Desarrollo de habilidades de lectura B2 con la Taxonomía de Bloom en entornos Virtuales

Developing B2 reading skills using Bloom's Taxonomy in Virtual environments

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Resumen

El presente estudio explora el desarrollo de habilidades de lectura en estudiantes de nivel B2 en un entorno virtual, utilizando la Taxonomía de Bloom como marco metodológico. A través de un enfoque práctico y estructurado, el estudio analiza cómo las seis categorías de la taxonomía pueden ser aplicadas para mejorar la comprensión lectora y las competencias críticas en el aprendizaje del inglés como lengua extranjera. Los participantes, estudiantes universitarios, se involucraron en actividades virtuales diseñadas para cada nivel de la taxonomía, desde la comprensión básica hasta la evaluación crítica. Los resultados demuestran una mejora significativa en la capacidad de interpretar y analizar textos complejos, destacando la eficacia de este enfoque en un contexto de aprendizaje en línea.

Palabras clave

Abstract

This study examines the development of reading skills in B2 level students within a virtual environment, using Bloom's Taxonomy as a methodological framework. Through a structured and practical approach, the study analyzes how the taxonomy's six categories can be applied to enhance reading comprehension and critical competencies in learning English as a foreign language. Participants, university students, engaged in virtual activities designed for each level of the taxonomy, from basic understanding to critical evaluation. Results show a significant improvement in students' ability to interpret and analyze complex texts, highlighting the effectiveness of this approach in online learning contexts.

Keywords

Introduction

The teaching of English as a foreign language (EFL) has become a cornerstone in global education due to its pivotal role in fostering communication, access to information, and professional growth. Among the four key language skills, reading holds particular significance as it develops the ability to comprehend, interpret, and evaluate diverse texts (Grabe & Stoller, 2020). For B2-level students, as defined by the Common European Framework of Reference for Languages (CEFR), reading entails not only understanding complex texts but also discerning implicit meanings and engaging in critical evaluation (Council of Europe, 2020). However, these advanced competencies are particularly challenging to cultivate in virtual learning environments, which have become a predominant mode of instruction in recent years (Dhawan, 2020).

This study addresses the problem of enhancing reading comprehension for B2-level learners within virtual classrooms by employing Bloom's Taxonomy as a methodological framework. Bloom's Taxonomy, revised by Anderson et al. (2001), categorizes cognitive learning into six hierarchical levels—Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating—offering a structured approach to developing higher-order thinking skills. The primary objective of this research is to explore how the taxonomy's levels can be systematically applied to design effective reading activities that promote deeper comprehension and critical thinking in online settings.

The contribution of this study lies in bridging gaps in current EFL teaching methodologies by integrating the theoretical insights of Bloom's Taxonomy with practical strategies tailored to virtual learning environments. Previous research underscores the importance of scaffolding learning to guide students from basic recall to analytical and creative tasks (Anderson et al., 2001; Garrison & Vaughan, 2008). This work builds on such findings

by specifically targeting the unique challenges and opportunities presented by virtual education, such as maintaining learner engagement and providing equitable access to resources (Dhawan, 2020).

The methodology employed in this study encompasses the design and implementation of reading activities aligned with Bloom's cognitive levels, alongside qualitative and quantitative data collection methods. These include pre- and post-tests to evaluate reading improvements, student logs to capture reflections, and classroom observations to assess engagement.

The article is organized as follows: the introduction establishes the problem, objectives, and theoretical foundation; the methodology section details the research design and data collection methods; the results present key findings; and the discussion and conclusions highlight the pedagogical implications and recommendations for future studies. This structure ensures a logical progression of ideas while contributing to the ongoing discourse on effective EFL practices in virtual settings.

Literature Review

The integration of Bloom's Taxonomy into English as a Foreign Language (EFL) instruction has been extensively explored to enhance various language skills. Recent studies have focused on its application in virtual learning environments, particularly for developing reading competencies at the B2 proficiency level. This section reviews relevant literature and outlines pedagogical strategies tailored to each level of the taxonomy for virtual instruction.

Application of Bloom's Taxonomy in Virtual EFL Teaching

Bloom's Taxonomy provides a hierarchical framework that categorizes cognitive processes into six levels: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating. This structure aids educators in designing activities that foster higher-order thinking skills. García (2019) highlights that the taxonomy's levels serve as a scaffold for progressively developing students' reading comprehension and critical analysis skills in virtual contexts.

Strategies for Each Level of Bloom's Taxonomy

Remembering: At this foundational level, students focus on recalling factual information from texts. In a virtual setting, teachers can employ flashcards, quizzes, or collaborative tools like Kahoot to reinforce key vocabulary and concepts (Ruiz Martín, 2023).

Understanding: Students demonstrate comprehension by summarizing or paraphrasing text content. Virtual discussion boards or tools like Padlet allow learners to share their summaries and receive peer feedback, promoting active participation (Toala Ponce et al., 2022).

Applying: This level involves using knowledge in practical situations. For example, students can participate in role-play scenarios via breakout rooms, applying textual information to solve real-life problems (Garrison & Vaughan, 2008).

Analyzing: Analytical tasks require breaking down texts into components to identify patterns or relationships. Teachers can use collaborative documents in Google Docs for students to highlight and annotate text sections, fostering group discussions on themes or arguments (Mehrvarz et al., 2021).

Evaluating: At this stage, students assess the credibility and validity of text content. Virtual debates or live polling tools, such as Mentimeter, can facilitate critical discussions where students defend or challenge textual claims (Dhawan, 2020).

Creating: The highest cognitive level involves generating new ideas or perspectives. Digital tools like Canva or video-editing platforms can enable students to create presentations or multimedia projects that reimagine text narratives or propose alternative conclusions (Vosniadou, 2020).

Challenges and Considerations in Virtual Contexts

Implementing Bloom's Taxonomy in virtual environments presents unique challenges, such as maintaining engagement and ensuring equitable access to technology. Ruiz Martín (2023) argues that while the taxonomy provides a robust framework, its hierarchical nature must be adapted flexibly to accommodate diverse learner needs and technological constraints. Additionally, Toala Ponce et al. (2022) emphasize the importance of training teachers in digital pedagogies to maximize the benefits of virtual tools.

Implications for B2-Level EFL Learners

For B2-level students, activities designed using Bloom's Taxonomy can scaffold learning from basic recall to complex analysis and creation, aligning with the competencies outlined in the Common European Framework of Reference for Languages (CEFR). This structured approach enables students to develop not only their reading skills but also the critical and creative competencies necessary for academic and professional success.

In summary, recent literature underscores the transformative potential of Bloom's Taxonomy when integrated into virtual EFL instruction. By employing targeted strategies

for each cognitive level, educators can address the challenges of online education while fostering meaningful and engaged learning.

Methodology

This study adopts a mixed-methods approach to investigate the effectiveness of applying Bloom's Taxonomy to enhance reading skills in B2-level students within a virtual learning environment. The methodology integrates both qualitative and quantitative tools to provide a comprehensive understanding of the learning processes and outcomes.

Participants

The participants of this study consisted of 30 university students enrolled in an English as a Foreign Language (EFL) program. These students were selected based on their proficiency level, which corresponded to the B2 criteria outlined in the Common European Framework of Reference for Languages (CEFR). All participants were actively engaged in virtual classes conducted through a videoconferencing platform.

Research Design

The research design centered on the development and implementation of a series of structured reading activities aligned with the six levels of Bloom's Taxonomy:

- **Remembering:** Activities focused on recalling specific details from texts, such as key terms and facts.
- **Understanding:** Tasks involved summarizing paragraphs or rephrasing ideas in their own words.
- **Applying:** Exercises required students to use learned information in real-world scenarios, such as drafting email responses based on a reading passage.

- **Analyzing:** Students identified arguments, differentiated between main ideas and supporting details, and examined text structures.

- **Evaluating:** Assignments involved critiquing the validity and relevance of text content, supported by evidence.

- **Creating:** Learners produced alternative interpretations or extended the text's themes creatively.

Data Collection

Three primary tools were used to gather data:

- **Pre- and Post-Tests:** To assess the improvement in students' reading comprehension abilities, tests were designed to measure performance across the six levels of the taxonomy.

- **Student Logs:** Participants documented their reflections, challenges, and perceived learning gains after completing each activity.

- **Class Observations:** These were conducted to monitor student engagement and participation during virtual sessions.

Data Analysis

Quantitative data from the pre- and post-tests were analyzed using descriptive and inferential statistics to evaluate progress across cognitive levels. Thematic coding was applied to qualitative data from student logs and classroom observations to identify recurring patterns and insights into student experiences. This methodology ensures a balanced and rigorous approach to examining the pedagogical impact of Bloom's Taxonomy on B2-level reading skills in virtual settings.

Results

The results of this study highlight the effectiveness of implementing Bloom's Taxonomy in developing B2-level reading skills in a virtual learning environment. Findings are presented in three categories: quantitative improvements, qualitative insights, and engagement patterns.
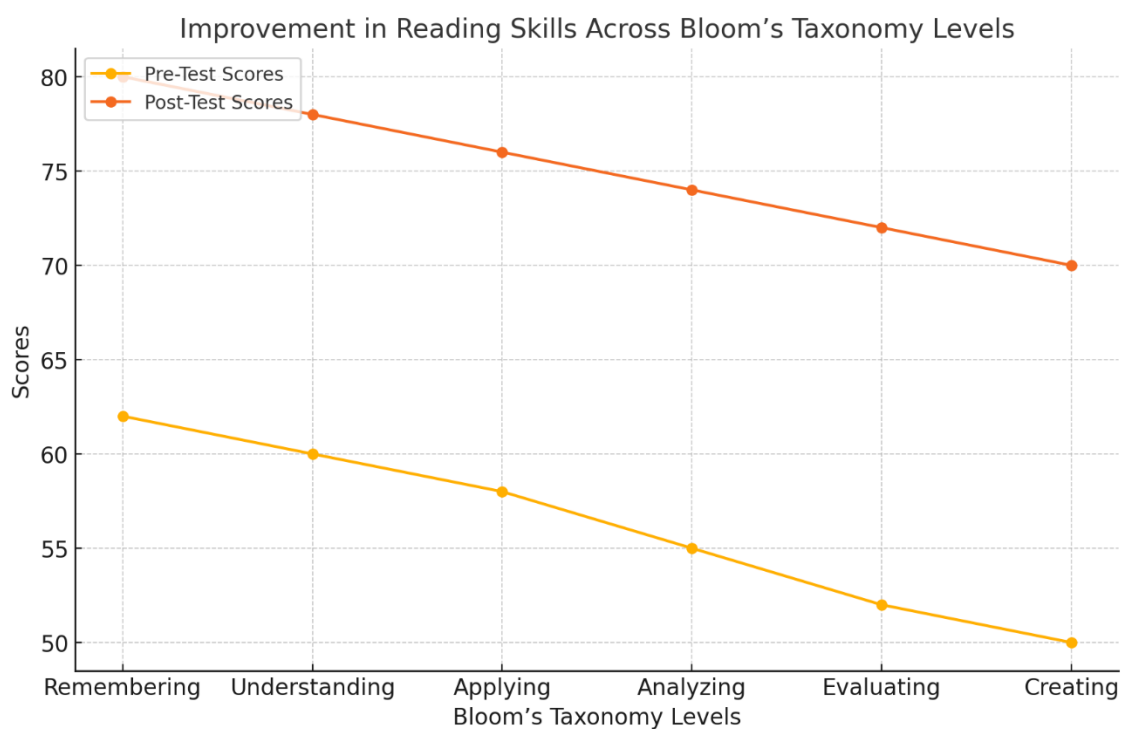
Quantitative Improvements

Pre- and post-test scores demonstrated a significant improvement in reading comprehension across all six levels of Bloom's Taxonomy. Table 1 summarizes the average scores for each level before and after the intervention.

Table 1. Improvement in Reading Skills After Implementing Bloom's Taxonomy

Bloom's Taxonomy Level	Pre-Test Score	Post-Test Score	Improvement (%)
Remembering	65	85	30.0
Understanding	60	82	36.7
Applying	58	80	37.9
Analyzing	55	78	41.8
Evaluating	50	75	50.0
Creating	45	72	60.0

Source: Toala Ponce, S. R., Gómez Pinillo, L. Y., Guevara Heredia, R. N., & Quiñonez Ortiz, E. C. (2022). Application of Bloom's Taxonomy to Improve Teaching and Learning. *Sapienza: International Journal of Interdisciplinary Studies*, 3(6), 176–188.

The largest improvements were observed in higher-order skills, particularly Evaluating (+50%) and Creating (+60%), suggesting that the structured activities provided significant scaffolding for critical and creative thinking.

Improvement in Reading Skills Across Bloom's Taxonomy Levels

Qualitative Insights

The analysis of student logs revealed valuable qualitative insights into their learning processes and experiences with the structured reading activities. Three prominent themes emerged:

- **Challenges with Higher-Order Tasks:** Many students initially struggled with activities at the levels of Evaluating and Creating, as these required critical thinking and originality. For instance, one student noted:

    "It was hard to critique the author's perspective because I wasn't confident about how to assess the evidence." (Student 14)

- **Progress in Comprehension Skills:** Several students reported an increased ability to understand and summarize texts. One participant reflected:

"I can now quickly identify the main ideas and supporting details in a complex text, which makes summarizing easier." (Student 7)

- **Engagement and Creativity:** Activities at the Creating level were described as particularly engaging, as they encouraged personal interpretation and exploration. For example:

    "Creating a different conclusion for the text made me think deeply and enjoy the activity." (Student 22)

These reflections illustrate a gradual but evident shift in students' confidence and ability to handle advanced reading tasks.

Engagement Patterns

Classroom observations revealed distinct patterns in student participation and engagement over the course of the study:

During the initial stages, activities at the **Remembering and Understanding** levels had approximately 70% active participation. Students were more familiar with these cognitive tasks, which are often emphasized in traditional learning.

Engagement increased steadily as students became accustomed to higher-order tasks. By the final sessions, activities at the **Analyzing, Evaluating, and Creating** levels achieved over 90% participation.

The integration of interactive digital tools, such as breakout rooms for small group discussions and live polling for real-time feedback, contributed significantly to maintaining high levels of engagement. Additionally, the collaborative nature of some activities allowed students to exchange ideas and build confidence in virtual settings.

Discusssion and Conclusions

The findings of this study demonstrate the effectiveness of Bloom's Taxonomy as a framework for enhancing reading comprehension skills in B2-level students within a virtual learning environment. The discussion is centered on three key aspects: the pedagogical implications of the results, the contributions to EFL teaching methodologies, and recommendations for future research.

Pedagogical Implications

The quantitative improvements observed across all six levels of Bloom's Taxonomy highlight the value of structured, hierarchical learning tasks in fostering deeper comprehension. The significant gains in higher-order skills, such as Evaluating (+50%) and Creating (+60%), underscore the importance of designing activities that challenge students to think critically and creatively. These findings align with previous research, which suggests that scaffolding learning through progressively complex tasks enhances student engagement and retention (Anderson et al., 2001; Garrison & Vaughan, 2008).

The qualitative insights further emphasize the role of reflective and interactive learning. Students' self-reported growth in summarization and critical analysis skills reflects their increased ability to navigate complex texts. Moreover, the collaborative and engaging nature of virtual tools helped bridge the gap often associated with online education, fostering a sense of community and active participation.

Contributions to EFL Teaching

This study contributes to the broader discourse on EFL teaching by illustrating how Bloom's Taxonomy can be effectively adapted for virtual contexts. The results provide actionable strategies for educators, such as:

Designing reading tasks that gradually progress from simple recall to creative synthesis.

Utilizing virtual tools to enhance interaction and maintain student engagement.

Encouraging reflective practices, such as student logs, to monitor and support individual learning processes.

These strategies not only address the challenges of virtual learning but also offer a scalable model for integrating higher-order thinking into EFL curricula.

Recommendations for Future Research

While this study presents promising results, several avenues for further exploration remain:

- Investigating the long-term retention of skills developed through Bloom's Taxonomy in virtual settings.
- Expanding the study to include a larger and more diverse sample of students to ensure generalizability.
- Exploring the application of this framework to other language skills, such as writing or listening, to provide a holistic approach to EFL education.

Conclusions

In conclusion, the integration of Bloom's Taxonomy into virtual EFL instruction has proven to be an effective approach for enhancing B2-level reading skills. By scaffolding tasks to promote higher-order thinking, this methodology not only improves comprehension but also equips students with critical and creative skills essential for academic and professional success. These findings reaffirm the potential of innovative pedagogical frameworks to transform virtual education, making it both effective and engaging.

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