

Experimental Insights into Letter Pattern Recognition among First-Year ESL Students

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Article History	Abstract
Original Research Article	<p><i>This study explores the effectiveness of a word puzzle-based instructional strategy in enhancing English letter awareness among rural Tamil-medium undergraduates. Conducted at Rajah Serfoji Government College, Thanjavur, the experiment involved 12 first-year B.Sc. Physics students aged 17–18, of whom 10 completed the study. Participants were divided into an experimental group and a control group. Over five contact hours in the language lab, the experimental group received the “A Silver Lining” puzzle, visuals, and a bilingual glossary, while the control group received only the glossary. Results showed that the experimental group engaged actively, grasped the logic of English letter sequences, and completed the puzzle with ease. In contrast, the control group struggled to decode the clues and failed to complete the task. The findings affirm that playful, scaffold materials significantly improve vocabulary acquisition and letter recognition. The study advocates for multimodal, culturally relevant resources in rural English language teaching.</i></p> <p>Keywords: Word Puzzle, English Letter Awareness, Rural Learners, Tamil-Medium Students, and Vocabulary Acquisition</p>
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Introduction

In the context of rural higher education in Tamil Nadu, English language acquisition remains a persistent challenge, particularly for Tamil-medium undergraduate students. Limited exposure to authentic English usage, minimal access to interactive learning environments, and a reliance on rote memorization often hinder learners’ ability to engage meaningfully with the language. Among these learners, vocabulary development and letter awareness are foundational yet frequently overlooked components of English proficiency.

This study emerges from a pedagogical need to explore playful, scaffold approaches that can bridge this gap. Word puzzles, when designed with linguistic intent and cultural sensitivity, offer a promising avenue for enhancing learners’ engagement with English orthography and vocabulary. The resource “A Silver Lining”, developed by the researcher, centers on the recurring letter sequence “E-A-R” and integrates clues,

visuals, and a bonus puzzle to stimulate pattern recognition and contextual guessing.

The present micro-experiment was conducted with first-year B.Sc. Physics students at Rajah Serfoji Government College, Thanjavur. All participants were aged 17–18 and came from rural Tamil-medium backgrounds. The study aimed to assess whether multimodal scaffolding through puzzles, pictures, and bilingual glossaries could improve learners’ understanding of English letter sequences and vocabulary usage. By comparing an experimental group (receiving full scaffolds) with a control group (receiving only a glossary), the research sought to evaluate the pedagogical impact of playful, letter-focused instruction.

This introduction sets the stage for a focused inquiry into how low-cost, culturally relevant materials can empower rural learners to decode and appreciate the structure of English words. It also contributes to the

broader discourse on inclusive English language teaching (ELT) by foregrounding learner-centered strategies that are both accessible and engaging.

Literature Review

The integration of playful pedagogies in English language teaching has gained increasing attention, particularly in contexts where learner motivation and engagement are low. Gee (2003) argues that game-based learning fosters deep cognitive involvement, making it especially effective for language acquisition. Wright, Betteridge, and Buckby (2006) support this view, noting that word games enhance vocabulary retention and promote learner autonomy. In rural and low-resource settings, Annamalai (2004) emphasizes the need for culturally responsive materials that align with learners' linguistic realities, advocating for bilingual scaffolds to bridge comprehension gaps. Vygotsky's (1978) sociocultural theory provides a foundational framework for scaffolding, suggesting that learners progress best when supported within their zone of proximal development. Mayer (2009) further reinforces the value of multimodal instruction, showing that visual and verbal integration improves processing and recall. Finally, Treiman (1993) highlights the importance of letter awareness in early literacy, a concept that remains relevant for older learners with limited exposure to English orthography. Together, these studies underscore the pedagogical value of scaffolded, playful, and context-sensitive approaches especially for rural Tamil-medium learners navigating the complexities of English vocabulary and spelling.

Methodology

This study was conducted to explore the impact of a word puzzle-based instructional strategy on English letter awareness among rural Tamil-medium undergraduates. The research focused on twelve first-year B.Sc. Physics students from Rajah Serfoji Government College, Thanjavur, all aged 17 or 18 and from rural backgrounds. Two students discontinued participation during the study, leaving a final sample of ten. These ten students were divided into two equal groups: an experimental group and a control group. The experimental group received the word puzzle titled "*A Silver Lining*", along with supporting materials such as pictures and a bilingual Tamil-English glossary. The control group received only the glossary. The experiment was conducted over five contact hours in

the college's language laboratory, where instruction was delivered in Tamil with English reinforcement. The researcher facilitated the sessions and observed students' engagement, comprehension, and task completion. The scope of the study was limited to evaluating the effectiveness of a single puzzle resource in a short-term setting, without assessing long-term retention. The objectives were to examine whether playful, scaffold materials could enhance English letter recognition, to compare puzzle performance between the two groups, and to assess the feasibility of integrating such resources into rural ELT classrooms. The study was guided by three research questions:

- (1) Did the use of a word puzzle with multimodal scaffolds improve English letter awareness among rural Tamil-medium undergraduates?
- (2) How did the performance of the experimental group differ from that of the control group in completing the puzzle task?
- (3) What role did visual aids and bilingual glossaries play in supporting vocabulary acquisition? The methodology was designed to reflect the realities of low-resource learning environments and to test the pedagogical value of culturally relevant, task-based materials.

Material

A Silver Lining

E-A-R Words

We need ears to hear. We also need the letters (Power) e-a-r to spell many words. In the left-hand column are 12 words containing these letters. Use the clues on the right to complete the spelling of the e-a-r words and match those words with the clues. For example, Clue A, "Opposite of late," can be matched with "E A R ____," which can be completed to spell EARLY. As an additional clue, note that the e-a-r words are listed in alphabetical order. Try this puzzle; there is nothing to f-e-a-r!

E-A-R Words	Clues
____ 1. ____ E A R ____ 2. ____ E A R ____ ____ 3. ____ E A R ____ 4. E A R ____ _A_ 5. E A R L Y ____ 6. E A R ____ ____ 7. ____ E A R ____ ____ 8. ____ E A R ____ ____ 9. ____ E A R ____ ____ 10. ____ E A R ____ ____ 11. ____ E A R ____ ____ 12. ____ E A R	A. Opposite of late B. Try to find something: "Let's ____ for lost treasure." C. Longer than a month; shorter than a decade D. Show up: "The magician made the rabbit ____." E. Practice a play, dance, or other performance F. Gaining knowledge: "I'm ____ how to play chess." G. Work for a reward, such as money H. Someone you love romantically I. Not cloudy at all: "The sky is ____ today." J. Between your elbow and your wrist K. Like headphones, but much, much smaller L. Hair on the cheeks and chin

Bonus E-A-R Puzzle: In the paragraph below, the letters e-a-r (in that order) appear ten times. How long will it take you to find all ten?

There are many people here today. We arranged a party at a place called The Blue Arrow Tea Room, and the area really looks good. People can sip tea, see art, and look at the sea right outside. Also, there should be a red sunset later, maybe around 8 p.m. We all are ready to relax!

Answers

1. D (APPEAR)
2. L (BEARD)
3. I (CLEAR)
4. K (EARBUDS)
5. A (EARLY)
6. G (EARN)
7. J (FOREARM)
8. F (LEARNING)
9. E (REHEARSE)
10. B (SEARCH)
11. H (SWEET HEART)
12. C (YEAR)

There are many people here today. We arranged a party at a place called The Blue Arrow Tea Room, and the area really looks good. People can sip tea, see art, and look at the sea right outside. Also, there should be a red sunset later, maybe around 8 p.m. We all are ready to relax!

Results

The findings of this micro-experiment revealed a clear distinction in performance and engagement between the experimental and control groups. The five students in

the experimental group, who received the word puzzle "*A Silver Lining*" along with visual aids and a bilingual glossary, demonstrated a strong grasp of English letter sequences particularly the recurring "E-A-R" pattern. They approached the puzzle with curiosity, collaborated effectively, and completed both the main and bonus tasks with minimal assistance. Their ability to decode clues and recognize word structures improved noticeably over the five contact hours. In contrast, the control group, which received only the glossary, struggled to interpret the clues and failed to complete the puzzle. These students showed signs of disengagement and confusion, relying solely on word meanings without understanding the structural logic behind the puzzle.

The results suggest that multimodal scaffolding especially the integration of visuals and bilingual support and played a crucial role in enhancing letter awareness and vocabulary acquisition. The puzzle format encouraged learners to think critically, recognize patterns, and engage with English in a playful yet purposeful manner. This aligns with Vygotsky's theory of scaffold learning and supports Mayer's findings on multimodal instruction. The experimental group's success also highlights the importance of culturally relevant and linguistically accessible materials in rural ELT contexts. While the control group had access to word meanings, the absence of visual and interactive elements limited their ability to internalize and apply the knowledge.

Overall, the experiment demonstrated that playful, scaffold resources can transform passive learners into active participants. The word puzzle not only improved

linguistic awareness but also fostered confidence and collaboration. These outcomes reinforce the need for inclusive, low-cost pedagogical tools tailored to the realities of rural Tamil-medium learners.

Conclusion

This study demonstrated that playful, scaffold instruction using word puzzles can significantly enhance English letter awareness and vocabulary acquisition among rural Tamil-medium undergraduates. The experimental group, supported by visuals and a bilingual glossary, showed greater engagement, comprehension, and task completion compared to the control group, which received minimal support. These findings affirm the pedagogical value of integrating culturally relevant, multimodal resources into English language teaching, especially in low-resource contexts. The puzzle format encouraged learners to recognize patterns, decode clues, and interact with English in a meaningful and enjoyable way. By fostering curiosity and confidence, such tools can transform passive learners into active participants. The study also highlights the importance of designing materials that align with learners' linguistic backgrounds and cognitive levels. Future research may explore the long-term impact of puzzle-based learning and its adaptability across disciplines. Overall, this experiment contributes to the growing advocacy for inclusive, learner-centered ELT practices in rural India.

REFERENCES

1. Annamalai, E. (2004). Medium of power: The question of English in education in India. *Language Policy*, 3(1), 1–24.
2. Balaganapathy, M. (2024). *Reading Comic Stories and Speaking: Points to Ponder*. Shodha-Prabha. 49.2. 163.
3. Balaganapathy, M. (2022). *Unlocking Oral Skills In Underprivileged Learners A Study*. Educational Administration: Theory and Practice. 28. (1), 371-374.
4. Bruner, J. S. (1986). *Actual minds, possible worlds*. Harvard University Press.
5. Cameron, L. (2001). *Teaching languages to young learners*. Cambridge University Press.
6. Cook, V. (2008). *Second language learning and language teaching* (4th ed.). Hodder Education.
7. Cummins, J. (2000). *Language, power and pedagogy: Bilingual children in the crossfire*. Multilingual Matters.
8. Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press.
9. Ehri, L. C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of Reading*, 9(2), 167–188.
10. Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. Palgrave Macmillan.
11. Krashen, S. D. (1982). *Principles and practice in second language acquisition*. Pergamon Press.
12. Kumaravadivelu, B. (2006). *Understanding language teaching: From method to postmethod*. Routledge.
13. Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.
14. Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge University Press.
15. Nunan, D. (2004). *Task-based language teaching*. Cambridge University Press.
16. Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching* (2nd ed.). Cambridge University Press.
17. Sarangi, S., & Das, J. (2011). English language teaching in rural India: Issues and challenges. *Language in India*, 11(3), 1–12.
18. Treiman, R. (1993). *Beginning to spell: A study of first-grade children*. Oxford University Press.
19. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
20. Wright, A., Betteridge, D., & Buckby, M. (2006). *Games for language learning* (3rd ed.). Cambridge University Press.