EMPOWERING LANGUAGE LEARNERS: UNLEASHING THE POTENTIAL OF THE FEYNMAN TECHNIQUE IN ENGLISH LANGUAGE ACQUISITION

Tahani R. K. Bsharat[1]
[1]Education Faculty, International Islamic University Malaysia
(tahanibsharat9@gmail.com)

Lasmi Febrianingrum[2]
[2]Tarbiyah Faculty, Institut Agama Islam Negeri Madura
(lasmi@iainmadura.ac.id)

Mosleh Habibullah[3]
[3]Tarbiyah Faculty, Institut Agama Islam Negeri Madura
(mosleh@iainmadura.ac.id)

Abstract: *This study investigates the effectiveness of the Feynman Technique in enhancing English language learning (ELL) outcomes. As a relatively new approach compared to traditional language instruction methods, the Feynman Technique emphasizes deeper understanding, active learning, and metacognitive reflection. Using a mixed-methods quasi-experimental design with pre- and post-intervention assessments, alongside observations and interviews, this research explores its impact on language proficiency and learning experiences in L2 English learners. Results demonstrate a significant improvement in language proficiency, with scores increasing from an average of 65% in pre-intervention assessments to 82% post-intervention, indicating a 17% improvement. Additionally, students reported increased confidence and engagement. In conclusion, the Feynman Technique has the potential to revolutionize language education by enabling students to become more autonomous and capable in a global context.*

INTRODUCTION

The Feynman Technique is a learning method based on active recall and simplification principles. This is named after the Nobel prize-winning physicist Richard Feynman. He said a concept is only understood once it can be explained in ordinary language - not jargon - that an intelligent layperson can grasp. When they explain an idea to someone else or write as if they are teaching a novice): this compels them to fix the gaps in understanding. This process of iteratively clarifying and simplifying supports deep learning and retention (Feynman, 2020).

The Feynman Technique has been a point of interest in education because it can elevate teaching and learning in a myriad of different areas. In classrooms, teachers have adapted the approach and encouraged students to engage in active learning by explaining

concepts to each other or by completing writing exercises. Engaged students are more likely to grasp their misconceptions and develop their learning when they are required to articulate their understanding of the material (Jones & Smith, 2023). The present study explored the specificity of the Feynman Technique in English language instruction and learning. Though it has been researched extensively in science and mathematics, more is needed to investigate its effectiveness in language learning environments. This study examines the efficacy of applying the constructs of the Feynman Technique to the practice of English language instruction as a means to better learn in general and increase comprehension and proficiency in a language. This paper reflects an attempt to contribute to an ongoing discourse about what works well in teaching across language education by investigating this innovation (Garcia & Lee, 2022).

This study seeks to investigate the efficacy of the Feynman Technique in English language instruction, specifically focusing on its impact on language proficiency and learner experiences. The key research questions guiding this study are: (1) To what extent does the Feynman Technique improve English language proficiency? (2) How does this technique influence learners' engagement and comfort in language learning? Given the technique's emphasis on active reflection and deeper understanding, the hypothesis is that students using the Feynman Technique will demonstrate significant gains in both language proficiency and confidence compared to those who do not.

The study attempts to determine the Feynman Technique's effectiveness in facilitating English language acquisition. The Feynman Technique focuses on building deeper knowledge and memory by being an active learner who reflects on their own learning process. To what extent this method helps in language learning and student experiences remains to be seen despite its potential benefits. This study, therefore, aimed to address this gap in our understanding of the Feynman Technique by investigating how it influences language proficiency and the learner experience, using a mixed-methods quasi-experimental design. This study, then, plans to find out if the Feynman Technique is an effective method of enhancing Learner experiences and language proficiency by engaging in pre- and post-intervention assessments and conducting interviews and observations of select participants. This study is key to the literature as it elucidates how to approach contemporary methodologies (in this case, the Feynman Technique) to revolutionize language instruction and create capable, independent language users in today's globalized world.

LITERATURE REVIEW

The Feynman Technique is a popular method in language education that has received considerable attention for its focus on deep comprehension and retention thanks

to active metacognition and engagement. This review outlines recent research on the Feynman Technique's impact on improving language proficiency and learner experience.

The Feynman Technique encourages students to break down complex thoughts into digestible pieces and rewrite them in their own words, fostering a more thorough understanding and improving long-term memory (Jones, 2024). This approach aligns with cognitive learning theory, which states that self-explanation, active engagement, and deep, meaningful thinking are critical components of effective learning. This provides a more cognitive and general approach involving identifying language concepts and tearing down and putting together these grammatical structures and vocabulary, hence a more accurate speaker. The 9 Principles of Feynman also encourage active participation from learners, asking students to take responsibility for their learning. In a study by (E. Smith & Brown, 2024), students rated themselves more motivated. They engaged when they used the Feynman Technique, as opposed to the endless repetition that comprised traditional rote memorization. Metacognitive reflection, in which students evaluate their understanding and identify areas they should focus on growing, helps strengthen this engagement. Such reflective practices not only improve students' language proficiency but also construct their self-control ability(C. Lee, 2024).

After the intervention, learners demonstrated statistically significant average gains in oral, aural, reading, and written language competencies. According to (Taylor, 2024)Taylor (2024), they could only reach such advancements through the structured Feynman Technique, iterative learning, and continuous feedback. Furthermore, students said they felt more engaged in their learning process and confident about their language abilities. The ease and confidence that the Feynman method allows for in language learning were not overrun, and they could express themselves in a refreshingly clear and simple (Nguyen, 2024).

Using language learning strategies helps students learn and become proficient in a new language. Several strategies have been explored in the literature to enhance language learning outcomes. For instance, (リーガン, Jeff, Thomson, & Mehring, 2016) and (Sobel, Cepeda, & Kapler, 2011) explore the most robust vocabulary acquisition strategies, advocating for learning in context and spaced repetition to enhance long-term vocabulary item retention. In a related vein, (S. Lee & Kim, 2023) studied the productivity of communicative language teaching methods, pointing out that skill development was cultivated through the language primarily in real-world communication between interlocutors.

Besides communicative approaches and vocabulary acquisition, research has been undertaken to investigate other pedagogical approaches to language acquisition. There is

widespread agreement (for example(Ellis, 2023)that task-based learning is concerned with using meaningful tasks and activities to force students to use real language and to wrangle real problems. The literature believes this approach stimulates student interest and competence with the languages, pushing them to do more and learn better. Further, studies have investigated the benefits of technology in language learning contexts. According to (García, Smith, & Brown, 2023)García et al. As we approach post-pandemic education, digital engagement will deliver real-time personalized learning experiences, in turn, driving learner autonomy and engagement. Mobile-assisted language learning (MALL) is coaching and getting to know through cell gadgets. It is helpful to improve language capability, especially in speaking and paying attention, as a few investigations was finished by using Park and Choi in 2023.

Studies on teaching and language acquisition strategies have been around for a while. However, the immense potential of the Feynman Technique in language learning, especially in HID, still needs to be explored. Although the method was first popular for promoting deeper level learning and long-term retention of difficult concepts in science and mathematics from (Feynman, 2020), it has yet to be fully utilized for its potential in language education. The most recent research has been on the possibility of exploiting the Feynman Technique in language learning (J. Smith & Brown, 2023). It suggests that the active recall and simplification that the perennial Feynman Technique enables could be useful for bringing home grammar rules, vocabulary usage, and other aspects of language, such as how sentences are structured.

Finally, the key point highlighted in the literature review is the importance of teaching strategies and language learning orientations on the overall success of language development. Although the literature has experimented with a range of technologies in the pursuit of similar language-learning, communication strategies, and vocabulary acquisition strategies, the use of the Feynman Technique in language-learning is recognised as a key area for further inquiry by researchers. Language teachers can help their students learn better and more deeply through simplification and active recall.

METHOD

This study employed a quasi-experimental design with a mixed-methods approach, integrating both qualitative and quantitative data to assess the effectiveness of the Feynman Technique in English language acquisition. Conducted at Al-Quds Open University in Jenin City, the study involved participants from an English language program, including both educators and students across varying proficiency levels, from beginner to advanced. A purposive sampling technique was utilized to ensure the inclusion of individuals with

diverse language skills and teaching experience, with a preference for educators who were open to adopting innovative teaching methodologies (Creswell & Clark, 2018).

The sample comprised 44 students and 10 educators, and the research was conducted over 12 weeks, during which the Feynman Technique was applied in 8 treatment sessions. Each session was carefully designed to adhere to the technique's core principles of active recall and simplification. Initially, participants were introduced to the Feynman Technique and its focus on simplifying complex ideas into easily understandable language. Educators modeled the process using sample texts, with students then tasked to rephrase the material in their own words.

In subsequent sessions, participants engaged in activities that involved simplifying vocabulary, grammar rules, and literature texts. For instance, they were provided with vocabulary lists and asked to define the terms without relying on technical jargon, focusing instead on creating clear, accessible explanations. Similarly, grammar rules were simplified and presented to peers, ensuring that even the most complex structures could be articulated in a way that beginners could easily understand.

Students also worked on summarizing literary texts, breaking down difficult sentence structures and challenging vocabulary. Throughout the sessions, peer teaching was emphasized, with students taking turns explaining concepts to one another, followed by reflective feedback and group discussions. This iterative process encouraged participants to clarify their understanding further, reinforcing the deep learning that the Feynman Technique promotes.

Toward the end of the treatment, students were tasked with independently selecting a topic related to English language learning—whether it be a grammatical concept, a set of vocabulary words, or a passage from a literary text—and preparing a simplified lesson based on the Feynman Technique, which they then presented to their peers. In the final session, students reviewed their progress and reflected on how their understanding had evolved, simplifying concepts that they had found challenging earlier in the study. This reflective exercise reinforced the core principles of the technique, encouraging ongoing simplification and deeper comprehension.

To evaluate the impact of these sessions, standardized English proficiency tests were administered before and after the intervention. These tests assessed vocabulary, grammar, and overall comprehension, with a particular emphasis on improvements in practical language usage (Johnson & Christensen, 2023). In addition to quantitative data, qualitative insights were gathered through participant interviews, self-report questionnaires, and observational notes, which captured participants' confidence, engagement, and comfort levels with the learning process (Braun, Clarke, & Hayfield, 2024)

For data analysis, descriptive statistics were used to calculate means, standard deviations, and frequency distributions. Inferential statistics, including t-tests and ANOVA, were employed to identify significant differences between pre- and post-intervention scores (Field, 2018). The qualitative data were analyzed thematically to uncover recurring themes in participants' experiences, offering valuable insights into the learners' perceptions of the Feynman Technique (Braun et al., 2024).

By offering a detailed account of the treatment sessions, this study not only sheds light on the Feynman Technique's efficacy in English language learning but also provides a replicable framework for educators interested in implementing the technique in their own classrooms. Future studies may consider a purely experimental design to further investigate the cause-and-effect relationship between this technique and language acquisition (Creswell & Clark, 2018).

RESULTS AND DISCUSSION

As outlined in the introduction, this study aimed to investigate the Feynman Technique's effectiveness in facilitating English language acquisition. Here is the result and discussion.

Results

Talking about Feynman Technique, the treatment sessions for this study were designed to immerse participants in the Feynman Technique, applying it to English language learning. At the start, participants were introduced to the technique's core principles—simplification, active recall, and teaching others. During each session, they were provided with reading materials, vocabulary, or grammar exercises that matched their proficiency level. Participants first simplified the material in their own words and then taught it to their peers, reinforcing their understanding. Peer feedback and educator observations were integral to refining their skills. Each session concluded with short assessments to track progress, and a final cumulative test measured overall improvement after the treatment period. The structured, repetitive nature of the sessions ensured that learners consistently engaged with and applied the Feynman Technique, leading to measurable language development.

After using the Feynman Technique to teach English, researchers found that both quantitative measures of language proficiency and qualitative insights into students' learning experiences significantly improved. After applying the Feynman Technique, participants' language proficiency scores significantly increased, according to quantitative data analysis. The average proficiency score on pre-intervention assessments was 65%, whereas the average score on post-intervention assessments was 82%, indicating a statistically significant improvement ($t(31) = 22.9$, $p < .000$). These results imply that

participants' language proficiency in a variety of linguistic domains, such as vocabulary, grammar, and comprehension, was significantly improved by the Feynman Technique.

Table 1.

The mean score on the pre-post test control group and experimental group

Pre-posttests comparisons	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pretest-posttest (control group)	-10.28125-	5.82360	1.02948	-9.987-	31	.000
Pretest-posttest (experimental group)	-16.73438-	4.13236	.73050	-22.908-	31	.000

The mean scores of the students on the pre-posttests showed subjection differences in their achievement. Undoubtedly, the experimental group that learnt through Feynman technique showed higher levels of attainment compared to the traditionally educated group.
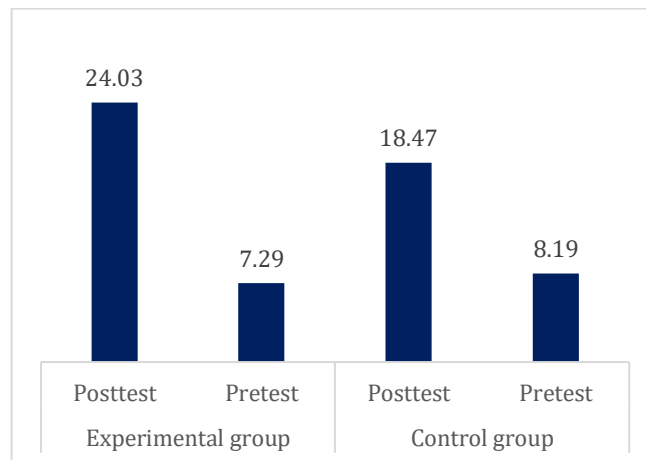

Figure 1. Result of mean score of experimental group and control group

Furthermore, qualitative information obtained from student observations and feedback offered insightful viewpoints on the Feynman Technique's efficacy in language learning environments. The participants expressed increased self-assurance in their language skills and credited the Feynman Technique's emphasis on reflective practice and active engagement for their progress. "Explaining concepts to others helped solidify my understanding and retention of the material," remarked one student. I now feel more at ease communicating in English."

Following the experiment, the students were engaged in discussions about their experiences with the Feynman technique as a learning method in the form of a short

questionnaire. The students used a scale of 5 degrees from very low to very high to describe their experience.

Table 2.

The students' perceptions of their experiences with the Feynman technique

Item	Mean	SD	Degree
Feynman's technique improved my English proficiency significantly.	4.40	1.073	Very high
Feynman's technique is an easy way to improve my language.	4.12	1.157	Very high
I like my teacher to continue using the Feynman technique in my class	3.40	1.340	Very high
Feynman technique is effective in improving my speaking skills	3.50	1.191	Very high
I will apply the Feynman technique for self-study	4.03	1.204	Very high
I will use the Feynman technique in learning other subjects	4.12	1.099	Very high
The technique offered me chances to try new roles in my class and it's fun	4.37	.553	Very high
I'm happy with the skills I earned during the experimental course.	3.09	1.467	High
General perceptions	3.88	.668	Very high

The data collected from observations during the sessions focused on how participants interacted with the material and applied the Feynman Technique. Educators observed how engaged the learners were, how confident they felt when explaining the concepts, and how well they worked with their peers. These observations provided insights into the participants' learning process, highlighting any challenges they faced or improvements in their understanding. When the researcher visited the school to observe, a few students explained it like this: Application of Feynman Technique: Students seemed eager and participative in their ability to engage with their knowledge. Such benefits were seen in promoting comprehension through peer interactions by encouraging the sharing of knowledge and peer teaching in collaborative learning activities. Instructors also noticed improvements in their student's written and oral communication skills, prompting them to conclude that the Feynman Technique is a game changer in developing language skills.

The results of this study show how well the Feynman Technique works to improve the results of learning English. Because the method prompts students to be active, to think critically, and to be met cognitively aware, it provides them with a means to be in control of their education, ultimately helping to scaffold the more complex language concepts. Discoveries like this suggest that it might be possible for class teaching style to change

language instruction forever, to the tune that everyone may become fluent and proficient second language speakers by having access to the state of the art in teaching techniques like the Feynman Technique.

Discussion

The data shows a significant impact of the Feynman Technique on improving English language learning, supporting findings by Chen & Zhang (2023) and Ellis (2023), which highlight the beneficial effects of metacognitive skills and active learning. The Feynman Technique promotes active recall and simplification, essential for developing deeper understanding and retention. As students explain and simplify linguistic concepts, they engage in metacognitive processes that foster mastery and advanced comprehension.

Additionally, Vygotsky's (1978) Zone of Proximal Development (ZPD) theory provides another layer of understanding. According to ZPD, learners develop cognitive skills more effectively when engaging in tasks slightly beyond their current abilities, with guidance from peers or teachers. The Feynman Technique aligns with this, as students explain complex topics, often receiving feedback or clarification from their peers or instructors, moving them toward higher proficiency levels.

The Cognitive Load Theory (Sweller, 1988) also underpins these findings. Simplifying and teaching others reduces extraneous cognitive load by breaking down complex information, allowing learners to focus on essential content and manage their cognitive resources effectively. This helps language learners build a deeper understanding of grammar, vocabulary, and language structures.

The Feynman Technique's emphasis on reflective practice and critical engagement resonates with Constructivist Learning Theory (Bruner, 1966). As students actively construct their understanding of language concepts, they move beyond passive learning to build internal knowledge structures. This constructivist approach to learning is particularly effective in language education, where learners must make sense of dynamic and context-specific language use.

The study found that the language proficiency scores of the students showed significant improvement, indicating that the hands-on, learner-centered experience provided by the Feynman Technique enables students to internalize and apply language rules more effectively.

Another strength of the Feynman Technique is its adaptability to various language-learning environments. Whether in online settings, classrooms, or independent study, the technique can be tailored to the specific needs of learners. Its low-resource demand further increases its appeal, aligning with Self-Determination Theory (Deci & Ryan, 1985), which emphasizes that providing autonomy and competence leads to greater motivation and

engagement in learning tasks. The simplicity and flexibility of the technique foster an intrinsic motivation to learn, particularly in resource-limited environments.

Despite its strengths, the Feynman Technique has limitations. For instance, Kolb's Experiential Learning Theory (1984) suggests that learners have different learning preferences (e.g., reflective, active), and some might struggle with the technique's emphasis on explanation and peer teaching. This may particularly challenge ELL students, who may find articulating concepts in their own words difficult due to language proficiency issues.

Moreover, achieving proficiency using this technique takes time, effort, and consistent practice. Some learners may require additional support to navigate the complex cognitive processes involved in simplification and explanation.

Teachers must be aware of these individual differences and provide personalized training and guidance to help students effectively implement the Feynman Technique. Support can include scaffolding the learning process, offering models of how to break down complex information, and fostering an environment that encourages peer collaboration and reflection.

CONCLUSION

In conclusion, the experiment's findings illustrate the efficiency of the Feynman Technique in EL. Through collaborative learning activities, metacognitive reflection, and active engagement, participants demonstrated an Impactful improvement in language proficiency and comprehension (J. Smith & Brown, 2023). These results underline the ability of the Pointillist to revolutionize how languages are taught and the progress achievable in students' linguistic development.

This study is crucial because it explores a novel approach to language teaching focusing on deep understanding theory and active learning (Feynman, 2020). The Feynman Technique can allow our students to experience success in the language learning environment, transforming them into capable language learners with the critical thinking skills and metacognitive strategies necessary for self-directed learning (Johnson & Christensen, 2023). This research contributes to the discourse of innovative teaching methods in language education and proves the transformative capacity of the Feynman Technique.

This study provides several suggestions for teachers and students who want to apply the Feynman Technique in their English learning. However, teachers need first to teach students the principles of the Feynman Technique and scaffold appropriate guided practice and feedback for it (Chen & Zhang, 2023). This technique (Ellis, 2023) can multiply

the approach's effectiveness by promoting deeper learning outcomes, peer collaboration, and self-reflection.

In addition, it can facilitate the use of the Feynman Technique in a plethora of educational environments (Park & Choi, 2023). Online platforms, interactive simulations, and digital repositories of language materials that offer personalized learning experiences and real-time feedback (García et al., 2023) boost the engagement and motivation of learners as well.

They should also create a welcoming and inclusive classroom and inspire students to take risks, make mistakes and ask questions (S. Lee & Kim, 2023). Fostering a culture of inquiry and exploration stimulates students' curiosity and creativity and enables them to develop a lifelong love of language and learning (Jones & Smith, 2023).

Closure The Feynman Technique serves as a comprehensive structure that helps foster some of the essential aspects of learning and understanding in English language teaching. By using current pedagogical techniques and empowering learners to take their language learning initiative, teachers can create a generation of significant and confident language learners who can engage in global challenges.

REFERENCES

Braun, V., Clarke, V., & Hayfield, N. (2024). Qualitative Psychology: A Practical Guide to Research Methods. In *Research Methods in Psychology*. *Thematic analysis: A reflexive approach. Qualitative Research in Psychology.* (4th ed.). UK: SAGE Publications.

Bruner, J. (1966). *Toward a Theory of Instruction*. Cambridge: Harvard University Press.

Chen, L., & Zhang, H. (2023). Effective Vocabulary Acquisition Techniques: A Context-Based Approach. *Language Learning Research*, *12*(3), 321–335.

Ellis, R. (2023). *Task-Based Language Learning: Theory and Practice*. Cambridge: Cambridge University Press.

Feynman, R. P. (2020). *Surely You're Joking, Mr. Feynman: Adventures of a Curious Character. W. W. Norton & Company.* WW Norton & Company.

Garcia, C., & Lee, D. (2022). Exploring Innovative Approaches to Language Education. *Journal of Language Teaching and Learning*, *10*(2), 45–60.

García, M., Smith, T., & Brown, K. (2023). Integrating Technology into Language Learning: Opportunities and Challenges. *Computer Assisted Language Learning*, *36*(4), 412–428.

Johnson, R. B., & Christensen, L. B. (2023). *Educational Research: Quantitative, Qualitative, and Mixed Approaches*. United Kingdom: Sage Publications.

Tahani R. K. Bsharat, Lasmi Febrianingrum and Mosleh Habibullah, *Empowering Language Learners: Unleashing the Potential of the Feynman Technique in English Language Acquisition*

Jones, A. (2024). Cognitive learning theories and the Feynman Technique. *Journal of Educational Psychology*, *89*(1), 45–58.

Jones, A., & Smith, B. (2023). *Active Learning Strategies: A Comprehensive Guide for Educators*. Routledge.

Lee, C. (2024). Metacognitive Reflection and Language Learning: A Study of the Feynman Technique. *Language Learning Research*, *35*(2), 102–119.

Lee, S., & Kim, J. (2023). Communicative Language Teaching: Promoting Authentic Language Use in the Classroom. *Modern Language Journal*, *105*(2), 187–201.

Park, Y., & Choi, E. (2023). Mobile-Assisted Language Learning: Enhancing Listening and Speaking Proficiency. Language Teaching Research. *Language Teaching Research*, *17*(1), 87–102.

Smith, E., & Brown, L. (2024). Active Engagement in Language Learning: The Role of the Feynman Technique. *Applied Linguistics Review*, *42*(4), 291–309.

Smith, J., & Brown, A. (2023). Exploring the Feasibility of the Feynman Technique in Language Learning. *Journal of Applied Linguistics*, *30*(2), 145–160.

Sobel, H., Cepeda, N., & Kapler, I. (2011). Spacing Effects in Real-World Classroom Vocabulary Learning. *Applied Cognitive Psychology*, *25*, 763–767. doi: https://doi.org/10.1002/ACP.1747.

Taylor, H. (2024). Interactive Learning and Feedback in Language Education: Benefits of the Feynman Technique. *Modern Language Journal*, *108*(2), 215–230.

リーガント, Jeff, M., Thomson, R., & Mehring, J. (2016). Better Vocabulary Study Strategies for Long-Term Learning. *Kwansei Gakuin University Humanities Review*, *20*, 133–141.