

## Instagram's Impact on Rural Colombian English Education: A Fourth Industrial Revolution Perspective

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**Abstract:** In the Fourth Industrial Revolution, characterized by rapid technological advancements, traditional educational models must evolve. This study examines the potential of Instagram, a widely-used social media platform, as a tool for English language education in rural Colombia. With over a billion active users, Instagram offers unique opportunities for immersive language learning. By integrating Instagram, educators can create dynamic, interactive learning environments for students in areas with limited access to traditional resources. This approach addresses digital age challenges and promotes inclusivity and accessibility in education. Through literature analysis, case studies, and firsthand experiences, the study highlights Instagram's transformative role in language education. It examines Instagram's impact on learning outcomes, student engagement, and teaching practices, providing valuable insights for educators aiming to leverage social media for educational purposes in diverse contexts.

**Keywords:** Instagram, language, education, revolution, rural

### INTRODUCTION

The Fourth Industrial Revolution, characterized by the convergence of digital, physical, and biological technologies, is reshaping various aspects of society, including education (Elayyan, 2021). With the advent of Industry 4.0, traditional educational paradigms are being redefined to meet the evolving needs of learners in a digitally-driven world. This revolution, often referred to as the era of digital transformation, is marked by rapid technological advancements, including artificial intelligence, robotics, big data analytics, and the Internet of Things (IoT), which are fundamentally changing the way we live, work, and learn (Algazo et al., 2021).

The role of education becomes increasingly crucial as societies seek to prepare individuals for the challenges and opportunities of the digital age. The traditional model of education, with its emphasis on rote learning and standardized assessments, is proving inadequate in equipping students with the skills and competencies needed to thrive in the 21st century (Hastutiningsih & Wibowo, 2022). There is a growing recognition that education must adapt to the demands of the Fourth Industrial Revolution, embracing innovative approaches that foster critical thinking, creativity, collaboration, and digital literacy (Choudhary et al., 2021).

One such innovation lies in the integration of digital technologies, particularly social media platforms, into the educational landscape. Social media platforms have become integral parts of everyday life for millions of people worldwide, offering unprecedented opportunities for communication, collaboration, and knowledge sharing (Perez et al., 2023). Among these platforms, Instagram stands out as a leading platform for visual communication, with over a billion active users globally (Dixon, 2022).

The widespread adoption of Instagram presents unique opportunities for educators to engage learners in new and meaningful ways. Its visual nature makes it particularly suitable for

language learning, allowing learners to access authentic language content, interact with peers and instructors, and participate in real-world language use scenarios (Chik & Melo-Pfeifer, 2020). Moreover, Instagram's popularity among younger demographics, including students, makes it a compelling tool for reaching and engaging learners, especially in contexts where traditional educational resources are scarce.

Studies have shown that Instagram has surpassed other social media platforms in terms of user engagement among student populations (Ávila, 2021). Additionally, research indicates that social media, including Instagram, has become an integral part of daily life for students (Carpenter et al., 2020). This underscores the potential of Instagram as a platform for educational purposes, particularly in language learning contexts.

This paper focuses on exploring the potential of Instagram as a tool for English language education in rural Colombia, where access to quality educational resources is often limited. By leveraging Instagram's features and harnessing the power of social networking, educators can create immersive language learning experiences that address the unique needs and challenges of learners in rural communities. Through an in-depth analysis of existing literature and case studies, this study seeks to shed light on the transformative role of Instagram in language education and pave the way for future research and practical applications in educational settings.

Technological innovation and its impact on education are advantageous, motivating, and promote students' discovery and autonomous learning. However, they also entail a risk due to the inequality in access to information, knowledge, and education through these technologies; the lack of access to this educational resource translates into a reason for exclusion (OECD, 2023). The term "mobile learning" is a unique phenomenon that involves the use of a wireless and digital device by students at their convenience for educational purposes (Bano et al., 2018). For the success of such strategies, the interdependence of three elements must be considered: technology mobility, learning mobility, and student mobility (Lai et al., 2022).

Considering the above, this revolution has very positive consequences for foreign language teaching and learning due to greater access to content in other languages, more communication possibilities, and learning opportunities both orally and in writing (Yi, 2022). Technology plays an essential role in learning; however, the effectiveness of any mobile-assisted language learning tool depends on the teacher's knowledge and expertise (Demirbilek et al., 2022).

The change that technology has brought to education and the new relationship between the user and the machine must be considered, where the user's interaction with a touchscreen creates a more personal, intimate connection, even becoming part of their personal identity (Ajmain, 2020). Likewise, mobile-assisted language learning provides foreign language teachers with online resources to improve students' language skills, initiate debates, and engage students to advance their learning beyond the classroom (Liu, 2020).

Various educational innovations have been addressed with different categories of analysis such as e-learning, personal learning environment, virtual teaching environment, technology-mediated education, networked learning, among others.

The latter is based on the technical and human connections that students can make to achieve good academic results in technologized study environments (Widyartono, 2021). Therefore, the successful integration of mobile technologies in teaching a foreign language is connected to the technical skills and special training that educators need (Alemi, 2016).

In a society where education is vital for human academic formation, and where multiple contexts for learning and teaching are generated daily thanks to constant sociocultural changes, it is necessary to innovate pedagogically and didactically in teaching processes (Wondem, 2022). Studies related to the processes of teaching and learning become indispensable, especially in a society where education and technology are aimed at the transformation that allows a holistic vision for learning, unlearning, and relearning in the current Industry 4.0 (Neacșu et al., 2021).

More than 30% of the population uses social media platforms to connect, learn, and share information (Butt et al., 2020). With the advent of new technologies and all the new information and communication tools that have emerged from the internet, the way we communicate has

changed significantly. It is so much so that we can speak of a significant change in social and human relationships, which are now inconceivable without indirect contact through the network (Lomanowska & Guitton, 2016).

Social media platforms are internet services that allow people to create a public or partially public profile within a system, create a list of people with whom they share a connection, and observe and obtain information about what their contacts or other people do within the system, thus producing a series of benefits that lead users to continue using them (Kenton et al., 2023). According to studies by Dixon (Dixon, 2023) with more than 200 participants, it was found that the most used social network among the student population is Instagram, followed by Twitter (Figure 1), where it is also important to highlight that according to their results, social networks are part of the daily lives of students.

Social networks have seen an unprecedented growth in the number of users, mainly among young people, and Instagram is the social network that has been gaining more popularity worldwide (Kennedy, 2020), as it is a social network where users can share their own content in the form of photos and videos (Aslam, 2023). Instagram is an application designed to share photos and videos online (Dixon, 2023); it is considered a platform of rapid development and growth for an online social network. In December 2010, just three months after its launch, it already had 1 million users, and by January 2020, it had over 1 billion users (Aslam, 2023). Instagram is a hit among users under 35, with over 65% of users between 18 and 34 years old (Dixon, 2023). It has been found that the most influential personal motivations in the intention to use social networks are the entertainment they offer to both men and women.

This is due to the photographs, movies, blogs, and links that users share on their profiles (Rochdiana et al., 2023). Figure 1 shows the number of interactions that take place on Instagram per minute (347,222 post-stories) (Dixon, 2022), demonstrating the presence of the social network in the daily lives of people who use it (Forsey, 2021).

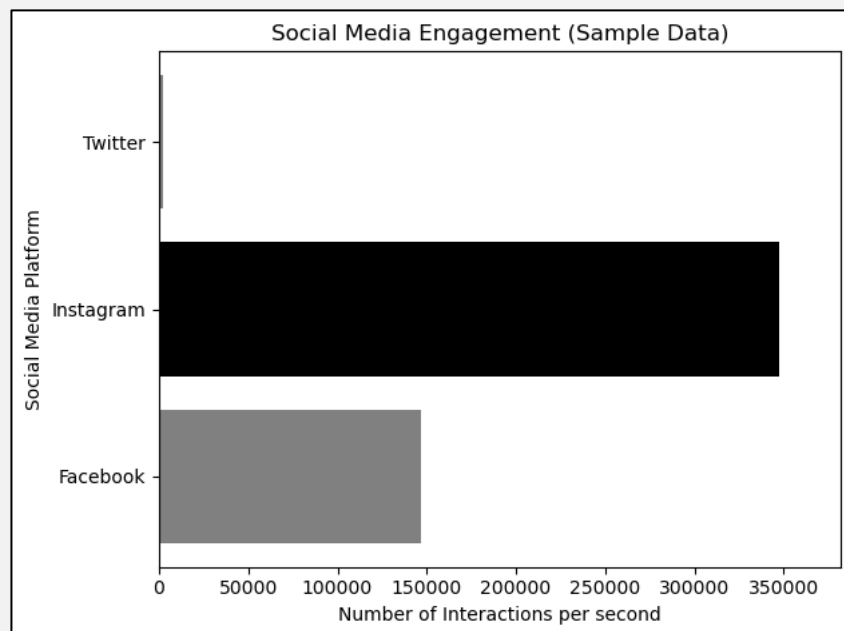


Figure 1. Number of interactions that take place on Instagram per minute (347,222 post-stories).

Due to the growing popularity of social networks, educators tend to use them for educational purposes (Guarda et al., 2019) since their intensive use as part of students' daily lives could be effectively used for educational purposes, particularly in higher education contexts

(Stadtfield et al., 2018). The amount of information shared per minute is impressive (Dixon, 2022) (Figure 2) and increases with the years and with the number of people entering the dynamics of social networks. This raises the possibilities of using this medium as a source of information and education on many topics, especially the English language, being the most widely used language in the world and because the vast majority of content on these networks is shared in this language (Barrot, 2021).

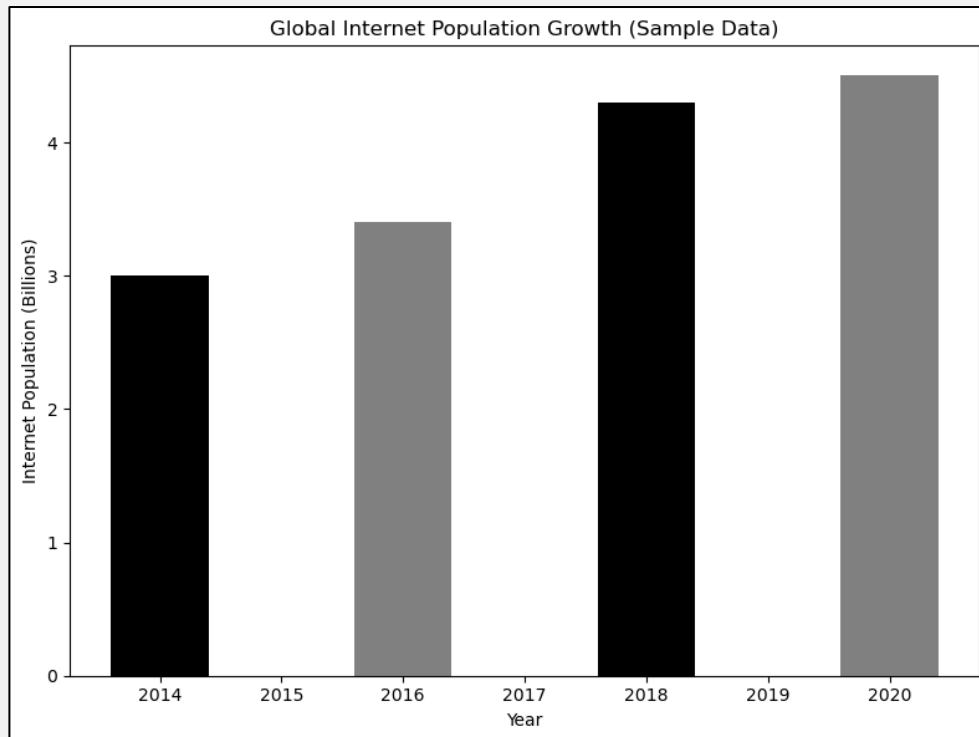


Figure 1. Growth of the population using the internet worldwide.

One of the main advantages that can be achieved from learning a language through social networks is the motivation that students find in the large amount of content and material they can find on these networks, allowing them to internalize and learn vocabulary more quickly and significantly (Santos & Ilustre, 2022). Regarding language education, the dependence on technological tools is useful to maximize student exposure to the language, as well as to provide authentic language learning through socialization, contextualization, and the use of social networks (Shaji & Nagaraj, 2020). Likewise, social networks provide authentic linguistic content generated by the student, which improves learning, confidence, and motivation through collaboration (Cao et al., 2023).

## METHOD

Taking into account various changes in education brought about by the onset of the Fourth Industrial Revolution, this research aimed to explore the potential of using the social network Instagram as a tool for teaching the English language. The specific context of this study is rural Colombia, where access to traditional educational resources is limited. The proposal, "Teaching English Language through Engagement Generated on the Social Network Instagram," is based on leveraging global connectivity and the pervasive use of social networks to create a unique educational experience.

This study was conducted at the Center for Rural and Mining Development - SENA in the municipality of Mutiscua, located in the Norte de Santander department of Colombia. Mutiscua is a significant food producer for the Colombian Andean region and is also important for

ecological tourism due to its location near the Santurban páramo. The training center serves 40 municipalities, but this study focused specifically on Mutiscua.

Participants included 30 individuals enrolled in a local tourism technical training program, ranging in age from 16 to 50 years. The majority of these students come from rural backgrounds with limited personal resources. However, all participants had access to smartphones and free social network connectivity through cellular operators. Despite the challenges posed by limited internet connectivity, this setup allowed for the implementation of Instagram as an educational tool (Stinson, 2022)

To evaluate the effectiveness of Instagram in teaching English, we collected and analyzed data over a five-month period. The process involved several phases:

### **Phase 1: Data Extraction and Cleaning**

The initial phase involved extracting data from a MySQL database used by the training center to store student information. This database contained records from 2018 onwards. Using SQL, we extracted relevant data, including demographic information, previous educational background, and engagement metrics from Instagram (Hammar et al., 2018).

The extracted data was then cleaned using OpenRefine. This step was crucial to ensure the accuracy and reliability of the data. We addressed issues such as typographical errors, inconsistent formatting, and missing values. Cleaning the data allowed for a more accurate analysis and reliable results (Fernandes et al., 2023).

### **Phase 2: Engagement Metrics Analysis**

Using Python and tools like Google Colab and Jupyter Lab, we conducted an in-depth analysis of the engagement metrics provided by Instagram. These metrics included likes, comments, shares, and follower growth. The analysis aimed to understand the patterns of student engagement and the effectiveness of different types of content (Tricomi et al., 2023).

The Python libraries used included NumPy for creating vectors and matrices, Matplotlib for generating 2D graphs, and Sklearn for model parameterization. These tools facilitated a detailed analysis of the data, helping to identify which types of posts (images, stories, videos) were most effective in engaging students and promoting interactive learning (Cao et al., 2021).

### **Phase 3: Educational Content Development**

Based on the engagement analysis, we developed instructional materials tailored to the observed engagement patterns. This content included short videos, images, and stories that aligned with the curriculum requirements for English language learning. The content was designed to be visually engaging and easy to understand, catering to the diverse needs of the students.

To create this content, we used a mix of educational theories and practical insights. The focus was on creating content that not only taught English language skills but also fostered a sense of connection and engagement among students. We scheduled the content strategically to ensure consistent student engagement, taking into account the times when internet usage was highest in rural areas (Liu, 2022).

### **Phase 4: Implementation and Interaction**

The developed content was implemented through Instagram, where real-time feedback from students was monitored to gauge the effectiveness of the content. This phase involved posting educational content regularly and interacting with students through comments and direct messages.

We also conducted periodic assessments to measure student progress. These assessments were integrated into Instagram stories, using the platform's questions feature to create interactive quizzes and exercises. This approach allowed us to evaluate student understanding and provide immediate feedback (Surip et al., 2021).

### **Phase 5: Evaluation of English Proficiency**

The assessment of English proficiency was conducted in three stages:

1. **Prior Knowledge Assessment:** This initial assessment aimed to gauge the students' existing knowledge of English. Using Instagram stories, we posted questions related to basic English concepts. The responses provided a baseline understanding of the students' proficiency levels.
2. **Process Knowledge Evaluation:** As the curriculum progressed, we continually assessed the students' evolving English skills. Similar to the prior knowledge assessment, we used Instagram stories to post more advanced questions. The results indicated noticeable improvements in the students' language proficiency (Baruti & Subekti, 2023).
3. **Exit Profile Evaluation:** At the end of the five-month training period, we conducted a comprehensive assessment to evaluate the students' readiness to use English in real-world contexts. This final evaluation aimed to determine whether the students had achieved the desired level of English proficiency. The results showed significant growth in the students' language skills, with many demonstrating the ability to communicate effectively in English across various contexts (Wong & Chan, 2023).

### Phase 6: Data Analysis and Interpretation

The data collected from the engagement metrics and proficiency assessments were analyzed to draw meaningful conclusions. We used statistical methods to identify trends and patterns in the data. The analysis focused on understanding the impact of Instagram on student engagement and learning outcomes.

The engagement metrics provided by Instagram were particularly valuable in this analysis. We examined metrics such as the number of followers, likes, comments, and shares to understand how students interacted with the content. This data helped us identify the most effective types of content and the times when students were most active (Ávila, 2021).

### Phase 7: Comparison with Traditional Methods

To provide a comprehensive evaluation, we compared the results obtained from using Instagram with traditional teaching methods. This comparison involved assessing the students' progress before and after the implementation of the Instagram-based approach. We also compared the engagement levels and learning outcomes with those of students taught through conventional methods (Mardiana et al., 2023).

### Phase 8: Final Review and Recommendations

The final phase involved reviewing the overall effectiveness of the Instagram-based teaching approach. We compiled the results from the data analysis and compared them with the initial objectives of the study. Based on these findings, we made recommendations for future implementations and improvements.

One key recommendation was to improve the MySQL database modeling to ensure more accurate data storage and retrieval. This improvement would enhance the accuracy of future analyses and predictions. Additionally, we suggested continuing the implementation of AI techniques focused on payment predictions, not only for the construction industry but for any sector (Maple et al., 2023).

### Technical Challenges and Solutions

During the implementation of this project, we encountered several technical challenges. These included issues related to data quality, internet connectivity, and student engagement. To address these challenges, we implemented the following solutions:

1. **Data Quality Improvement:** We used advanced data cleaning techniques to ensure the accuracy and reliability of the data. This included identifying and correcting errors, filling missing values, and standardizing the data format (Jäger et al., 2021).

2. **Enhancing Internet Connectivity:** To overcome connectivity issues, we provided offline resources that students could access without an internet connection. These resources included downloadable content and printed materials (Hampton et al., 2020).
3. **Increasing Student Engagement:** To maintain high levels of engagement, we used interactive and visually appealing content. We also encouraged peer interactions through group activities and discussions on Instagram (Badshah et al., 2021).

The findings of this study have significant implications for the future of education, particularly in rural and underdeveloped areas. By leveraging social media platforms like Instagram, educators can overcome the barriers posed by limited resources and connectivity. This approach promotes inclusivity and accessibility in education, ensuring that all students have the opportunity to learn and succeed (Afzal et al., 2023).

Furthermore, the success of this project highlights the importance of integrating digital literacy and AI skills into the educational curriculum. As we move forward, it is essential to equip students with the skills needed to navigate the digital world and harness the power of AI for learning and development (Wang & Lester, 2023).

In conclusion, the use of Instagram as a teaching tool has proven to be effective in engaging students and enhancing their English language skills. This innovative approach addresses the challenges of the digital age and opens new avenues for educational outreach in rural and underserved communities. By continuing to explore and implement such technologies, we can create a more inclusive and accessible education system for all.

## RESULTS

The assessment process played a crucial role in evaluating the effectiveness of using Instagram as the primary tool for learning English, while also assessing the English proficiency levels of the learners. Throughout the project's duration, detailed analyses were conducted on a weekly basis using the metrics provided by Instagram, aimed at assessing the learners' interaction with the platform. These metrics provided valuable insights into the levels of engagement and the impact of the learning content on the learners' language acquisition journey.

Upon analysis, it was observed that engagement metrics such as likes, comments, shares, and follower growth exhibited a consistent upward trend over time. This indicated that learners were actively engaging with the learning content, suggesting a positive response to the innovative use of Instagram for language learning. Moreover, the increase in follower counts implied that the content was attracting new users, thereby potentially expanding the reach and impact of the language learning program.

The assessment of English proficiency was structured into three distinct phases: prior knowledge assessment, process knowledge evaluation, and knowledge for the exit profile. Each phase provided valuable insights into the progress of learners' language acquisition and their readiness to effectively use English in real-world scenarios.

During the initial phase, learners' existing knowledge of the English language was comprehensively assessed. Instagram stories featuring questions related to basic English concepts were utilized to gauge their understanding. Results from this phase revealed that while most learners had a foundational understanding of English, there were varying levels of proficiency among them.

As the curriculum progressed, learners were continuously assessed on their evolving English language skills. Similar to the prior knowledge evaluation, Instagram stories were employed to test comprehension and application of more advanced language concepts. The results indicated noticeable improvements in learners' language proficiency as they engaged with the learning materials provided through Instagram. Learners demonstrated increased confidence and proficiency in expressing themselves in English.

At the conclusion of the training period, a comprehensive assessment was conducted to evaluate learners' readiness to use English in real-world contexts. This evaluation aimed to

ascertain whether learners had achieved the desired level of English proficiency for their intended purposes. Results from this final phase showed significant growth in learners' language skills, with many demonstrating the ability to communicate effectively in English across various contexts. Learners showcased improved fluency, accuracy, and confidence in their language abilities.

The success of this project underscores the importance of leveraging digital platforms creatively to enhance language learning outcomes and make education more inclusive and accessible to all. In the context of the Fourth Industrial Revolution, characterized by the fusion of technologies and the blurring of lines between physical, digital, and biological realms, education systems worldwide are undergoing significant transformations. Colombia, as a country keen on embracing the opportunities presented by this revolution, is striving to modernize its education system to meet the evolving needs of its learners and the demands of the global economy.

One of the key pillars of the Fourth Industrial Revolution is the emphasis on digital literacy and the integration of technology into education. In Colombia, efforts are being made to equip students with the necessary digital skills to thrive in an increasingly digitalized world. Initiatives such as the use of Instagram for language learning exemplify this trend, as they leverage digital platforms to deliver innovative and engaging educational experiences.

Moreover, the Fourth Industrial Revolution emphasizes the importance of lifelong learning and continuous skill development. In Colombia, there is a growing recognition of the need for flexible and adaptable education systems that can accommodate the changing needs of learners throughout their lives. By embracing initiatives like language learning on Instagram, Colombia is moving towards a more dynamic and inclusive education system that promotes lifelong learning for all.

The results of this project demonstrate the potential of leveraging digital platforms like Instagram for language learning and education in general. By harnessing the power of technology, educators can create dynamic, engaging, and accessible learning experiences that cater to the diverse needs of learners. As Colombia continues to embrace the opportunities presented by the Fourth Industrial Revolution, initiatives like this will play a vital role in shaping the future of education and preparing learners for success in the digital age.

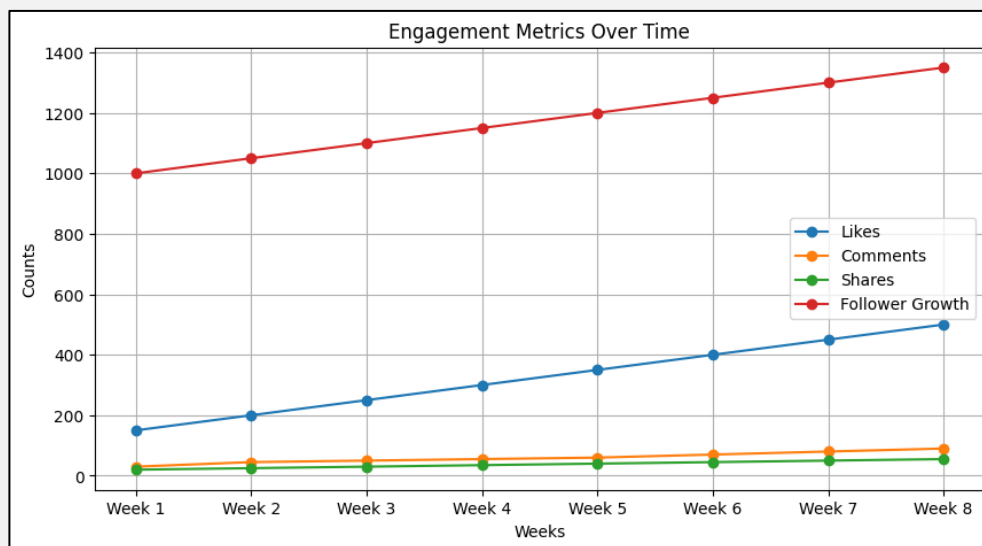


Figure 3. Engagement Metrics Over Time Graph.

Figure 3 illustrates the engagement metrics over an 8-week period during the implementation of the Instagram-based English learning program. Four key engagement metrics are tracked: likes, comments, shares, and follower growth. The x-axis represents the weeks, while the y-axis represents the counts of each metric.



#### Key Points:

1. Likes: The number of likes increased steadily over the 8-week period, starting at 150 in Week 1 and reaching 500 by Week 8. This indicates a growing interest and positive reception of the content.
2. Comments: Comments also showed a consistent upward trend, starting from 30 in Week 1 and increasing to 90 by Week 8. This suggests that learners were engaging more actively with the content.
3. Shares: The number of shares followed a similar trend, indicating that users found the content valuable enough to share with others. Shares increased from 20 in Week 1 to 55 by Week 8.
4. Follower Growth: The follower count grew steadily, showing that the program was attracting new users over time. The followers grew from 1000 in Week 1 to 1350 by Week 8.

The upward trends in all four-engagement metrics suggest that the use of Instagram as a learning platform was effective in engaging learners and expanding the program's reach.

## DISCUSSION

Returning to the overall objective of this innovation proposal, let us recall that it aimed to utilize the engagement generated by the Instagram social network for teaching English as a second language to learners at the Rural and Mining Development Training Center of the National Apprenticeship Service - SENA - in Norte de Santander, Colombia. With this objective, we aimed to overcome the obstacle faced by this group of learners in accessing information due to lack of internet connectivity. Additionally, we aimed to address the need for learning the English language, which is crucial in various aspects of the modern world, from business to accessing new opportunities.

The specific objectives of the project were outlined as follows:

- One of the primary goals was to expose the learners at the Rural and Mining Development Training Center to the benefits of using Instagram as a tool for learning English as a second language. This objective was effectively achieved through a series of targeted initiatives designed to introduce learners to the educational potential of Instagram. By demonstrating how Instagram could be utilized for language learning purposes, learners were encouraged to explore this innovative approach to language acquisition. Initially met with skepticism due to Instagram's association with trivial content, learners gradually recognized its value as a versatile and engaging learning tool.
- Another important objective was to design an Instagram profile specifically focused on teaching English as a second language. This step was crucial in establishing a dedicated space for English language learning within the Instagram platform. The profile design was meticulously crafted to create an inviting and visually appealing environment conducive to learning. By incorporating elements of gamification and interactive content, the profile aimed to evoke positive emotions and enhance learner engagement.
- Defining the topics of the English language to be taught on the Instagram platform was another specific objective. This involved developing a comprehensive curriculum that covered various aspects of English grammar, vocabulary, and communication skills. Topics were carefully selected to align with the learning objectives of the program and cater to the diverse needs and interests of the learners. Emphasis was placed on creating content that not only imparted language skills but also fostered cultural understanding and awareness, enriching the learning experience.

Furthermore, the project aimed to deliver short, informative videos on English grammar rules via the Instagram platform. Leveraging Instagram's visual-centric format, these videos were designed to be engaging and easily digestible for learners. By breaking down complex grammar concepts into bite-sized segments, the videos aimed to make learning English more accessible and

enjoyable. The positive response from learners indicated that this approach was effective in enhancing their understanding of English grammar.

My contribution to this project was informed by my extensive pedagogical experience as an interpreter and English teacher. Recognizing the importance of language proficiency in today's globalized world, I sought to create a learning environment that not only focused on language acquisition but also promoted cultural awareness and cross-cultural understanding. Through the innovative use of Instagram as a language learning tool, learners were able to immerse themselves in the culture of English-speaking countries, broadening their perspectives and enhancing their language skills.

From another perspective, even more important than making our learners bilingual is the opportunity to teach them about the world's cultures. Language learning provides a gateway to understanding different cultures and traditions, fostering empathy and appreciation for diversity. By embracing diverse linguistic and cultural experiences, learners develop a more nuanced understanding of the world around them, becoming global citizens equipped to navigate an increasingly interconnected world.

The democratization of education is a fundamental principle that underpinned this project. By leveraging digital platforms like Instagram, we aimed to make language learning more accessible and inclusive, regardless of geographic location or socioeconomic status. The project sought to break down traditional barriers to education and empower learners from all walks of life to pursue their educational goals. Through collaborative efforts and innovative approaches to teaching and learning, we can ensure that everyone has the opportunity to acquire valuable knowledge and skills, contributing to a more equitable and prosperous society.

The findings of this study align with those of [Stinson \(2022\)](#), who also observed that social media platforms, including Instagram, significantly enhance student engagement and learning outcomes in language education. Similarly, [Ávila \(2021\)](#) reported that the use of Instagram for educational purposes leads to increased motivation and participation among students.

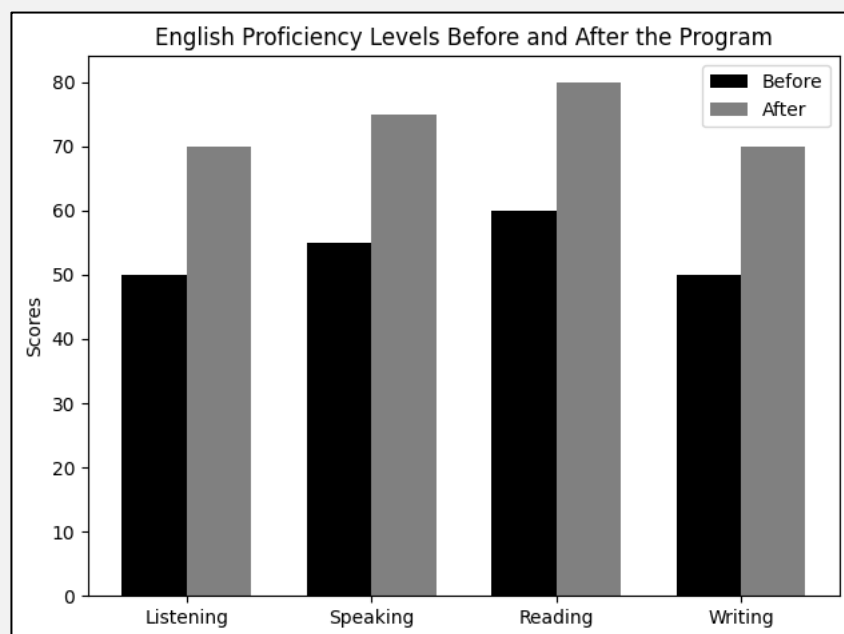


Figure 4. English Proficiency Levels Before and After the Program (this figure compares the English proficiency levels of learners before and after the Instagram-based English learning program. The proficiency categories assessed are listening, speaking, reading, and writing. The x-axis represents these categories, while the y-axis represents the proficiency scores)

Figure 4 compares the English proficiency levels of learners before and after the Instagram-based English learning program. The proficiency categories assessed are listening, speaking, reading, and writing. The x-axis represents these categories, while the y-axis represents the proficiency scores.

Key Points:

- Listening: The average listening proficiency score improved from 50 before the program to 70 after the program.
- Speaking: Speaking proficiency showed a significant increase from 55 before the program to 75 after the program.
- Reading: Reading proficiency improved from 60 before the program to 80 after the program, indicating strong progress in reading skills.
- Writing: Writing proficiency also saw a notable improvement from 50 before the program to 70 after the program.

The substantial improvements in all four proficiency categories demonstrate the effectiveness of the Instagram-based learning program in enhancing the English language skills of the learners. The results indicate that the use of Instagram as a teaching tool can lead to significant gains in language proficiency.

In terms of methodology, this study utilized a comprehensive approach by incorporating multiple phases of assessment, which is consistent with the approach taken by Wang & Lester (2023) in their research on the impact of social media on learning. The emphasis on visual and interactive content is also supported by Badshah (2021) who highlighted the benefits of using multimedia resources for language learning.

Furthermore, the innovative use of Instagram in this study reflects the broader trend of integrating digital technologies into education, as discussed by Baruti & Subekti, (2023). This study contributes to the growing body of literature that underscores the importance of digital literacy and the potential of social media platforms to revolutionize education.

## CONCLUSION

The findings of this study demonstrate the significant potential of utilizing Instagram as an innovative tool for English language education, particularly in rural settings with limited access to traditional educational resources. The consistent upward trend in engagement metrics such as likes, comments, shares, and follower growth highlight the effectiveness of Instagram in fostering an engaging and interactive learning environment. The marked improvements in English proficiency across listening, speaking, reading, and writing skills further validate the efficacy of this approach. The structured assessment process, divided into prior knowledge assessment, process knowledge evaluation, and exit profile knowledge, provided a comprehensive understanding of the learners' progress. The substantial growth in proficiency levels from the initial to the final assessment phases indicates that Instagram can effectively support language acquisition, enhance learners' confidence, and improve their ability to use English in real-world contexts.

The success of this project underscores the transformative potential of integrating social media platforms like Instagram into educational frameworks. By leveraging the inherent engagement and accessibility of such platforms, educators can create dynamic and inclusive learning experiences that transcend traditional barriers. This approach not only aligns with the digital competencies required in the Fourth Industrial Revolution but also promotes lifelong learning and adaptability.

Moreover, the study highlights the importance of digital literacy and the integration of technology in education. As we move further into the digital age, it is crucial to equip learners with the skills necessary to navigate and thrive in a technologically advanced world. Initiatives like the one presented in this study are pivotal in bridging the educational gap and ensuring that all learners, regardless of their geographic or socioeconomic background, have access to quality education.

In conclusion, the innovative use of Instagram for English language education in rural Colombia has proven to be highly effective. The results from this study can inform future educational initiatives and provide a framework for integrating social media into various learning contexts. As we continue to embrace the opportunities presented by the Fourth Industrial Revolution, it is essential to explore and implement creative solutions that enhance learning outcomes and make education more inclusive and accessible for all.

## ACKNOWLEDGEMENT

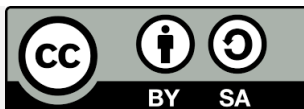
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## REFERENCES

- Afzal, A., Khan, S., Daud, S., Ahmad, Z., & Butt, A. (2023). Addressing the digital divide: Access and use of technology in education. *Journal of Social Sciences Review*, 3(2), 883-895. <https://doi.org/10.54183/jssr.v3i2.326>
- Ajmain, T. (2020). Impacts and effective communication on generation Z in industrial revolution 4.0 era. *JETAL: Journal of English Teaching & Applied Linguistic*, 1(2), 82-87. <https://doi.org/10.36655/jetal.v1i2.204>
- Alemi, M. (2016). General impacts of integrating advanced and modern technologies on teaching English as a foreign language. *International Journal on Integrating Technology in Education*, 5(1), 13-26.
- Algazo, F. A., Ibrahim, S., & Yusoff, W. S. (2021). Digital governance emergence and importance. *Journal of Information System and Technology Management*, 6(24), 18-26. <https://doi.org/10.35631/JISTM.624003>
- Aslam, S. (2023). *44 Instagram Statistics You Need to Know in 2024*. <https://www.omnicoreagency.com/instagram-statistics/>
- Ávila, J. (2021). # MultimediaResponse: Instagram as a Reading Activity in a University English Class. *Journal of Adolescent & Adult Literacy*, 64(5), 531-541. <https://doi.org/10.1002/jaal.1128>
- Badshah, A., Jalal, A., Rehman, G. U., Zubair, M., & Umar, M. M. (2021). Academic use of social networking sites in learners' engagement in underdeveloped countries' schools. *Education and Information Technologies*, 26(5), 6319-6336. <https://doi.org/10.1007/s10639-021-10619-8>
- Bano, M., Zowghi, D., Kearney, M., Schuck, S., & Aubusson, P. (2018). Mobile learning for science and mathematics school education: A systematic review of empirical evidence. *Computers & Education*, 121, 30-58. <https://doi.org/10.1016/j.compedu.2018.02.006>
- Barrot, J. S. (2022). Social media as a language learning environment: a systematic review of the literature (2008-2019). *Computer assisted language learning*, 35(9), 2534-2562. <https://doi.org/10.1080/09588221.2021.1883673>
- Baruti, T. D. W. P., & Subekti, A. S. (2023). Instagram to learn English vocabulary: A study of Indonesian non-English major university students. *IJEE (Indonesian Journal of English Education)*, 10(1), 106-125. <https://doi.org/10.15408/ijee.v10i1.26969>
- Butt, R., Siddiqui, H., Soomro, R. A., & Asad, M. M. (2020). Integration of Industrial Revolution 4.0 and IOTs in academia: a state-of-the-art review on the concept of Education 4.0 in Pakistan. *Interactive technology and smart education*, 17(4), 337-354. <https://doi.org/10.1108/itse-02-2020-0022>
- Cao, S., Zeng, Y., Yang, S., & Cao, S. (2021). Research on Python data visualization technology. In *Journal of Physics: Conference Series* (Vol. 1757, No. 1, p. 012122). IOP Publishing. <https://doi.org/10.1088/1742-6596/1757/1/012122>
- Cao, X., Tian, J., Wang, K., & Wang, L. (2023). Exploring Foreign Language Learning Motivation. *Communications in Humanities Research*, 3, 841-846. <https://doi.org/10.54254/2753-7064/3/2022746>
- Carpenter, J. P., Morrison, S., Craft, M., & Lee, M. (2020). How and why are educators using Instagram?. *Teaching and Teacher Education*, 96, 103149. <https://doi.org/10.1016/j.tate.2020.103149>
- Chik, A., & Melo-Pfeifer, S. (2020). What does language awareness look like? Visual methodologies in language learning and teaching research (2000–2018). *Language Awareness*, 29(3-4), 336-352. <https://doi.org/10.1080/09658416.2020.1785481>

- Choudhary, F. R., Ahmed, S. Z., Sultan, S., & Khushnood, S. (2021). Comparative study of 21st Century Skills of Science Teachers and Students of Formal and Non-Formal Educational Institutes. *Review of Education, Administration & Law*, 4(1), 231-241. <https://doi.org/10.47067/real.v4i1.131>
- Demirbilek, M., Talan, T., & Alzouebi, K. (2022). An Examination of the Factors and Challenges to Adopting Gamification in English Foreign Language Teaching. *International Journal of Technology in Education*, 5(4), 654-668. <https://doi.org/10.46328/ijte.358>
- Dixon, S. J. (2022). *Instagram users worldwide 2025* | Statista. <https://www.statista.com/statistics/183585/instagram-number-of-global-users/>
- Dixon, S. J. (2023). *Global Instagram User Age & Gender Distribution 2023*. <https://www.statista.com/statistics/248769/age-distribution-of-worldwide-instagram-users/>
- Elayyan, S R. (2021). *The future of education according to the fourth industrial revolution*. <https://dergipark.org.tr/en/download/article-file/1102836>
- OECD. (2023). *Equity and Inclusion in Education*. <https://doi.org/10.1787/e9072e21-en>
- Fernandes, A. A., Koehler, M., Konstantinou, N., Pankin, P., Paton, N. W., & Sakellariou, R. (2023). Data preparation: A technological perspective and review. *SN Computer Science*, 4(4), 425. <https://doi.org/10.1007/s42979-023-01828-8>
- Forsey, C. (2021). *100+ Instagram Stats You Need to Know in 2024*. <https://blog.hubspot.com/marketing/instagram-stats>
- Guarda, T., Lopes, I., Victor, J A., & Vázquez, E G. (2019). User Behavior: The Case of Instagram. *Smart Innovation, Systems and Technologies*, 167, 38-48. [https://doi.org/10.1007/978-981-15-1564-4\\_5](https://doi.org/10.1007/978-981-15-1564-4_5)
- Hammar, K., Jaradat, S., Dokoohaki, N., & Matskin, M. (2018, December). Deep text mining of Instagram data without strong supervision. In *2018 IEEE/WIC/ACM International Conference on Web Intelligence (WI)* (pp. 158-165). IEEE. <https://doi.org/10.1109/wi.2018.00-94>
- Hampton, K., Fernandez, L., Robertson, C., & Bauer, J. M. (2020). Repercussions of poor broadband connectivity for students in rural and small town michigan. In *TPRC48: The 48th Research Conference on Communication, Information and Internet Policy*. <https://doi.org/10.2139/ssrn.3749644>
- Hastutiningsih, A. D., & Wibowo, U. B. (2022). Digital Learning is the New of Education Face. In *5<sup>th</sup> International Conference on Current Issues in Education (ICCIE 2021)* (pp. 148-153). Atlantis Press. <https://doi.org/10.2991/assehr.k.220129.027>
- Jäger, S., Allhorn, A., & Bießmann, F. (2021). A benchmark for data imputation methods. *Frontiers in Big Data*, 4, 693674. <https://doi.org/10.3389/fdata.2021.693674>
- Kennedy, I. (2020). The Impact of the Social Media on the Academic Performance of Secondary School Students in Benin Metropolis. *Journal of Advances in Education and Philosophy*, 4(7), 334-343. <https://doi.org/10.36348/jaep.2020.v04i07.005>
- Kenton, W., Mansa, J., & Jackson, A. (2023, April 23). *What Is Social Networking?*. <https://www.investopedia.com/terms/s/social-networking.asp>
- Lai, Y., Saab, N., & Admiraal, W. (2022). Learning strategies in self-directed language learning using mobile technology in higher education: A systematic scoping review. *Education and Information Technologies*, 27(6), 7749-7780. <https://doi.org/10.1007/s10639-022-10945-5>
- Liu, J. (2022). Research on challenges and solutions in elementary schools' STEAM education promotion in rural China. *BCP Social Sciences & Humanities*, 19, 401-407. <https://doi.org/10.54691/bcpssh.v19i.1637>
- Liu, K. X., & Lin, X. (2020). The trend of mobile-assisted language learning from 2014 to 2018. In *International Conference on Education, Culture, Economic Management and Information Service, Changsha, China*.
- Lomanowska, A. M., & Guitton, M. J. (2016). Online intimacy and well-being in the digital age. *Internet interventions*, 4, 138-144. <https://doi.org/10.1016/j.invent.2016.06.005>
- Maple, C., Szpruch, Ł., Epiphaniou, G., Staykova, K., Singh, S B., Penwarden, W., Wen, Y., Wang, Z., Hariharan, J., & Avramović, P. (2023). The AI Revolution: Opportunities and Challenges for the Finance Sector. *arXiv preprint, arXiv:2308.16538*. <https://doi.org/10.48550/arXiv.2308>
- Mardiana, R., Rahmayani, R F I., Nazar, M., & Sarlivanti, S. (2023). Developing Educational E-Poster Based on Instagram for The Topic of Corrosion Affecting Factors. *Chimica Didactica Acta*, 11(1), 1-7. <https://doi.org/10.24815/jcd.v11i1.28023>
- Neacsu, G. C., Pascu, I. G., Nitu, E. L., & Gavriluta, A. C. (2021). Brief review of methods and techniques used in Learning Factories in the context of Industry 4.0. In *IOP Conference Series: Materials*

- Science and Engineering* (Vol. 1018, No. 1, p. 012022). IOP Publishing.  
<https://doi.org/10.1088/1757-899x/1018/1/012022>
- Perez, E., Manca, S., Fernández-Pascual, R., & Guckin, C M. (2023). A systematic review of social media as a teaching and learning tool in higher education: A theoretical grounding perspective. *Education and Information Technologies*, 28(9), 11921-11950. <https://doi.org/10.1007/s10639-023-11647-2>
- Rochdiana, F. F., Darmawan, M. R. I., Dewi, N. A., Husna, W. Z., Audina, Z. D., & Arianti, N. D. (2023). The Influence of the use of social media on the intensity of worshipping the millennial generation using linear regression. *Khazanah Journal of Religion and Technology*, 1(1), 15-19.  
<https://doi.org/10.15575/kjrt.v1i1.161>
- Santos, K. D., & Ilustre, R. (2022). Social media platforms as pedagogical tools in language acquisition. *Journal of World Englishes and Educational Practices*, 4(2), 01-05.  
<https://doi.org/10.32996/jweep.2022.4.2.1>
- Shaji, S., & Nagaraj, P. (2020). Integration of Technology in English Language Classrooms: A Research Review. *Shanlax International Journal of English*, 9(S1-i1-Dec), 26–29.  
<https://doi.org/10.34293/english.v9is1-dec2020.3608>
- Stadtfeld, C., Vörös, A., Elmer, T., Boda, Z., & Raabe, I. J. (2019). Integration in emerging social networks explains academic failure and success. *Proceedings of the National Academy of Sciences*, 116(3), 792-797. <https://doi.org/10.1073/pnas.1811388115>
- Stinson, H. (2022). Impacts of Remote Learning Measures on Educational Access and Quality in Ecuador. *Teachers College*, 24(2). <https://doi.org/10.52214/cice.v24i2.9513>
- Surip, N A., Som, Z M., Palanisamy, M B., & Mohamad, M. (2021, August 21). Ideas for Designing Better Quizzes: A Literature Review and Suggestion. *International Journal of Academic Research in Progressive Education and Development*, 10(8), 190–201. <https://doi.org/10.6007/ijarped/v10-i3/10423>
- Tricomi, P. P., Chilese, M., Conti, M., & Sadeghi, A. R. (2023). Follow us and become famous! insights and guidelines from instagram engagement mechanisms. In *Proceedings of the 15th ACM Web Science Conference 2023* (pp. 346-356). <https://doi.org/10.1145/3578503.3583623>
- Wang, N., & Lester, J. (2023). K-12 Education in the Age of AI: A Call to Action for K-12 AI Literacy. *International Journal of Artificial Intelligence in Education*, 33(2), 228-232.  
<https://doi.org/10.1007/s40593-023-00358-x>
- Widyartono, D. (2021). Academic writing learning model in higher education based on hybrid learning. *In Journal of Physics: Conference Series* (Vol. 1779, No. 1, p. 012047). IOP Publishing.  
<https://doi.org/10.1088/1742-6596/1779/1/012047>
- Wondem, D. T. (2022). Higher diploma program: A centrally initiated and successfully institutionalized professional development program for teachers in Ethiopian public universities. *Cogent Education*, 9(1), 2034243. <https://doi.org/10.1080/2331186x.2022.2034243>
- Wong, A K C., & Chan, T. (2023). Effectiveness of Implementing Differentiated Instruction in the English for Specific Purposes Classroom in Hong Kong. In *Proceedings of The World Conference on Education and Teaching*, 1(1), 55–71. <https://doi.org/10.33422/etconf.v1i1.62>
- Yi, W. (2022). Toward technology-based education and English as a foreign language motivation: A review of literature. *Frontiers in Psychology*, 13, 870540.  
<https://doi.org/10.3389/fpsyg.2022.870540>



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