students' willingness to participate and share their drafts enriched the overall learning experience as well.

Educators can utilize Padlet effectively by addressing connectivity issues, technical glitches, and ensuring a comprehensive understanding of its functionality. By doing so, they can enhance the user experience and create a seamless learning environment.

The research findings demonstrate that engineering students can develop their writing skills through Padlet. By cultivating a collaborative and interactive learning environment, Padlet enables students to articulate their thoughts effectively, a skill essential for their future professional successes. The evidence suggests that integrating Padlet into the curriculum is imperative in order to establish a stimulating and efficient learning atmosphere.

Conclusion

This study is the result of the author's challenges faced while guiding first-year engineering students to write technical content. After years of memorizing answers in English subjects, students struggle to write responses independently on various topics when they get into college studies.

The traditional method of teaching leaves little room for improving the writing skills of the "digital Natives ". Thanks to the advancement in technology, educators have access to a plethora of digital tools. Of all the available tools, Padlet has strong research evidence to improve this skill. This study is confined to the short-term impact of using Padlet on writing skills. Further research can explore the long-term impact of this tool on enhancing writing skills. Comparative studies with other digital tools can also be taken up.

===
Language in India www.languageinindia.comISSN 1930-2940Vol. 24:7 July 2024
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   53

To conclude, this study demonstrates that leveraging Padlet for developing the writing skills of first-year engineering students is highly effective. Since Padlet aligns well with the educational objectives and outcomes, educators can integrate Padlet activities into the curriculum.

Works cited

1. Anderson, J. R. (1983). *The Architecture of Cognition*. Harvard University Press, p. 15.

2. Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, 11(4), 227-268.

3. Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press, p. 35.

4. Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, 9(5), 2.

5. Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press, p. 73.

References

1. Ahmadi, M. R. (2018). The use of technology in English language learning: A literature review. International Journal of Research in English Education, 3(2), 115-125. http://dx.doi.org/10.29252/ijree.3.2.115

2. Baidoo, M., Ameyaw, Y., & Annan, J. N. (2022). Assessing the effectiveness of Padlet instructional tool in the teaching and learning of some ecological concepts. International Journal of Sciences, 11(4), 27-33. https://doi.org/10.18483/ijSci.2554

3. Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and Conducting Mixed Methods Research* (3rd ed.). SAGE Publications.

4. Cutting, D., McDowell, A., Anderson, N., Sage, P., Collins, M., & Allen, A. (2020). Creating an interactive tool for student communication: Lessons learnt. In Proceedings of the Education and New Developments Conference 2020 (pp. 291-294). https://doi.org./10.36315/2020end062

5. Downes, S. (2005). An Introduction to Connective Knowledge. In T. Hug (Ed.), *Proceedings of the International Workshop on Networked Learning*. Retrieved from https://www.downes.ca/cgi-bin/page.cgi?post=33034

6. Edward L. Deci, & Richard M.Ryan (1985) Perspectives in Social Psychology: Intrinsic Motivation and Self- Determination in Human Behaviour. Springer, New York,NY https://doi.org/10.1007/978-1-4899-2271-7

7. Erito, S. N. P. (2022). Undergraduate students' perspective on the use of Padlet as learning tool for English writing. JELLE: Journal Of English Literature,

==
Language in India www.languageinindia.comISSN 1930-2940Vol. 24:7 July 2024
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   54

Linguistics, and Education, 3(2), 25-30. INCLUDE PAGE NUMBERS. http://dx.doi.org/10.31941/jele.v3i2.2302

8. John Sweller, Paul Ayres, and Slava Kalyuga. (2011) "Cognitive Load Theory" Springer, USA.

9. Jong, B., & Tan, K. H. (2021). Using Padlet as a Technological Tool for Assessment of)2Students' Writing Skills in Online Classroom Settings. International Journal of Education and Practice, 9(2), 411-423. https://doi.org/10.18488/journal.61.2021.92.411.423

10. Kenneth A. Bruffee. (1993) "Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge" Johns Hopkins University Press, Baltimore

11. Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* CambridgeUniversityPress. https://doi.org/10.1017/CBO9780511815355

12. Mehta, K. J., Miletich, I., &Detyna, M. (2021). Content-specific differences in Padlet perception for collaborative learning amongst undergraduate students. Research In Learning Technology, 29, 1-19. https://doi.org/10.25304/rlt.v29.2551

13. Piaget, J. (1952). *The Origins of Intelligence in Children*. New York: International Universities Press.

14. Rashid, A. A., Yunus, M. M., &Wahi, W. (2019). Using Padlet for collaborative writing amongESL learners.Creative Education, 10(3), 610-620. https://doi.org/10.4236/ce.2019.103044

15. Saepuloh, A., & Salsabila, V. A. (2020). The teaching of writing recount texts by utilizing Padlet. Indonesian EFL Journal, 6(1), 45-54. https://doi.org/10.25134/ieflj.v6i1.2637

16. Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1). Retrieved from http://www.itdl.org/Journal/Jan_05/article01.htm

17. Siemens, G. (2006). *Knowing Knowledge*. Lulu Press. Retrieved from http://www.elearnspace.org/KnowingKnowledge_LowRes.pdf

18. Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.

===

Language in India www.languageinindia.comISSN 1930-2940Vol. 24:7 July 2024
Dr. S. Latha Venkateswari
Leveraging Padlet for Developing Writing Skills of I Year Engineering Students   55