

The use of flashcards in english vocabulary learning for young learners

El uso de tarjetas didácticas en el aprendizaje de vocabulario en inglés para niños

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Cómo citar este artículo:
Padilla, K., Tipán, J., & González, O. (2026). The use of flashcards in english vocabulary learning for young learners. *Revista de Investigación Educativa Niveles*, 3(2), 114-125. <https://doi.org/10.61347/rien.v3i2.111>

Recibido: 5 de junio de 2026

Aceptado: 10 de julio de 2026

Publicado: 18 de agosto de 2026

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Abstract: Flashcards are widely recognized as a pedagogical resource in foreign language teaching because they facilitate vocabulary recognition, practice, and retention through visual association and repeated exposure. Vocabulary acquisition is a fundamental component of English as a Foreign Language (EFL) learning; however, many students experience difficulties in remembering and using new words due to limited exposure to interactive and motivating learning strategies. Therefore, this study aimed to determine the effect of using flashcards on English vocabulary acquisition and student participation among young learners. A quantitative approach with a descriptive pre-experimental design was applied using a single-group pre-test and post-test structure. The study involved 13 students who participated in English learning activities supported by flashcards. Data were collected through vocabulary assessments and an observation checklist using a three-point Likert scale to evaluate students' learning behaviors during the intervention. The results showed an improvement in students' vocabulary performance after the implementation of flashcard-based activities, with higher levels of recognition, participation, and classroom interaction in the post-test evaluation. It was concluded that flashcards represent a useful instructional resource for supporting vocabulary learning among young EFL learners by promoting visual association, active participation, and meaningful engagement in classroom activities.

Keywords: Foreign language, flashcards, learning, strategies, vocabulary.

Resumen: Las flashcards son reconocidas como un recurso pedagógico utilizado en la enseñanza de lenguas extranjeras debido a su capacidad para facilitar el reconocimiento, práctica y retención del vocabulario mediante la asociación visual y la exposición repetida. La adquisición de vocabulario constituye un componente fundamental en el aprendizaje del inglés como lengua extranjera; sin embargo, muchos estudiantes presentan dificultades para recordar y utilizar nuevas palabras debido a la limitada aplicación de estrategias interactivas y motivadoras. Por ello, el presente estudio tuvo como objetivo determinar el efecto del uso de flashcards en la adquisición del vocabulario en inglés y la participación de estudiantes jóvenes. Se aplicó un enfoque cuantitativo con un diseño preexperimental de alcance descriptivo, mediante un esquema de un solo grupo con evaluación pretest y posttest. La investigación contó con la participación de 13 estudiantes que desarrollaron actividades de aprendizaje del inglés apoyadas en flashcards. La recolección de datos se realizó mediante evaluaciones de vocabulario y una lista de observación con escala tipo Likert de tres niveles para analizar los comportamientos de aprendizaje durante la intervención. Los resultados evidenciaron una mejora en el desempeño del vocabulario después de la aplicación de las actividades con flashcards, así como mayores niveles de participación, reconocimiento de palabras e interacción durante las clases. Se concluye que las flashcards constituyen un recurso didáctico útil para favorecer el aprendizaje del vocabulario en estudiantes jóvenes de inglés como lengua extranjera, al promover la asociación visual, la participación activa y experiencias de aprendizaje significativas.

Palabras clave: Aprendizaje, estrategias, lengua extranjera, tarjetas didácticas, vocabulario.

1. Introduction

Vocabulary acquisition is a fundamental aspect of English as a Foreign Language (EFL) learning because it enables students to develop communicative competence and improve their ability to understand and produce oral and written messages. A sufficient vocabulary repertoire facilitates reading comprehension, listening skills, and meaningful interaction in different communicative contexts. Therefore, vocabulary development represents a central objective in foreign language education, particularly during childhood, when learners establish the linguistic foundations for future language proficiency.

Learning new vocabulary requires strategies that promote recognition, association, repetition, and long-term retention. In this regard, flashcards have been recognized as an effective pedagogical resource because they combine visual representation and linguistic information, facilitating the relationship between words and their meanings. Lei and Reynolds (2022) demonstrated that word cards contribute to vocabulary learning through repeated exposure and active retrieval processes, which strengthen lexical recognition and knowledge consolidation.

The effectiveness of flashcards has been reported in different educational contexts and among diverse groups of learners. Suryani et al. (2022) found that the implementation of flashcards improved vocabulary acquisition among young learners by facilitating the association between images and new words. Similarly, Firdausah and Sari (2022) indicated that flashcards increased students' motivation, participation, and interest during vocabulary activities, reducing difficulties related to memorizing unfamiliar words.

The cognitive benefits of visual learning also support the use of flashcards in foreign language instruction. According to Pickering et al. (2022), visual memory plays a significant role in vocabulary development because visual stimuli facilitate the encoding, storage, and retrieval of linguistic information. Consequently, materials that integrate images and words, such as flashcards, may enhance students' ability to understand and retain new vocabulary through meaningful associations.

With the advancement of educational technologies, digital flashcards have expanded the possibilities for vocabulary instruction by incorporating interactive and mobile learning environments. Boroughani et al. (2023) reported that digital flashcards promote vocabulary development while strengthening learners' self-regulation through autonomous learning practices. Likewise, Parahiba and Nurkhamidah (2024) found that digital flashcards improved students' attention, engagement, and vocabulary achievement in English learning contexts.

Although previous studies have demonstrated positive outcomes regarding flashcard implementation, most research has been conducted in urban educational environments or contexts with greater access to technological resources. Consequently, limited evidence exists regarding their application among children in local communities and rural educational settings, particularly in Ecuador. This gap highlights the importance of investigating accessible and adaptable strategies that respond to the specific characteristics of young English learners.

In Ecuadorian educational contexts, English instruction frequently continues to rely on traditional methodologies that may limit interaction, motivation, and active participation among students. For this reason, the integration of visual and interactive resources represents an opportunity to promote more meaningful learning experiences. Previous findings suggest that flashcards can support vocabulary acquisition by increasing students' involvement and facilitating the comprehension of new lexical items (Briceño & Rojas, 2022; Castro & Zelada, 2025; Chamorro, 2018).

For young learners, vocabulary retention represents a considerable challenge because acquiring new words requires continuous exposure, cognitive processing, and opportunities for meaningful practice. Flashcards provide these conditions by allowing students to connect visual representations with linguistic forms, strengthening memory and facilitating recall. Teng (2024) emphasized that vocabulary learning in young learners is influenced by cognitive factors such as working memory, which reinforces the importance of strategies based on repeated interaction with lexical information.

Additionally, recent evidence indicates that combining visual resources with engaging activities can positively influence vocabulary development. Milosavljevic and Reynolds (2024) found that flashcard-based instruction contributed to receptive and productive vocabulary learning among young English learners, demonstrating the relevance of interactive approaches. These findings reinforce the need to implement teaching strategies that integrate cognitive, visual, and motivational elements.

Despite the growing evidence supporting flashcards as a vocabulary learning strategy, further research is required in specific educational contexts involving children with limited exposure to English instruction. Particularly, studies conducted in community-based environments remain scarce, creating a need for empirical evidence regarding the effectiveness of flashcards in promoting vocabulary acquisition and student participation among young learners.

Therefore, this study aims to determine the effect of using flashcards on English vocabulary acquisition and student participation among children aged 5 to 12 years. Specifically, it seeks to implement flashcard-based activities to facilitate vocabulary comprehension and strengthen oral expression through interactive classroom practices. The findings may contribute to the development of effective teaching strategies for English learning in similar educational contexts.

2. Methodology

This research adopted a quantitative approach with a descriptive scope and a pre-experimental design based on a single-group pre-test and post-test structure. The study was conducted to determine changes in students' vocabulary learning after implementing flashcard-based activities during English classes. Quantitative data were collected and analyzed systematically to identify variations in vocabulary performance and learning behaviors associated with the use of flashcards.

The pre-experimental design was considered appropriate because the study evaluated the same group of participants before and after the intervention. The research was conducted in a natural educational setting during regular English learning sessions with young learners. According to Govindan (2013), non-experimental and descriptive approaches allow researchers to analyze existing conditions and describe phenomena as they occur in real contexts.

The descriptive scope allowed the researchers to characterize students' vocabulary learning behaviors during the implementation of flashcards. The observed aspects included attention, participation, pronunciation, vocabulary recognition, interaction, comprehension, and retention during classroom activities. This type of approach was relevant because descriptive research provides valuable information about educational processes developed in authentic learning environments (Guevara et al., 2020).

The research was carried out in the San Buenaventura neighborhood, an urban parish located in the northern area of Pujilí canton, Cotopaxi province, Ecuador. The study was conducted within the framework of community service activities developed by students from the Technical University of Cotopaxi. These activities were designed as English learning sessions in which flashcards were used as the main instructional resource.

The participants consisted of thirteen children between 5 and 12 years old who voluntarily attended the English learning sessions offered through the community service program. The group included students from different levels of basic education who participated in vocabulary learning activities supported by flashcards. A purposive sampling method was applied because participants were selected according to specific characteristics related to the research objectives.

According to Tajiko et al. (2024), purposive sampling is a non-probabilistic technique that allows researchers to intentionally select participants based on their relevance to the phenomenon under investigation. In this study, participant selection was justified because all students were enrolled in English learning sessions where flashcards were implemented as the main teaching resource, allowing the researchers to evaluate their influence on vocabulary learning.

Data Collection Instrument

Students' vocabulary learning behaviors were assessed through an observation checklist designed by the researchers. Observation was selected as the main data collection technique because it enabled the researchers to identify students' responses, participation levels, and interaction patterns during English learning activities conducted in a natural classroom environment.

The checklist consisted of fourteen indicators related to vocabulary learning behaviors, including vocabulary recognition, oral participation, pronunciation, attention, curiosity, collaboration, comprehension, and vocabulary retention. These indicators were established based on previous studies that highlighted the relevance of repetition, visual association, motivation, and active participation in vocabulary acquisition among young learners (Lei & Reynolds, 2022; Suryani et al., 2022; Teng, 2024).

Each indicator was evaluated using an observation sheet that allowed the researchers to record the frequency of students' behaviors during flashcard activities. A three-point Likert scale was applied to classify the observed behaviors according to their frequency of occurrence: 3 = Always, 2 = Sometimes, and 1 = Never.

The observation scale facilitated the organization and quantitative analysis of classroom behaviors by determining how frequently students demonstrated vocabulary learning processes during flashcard activities. Through this instrument, the researchers identified changes in students' participation, vocabulary recognition, and interaction throughout the intervention.

Data Collection Procedure

Data collection was conducted during English classes in which flashcards were implemented as the main instructional material for vocabulary teaching. The observation checklist was applied at two different moments: before and after the intervention, allowing the researchers to compare students' vocabulary learning behaviors throughout the research process.

During each session, the researchers observed students' participation in vocabulary recognition activities, pronunciation exercises, image-word association tasks, and collaborative learning activities. The checklist was completed while students interacted with the learning materials, ensuring that the recorded information reflected their performance in the classroom context.

Attention was given to students' concentration, ability to associate images with vocabulary items, participation in oral activities, and retention of previously introduced words. The implementation of flashcards provided an interactive and multisensory learning environment that allowed researchers to analyze changes in students' motivation, participation, and vocabulary acquisition.

Table 1 presents the observation checklist used to assess students' vocabulary learning behaviors during flashcard-based English activities. The instrument consisted of 14 indicators grouped around four main dimensions: attention and engagement, vocabulary recognition and comprehension, oral production, and collaborative participation. Each indicator evaluated observable behaviors related to students' interaction with flashcards, including visual attention, interest, vocabulary identification, image-word association, pronunciation, speaking participation, and peer collaboration. The behaviors were measured using a three-point Likert scale: Always (3), Sometimes (2), and Never (1), which allowed the researchers to quantify the frequency of students' responses during classroom activities and compare their performance before and after the intervention.

Table 1

Observation checklist for assessing vocabulary learning behaviors with flashcards

N.º	Elementos	Siempre (3)	A veces (2)	Nunca (1)
1	Los niños mantienen atención visual hacia la flashcard durante su presentación.			
2	Los niños muestran interés observable (mirada fija, postura atenta) al utilizar las flashcards.			
3	Los niños muestran curiosidad hacia las imágenes presentadas.			
4	Los niños identifican correctamente el significado de la palabra al observar la imagen.			
5	Los niños asocian correctamente la imagen con el significado de la palabra.			
6	Los niños comprenden con facilidad el vocabulario presentado durante la actividad.			
7	Los niños responden correctamente cuando se les pide identificar la palabra mostrada.			
8	Los niños pueden identificar correctamente la palabra cuando se muestra nuevamente la flashcard.			
9	Los niños pronuncian correctamente las palabras nuevas.			
10	Los niños intervienen en actividades de <i>speaking</i> utilizando el vocabulario nuevo.			
11	Los niños participan activamente en las actividades de <i>speaking</i> .			
12	Los niños realizan preguntas relacionadas con las imágenes de las flashcards.			
13	Los niños colaboran con sus compañeros durante actividades con flashcards.			
14	Los niños corrigen o apoyan a sus compañeros durante la actividad.			

Escala de valoración

Siempre = 3

A veces = 2

Nunca = 1

3. Results

The results obtained from the pre-test and post-test evaluations allowed the researchers to identify changes in students' English vocabulary performance after the implementation of flashcard-based activities. The comparison between both measurements showed an improvement in students' scores, indicating positive changes in vocabulary recognition, comprehension, and participation during English learning activities.

Pre-test Results

Table 2 presents the students' performance before the implementation of flashcard activities. The results showed that most participants were initially located in the "Acceptable" performance level, with 61.5% of students obtaining scores between 4 and 6 points. Additionally, 15.4% of participants achieved the "Good" level and another 15.4% reached the "Excellent" level, while 8.0% remained in the "Needs Improvement" category.

These findings indicate that, before the intervention, most students demonstrated basic vocabulary knowledge but still experienced difficulties in recognizing and recalling English words. The presence of students in lower performance categories suggested the need for instructional strategies that could strengthen vocabulary retention, comprehension, and active participation during English classes.

Table 2

Pre-test results of students' vocabulary performance before the implementation of flashcards

Performance level	Score range	Percentage	Students
Needs improvement	0–3	8.0%	1
Acceptable	4–6	61.5%	8
Good	7–8	15.4%	2
Excellent	9–10	15.4%	2
Total	0–10	100%	13

Note. The pre-test was scored on a scale from 0 to 10. Performance levels were classified as follows: 0–3 = Needs Improvement, 4–6 = Acceptable, 7–8 = Good, and 9–10 = Excellent.

Post-test Results

Table 3 shows students' performance after the implementation of flashcard activities. The results indicated that all participants improved their performance, with 53.8% of students reaching the "Excellent" category and 46.2% achieving the "Good" category. No participants remained in the "Acceptable" or "Needs Improvement" levels after the intervention.

These results suggest that the implementation of flashcards was associated with improvements in vocabulary performance, particularly in word recognition and comprehension. The increase in students achieving higher performance levels indicates that the intervention contributed to strengthening vocabulary learning processes during English activities.

Table 3

Post-test results of students' vocabulary performance after the implementation of flashcards

Performance level	Score range	Percentage	Students
Needs improvement	0–3	0.0%	0
Acceptable	4–6	0.0%	0
Good	7–8	46.2%	6
Excellent	9–10	53.8%	7
Total	0–10	100%	13

Note. The post-test was scored on a scale from 0 to 10. Performance levels were classified as follows: 0–3 = Needs Improvement, 4–6 = Acceptable, 7–8 = Good, and 9–10 = Excellent.

Comparison Between Pre-test and Post-test Results

The comparison between pre-test and post-test scores is presented in table 4. Before the intervention, 61.5% of students were classified at the “Acceptable” level, whereas after the implementation of flashcards, this category decreased to 0%. Similarly, the proportion of students in the “Good” category increased from 15.4% to 46.2%, while the “Excellent” category increased from 15.4% to 53.8%.

The comparison demonstrates a positive change in students' vocabulary performance after participating in flashcard-based activities. The reduction of students in lower performance categories and the increase in higher achievement levels indicate that flashcards supported vocabulary learning by providing visual associations, repetition opportunities, and interactive classroom experiences.

Table 4

Comparison of students' vocabulary performance before and after the implementation of flashcards

Performance level	Score range	Pre-test students	Pre-test %	Post-test students	Post-test %
Needs improvement	0–3	1	8.0%	0	0.0%
Acceptable	4–6	8	61.5%	0	0.0%
Good	7–8	2	15.4%	6	46.2%
Excellent	9–10	2	15.4%	7	53.8%
Total	0–10	13	100%	13	100%

Note. The pre-test and post-test were scored on a scale from 0 to 10. Performance levels were classified as follows: 0–3 = Needs Improvement, 4–6 = Acceptable, 7–8 = Good, and 9–10 = Excellent.

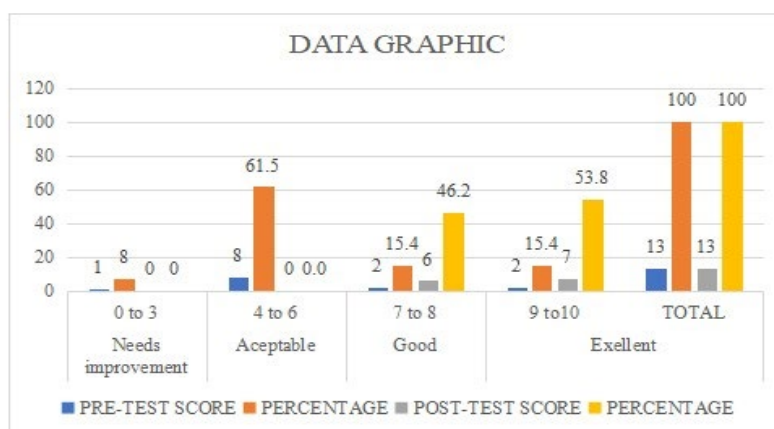
Graphical Representation

Figure 1 illustrates the differences between students' performance before and after the implementation of flashcards. The graph shows a shift from lower and intermediate performance categories in the pre-test toward higher achievement levels in the post-test.

Before the intervention, most students were concentrated in the “Acceptable” category, whereas after the use of flashcards, all participants reached either the “Good” or “Excellent” levels. This change suggests that flashcard-based activities provided meaningful support for vocabulary learning by facilitating word recognition, visual association, and repeated practice.

Figure 1

Comparison of students' vocabulary performance before and after the implementation of flashcards



4. Discussion

The results of this research indicated that the implementation of flashcard-based activities was associated with improvements in students' English vocabulary performance, as well as increased participation and classroom interaction. The comparison between the pre-test and post-test scores revealed a positive change in students' achievement levels, with all participants moving from lower performance categories toward the “Good” and “Excellent” levels after the intervention. These findings suggest that visual and interactive materials may support vocabulary recognition, retention, and processing in EFL learning environments, particularly among young learners.

The findings of this study are consistent with those reported by Suryani et al. (2022), who found that flashcards support vocabulary acquisition by facilitating the association between images and words. This relationship was also observed in the present research, as students demonstrated greater recognition of vocabulary items after participating in activities based on visual representations. Similarly, Firdausah and Sari (2022) reported that flashcards increase students' motivation and reduce boredom during vocabulary learning activities. In agreement with these findings, the students in this study showed greater involvement, attention, and willingness to participate during classroom activities supported by flashcards.

Furthermore, Lei and Reynolds (2022) emphasized that word cards facilitate vocabulary learning through repeated exposure and active retrieval processes, strengthening both receptive and productive lexical knowledge. The improvement observed between the pre-test and post-test results in this study may be explained by these mechanisms, since students repeatedly interacted with vocabulary items through recognition, pronunciation, and image-word association activities. Therefore, flashcards provided opportunities for meaningful practice and continuous reinforcement of newly acquired words.

The results also support Teng's (2024) cognitive perspective, which highlights the relevance of

working memory and cognitive processes in vocabulary learning among young EFL learners. In this study, the use of visual stimuli appeared to facilitate students' attention and recall of new words, suggesting that flashcards contributed to the connection between visual information and linguistic meaning. Likewise, Milosavljevic and Reynolds (2024) demonstrated that visually supported learning activities contribute to vocabulary development and retention among young learners. These findings reinforce the relevance of incorporating multisensory strategies that combine visual input, repetition, and active student engagement.

Beyond vocabulary acquisition, the findings revealed positive changes in students' classroom participation and motivation. The observation of students' behaviors during the intervention showed increased interaction, collaboration, and involvement in oral activities when flashcards were incorporated into English lessons. These results are related to the findings of Boroughani et al. (2023), who highlighted that digital flashcards could promote active learning processes and self-regulation among language learners. Although the present study used physical flashcards, both approaches share the principle of facilitating autonomous and meaningful interaction with vocabulary.

From a pedagogical perspective, the findings suggest that flashcards represent a valuable instructional resource for supporting vocabulary learning in EFL contexts. Their visual and manipulative characteristics provide opportunities for students to engage with language through multiple forms of representation, which may be particularly beneficial for children who require concrete and interactive learning experiences. Therefore, this research contributes to existing evidence supporting the integration of accessible visual resources in English teaching environments.

However, the interpretation of these findings should consider the characteristics of the research design, particularly the use of a single experimental group without a control group. Consequently, the results demonstrate an improvement associated with the implementation of flashcards, but they do not allow establishing definitive causal relationships. Future studies could incorporate larger samples, control groups, and longer intervention periods to further examine the effectiveness of flashcards in different educational contexts.

In summary, the findings suggest that flashcards constitute an effective and motivating resource for supporting English vocabulary learning among young learners. The results highlight the importance of implementing interactive and visually supported strategies, particularly in contexts where traditional instructional approaches may limit student engagement. By promoting vocabulary recognition, participation, and meaningful classroom interaction, flashcards may contribute to the development of more dynamic and learner-centered EFL learning experiences.

5. Conclusions

The results of this study indicated that the implementation of flashcards was associated with improvements in students' English vocabulary learning and the development of essential language skills related to vocabulary recognition, pronunciation, and oral interaction. The comparison between pre-test and post-test scores showed a positive progression in students' performance levels, as most participants moved from "Acceptable" categories toward "Good" and "Excellent" achievement levels after participating in flashcard-based activities. These findings suggest that flashcards provided meaningful opportunities for vocabulary practice through visual association, repetition, and active classroom participation.

The analysis of classroom observations and vocabulary assessments revealed that students demonstrated greater involvement and interaction during English learning activities supported by

flashcards. These findings are consistent with previous studies by Suryani et al. (2022) and Firdausah and Sari (2022), who highlighted that flashcards contribute to vocabulary acquisition by increasing motivation, reducing learning difficulties, and promoting active participation in EFL classrooms. Therefore, flashcards represented not only a resource for reinforcing lexical knowledge but also a strategy that encouraged positive attitudes toward English learning.

The findings of this research highlight the relevance of incorporating innovative and student-centered approaches in EFL contexts, particularly among young learners who benefit from visual, interactive, and multisensory learning experiences. The use of flashcards facilitated the association between words and images, which may support cognitive processes involved in vocabulary recognition, memory retention, and oral production. These results are aligned with the perspectives of Teng (2024) and Milosavljevic and Reynolds (2024), who emphasized the importance of visual input and cognitive processes in vocabulary development.

In conclusion, this study suggests that flashcards constitute an accessible and effective instructional resource for supporting English vocabulary learning among young learners. Their visual and interactive characteristics promoted greater student engagement and facilitated meaningful vocabulary practice within the classroom environment. Although further research with larger samples and comparative designs is required, the findings provide evidence supporting the integration of flashcards as a complementary strategy for enhancing vocabulary learning and participation in EFL contexts.

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Transparencia

Conflicto de interés

Los autores declaran que no existen conflictos de interés de naturaleza alguna como parte de la presente investigación.

Fuente de financiamiento

Los autores financiaron completamente la investigación.

Contribución de autoría

Katherine Johana Padilla Suntaxi: Metodología, validación, análisis formal, investigación, gestión de datos, visualización, redacción - preparación del borrador original, redacción - revisión y edición, financiamiento, administración del proyecto, recursos, supervisión.

Juan Tomas Tipán Ayala: Conceptualización, metodología, software, validación, análisis formal, investigación, gestión de datos, redacción - preparación del borrador original, redacción - revisión y edición, financiamiento, recursos.

Olga Lorena González Ortiz: Validación, análisis formal, gestión de datos, redacción - preparación del borrador original, redacción - revisión y edición, financiamiento.

Los autores contribuyeron activamente en el análisis de los resultados, revisión y aprobación del manuscrito final.