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#### **ARTICLE**

# Designing and Implementing Authentic Inclusive Projects for Collaborative Learning in EFL Classrooms

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#### **ABSTRACT**

This study examines the effectiveness of Project-Based Learning (PBL) as an instructional strategy to enhance language acquisition and social integration among students with special needs in an inclusive English as a Foreign Language setting. Conducted in a private school in Milagro, Ecuador, the research involved 15 students from diverse grades and with various disabilities, utilizing a mixed-methods approach combining pre-tests, post-tests, surveys, and classroom observations to assess linguistic progress and social engagement. Findings indicate that PBL facilitated notable improvements in vocabulary recognition, pronunciation, and communication skills while fostering confidence and peer collaboration. Results indicate that PBL improved vocabulary recognition, pronunciation, and communication skills while fostering confidence and peer collaboration. Initial challenges included students' hesitancy in group tasks and reliance on their mother tongue, but scaffolded instruction and structured peer interactions mitigated these barriers. The study highlights the importance of differentiated instruction and inclusive project design, emphasizing peer support as a catalyst for participation. Although the small sample size limits the findings, they suggest that well-structured PBL can enhance both linguistic and social competencies. Future research should explore long-term effects, teacher training strategies, and resource accessibility to optimize PBL for inclusive English as a Foreign Language education.

Keywords: Inclusive Education; Project-Based Learning; EFL Pedagogy; Special Needs Learners; Second Language

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Acquisition; Collaborative Learning

### 1. Introduction

One of the fundamental principles of modern pedagogy is inclusive education, which ensures that all students, regardless of their background, abilities, or challenges, have access to high-quality education. Despite significant advancements in inclusive education, fostering collaboration and teamwork among learners with diverse abilities remains challenging for teachers and educational institutions. In many inclusive classrooms, barriers to active participation and collaborative learning hinder educational progress, social skills development, and student integration [1].

This study explores the effectiveness of Project-Based Learning (PBL) as a pedagogical strategy to enhance collaboration in inclusive English as a Foreign Language (EFL) classrooms. While PBL is widely recognized for its engagement and real-world applicability, its potential to support students with special needs in collaborative learning remains underexplored<sup>[2, 3]</sup>. Thus, this study seeks to address the following questions:

- How does PBL influence collaborative learning in inclusive EFL classrooms?
- What best practices can make PBL more inclusive and equitable in EFL settings?

#### 1.1. Inclusive Education in EFL Contexts

Inclusive education is a philosophical and pedagogical approach that provides equitable learning opportunities for all students, regardless of their abilities, backgrounds, or learning styles<sup>[4]</sup>. Educational institutions and teachers are responsible for ensuring equal opportunities and fostering educational equity by creating engaging and supportive learning environments.

In EFL classrooms, inclusive practices require creating safe and supportive spaces where students with special needs can fully participate in language learning. Research suggests that fostering inclusive language education benefits special needs students and promotes socio-academic development for all learners <sup>[5, 6]</sup>. Additionally, cultural influences are crucial in shaping how students engage with language learning,

particularly in diverse and inclusive classrooms [7].

# 1.2. Project-Based Learning (PBL) as a Tool for Inclusive Education

PBL is an instructional approach that engages students in real-world tasks, requiring them to collaborate, problem-solve, and apply their knowledge in meaningful contexts [3]. This approach has been extensively researched in general education settings, with studies highlighting its effectiveness in promoting engagement, critical thinking, and language acquisition.

However, research on the role of PBL in fostering collaboration among students with special needs remains limited. Recent studies suggest that authentic, collaborative projects can support inclusivity by engaging students with diverse abilities in meaningful learning experiences [8]. PBL provides students with learning opportunities by doing, fostering critical thinking, communication skills, and problem-solving abilities [9].

# 1.3. Considerations for Implementing PBL in Inclusive EFL Classrooms

Effective student-centered implementation of PBL in inclusive EFL contexts requires careful pedagogical planning to ensure that all students, including those with special needs, can actively participate and benefit from the learning process. Some key factors must be considered to create an equitable and learner-centric environment.

One important consideration is the nature of tasks and task differentiation. Teachers must evaluate the complexity of PBL tasks based on students' language proficiency and cognitive abilities. To facilitate full participation, scaffolding techniques and differentiated instruction should be incorporated, allowing students to progress at their own pace while receiving the necessary support from teachers [10].

Equally significant is providing multiple ways for students to engage and express themselves. Students differ in learning styles and ability levels; thus, teachers must present information in varied formats to accommodate these differences. They can offer multiple means to express themselves, allowing students to demonstrate their understanding based on their strengths while fostering an inclusive and accessible learning experience. As a result, students are encouraged to work in different modalities, which enhances comprehension and promotes a student-centered classroom environment.

Another essential aspect of PBL is peer collaboration and social skill development. Research highlights the importance of collaborative learning environments in building a sense of community while fostering academic and social competencies [11]. Through PBL activities, students can learn from one another's experiences, improving their academic performance and ability to engage in peer-to-peer support, empathy, and respect for diversity.

However, effective PBL implementation in inclusive classrooms requires adequate teacher training and institutional support. Many educators struggle to implement PBL strategies for students with special needs due to limited training, insufficient resources, and a lack of administrative support<sup>[5]</sup>. Thus, it affects the success of inclusive education initiatives and students' overall well-being<sup>[12]</sup>. Addressing these challenges requires professional development programs and collaborative teacher networks that equip educators with the necessary knowledge, strategies, and tools for successful implementation. Research indicates that partnerships between teachers and researchers enhance professional learning, allowing for more effective PBL strategies and improved student engagement<sup>[13]</sup>.

Assessment and progress monitoring are crucial for ensuring high-quality PBL outcomes. Constructive assessment measures should be designed to evaluate academic growth and collaborative skill development. When applied effectively, these assessment tools provide valuable insights into student progress and help educators track learning outcomes [14].

# 1.4. Challenges in Implementing PBL for Special Needs Students in EFL Classrooms

While PBL offers substantial benefits for inclusive education, its implementation in EFL classrooms for students with special needs presents challenges that must be carefully addressed to ensure equitable learning opportunities.

One major hurdle is language barriers. Students with special needs often struggle with language acquisition and verbal expression, making engaging fully in PBL activities difficult. To mitigate this, teachers should adapt tasks and instructional approaches by integrating visual aids, assistive technologies, and alternative communication methods to enhance student participation<sup>[15]</sup>.

Another significant challenge is teacher preparedness. Many educators lack specialized training in inclusive education, making designing and implementing effective PBL strategies difficult. Differentiating instruction, scaffolding learning, and managing diverse classroom dynamics become daunting without proper training. Professional development programs and teacher training initiatives are essential to equip educators with the skills and confidence to integrate PBL effectively in inclusive settings<sup>[16]</sup>.

Resource limitations further hinder successful PBL implementation. Many schools, especially in underfunded educational systems, lack the instructional materials, technological tools, and institutional support necessary to sustain high-quality PBL experiences. Insufficient resources can constrain project scope, limit student engagement, and increase the burden on teachers striving to create meaningful learning experiences.

Lastly, individualized support is crucial. Special needs students often require tailored accommodations, such as modified assignments, peer assistance, or targeted feedback, to fully participate and succeed academically. Teachers must assess each student's unique needs and implement personalized support strategies that align with their learning preferences and abilities [17, 18]. Without these interventions, students may struggle to keep pace with their peers, diminishing the effectiveness of PBL in inclusive classrooms.

Despite these challenges, investing in teacher training, resource allocation, and adaptive instructional strategies can foster an inclusive learning environment where all students, regardless of ability, can benefit from the collaborative and experiential nature of PBL.

#### 2. Materials and Methods

#### 2.1. Participants and Context

This study utilized a convenience sampling approach, selecting 15 students from a private school in Milagro, Ecuador, from fourth to seventh grade. Participation was voluntary and required parental consent, which was granted.

The sample consisted of students with diverse disabil-

ities: Three diagnosed with autism, two had both autism and hyperactivity, four had intellectual disabilities, four had physical disabilities, and two had Down syndrome. Some students received support from shadow teachers (four in total), who played a critical role in assisting during crises and facilitating participation in activities requiring physical movement.

While some participants had prior exposure to basic vocabulary related to numbers, colors, and classroom objects, pronunciation difficulties were common due to language disorders. However, many students demonstrated word recognition skills.

Given the participants' diverse linguistic and cognitive profiles, proficiency assessments based on the Common European Framework of Reference for Languages (CEFR) were not considered appropriate for this study.

All students had access to technology in and outside the institution and used the same instructional materials as their peers. However, adaptations were made to accommodate individual needs, including modified activities and personalized learning materials based on each student's disability.

#### 2.2. Instruments

This study employed an Action Research Design and a mixed-methods approach to comprehensively assess students' linguistic progress and social engagement in an inclusive EFL classroom. Data collection instruments included pre-tests, post-tests, surveys, rubrics, and classroom observations, ensuring both quantitative and qualitative analysis of student performance. These tools were chosen to capture both measurable language development and social integration indicators, allowing for a more holistic evaluation of student progress.

#### 2.2.1. Quantitative

A pre-test was administered at the beginning of the study to define students' linguistic competence. This test focused on vocabulary and basic grammatical structures, requiring students to recognize and use these elements in context. To ensure equitable participation, the test was adapted for students with speech impairments, allowing alternative response formats. Instances of these formats were gestures, signs, assistive technology, and visual aids (picture-supported responses for comprehension tasks).

The post-test was designed to be applied at the end of the study to measure students' vocabulary acquisition and comprehension of English instructions. Unlike the pre-test, this assessment was individualized. Similarly, adaptations such as sign language, assistive technology, and alternative forms of communication were made to evaluate students with speech impairments to demonstrate their understanding.

Both tests were adapted according to each student's grade level, cognitive abilities, and physical capabilities, ensuring a fair measure of progress.

Additionally, two surveys were designed to be applied to all students at the beginning and end of the study to evaluate their social integration and engagement. On the one hand, the peer inclusion survey assessed how students perceived and accepted classmates with disabilities before and after the intervention. On the other hand, the second survey allowed data on their confidence, participation, and language use in group activities to be collected.

#### 2.2.2. Qualitative

Two rubrics were designed and applied by shadow teachers to assess students' progress:

- Language acquisition rubric. It evaluated students' ability to learn and apply English vocabulary and grammatical structures. Performance indicators included word recognition, comprehension, and communication methods, whether spoken or alternative.
- Social participation and interaction rubric. It assessed students' interactions with peers, teachers, and school staff. It focused on classroom participation, collaboration in group tasks, and social engagement within institutional activities.

These qualitative assessments provided deeper insights into how students navigated inclusive learning environments and how effectively PBL fostered linguistic and social growth.

#### 2.3. Procedure and Data Analysis

#### 2.3.1. Procedure

The study was done during eight months. The student's parents agreed to participate and signed informed consent before the intervention started. Thus, recognizing the possible positive impact of the study on inclusive education.

At the beginning of the school year, students with spe-

cial needs were provided with differentiated learning materials tailored to them. While the rest of the class reviewed complex grammar structures, students with impairments used a customized handbook designed by researchers. Studies indicate that differentiated materials are crucial when standard learning resources are too complex for specific learners [19]. The handbook contained vocabulary and simple sentence structures to ensure that students with special needs could engage meaningfully with their peers.

Total Physical Response (TPR) was employed throughout the study to help students retain vocabulary. Activities were designed to integrate students with disabilities into classroom interactions, including role-playing exercises and group tasks.

At first, students with impairments were not very active, but over time, they began to participate and would even sing the class welcome song in English at the beginning of each lesson.

The student's parents agreed that using the same textbook for all students was beneficial, as adaptations could accommodate different needs.

After three months, students with disabilities began to ask for their materials, showing a growing sense of ownership over their learning process. They engaged in basic tasks such as underlining key terms, circling vocabulary, and copying words from the board.

Over time, students with severe reading difficulties learned to recognize letters and names, improving their cognitive and linguistic development. Research suggests that engaging students in familiar, structured tasks enhances their ability to retain and apply new knowledge<sup>[20]</sup>.

#### • Role of shadow teachers

An important study component was to shadow teachers' responsibility by evaluating student progress in learning and social interactions. Their impact over the course of the study was analyzed since having well-trained shadow teachers has been shown to support significantly inclusive education. In contrast, the effect of untrained shadow teachers may negatively affect the learning process<sup>[21]</sup>. Shadow Teachers supported classroom participation, accommodations, and peer cooperation for students with special needs.

With time, peer interactions improved, and shadow teachers were of reduced dependency of students with disabilities.

As students worked on group projects, their peers began assigning modified tasks to accommodate their classmates' needs, fostering inclusivity and mutual respect. Gulya and Fehérvári highlight that true inclusion is not just about helping students with disabilities adapt but also about encouraging non-disabled peers to embrace diversity and provide support [22].

#### Adaptation of Project-Based tasks

All project-based tasks and classroom activities were modified to ensure that all students could fully participate while preserving the core learning objectives of EFL instruction. To accommodate diverse cognitive and physical abilities, tasks were structured to be inclusive, interactive, and accessible. As Lenzen et al. highlight, cognitive ability can be assessed in two key areas: memory and mental status <sup>[23]</sup>. These factors were carefully considered in task design and implementation, ensuring that students with disabilities could fully engage in project-based learning (PBL) activities.

By the third month of the study, students began working on their English projects, which were designed to promote language acquisition, interpersonal skills, and personal values. Since students with disabilities often face challenges in understanding group work dynamics, additional scaffolding techniques were introduced to facilitate their participation. Research suggests that differentiated instruction and structured peer collaboration enhance engagement among students with diverse learning needs<sup>[12]</sup>.

To support collaboration, manageable tasks were assigned to students with disabilities within their groups, ensuring that all students could contribute effectively to the project activities. This approach aligns with findings by Carvajal-Ayala and Avendaño-Franco, which emphasize the role of peer-assisted learning structures in fostering active participation in collaborative learning <sup>[5]</sup>. Additionally, multimodal instructional techniques, including visual aids, structured role assignments, and hands-on activities, were integrated to enhance accessibility. Research by Sormunen et al. highlights that maker-centered PBL encourages students with disabilities to take active roles rather than remain passive participants, further supporting the modifications implemented in this study <sup>[14]</sup>.

The classroom environment encouraged greater inclusivity and collaboration by structuring project-based tasks to accommodate different learning abilities. These adaptations ensured that all students, regardless of ability, had opportunities to engage meaningfully in learning activities, reinforcing peer interaction and respect for individual differences.

### 2.3.2. Data Analysis

The data gathered in this research were analyzed qualitatively and quantitatively to determine the linguistic growth of the students, social participation, and inclusively enter project-based activities. On the one hand, the SPSS software was used to process and analyze the quantitative data. On the other hand, qualitative data obtained through observations and rubrics was examined to identify patterns related to students' participation, language development, and peer interactions.

Statistically, the pre-test and post-test scores were analyzed to test students' English language ability and social engagement. Descriptive statistics were used to measure improved vocabulary recognition, sentence structure comprehension, listening skills, pronunciation, and writing ability.

Survey responses were analyzed as well. Mean scores from pre-intervention and post-intervention surveys were compared to assess changes in students' confidence, willingness to participate in class, and ability to interact with peers and teachers using English.

The qualitative data, collected from teacher observations, student reflections, and rubric-based evaluations, was examined using thematic analysis to identify recurring patterns and trends.

- Observations: Researchers recorded students' classroom engagement, social interactions, and language use. Changes in student behavior and participation over time were noted, particularly regarding their comfort level with English and willingness to collaborate with peers.
- Rubric-based evaluations: Two rubrics were used—one for language acquisition and one for interpersonal engagement. These rubrics provided insights into how students applied language skills in practical settings and engaged in classroom activities.
- Shadow teachers' reports: Their notes and feedback were analyzed to assess students' progress in communication, independence, and social adaptability.

The analysis triangulated test scores, survey data, classroom observation and teacher feed-back to provide a comprehensive evaluation of student learning (academic) and social dimensions.

#### 3. Results

#### 3.1. Pre-Test and Post-Test

The results presented in **Table 1** compare students' pre-test and post-test scores across various language competencies. The data illustrates how students progressed in vocabulary recognition, grammar comprehension, listening, pronunciation, and writing skills after participating in the inclusive English learning intervention.

The findings indicate notable improvements in students' language skills after the intervention. The most significant progress was observed in vocabulary recognition, which increased from 1.5 in the pre-test to 4.15 in the posttest. This suggests that consistent exposure to collaborative, contextualized learning activities contributed to enhanced vocabulary retention.

Students also demonstrated improvements in reading comprehension (3.56) and pronunciation (3.52), highlighting the effectiveness of PBL and multimodal instruction in language development. Additionally, their listening skills improved from 1.1 to 3.40, reflecting their enhanced ability to process and recognize spoken English words.

While gains were observed across all language areas, grammar comprehension showed the least improvement, with a post-test mean of 2.12. This suggests that explicit instruction and additional reinforcement may be necessary to strengthen students' understanding of grammatical structures.

Overall, the results confirm that inclusive and PBL approaches significantly contributed to language acquisition and engagement, supporting the development of essential communication skills in students with diverse learning needs.

### 3.2. Pre-Survey and Post-Survey

The pre-survey and post-survey results provide insight into students' social engagement and language use in the classroom before and after participating in inclusive, PBL activities (**Table 2**). The data reflects students' progress in

Table 1. Pre-test and Post-test.

Criteria	<b>Pre-Test Mean</b>	Post-Test Mean
Recognizes the vocabulary words.	1.5	4.15
Recognizes some basic grammatical structures.	0.6	2.12
Understands vocabulary from short readings.	1.2	3.56
Can read a simple sentence that was adapted.	1.00	2.81
Listens to a word and can recognize it.	1.1	3.40
Pronounces the words correctly.	1.3	3.52
Performs activities according to what is heard.	1.00	3.71
Can write a simple word in English that has been studied.	1.1	2.80

Table 2. Pre-survey and Post-survey.

Criteria	Pre-Survey Mean	Post-Survey Mean
Uses the target language in the English class.	1.1	3.90
Greets the teachers in English every time he/she sees them.	2.1	4.82
Asks the teachers to participate in class.	0.5	2.91
Asks the teachers if they can help deliver material.	1.00	4.80
Likes to participate in speaking activities in groups.	0.4	2.40
Sings and dances the songs in class.	1.9	3.98
Interested in taking roles during the projects.	1.2	4.31
Can communicate with others and tries to establish relationships.	1.5	4.62

communication, participation, and social interactions over time.

The findings indicate a substantial improvement in students' use of English in class and their willingness to interact with peers and teachers. The most significant progress was observed in students greeting teachers in English, which increased from a pre-survey mean of 2.1 to a post-survey mean of 4.82. This suggests that students became more confident and comfortable using English in daily interactions.

Similarly, students showed greater participation in project-based activities, with interest in taking roles during projects increasing from 1.2 to 4.31. This demonstrates that inclusive learning environments and collaborative tasks encourage active student engagement and social integration.

Students also showed an increase in their willingness to communicate and build relationships, as reflected in the rise from 1.5 to 4.62 in their efforts to interact with others. This suggests that inclusive learning strategies contribute to developing interpersonal skills, fostering a sense of belonging, and social inclusion.

Although students demonstrated overall progress, the least improvement was observed in participation in speaking activities in groups, which increased from 0.4 to 2.40. While this still represents growth, students may have felt more com-

fortable using English in structured, teacher-led activities rather than spontaneous, peer-driven conversations. This highlights the need for further strategies to build students' confidence in open-ended speaking activities.

#### 4. Discussion

This study highlights the potential of inclusive PBL in EFL classrooms to support students with special needs. According to the outcomes, authentic, collaborative tasks motivate students to learn languages and contribute to participation as well as social inclusion. This section analyzes previous research findings, exploring their implications and the challenges involved in implementing PBL in inclusive classrooms.

# 4.1. Project-Based Learning in Inclusive Education

The results of this study reinforce the value of PBL in fostering interactive and meaningful learning experiences for students in inclusive EFL settings. The observed improvements in vocabulary retention, reading comprehension, and pronunciation indicate that project-based tasks contribute to more profound language processing and application. These

findings align with research by Boss and Krauss, which emphasizes the benefits of real-world engagement in language learning [2].

Beyond linguistic gains, the increased willingness of students to use English and interact with peers' points to the motivational advantages of PBL. Notably, when students with disabilities were given active roles in projects, they demonstrated a stronger sense of belonging and participation. This outcome resonates with the assertion of Joraboyev that student-centered, collaborative learning enhances academic and social outcomes in inclusive settings [8]. However, even though findings are promising, the degree to which these improvements translate into long-term language development warrants further investigation.

# 4.2. Social and Emotional Benefits of Inclusive PBL

In addition to language development, this study highlights the social and emotional benefits of PBL. Students demonstrated increased confidence in social interactions, as seen in their greater willingness to greet teachers in English, volunteer for tasks, and collaborate with peers. Well-adapted project-based tasks also appeared to foster empathy and teamwork, contributing to a more supportive classroom culture.

A particularly noteworthy finding was the shift toward greater peer support, with students without disabilities actively assisting their classmates in language-learning activities. This is consistent with research suggesting that peer-driven interactions in inclusive classrooms create stronger social bonds and foster a sense of belonging for all students [24]. Likewise, this observation aligns with the work of Gulya and Fehérvári, which argues that true inclusivity extends beyond physical integration to creating environments where all students contribute to each other's success [22]. The role of shadow teachers was particularly important in facilitating this dynamic, as they provided initial scaffolding before gradually encouraging independent interactions among students.

However, some challenges were evident. A few students occasionally used their mother tongue when responding in English, indicating a need for more structured activities to build confidence in spontaneous communication. Future research could address this issue by integrating additional oral exercises within PBL frameworks.

# 4.3. Challenges and Considerations for Implementation

Despite its benefits, implementing PBL in inclusive EFL classrooms presented challenges. Student reluctance to engage in group tasks required scaffolding and ongoing support, aligning with the findings of Carvajal-Ayala and Avendaño-Franco on the need for differentiated instruction<sup>[5]</sup>.

Teacher training gaps were another concern. While educators were eager to adopt PBL, many lacked confidence in designing activities for diverse learners. Teachers with higher self-efficacy create more inclusive environments, highlighting the need for professional development to balance instructional differentiation with language-learning objectives [25].

Resource constraints also posed barriers. Though this study adapted materials for student needs, underfunded schools may struggle to implement PBL effectively. Future research should explore cost-effective strategies for sustaining inclusive PBL in resource-limited settings.

### 5. Conclusions

This study provides evidence that inclusive PBL can facilitate language acquisition and social engagement for students with disabilities in EFL classrooms. Based on the specific sample of students who participated in this research, the findings suggest that engaging in collaborative, rolebased learning activities improved vocabulary retention, pronunciation, and overall communication skills. Rather than relying solely on memorization, students acquired English through active participation, which helped them become more accustomed to different pronunciations and interactive language use. A key observation from the study was the importance of peer relationships in supporting students with special needs. As these students developed closer connections with their classmates through project-based tasks, their motivation and participation increased. However, frustration was also noted, particularly when students struggled with specific activities. In such cases, teachers and peers provided support, including the occasional use of the student's mother tongue to facilitate comprehension, which helped reduce anxiety and encourage continued engagement. The study also highlighted changes in educators' perspectives regarding inclusive teaching. The teachers in this research

reassessed their instructional approaches, shifting towards a more flexible and adaptive methodology that prioritized inclusion before language mastery.

Additionally, shadow teachers, who played a critical role in facilitating participation, reported that their involvement in the English lessons helped them gain confidence in supporting students' language learning processes. Despite these positive findings, it is important to note that the results of this study are specific to the small group of students who participated and cannot be broadly generalized. Further research with a more extensive and diverse sample is necessary to assess the long-term impact of inclusive PBL in EFL contexts. Future studies could explore additional strategies to enhance spontaneous language use and address initial resistance to group-based learning. While this study demonstrates potential benefits, the effectiveness of PBL in inclusive EFL education ultimately depends on factors such as teacher training, classroom resources, and institutional support. Ensuring that these elements are in place can contribute to a more sustainable and inclusive learning environment where students with disabilities can actively engage and develop their language skills based on their individual needs and abilities.

#### **Author Contributions**

Conceptualization, F.P.R.H. and V.V.O.J.; methodology, F.P.R.H.; formal analysis, F.P.R.H.; data curation, F.P.R.H.; writing—original draft preparation, S.E.G., F.P.R.H., V.V.O.J., and A.C.V.S.; writing—review and editing, F.P.R.H., V.V.O.J., and S.E.G.; literature review, A.C.V.S., V.V.O.J., and S.E.G. All authors have read and agreed to the published version of the manuscript.

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### **Institutional Review Board Statement**

Ethical review and approval were waived for this study as it was conducted in a high school that regularly participates in research projects and community service in collaboration with the university to which the researchers belong. However, an informative session was held with students and parents, during which they were informed about the research, and parental consent was obtained through a signed informed consent form.

#### **Informed Consent Statement**

Informed consent was obtained from all participants' parents involved in the study.

# **Data Availability Statement**

The authors can provide the data supporting the findings of this study upon reasonable request.

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The authors have no acknowledgments to declare.

### **Conflicts of Interest**

The authors declare no conflict of interest.

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