Pertanika Proceedings 2 (1): 71 - 77 (2026)

PERTANIKA JOURNALS

PERTANIKA PROCEEDINGS

Journal homepage: http://www.pertanika.upm.edu.my/

Incidental Vocabulary Learning through Reading Online Consumer Electronics Reviews

Chun-Huei Chuo

The College of Liberal Arts and Social Sciences, National Taiwan University of Science and Technology, 106335 Taipei, Taiwan

ABSTRACT

Explicit vocabulary instruction is widely practiced in Taiwanese language classrooms, yet limited attention has been given to how learners can acquire vocabulary incidentally through authentic online reading. While both explicit and incidental learning are recognised as complementary processes in second language vocabulary acquisition, research on how incidental vocabulary learning occurs in digital contexts remains limited. In this study, incidental vocabulary learning is defined as the unintentional acquisition of new words that takes place as a by-product of meaning-focused reading, rather than through deliberate vocabulary study. This study aimed to develop an English reading course for Taiwanese undergraduates, utilising online consumer electronics reviews to promote incidental vocabulary learning. The study was organised into three stages. In Stage One, a corpus-based analysis was conducted, involving the creation and examination of a corpus of online consumer electronics reviews to generate a word list that later served as the basis for a vocabulary test. Stage Two encompassed a 12-week classroom investigation employing mixed methods in action research. This approach monitored learners through spirals of 'planning, acting, observation, and reflection' (Lewin, 1946), ensuring active reading involvement to investigate incidental vocabulary learning. A quasi-experimental design was used to assess students' vocabulary gains. Stage Three examined students' perceptions and experiences through focus group interviews. Quantitative findings indicated that students were able to acquire vocabulary incidentally through extensive online reading, while qualitative insights highlighted themes related to their experiences and strategies for handling unfamiliar words. This study provides an alternative approach to enhance students' vocabulary acquisition and increase their reading motivation.

Keywords: Corpus-based research, ESP, extensive reading, incidental vocabulary learning

ARTICLE INFO

Article history:
Received: 30 December 2025
Published: 06 March 2026

DOI: https://doi.org/10.47836/pp.2.1.012

E-mail address:
chuojoyce@gmail.com (chuojoyce@gmail.com)

e-ISSN: 3083-9475

INTRODUCTION

As of April 2024, 5.44 billion people used the internet, representing 67.1% of the global population (Statista, 2024). This digital shift has transformed language through new communication technologies, such as social media and instant messaging (Nation & Macalister, 2020). The study aims to introduce Taiwanese students to English online discourse, which is often absent in local classrooms. Online consumer electronics reviews from the web magazine *Engadget* were used as authentic materials to promote incidental vocabulary learning and enhance reading motivation. These reviews provided real-life language exposure, crucial for students in the consumer electronics industry (Pellicer-Sánchez & Schmitt, 2010). This approach addresses the need for vocabulary development in specialised fields.

RELATED LITERATURE

Vocabulary learning is essential for second language proficiency, requiring learners to know a substantial number of words to comprehend texts effectively (Schmitt, 2010). Knowing a word encompasses various aspects, including its form, meaning, and use (Nation, 2020). Vocabulary knowledge can be categorised into receptive and productive dimensions (Laufer & Goldstein, 2004). Recent studies continue to emphasise that incidental learning, particularly guessing word meanings from context, is a crucial source of vocabulary acquisition (Nation, 2022; Webb et al., 2023).

Incidental vocabulary learning occurs when learners acquire new words unintentionally, typically through extensive reading (Webb et al., 2023). This method complements explicit vocabulary instruction, creating a more holistic approach to language acquisition (Schmitt, 2010). Research demonstrates that incidental learning can significantly enhance vocabulary acquisition, especially when learners are exposed to authentic reading texts (Nation & Waring, 2019). Extensive reading, defined as reading large amounts of material for enjoyment and general understanding, promotes incidental learning. Authentic materials, including internet discourse and online reviews, offer real-life language contexts that increase learner motivation and engagement (Li & Tsai, 2017; Pellicer-Sánchez & Schmitt, 2010).

Corpus-based research, which analyses language patterns and vocabulary usage, also plays a crucial role in facilitating vocabulary development, particularly in English for Specific Purposes (ESP) contexts. Specialised corpora in ESP provide insights into domain-specific language (Hou, 2014). Genre analyses of online consumer reviews reveal distinct linguistic features valuable for language learning (Vasquez, 2014). However, research focusing on how digital reading environments foster incidental vocabulary acquisition remains limited, particularly in the Taiwanese higher education context. Addressing this gap, the present study develops and evaluates a corpus-based reading course using online

consumer electronics reviews to promote incidental vocabulary learning and learner engagement.

METHODS

The current study sought to investigate three research questions:

1. What is the vocabulary distribution in online consumer electronics reviews and how does it inform word list development?
2. Do students learn vocabulary incidentally through online reviews?
3. What are students' perceptions of learning vocabulary through online reading, and what strategies do they use for unfamiliar words?

The study adopted a mixed-methods approach, combining quantitative and qualitative data to provide a comprehensive understanding of incidental vocabulary learning (Creswell & Clark, 2018). This approach incorporated a corpus-based study, an action research-based classroom investigation, and focus group interviews to triangulate findings. The research was conducted in three stages.

In Stage One, a corpus of online consumer electronics reviews was created and analysed to establish a word list. The corpus consisted of 300 product reviews, containing 52,349 running words. This process involved collecting data from the reviews, analysing vocabulary frequency, and developing a 188-target word list for subsequent testing (Dang & Webb, 2016).

Stage Two utilised action research to evaluate incidental vocabulary learning over a 12-week classroom period. This duration allowed sufficient time for multiple action research cycles and meaningful observation of students' vocabulary development. Participants were undergraduate students from the Computer Science Department at the University of Technology, selected because they were enrolled in an English course designed to enhance reading and technical vocabulary related to their discipline. The action research cycle included planning, acting, observing, and reflecting to refine the curriculum weekly (Lewin, 1946). A quasi-experimental design was implemented, using the word list from Stage One to assess vocabulary gains. Students' learning was monitored through learning diaries, classroom observations, and vocabulary tests.

Stage Three focused on qualitative methods, using focus group interviews to explore students' perceptions and experiences (Krueger & Casey, 2015). A total of 11 students voluntarily participated in the interviews, which aimed to understand their attitudes toward incidental vocabulary learning and the strategies they used to handle unfamiliar words.

Data from the three stages were analysed to ensure the validity and reliability of the findings. Corpus data were examined through frequency analysis using WordSmith Tools to identify high-frequency word families and develop a target word list. Quantitative

data from the pre- and post-tests were analysed using SPSS with independent and paired sample t-tests to measure vocabulary gains and effect sizes. Qualitative data from focus group interviews and learning diaries were transcribed, coded, and thematically analysed to identify patterns in students' experiences and strategies. Together, these analyses enhanced the study's overall rigor and comprehensiveness.

RESULTS AND DISCUSSION

In Stage One, the corpus analysis of online consumer electronics reviews revealed that the coverage of GSL words was not close to conversational English, and the coverage of AWL words differed from academic texts. Off-list words (words that are not included in the GSL and AWL) had higher coverage than in general texts, indicating the specialised nature of these reviews. Table 1 presents the lexical coverage of the corpus. Based on the criteria of specialised occurrence and frequency (Csomay & Petrović, 2012), a 188-word list was created, which included topic-related words, cohesive devices, sub-technical vocabulary, evaluative terms, and customer concerns. The word list served as the target vocabulary for testing in Stage Two.

Table 1
Lexical coverage of the corpus of online consumer electronics reviews

Word Category	Word Families	Types	Tokens	Coverage (%)
K1 Words (1–1000)	768	1,630	40,521	77.41
K2 Words (1001–2000)	416	671	3,168	6.05
Academic Word List (AWL)	303	493	2,049	3.91
Off-list Words	--	1,825	6,611	12.63
Total	1,487+	4,618	52,349	100.00

Stage Two involved a 12-week classroom experiment using action research. Quantitative results showed significant vocabulary gains in the experimental group engaged in online extensive reading, while the control group did not show similar improvements (Table 2). This finding aligns with previous research highlighting the positive impact of extensive reading on incidental vocabulary learning (Pellicer-Sánchez & Schmitt, 2010; Teng, 2018; Webb & Chang, 2015). In addition, the study assessed partial word knowledge through three test types, revealing the incremental nature of incidental vocabulary learning (Nation, 2022; Schmitt, 2010). Meaning-translation had the lowest scores, multiple-choice recognition showed the greatest improvement, and word-form recognition scored highest, indicating word knowledge ranges on a continuum, rather than being known or unknown.

Table 2
Summary of vocabulary gains in experimental and control groups

Test Type	Group	N	Pre-test M (SD)	Post-test M (SD)	Mean Gain	p	Significance
Word-form recognition	Experimental	21	44.05 (10.14)	52.71 (11.42)	+8.66	< .05	Significant
	Control	12	48.00 (12.82)	48.42 (11.31)	+0.42	> .05	Not significant
Meaning-translation	Experimental	21	24.05 (10.44)	31.14 (9.96)	+7.09	< .05	Significant
	Control	12	20.50 (10.33)	20.58 (11.94)	+0.08	> .05	Not significant
Multiple-choice recognition	Experimental	21	42.24 (11.08)	51.43 (11.73)	+9.19	< .05	Significant
	Control	12	45.33 (10.83)	46.50 (10.52)	+1.17	> .05	Not significant

Qualitative data from both the action research cycle in Stage Two and the focus group interviews in Stage Three revealed that students preferred the online reading class over general English classes, finding it more motivating (Yaghi et al., 2019). Students believed frequent word occurrences and classroom tasks enhanced their vocabulary learning (Nation, 2022). However, some felt frustrated by the number of unknown words and confused by words with multiple meanings. Reported strategies for dealing with unknown words included ignoring them, inferring meanings, using online dictionaries, and taking notes. These insights provide a comprehensive understanding of incidental vocabulary learning through online extensive reading.

CONCLUSION

This study demonstrated the effectiveness of incidental vocabulary learning through reading online consumer electronics reviews, enhancing both vocabulary acquisition and reading motivation among Taiwanese undergraduates. By engaging students with authentic online materials, the research offered an innovative and practical alternative to traditional, test-oriented vocabulary instruction. The findings highlight the pedagogical value of integrating incidental and explicit learning approaches to foster deeper lexical knowledge and learner autonomy. Incorporating corpus-based materials and online reading tasks can further enrich English for Specific Purposes (ESP) instruction. Future studies could include delayed post-tests to measure long-term retention and update word lists to reflect rapidly evolving technological terms, ensuring the continued relevance of this approach in modern English language education in Taiwan.

ACKNOWLEDGEMENT

The author would like to thank the students who participated in this study for their time and cooperation and to express appreciation to the reviewers for their constructive comments.

REFERENCES

Creswell, J. W., & Clark, V. L. P. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Csomay, E., & Petrović, M. (2012). "Yes, your honor!": A corpus-based study of technical vocabulary in discipline-related movies and TV shows. *System*, *40*(2), 305-315. https://doi.org/10.1016/j.system.2012.05.004

Dang, T. N. Y., & Webb, S. (2016). Making an essential word list for beginners. In Nation, ISP (Ed.) *Making and using word lists for language learning and testing* (pp. 153-167). John Benjamins.

Hou, H. I. (2014). Teaching specialized vocabulary by integrating a corpus-based approach: Implications for ESP course design at the university level. *English Language Teaching*, *7*(5), 26-37.

Krueger, R. A., & Casey, M. A. (2015). Focus group interviewing. In K. E. Newcomer, H. P. Hatry & J. S. Wholey (Eds.) *Handbook of practical program evaluation* (pp. 506-534). Wiley. https://doi.org/10.1002/9781119171386.ch20

Laufer, B., & Goldstein, Z. (2004). Testing vocabulary knowledge: Size, strength, and computer adaptiveness. *Language Learning*, *54*(3), 399-436. https://doi.org/10.1111/j.0023-8333.2004.00260.x

Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues, 2*(4), 34-46.

Li, L. Y., & Tsai, C. C. (2017). Accessing online learning material: Quantitative behaviour patterns and their effects on motivation and learning performance. *Computers & Education, 114*, 286-297. https://doi.org/10.1016/j.compedu.2017.07.007

Nation, I .S. P., & Waring, R. (2019). *Teaching extensive reading in another language* (1st ed.). Routledge. https://doi.org/10.4324/9780367809256

Nation, I. S. P. (2020). The different aspects of vocabulary knowledge. In S. Webb (Ed.) *The Routledge handbook of vocabulary studies* (pp. 15–29). Routledge.

Nation, I. S. P. (2022). *Learning vocabulary in another language* (2nd ed.). Cambridge University Press.

Nation, I. S. P., & Macalister, J. (2020). *Teaching ESL/EFL reading and writing* (2nd ed.). Routledge. https://doi.org/10.4324/9781003002765

Pellicer-Sánchez, A., & Schmitt, N. (2010). Incidental vocabulary acquisition from an authentic novel: Do things fall apart? *Reading in a Foreign Language*, *22*(1), 31-55.

Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Palgrave Macmillan.

Teng, F. (2018). Incidental vocabulary acquisition from reading-only and reading-while-listening: A multi-dimensional approach. *Innovation in Language Learning and Teaching*, *12*(3), 274-288. https://doi.org/10.1080/17501229.2016.1203328

Vasquez, C. (2014). *The discourse of online consumer reviews*. Bloomsbury Publishing.

Webb, S., & Chang, A. C. (2015). Second language vocabulary learning through extensive reading with audio support: How do frequency and distribution of occurrence affect learning? *Language Teaching Research*, *19*(6), 667-686. https://doi.org/10.1177/13621688145598

Webb, S., Uchihara, T., & Yanagisawa, A. (2023). How effective is second language incidental vocabulary learning? A meta-analysis. *Language Teaching*, *56*(2), 161-180. https://doi.org/10.1017/S0261444822000507

Yaghi, E. T., Abdullah, A., & Mustafa, Z. (2019). Investigation on motivation of online reading: A case study preparatory year students. *Turkish Online Journal of Educational Technology-TOJET, 18*(2), 40-51.