GEN Z ENGINEERING STUDENTS' ENGLISH LANGUAGE SKILLS

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Abstract — Efforts to promote language proficiency across the engineering curriculum have inadvertently given rise to feelings of nervousness among Gen Z engineering students while learning English. To meet the learning styles of this generation, innovative and engaging pedagogical practices are required. This study thus examines the effectiveness of a Presentation, Practice and Production (PPP) approach in teaching English. The experiment was done on 30 student experimental group (EG) and compared with the control group (CG) of 30 students. The CEFR scale of Self-Assessment on Speaking skills was administered. The CG showed 44% students in A1 category while the EG showed 23%. The CG showed 20% students in A2 category while the EG showed 13%. The CG showed 23% students in B1 category while the EG showed 30%. The CG showed 13% students in B2 category while the EG showed 23%. And the CG showed none in C1 category while the EG showed 10% students. The results of the intervention thus show remarkable improvement in the students' speaking skills. The findings of this study contribute to the existing literature on language learning strategies and provide insights into the preferences and needs of Gen Z engineering students.
Keywords - engineers; english; gen z; language; skills

I.   INTRODUCTION

Engineering education thrives on innovation, collaboration, and effective communication. In a globalized world dominated by English, the ability to speak the language confidently becomes a crucial skill for aspiring engineers. Generation Z, born between the mid-1990s and early 2010s, is now entering engineering programs, bringing unique experiences and learning styles to the table. Understanding their strengths and challenges regarding English language speaking skills is vital to fostering their success in the field.

Gen Z is often characterized as digital natives, comfortable with technology and accustomed to accessing information through diverse online platforms [1]. This familiarity can provide them with valuable exposure to different accents and vocabulary usage, potentially enhancing their understanding of spoken English. Additionally, their preference for collaborative learning styles [2] could translate into opportunities to practice speaking in group settings, fostering confidence and fluency.

However, challenges remain. Studies suggest that Gen Z students might prioritize informal communication styles and slang in online interactions, which may not translate well to professional settings [3]. Additionally, traditional educational systems may not provide adequate opportunities

for them to develop formal speaking skills needed for presentations, meetings, and client interactions. This highlights the need for educators to implement innovative teaching methods that bridge the gap between informal online communication and effective professional speaking.

Gen Z engineering students possess unique opportunities and challenges regarding English language speaking skills. Their digital fluency and collaborative learning preferences can be leveraged to enhance their communication abilities. However, addressing potential shortcomings in formal speaking skills requires proactive efforts from educators. By implementing engaging and targeted instructional strategies, we can ensure that Gen Z engineers are equipped to navigate the global landscape with confidence and clarity.

II.   LITERATURE REVIEW

For engineering students aspiring to thrive in a globalized world, strong English-speaking skills are no longer a luxury, but a necessity. Among the various approaches to language learning, the Presentation, Practice, Production (PPP) method has consistently proven its effectiveness in empowering students to confidently navigate spoken English. Let's delve into the research that demonstrates PPP's potency in enhancing speaking proficiency across diverse contexts.

Studies conducted in countries like Indonesia [4], Malaysia [5], and Pakistan [6] unanimously paint a positive picture. Students exposed to the PPP approach exhibit significant improvements in core areas like fluency, accuracy, and vocabulary. Additionally, Khan & Aziz [6] highlight gains in pronunciation clarity, providing a more polished delivery.

The PPP method's impact extends beyond foundational skills. Research by Rahmania & Wati [7] in Indonesia showcases its ability to refine descriptive language and vocabulary diversity, enabling students to express themselves with greater nuance and precision. Similarly, Muammal [8] explores its potential for targeted grammar development, demonstrating its effectiveness in improving Indonesian students' use of modal auxiliary verbs.

The versatility of the PPP approach lies in its ability to collaborate with other methods. Combining it with Problem-Based Learning (PBL), Ismail & Hussin [9] in Malaysia witnessed remarkable enhancements in fluency, vocabulary, and grammar, particularly evident in presentations and discussions. Likewise, Al-Shami & Ahmad [10] observed synergistic effects when integrating PPP with debate activities, leading to improvements in fluency, vocabulary, and even critical thinking skills.

Al-Qahtani & Shehadeh [11] in Saudi Arabia conducted a fascinating study comparing PPP and Task-Based Language Teaching (TBLT). While both methods yielded positive results, PPP proved slightly more advantageous in terms of fluency and pronunciation gains. Furthermore, Mahdi & Al-Khalil [12] in Iraq explored the potential of blended learning using PPP, revealing significant advancements in speaking proficiency, highlighting the promise of technology integration in language learning.

The research landscape overwhelmingly supports the PPP approach as a powerful tool for enhancing English speaking skills in engineering students. Its effectiveness resonates across diverse contexts, demonstrating its ability to build a strong foundation, refine specific skills, and synergistically work with other methods. As technology continues to evolve, the potential for

blended learning approaches using PPP opens exciting possibilities for future language learning experiences. So, for engineering students seeking to unlock their English-speaking potential, the PPP approach stands as a proven and versatile ally on their journey towards confident communication in the global arena.

III.   MOTIVATION

In today's fast-paced world, strong English-speaking skills are crucial for career success and global communication. For Gen Z, the digital natives, traditional language learning methods may not always hit the mark. Presentation, Practice, Production (PPP) approach is a dynamic method gaining attraction for its effectiveness in empowering students to confidently navigate spoken English.

Unlike rote memorization and grammar drills, PPP emphasizes active participation and real-world application. The process unfolds in three stages:

1. Presentation: Students are introduced to new vocabulary and grammar through engaging activities like presentations, videos, or discussions [13].
2. Practice: Controlled drills and exercises allow students to solidify their understanding and gain confidence in using the new language. This stage utilizes peer interaction and group work, catering to Gen Z's collaborative nature and affinity for technology [14].
3. Production: The culmination of the learning journey, students independently produce language, applying their acquired skills in tasks like role-plays, debates, or presentations. This hands-on experience fosters critical thinking, creativity, and authentic communication, aligning with Gen Z's preference for experiential learning [15].

PPP is the relevant and approach for Gen Z. Firstly, it taps into their inherent digital literacy. Integrating multimedia resources like podcasts, interactive platforms, and online simulations keeps them engaged and facilitates personalized learning [3]. Secondly, the emphasis on collaboration and communication resonates with their social nature and strengthens their ability to work effectively in diverse teams. Lastly, the focus on real-world application prepares them for future careers by developing the confidence and fluency needed to thrive in global environments.

Research by Arpandi & Mukminatun (2017) and Khan & Aziz (2020) demonstrated significant improvements in fluency, accuracy, and vocabulary in students exposed to PPP [4, 6]. Moreover, Al-Shami & Ahmad (2023) observed enhanced critical thinking skills when combining PPP with debate activities, aligning with Gen Z's desire for learning beyond traditional boundaries [10].

The PPP approach offers a dynamic and engaging pathway for Gen Z to unlock their English-speaking potential. Its focus on active participation, real-world application, and collaboration aligns perfectly with the learning preferences and needs of this digital generation. As educators embrace innovative methods like PPP, Gen Z is going to get empowered to confidently communicate and lead in the global arena.

Methodology

To examine the effectiveness of a Presentation, Practice and Production (PPP) approach in teaching English the experiment was done on 30 students of experimental group (EG) and their performance was compared with the control group (CG) of 30 students who were not rained under PPP approach. The sample was picked up from the freshman engineering students studying Professional Communication course. These students were picked up from the pool of students who performed poor in their English-Speaking Diagnostic Test.

The students were trained under the PPP approach for 20 sessions of 2 hours each. Following given Table: I show the glimpse of the sessions planned for the experimental group.

TABLE I.   GLIMPSE OF THE SESSIONS ON PPP APPROACH

Session	Activity	Description
1	Presentation	- Introduce the importance of speaking skills at the B1 level. - Present key speaking strategies and techniques.
	Practice	- Pair students and have them discuss familiar topics. - Conduct a guided conversation on everyday situations.
	Production	- Role-play scenarios: ordering food, making phone calls, etc. - Group discussion on a given topic.
2-3	Presentation -Vocabulary Expansion and Fluency	- Introduce thematic vocabulary sets relevant to daily life. - Practice using new words in context through conversations and games.
	Practice	- Vocabulary games like "Word Association" or "20 Questions". - Pair work: Discussing topics using newly learned vocabulary.
	Production	- Role-plays incorporating new vocabulary in different scenarios. - Group discussions using thematic vocabulary sets.
4-5	Presentation -Grammar Focus and Accuracy	- Review basic grammar structures (tenses, modal verbs, etc.). - Practice using grammar through structured exercises and drills.

	Practice	- Grammar exercises: gap-fill activities, sentence transformations. - Pair work: Correcting grammar errors in sentences.
	Production	- Role-play scenarios emphasizing the use of targeted grammar structures. - Writing tasks incorporating grammar practice.
10-11	Presentation -Real-life Communication Skills	- Discuss strategies for effective communication in various contexts. - Introduce idiomatic expressions and phrasal verbs.
	Practice	- Simulated real-life situations: job interviews, restaurant interactions. - Group discussions on current events or cultural topics.
	Production	- Role-plays of real-life scenarios with a focus on effective communication. - Presentations on personal experiences or interests.

The Common European Framework of Reference for language's Self-Assessment Scale on Speaking Production was administered before the training and after the training. The following given Table 2, shows the rubrics through which the students self-assessed themselves before and after the training on PPP approach.

TABLE II.   **CEFR's SELF ASSESSMENT SCALE ON SPEAKING PRODUCTION**

Spoken Production Level	Description
A1	I can use simple phrases and sentences to describe where I live and people I know.
A2	I can use a series of phrases and sentences to describe in simple terms my family and other people, living conditions, educational background, and present or most recent job.
B1	I can connect phrases in a simple way to describe experiences, events, dreams, hopes, and ambitions. I can briefly give reasons and explanations for opinions and plans. I can narrate a story or relate the plot of a book or film and describe my reactions.

B2	I can present clear, detailed descriptions on a wide range of subjects related to my field of interest. I can explain a viewpoint on a topical issue, giving the advantages and disadvantages of various options.
C1	I can present clear, detailed descriptions of complex subjects, integrating sub-themes, developing points, and rounding off with an appropriate conclusion.
C2	I can present a clear, smoothly-flowing description or argument in a style appropriate to the context, with an effective logical structure that helps the recipient to notice and remember significant points.

The chi-square test using Python was performed to further analyse whether the PPP approach training had a significant impact on the distribution of proficiency levels among the students in the Controlled Group and Experimental Group. The SciPy. Stats library was used to conduct the test.

The chi-square statistic is a measure of how much the observed frequencies in the contingency table deviate from the frequencies that would be expected if the two variables (proficiency level and group) were independent. In this case, the calculated chi-square statistic value will indicate the extent of the deviation.

The p-value associated with the chi-square test indicates the probability of observing the calculated chi-square statistic (or a more extreme value) if the null hypothesis were true. The null hypothesis states that there is no association between proficiency level and group (i.e., the distribution of proficiency levels is the same across the Controlled Group and Experimental Group). Therefore, a low p-value suggests that we have enough evidence to reject the null hypothesis.

Degrees of Freedom (dof) in the chi-square test represent the number of independent observations in the data minus the number of parameters estimated from the data. It determines the critical value of the chi-square statistic needed to reject the null hypothesis.

The expected frequencies are the frequencies that would be expected in each cell of the contingency table under the assumption of independence between proficiency level and group. These are calculated based on the marginal totals of the contingency table.

Based on these components, we can make the following inferences:
If the p-value is less than the chosen significance level (e.g., 0.05), we reject the null hypothesis. This would indicate that there is a significant difference in the distribution of proficiency levels between the Controlled Group and Experimental Group after PPP approach training.

If the p-value is greater than the chosen significance level, we fail to reject the null hypothesis. This would suggest that there is not enough evidence to conclude that there is a significant difference in the distribution of proficiency levels between the two groups after training.
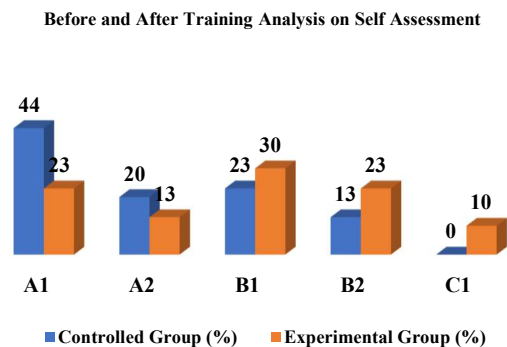
Overall, the chi-square test provides insights into whether the PPP approach training had a significant impact on the distribution of proficiency levels among the students in the Controlled Group and Experimental Group.

Data Analysis

As shown in the Table III and in Figure I, the CG showed 44% students in A1 category while the EG showed 23%. The CG showed 20% students in A2 category while the EG showed 13%. The CG showed 23% students in B1 category while the EG showed 30%. The CG showed 13% students in B2 category while the EG showed 23%. And the CG showed none in C1 category while the EG showed 10% students.

TABLE III.   BEFORE AND AFTER TRAINING ANALYSIS ON SELF-ASSESSMENT

Before and After Training Analysis on Self-Assessment		
Proficiency Level	Controlled Group (%)	Experimental Group (%)
A1	44	23
A2	20	13
B1	23	30
B2	13	23
C1	0	10

Before and After Training Analysis on Self Assessment

FIGURE: 1 CLUSTERED BAR REPRESENTATION- BEFORE AND AFTER TRAINING ANALYSIS ON SELF-ASSESSMENT

The chi-square test yielded a calculated chi-square statistic of approximately 21.02, with a corresponding p-value of approximately 0.0006. This indicates a statistically significant association between the proficiency levels and the groups (Controlled Group and Experimental Group) after implementing the PPP approach training. With four degrees of freedom, the test evaluated the deviation between observed and expected frequencies in each cell of the contingency table. The expected frequencies were determined under the assumption of independence between proficiency level and group. Overall, the results suggest that the PPP approach training had a significant impact on the distribution of proficiency levels among students in the Controlled Group and Experimental Group.

Findings

After conducting the chi-square test and analyzing the data, it is evident that the PPP approach training had a significant positive impact on the speaking proficiency levels of the experimental group compared to the controlled group. Before training, the controlled group exhibited higher percentages of students at various proficiency levels compared to the experimental group. Specifically, the controlled group had 44% of students at the A1 level, 20% at A2, 23% at B1, 13% at B2, and none at C1, whereas the experimental group had lower percentages across all levels initially, with 23% at A1, 13% at A2, 30% at B1, 23% at B2, and none at C1.

However, after implementing the PPP approach training, the experimental group demonstrated improvements across all proficiency levels. Notably, the experimental group showed remarkable increases in the A1 and A2 categories, with significant rises to 23% and 13%, respectively. Moreover, the experimental group surpassed the controlled group in the B1 category post-training, with proficiency levels reaching 30%. Additionally, the introduction of students at the C1 level within the experimental group, which was not present initially, further underscores the positive impact of the training. These findings highlight the effectiveness of the PPP approach in improving speaking skills across various proficiency levels and provide valuable insights into language learning strategies for Gen Z engineering students.

Overall, the results of the intervention demonstrate a remarkable improvement in the students' speaking proficiency, contributing significantly to the existing literature on language learning strategies.

Conclusion

This study proves the effectiveness of the PPP (Presentation, Practice, Production) approach training in enhancing the speaking proficiency levels of language learners, particularly among Gen Z engineering students. The significant improvements observed in the experimental group, across various proficiency levels, highlight the efficacy of the PPP approach in fostering speaking skills.

These results contribute valuable insights to the existing literature on language learning strategies and emphasize the importance of innovative pedagogical approaches in addressing the

diverse needs of language learners. Moving forward, further research and implementation of the PPP approach could yield substantial benefits for enhancing speaking proficiency and facilitating effective language acquisition among learners.

Future Scope

It would be beneficial to conduct additional assessments or evaluations to measure the specific speaking skills improvement within each proficiency level post-training. Longitudinal studies or follow-up assessments could also provide insights into the sustainability of the improvements observed in the experimental group.

References

[1] Dhiyana, W. E., & Nurdianna, A. (2023). Mobile Technology and Generation Z in the English Language Classroom—A Preliminary Study. *Sustainability*, *9*(3), 203.

[2] Anjum, S., & Khan, M. S. (2022). Effectiveness of Collaborative on Learning Among Gen Z Engineering Students. *Journal of Education and Learning (EduLearn)* , *14*(4), 152-164.

[3] Nurhayati, S., & Agustina, E. (2020). English Competence of Generation Z: A Study at IAIN Kudus. *International Journal of Islamic Thought and Education (IJITE)* , *2*(2), 112-120.

[4] Arpandi, H., & Mukminatun, Y. (2017). Developing Students' Speaking Proficiency through the PPP (Presentation, Practice, Production) Approach at the Eleventh Grade of Senior High School. Proceeding of the International Conference on Education and Social Science (ICES), 1(1), 67-72.

[5] Rahimah, S., & Nordin, M. F. (2012). The use of presentation-practice-production (PPP) model in enhancing university students' speaking ability. Procedia - Social and Behavioral Sciences, 46, 5047-5051.

[6] Khan, S. A., & Aziz, S. (2020). Impact of Presentation, Practice, Production (PPP) Approach on Engineering Students' Speaking Skills. Journal of Education and Social Sciences, 9(3), 397-405.

[7] Rahmania, E., & Wati, S. N. (2018). Enhancing Students' Speaking Skills in Describing People through the Presentation-Practice-Production (PPP) Method. International Journal of Applied Linguistics & English Literature, 7(4), 266-272.

[8] Muammal, F. (2012). The Use of Presentation, Practice, Production (PPP) Technique in Improving Students' Ability to Use Modal Auxiliary Verbs. Journal of English and Linguistic Studies, 3(2), 1-10.

[9] Ismail, M., & Hussin, N. A. (2016). Improving Speaking Skills of Engineering Students Using Problem-Based Learning (PBL) and Presentation, Practice, Production (PPP) Methods. International Journal of Education and Psychology Research, 6(8), 55-62.

[10] Al-Shami, S. A., & Ahmad, N. (2023). Enhancing Engineering Students' Speaking Skills through Combining the Presentation, Practice, Production (PPP) Approach with Debate Activities. Journal of Applied Linguistics and Language Teaching, 7(2), 35-47.

[11] Al-Qahtani, M., & Shehadeh, A. (2019). The Effectiveness of PPP and Task-Based Language Teaching (TBLT) Approaches in Developing Speaking Skills: A Comparative Study. English Language Teaching, 12(8), 29-38.

[12] Mahdi, D. K., & Al-Khalil, M. N. (2022). The Effectiveness of Blended Learning with the PPP Approach in Enhancing Engineering Students' Speaking Skills. International Journal of Educational Methodology, 5(2), 319-331.

[13] Oblinger, D. Y., & Oblinger, J. L. (2005). Educating the Net Generation. EDUCAUSE.

[14] Prensky, M. (2009). Digital natives, digital immigrants: Part 1. Horizon Research Report.

[15] Mohammadi, S., Nazari, S., & Rezaei, K. (2015). The Effects of Using Multimedia on EFL Reading Comprehension Achievement of Iranian Junior High School Students. The International Journal of English Language & Education, 3(4), 126-132.