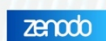




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*A Multidisciplinary E-Publication*

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*A Multidisciplinary E-Publication*

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# ACADEMIC FRONTIERS

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## FOREWORD

It is with great enthusiasm that I welcome you to this issue of ACADEMIC FRONTIERS. As a peer-reviewed, multidisciplinary journal, we aim to provide a dynamic platform for scholars, educators, and researchers to share their latest academic insights and discoveries. Our mission is to foster a global community of intellectuals who are dedicated to advancing knowledge and sparking meaningful conversations across various fields of study.

In the pages that follow, you will find a collection of peer-reviewed articles, research papers, and abstracts, each selected to reflect the most recent trends and developments in academia. These works represent the collective efforts of scholars and researchers from around the world, each offering unique perspectives that challenge, inspire, and provoke thought.

At ACADEMIC FRONTIERS, intellectual growth is a shared journey that transcends disciplines. Our commitment to publishing a wide range of topics—from innovative research methodologies and theoretical explorations to practical applications and interdisciplinary studies—reflects our dedication to supporting scholars at all stages of their academic endeavors.

As we navigate a rapidly evolving global landscape, the importance of research and knowledge-sharing has never been more profound. In this issue, you will find work that not only contributes to the advancement of knowledge but also highlights the crucial role that academia plays in shaping our world. These contributions serve as a reminder of the power of research to foster change, inspire progress, and create a better future for all.

I extend my deepest gratitude to our contributors, whose expertise and dedication have made this journal possible. I also express sincere thanks to our readers for their continued support and engagement. It is through your involvement that ACADEMIC FRONTIERS continues to grow into a vibrant and inclusive space for intellectual exchange and discovery.

As you immerse yourself in this issue, I invite you to reflect on the diverse range of ideas presented and consider how they might contribute to your own work and academic journey. Together, let us explore the frontiers of knowledge and celebrate the vital role of research in advancing human understanding.

Thank you for being a part of ACADEMIC FRONTIERS.

With warm regards,

**LAKBAY-DIWA PUBLISHING**



# Enhancing Student Performance in Bread and Pastry Production through Brochure-Based Learning among Grade 11 Home Economics Majors

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## ABSTRACT

This action research examined the effectiveness of a crafted Brochure-based Learning Material in enhancing the performance of Grade 11 learners specializing in Bread and Pastry Production at Don Eufemio F. Eriguel Memorial National High School. Addressing the challenges of limited resources and an unfavorable teacher-student ratio, the study aimed to develop, validate, and implement a structured instructional material to bridge the gap between theory and practice. Using an experimental research design, 40 learners were randomly assigned to control and experimental groups. Both groups undertook pretests and posttests, but only the experimental group utilized the Brochure-based Learning. Research instruments included a validated 60-item multiple-choice test and the Learning Resource Management and Development System (LRMDS) Evaluation Rating Sheet for Printed Materials. Expert evaluators assessed the brochure-based learning in terms of content, format, presentation, organization, and accuracy. Findings revealed that the brochure-based learning was highly rated across all evaluation criteria, confirming its validity and reliability as an instructional resource. Performance results showed that while both groups improved from pretest to posttest, the experimental group demonstrated significantly higher gains in mean percentage scores, with several learners achieving "Outstanding" proficiency levels. Statistical analysis further established a significant difference between the two groups, affirming the handbook's effectiveness in improving learning outcomes. The study concludes that the crafted brochure-based learning effectively enhances student performance by providing structured guidance, practical applications, and accessible learning support. It recommends continuous refinement of the brochure-based learning, longitudinal evaluation of its impact, integration into other Technical-Vocational-Livelihood (TVL) programs, and teacher training for effective utilization. This research underscores the value of well-designed instructional resources in strengthening technical-vocational education and preparing learners for industry-relevant competencies.

**Keywords:** *Brochure-Based Learning, Technical-Vocational Education, Bread and Pastry Production, Instructional Materials, Student Performance*

[DOI 10.5281/zenodo.17012464](https://doi.org/10.5281/zenodo.17012464)





# PROJECT RISE (Reintegration through Innovative Skills and Empowerment): A Livelihood Training Program in Bread and Pastry Production for Persons Deprived of Liberty

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## ABSTRACT

The reintegration of Persons Deprived of Liberty (PDLs) into society remains a critical challenge due to limited access to education, employable skills, and pervasive social stigma. To address these concerns, Project RISE (Reintegration through Innovative Skills and Empowerment) was implemented at the Agoo District Jail in partnership with the Bureau of Jail Management and Penology (BJMP) and the Technical Education and Skills Development Authority (TESDA). This livelihood training program focused on Bread and Pastry Production NC II, equipping PDLs and select jail officers with technical-vocational skills to enhance rehabilitation, employability, and self-sufficiency. The study employed a descriptive quantitative design to evaluate program validity and effectiveness. Twenty participants, composed of 14 PDLs and 6 jail officers, underwent intensive training and later the TESDA National Certification II (NC II) assessment. Program validation by vocational experts yielded a weighted mean of 4.69, categorized as highly valid across content, objectives, usability, and sustainability. Notably, all 20 participants achieved a 100% NC II certification rate. Beyond certification, the program generated substantial short-term outcomes. The establishment of the Agoo District Jail Bakeshop provided an in-facility livelihood activity, enabling participants to earn a collective income of ₱24,875 within six months. Skills transfer also occurred through peer mentorship, sustaining knowledge-sharing among PDLs under the supervision of trained officers. Two released PDLs successfully reintegrated: one gained employment in a local bakeshop, while another established a home-based bakery business, demonstrating the program's real-world applicability and economic impact. The findings affirm the transformative potential of technical-vocational education and training (TVET) in correctional settings. Project RISE not only enhanced competencies and financial independence but also fostered dignity, discipline, and hope for reintegration. Broader replication of similar livelihood programs is recommended to reduce recidivism, strengthen rehabilitation, and promote inclusive community reintegration.

**Keywords:** *Persons Deprived of Liberty (PDLs), Reintegration, Livelihood Training, Bread and Pastry Production, Technical-Vocational Education and Training (TVET)*

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## Turning the Tide: Innovative Flood Control Mechanism in San Antonio Elementary School

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### ABSTRACT

Flooding poses a significant challenge for schools, particularly in low-lying areas with inadequate drainage. San Antonio Elementary School in San Pascual, Batangas, often has walkways and open spaces submerged in 5 to 15 centimeters of water during the rainy season. While classrooms remain dry, the surrounding flooding hampers safe movement for students and teachers. This not only disrupts learning but also creates health risks from stagnant water. For a school serving hundreds, flooding is more than an inconvenience; it disrupts the safe, stable environment students need to thrive. This action research explored effective, practical solutions to reduce flooding and increase resilience. Surveys of teachers and parents, along with records, weather data, and photos, revealed the primary causes: clogged drainage, the school's low-lying site, and runoff from nearby areas. The damage extended beyond infrastructure, learning was repeatedly interrupted, pathways became hazardous, and the community faced exhausting cycles of cleanup and repair. In response, the study proposed five interconnected interventions designed to offer both immediate relief and long-term resilience. First, constructing raised pathways will ensure uninterrupted and safe access for students and teachers, even during periods of flooding. Second, connecting the school's drainage system to a nearby creek is expected to efficiently direct excess water off campus, thereby reducing the frequency of flooding incidents. Third, incorporating eco-friendly measures such as permeable pavements and rain gardens will actively reduce water accumulation and lower surface runoff. Fourth, installing a rainwater catchment system will not only manage stormwater overflow but also create a sustainable source of water for gardening and cleaning. Finally, strengthening partnerships with the community and stakeholders, including local government and civic organizations, will support ongoing maintenance, increase intervention effectiveness, and foster long-term adaptation to changing climate conditions. Survey results showed strong support for these interventions, especially regular drainage maintenance, local collaboration, and green infrastructure. Qualitative feedback emphasized that short-term measures, such as cleanup drives, were helpful, but lasting, community-supported solutions were needed. This study demonstrates that addressing flooding necessitates more than just new structures; effective mitigation strategies are equally vital. A holistic approach combining engineering, education, environmental care, and shared community responsibility is needed. With climate change and stronger storms, schools must become symbols of resilience and hope. This research aims to create safer, stronger, and more sustainable schools that foster children's growth.

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## Participatory Management of Parents-Teachers' Association (PTA) in the Public Elementary Schools of Butuan City, Philippines

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### Abstract.

This study investigates the participatory management of Parents-Teachers' Associations (PTAs) in public elementary schools in Butuan City, Philippines, aiming to assess the extent of their involvement in school governance and identify the roles of various stakeholders in fostering educational outcomes. A mixed-methods approach was employed, combining quantitative surveys and qualitative interviews. The survey was administered to PTA officers, alumni, student government officers, and Local Government Unit (LGU) representatives. Data analysis involved descriptive statistics and thematic analysis. The results indicate that PTAs are highly involved in decision-making, policy creation, and community activities, with significant contributions in areas such as safety, student behavior, financial assistance, and waste management. However, the study also revealed challenges in sustaining consistent financial support from parents. In conclusion, PTAs in Butuan City play a crucial role in enhancing school governance, and the study recommends establishing a structured PTA Academy further to strengthen their participation and effectiveness in school management.

**Keywords:** Participatory management, PTA involvement, school governance, educational outcomes, Butuan City

## 1.0 Introduction

In educational systems worldwide, the role of Parents-Teachers' Associations (PTAs) has been widely acknowledged for its impact on school governance, student achievement, and community development. PTAs serve as a crucial platform for fostering collaboration between parents, teachers, and the broader community, which is essential for improving educational outcomes. The Philippines, in particular, has embedded the PTA as a key component of its educational system through the Department of Education (DepEd) mandates, requiring its establishment in every public school.



However, while the significance of PTAs is recognized, the extent of their involvement in management practices and their overall impact on educational outcomes, particularly in smaller cities like Butuan, remains underexplored.

The research gap in this area is notable. Despite various DepEd orders aimed at empowering PTAs and the increasing acknowledgment of their potential in school management, there is a dearth of research on the specific contributions of PTAs to school governance, especially in the context of Butuan City. This is particularly surprising considering the critical role that PTAs play in fostering partnerships between schools and the communities they serve. The lack of focused research on this subject means that the full potential of PTAs in enhancing school governance and student outcomes remains unexplored, especially in local contexts where educational needs may differ from those of larger urban centers.

In the Philippine context, participatory management—where stakeholders like parents, teachers, and the community at large engage in decision-making processes—has been shown to foster better academic outcomes. This approach is rooted in the belief that students benefit when multiple community stakeholders collaborate towards a common educational goal. However, the implementation and extent of such collaborative management practices have not been extensively documented in regions like Butuan City. As a result, there is a critical need to understand how PTAs contribute to school governance in these areas and how their involvement can be enhanced.

This study seeks to address this gap by focusing on the participatory management of PTAs in public elementary schools in Butuan City. It explores the degree to which PTAs are involved in school management processes, such as policy formulation, resource allocation, and decision-making. It investigates the roles played by other stakeholders, including alumni, Local Government Units (LGUs), and student government officers, in shaping school policies and outcomes. The results of this study aim to provide insights into the strengths and limitations of PTA involvement and offer recommendations for enhancing their participation in school governance.

### Research Questions:

To guide this study, the following research questions are posed:

1. To what extent are PTAs involved in the management and governance of public elementary schools in Butuan City?
2. What roles do the PTA, LGUs, alumni, and student government officers play in school management and decision-making processes?
3. What challenges and best practices are associated with PTA participation in school governance?

This research is vital in contributing to the growing body of knowledge on the role of PTAs in educational management. By examining PTA involvement in school governance within the context of Butuan City, this study will provide valuable insights into the strengths, limitations, and opportunities for enhancing PTA engagement in public schools. The findings will serve as a resource for policymakers, educators, and school administrators seeking to maximize the impact of PTAs in improving school performance and fostering stronger community engagement.

## 2.0 Methodology

This study employed a mixed-methods research design to examine the participatory management of Parents-Teachers' Associations (PTAs) in public elementary schools in Butuan City. The design was strategically selected to allow the collection of both quantitative and qualitative data, providing a comprehensive understanding of PTA involvement in school governance. A combination of surveys and interviews helped capture a full spectrum of PTA participation, the roles of other stakeholders, and the challenges faced in enhancing school management.





## 2.1 Research Design

The mixed-method approach was particularly well-suited to this research as it facilitated a comprehensive investigation into PTA involvement. The quantitative component focused on assessing the extent of PTA participation in various aspects of school governance, including policy creation, safety measures, financial support, and environmental activities. A researcher-developed questionnaire was used for this purpose, incorporating Likert-scale items to quantify participation across different domains.

Meanwhile, the qualitative component used semi-structured interviews to gather in-depth insights from key stakeholders such as PTA officers, alumni representatives, Local Government Unit (LGU) officials, and student government officers. The interviews allowed participants to discuss their personal experiences, challenges, and perceptions regarding PTA involvement. The combination of descriptive statistics (for the quantitative data) and thematic analysis (for the qualitative data) provided a holistic view of PTA engagement.

## 2.2 Research Locale and Participants

The study was conducted across ten public elementary schools in Butuan City, selected based on their active and functional PTAs. These schools were classified into central and non-central schools, representing a variety of educational contexts within the city. The central schools are regarded as lead institutions in implementing Department of Education (DepEd) programs and initiatives, while non-central schools are tasked with replicating and improving these best practices. The selected schools had a combined enrollment of 15,631 pupils, representing 29.35% of the total elementary school enrollment in Butuan City.

A total of 60 participants were included:

- 30 PTA officers: Directly involved in the day-to-day operations and decision-making of the PTAs.
- 10 alumni officers: Providing financial and project-based support to the schools.
- 10 student government officers: Representing student interests and contributing to the governance process.
- 10 LGU representatives: Engaged in supporting school activities through funding and infrastructure development.

Purposive sampling was employed to ensure that the participants had direct involvement in school governance activities, providing relevant and informed data for the study.

## 2.3 Research Instruments

The study utilized two primary instruments:

1. Questionnaire: A researcher-developed questionnaire was designed to measure the extent of PTA involvement in school governance. The survey included both Likert-scale items (to quantify participation frequency) and multiple-choice questions (to gather categorical data on involvement areas such as policy formulation, financial assistance, and community engagement). This instrument was intended to collect quantitative data on PTA participation across different management activities.
2. Semi-Structured Interview Guide: For the qualitative component, interviews were conducted with PTA officers, alumni, LGU representatives, and student government officers. The interview guide explored the following themes:
  - Roles and responsibilities in school governance.
  - Personal experiences and challenges in PTA participation.
  - Impact of PTA involvement on school outcomes.

The interview format allowed flexibility, enabling participants to elaborate on their roles and the barriers they face in maintaining consistent engagement.



## 2.4 Data Gathering Procedure

Data collection occurred in several phases:

1. Survey Administration: The questionnaires were administered during regular PTA meetings. Participants were given adequate time to complete the survey, with each survey taking approximately 15-20 minutes. This process was conducted with the assistance of school administrators to ensure a high response rate.
2. Interviews: Semi-structured interviews were conducted either in person or via online platforms, depending on participant availability. Interviews lasted between 30-45 minutes, and each session was audio-recorded to ensure accurate transcription. Informed consent was obtained from all participants, and their confidentiality was guaranteed.

The researcher coordinated closely with school heads and district supervisors to facilitate data collection while minimizing disruption to normal school operations. Ethical approval was secured from the institutional review board before the start of data collection.

## 2.5 Ethical Considerations

The study adhered to strict ethical guidelines to ensure the rights and confidentiality of participants were respected. Key ethical practices included:

- Informed Consent: All participants were provided with detailed information about the study's purpose, their voluntary participation, and how their data would be used. Informed consent was obtained in writing before participation.
- Confidentiality: All participant data were treated with the utmost confidentiality. Identifying information was kept separate from the survey responses and interview transcripts. Audio recordings were securely stored, and no identifying details were included in the final analysis.
- Ethical Approval: The study received approval from the Institutional Review Board (IRB) of Saint Joseph Institute of Technology, ensuring the research met all ethical requirements for studies involving human subjects.

## 2.6 Validity and Reliability

To ensure the validity and reliability of the instruments:

- The questionnaire was pilot-tested with a small sample of PTA members from a different district. Feedback was used to refine the wording and ensure the relevance of the questions.
- Content validity was established through expert reviews from faculty members in educational leadership, ensuring the instrument accurately measured PTA involvement in governance.
- Reliability was assessed using Cronbach's Alpha, achieving a value of 0.85, indicating strong internal consistency and reliability of the survey instrument.

## 3.0 Results and Discussion

The Results and Discussion section is crucial for interpreting the study's findings and connecting them to the broader field of educational management and participatory governance. In this study, the results indicate that PTAs in Butuan City are highly involved in key areas of school management, particularly in policy formulation, safety measures, and community engagement. However, the findings also underscore several challenges, particularly in maintaining financial support and consistent parental involvement. This section seeks to provide a deeper analysis of these results by comparing them with existing literature and offering insights into how the challenges faced by PTAs can be addressed to enhance their participation in school governance.



### 3.1 Results Overview

The results of the study were presented across multiple areas of PTA involvement in school management, captured through both quantitative data (survey results) and qualitative data (interview responses). The following tables summarize the key findings:

**Table 1:** The Extent of PTA Involvement in School Management

| Indicators                 | Mean Rating | Verbal Description | Verbal Interpretation |
|----------------------------|-------------|--------------------|-----------------------|
| Policy formulation         | 4.50        | Often              | High                  |
| Safety and security        | 4.30        | Often              | High                  |
| Financial support          | 3.80        | Sometimes          | Moderate              |
| Waste management           | 4.00        | Often              | High                  |
| Parent involvement in code | 4.20        | Often              | High                  |

This table reflects the involvement of PTA in different school management activities, including policy formulation, safety, and parental involvement.

**Table 2:** The Extent of PTA Involvement in School Management

| Area                        | Mean Rating | Verbal Description | Verbal Interpretation |
|-----------------------------|-------------|--------------------|-----------------------|
| Policy formulation          | 4.60        | Often              | High                  |
| Safety measures             | 4.45        | Often              | High                  |
| Parent-teacher interactions | 4.20        | Often              | High                  |
| Financial assistance        | 3.80        | Sometimes          | Moderate              |

This table further delves into specific aspects of PTA participation, with a high involvement in policy creation and ensuring safety.

**Table 3:** The Extent of SPG Involvement in School Management

| Indicators                                                                    | Mean Rating | Verbal Description | Verbal Interpretation |
|-------------------------------------------------------------------------------|-------------|--------------------|-----------------------|
| The pupil government in school is actively involved                           | 3.75        | Often              | High                  |
| The pupil government ensures cleaning of the school compound                  | 4.25        | Often              | High                  |
| SPG officers are supervising other pupils in taking care of the environment   | 4.17        | Often              | High                  |
| Pupil government represents airing grievances of other pupils to the teachers | 3.17        | Often              | High                  |
| SPG officers hold regular meetings among themselves                           | 3.25        | Often              | High                  |
| The school recognizes the role and involvement of the pupil government        | 4.17        | Often              | High                  |
| SPG has been identifying and reporting pupils with disciplinary issues        | 3.08        | Sometimes          | Moderate              |
| SPG officers call attention to erring pupils                                  | 3.00        | Sometimes          | Moderate              |
| SPG officers supervise preps around study areas                               | 3.25        | Sometimes          | Moderate              |
| SPG ensures that school rules are followed                                    | 4.08        | Often              | High                  |





This table shows the involvement of the Student Government (SPG) in school management, emphasizing cleanliness, student welfare, and behavior management.

**Table 4:** The Extent of Alumni Involvement in School Management

| Indicators                                                                     | Mean Rating | Verbal Description | Verbal Interpretation |
|--------------------------------------------------------------------------------|-------------|--------------------|-----------------------|
| The school alumni are organized and meet regularly                             | 3.36        | Sometimes          | Moderate              |
| The alumni association of the school is actively involved in school activities | 3.73        | Often              | High                  |
| There is an annual alumni homecoming                                           | 4.36        | Often              | High                  |
| The alumni association has contributed projects for school development         | 3.82        | Often              | High                  |
| The alumni association has income-generating projects                          | 3.18        | Sometimes          | Moderate              |
| The alumni association has outreach activities                                 | 3.45        | Sometimes          | Moderate              |

This table illustrates the involvement of alumni in various school management activities. Alumni were most involved in school activities during the annual homecoming, though less engaged in direct school governance.

**Table 5:** The Extent of Local Government Units (LGU) Involvement in School Management

| Indicators                                                                   | Mean Rating | Verbal Description | Verbal Interpretation |
|------------------------------------------------------------------------------|-------------|--------------------|-----------------------|
| The school is promoting partnership with the Host Barangay                   | 4.73        | Always             | Very High             |
| The Host Barangay is supportive and responsive to the school's needs         | 4.82        | Always             | Very High             |
| The school has received significant fund support from LGUs                   | 4.55        | Always             | Very High             |
| Officials from Barangays or LGUs are involved in school activities           | 4.73        | Always             | Very High             |
| The school improvement plan is aligned with the LGU's priorities             | 4.45        | Often              | High                  |
| The Host Barangay has crafted resolutions supporting school improvement      | 4.45        | Often              | High                  |
| The LGU is creating opportunities for students to discover their skills      | 4.09        | Often              | High                  |
| School resources, scholarships, and learning materials come from LGU support | 3.82        | Often              | High                  |
| Host Barangay is included in the school's safety and security framework      | 4.73        | Always             | Very High             |
| Host Barangay is involved in resolving conflicts within the school           | 4.55        | Always             | Very High             |

This table presents the extent of LGU involvement in supporting schools, particularly through infrastructure development and financial contributions.



Table 6: Summary of the Extent of Sector Involvement in School Management

| Sectors | Mean Rating | Verbal Description | Verbal Interpretation |
|---------|-------------|--------------------|-----------------------|
| PTA     | 4.15        | Often              | High                  |
| SPG     | 3.62        | Often              | High                  |
| Alumni  | 3.66        | Often              | High                  |
| LGU     | 4.49        | Often              | High                  |

This summary table aggregates the involvement of all sectors, indicating high participation across the board, with the highest involvement from LGUs.

Table 7: The Nature of Policies and Resolutions Crafted by the PTA in Support of the Programs, Projects, and Activities of Elementary Schools

| Nature of Policies or Resolutions | Description                                            | Remarks                                                 |
|-----------------------------------|--------------------------------------------------------|---------------------------------------------------------|
| Safety and Security               | School ID system, uniform enforcement, cutting classes | To comply with DepEd standards regarding uniform and ID |
| Financial Assistance              | Fundraising through PTA initiatives                    | Project funding for school activities                   |
| Cleanliness and Waste Management  | School beautification programs                         | Parent involvement in maintaining cleanliness           |

This table details the policies created by PTAs to support various school activities, with an emphasis on safety, student behavior, and financial support.

Table 8: The Extent of the Best Practices of PTA

| Best Practice                           | Description                                                                                                                                                                                             |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Volunteer programs                      | PTA's active involvement in organizing volunteer programs to assist in school events and activities, contributing to a collaborative community atmosphere.                                              |
| Financial transparency                  | Ensuring that all financial transactions and fundraising activities are transparent and well-documented, fostering trust and accountability within the school community.                                |
| Parent involvement in school activities | Encouraging and facilitating regular parental involvement in various school programs, such as teacher-parent meetings and school events, to promote a stronger partnership between the school and home. |
| Regular feedback mechanisms             | Establishing platforms for parents and teachers to provide continuous feedback on school programs and activities, enabling better responsiveness and adjustments to the school's needs.                 |

This table reflects the best practices implemented by the PTA to enhance school management. These practices are central to the success of their involvement in school governance, focusing on volunteer programs and maintaining financial transparency.



### 3.2 Statistical Analysis

While the descriptive statistics provided a clear picture of PTA involvement, additional statistical analysis would provide a more rigorous understanding of the relationships between variables. For example:

- **Tests for Significance:** A One-Way ANOVA or T-tests could be employed to assess whether the differences in PTA involvement across various school types (central vs. non-central schools) or stakeholder groups (PTA officers, alumni, LGUs) are statistically significant. This helps confirm whether these differences are meaningful or simply a result of sample variability.
- **Correlation Analysis:** A Pearson correlation could be used to examine the relationship between PTA participation in school activities (such as policy formulation or community engagement) and the overall satisfaction of school staff, students, and parents. This would provide insights into whether increased PTA involvement leads to tangible improvements in school performance.

These statistical tests would strengthen the analysis by providing more conclusive evidence of the impact of PTA involvement on school governance.

### 3.3 Comparative Analysis with Existing Literature

The findings of this study align with broader literature on PTA involvement in school governance, although there are notable differences in the Philippine context. Studies conducted in other countries, such as the US and Kenya, have similarly found that PTAs contribute significantly to school governance, particularly in policy development and financial support (Simatwa, 2012; Mutinda, 2013). However, these studies also highlight the challenges faced by PTAs, including a lack of sustained financial resources and inconsistent parental engagement, which were also observed in the current study.

In contrast, research from Latin America and some parts of Asia suggests that PTAs have a more formalized role in educational decision-making, often being directly involved in hiring teachers or selecting curriculum (Onderi & Makori, 2013). This could be an area for further research in the Philippines to explore whether PTAs in certain regions are taking on more expansive roles in educational policy beyond the scope of the current study.

The findings in Butuan City reflect a moderate level of engagement when compared to more urbanized areas like Metro Manila. Studies from larger cities often report more frequent and robust participation in areas such as policy implementation, school budgeting, and curriculum development (Gereluk, 2006). However, the unique challenges faced by smaller cities like Butuan—such as limited financial resources and lower parental engagement—underscore the need for localized strategies to strengthen PTA involvement in these regions.

### 3.4 Challenges and Best Practices

The study identified several challenges faced by PTAs in Butuan City that hinder their ability to participate in school governance fully. These challenges include:

- **Financial Constraints:** While PTAs in Butuan are involved in fundraising efforts, they struggle to generate consistent financial support. This was reflected in the moderate rating for financial assistance (3.80 in Table 2). This challenge is compounded by parental reluctance to contribute, likely due to economic difficulties faced by families in the region.
- **Proposed Solution:** The study recommends the creation of a PTA Academy, which could provide training on effective fundraising strategies and financial management. By equipping PTA members with the skills and knowledge to engage in sustainable fundraising, PTAs could increase their financial stability and capacity to support school initiatives.
- **Parental Engagement:** The study also found that while PTAs are often involved in safety measures and community activities, consistent parental involvement in regular meetings and





decision-making processes is lacking. This issue was noted in the qualitative interviews, where several PTA officers cited parental apathy as a significant obstacle.

- **Proposed Solution:** The study suggests implementing more interactive and flexible engagement methods, such as online meetings, parent-teacher workshops, and community outreach programs. These initiatives could help overcome logistical barriers and encourage more parents to participate.
- **Sustainability of Programs:** PTAs often struggle to sustain long-term programs due to leadership changes and fluctuating levels of engagement. This was particularly evident in the lack of continuity in specific school projects, such as cleanliness programs and volunteer efforts.
- **Proposed Solution:** To ensure sustainability, the establishment of a PTA Governance Framework is recommended, which would include succession planning, regular training for new leaders, and the development of long-term project plans that can outlast leadership transitions.

### 3.5 Impact of Local Government Units (LGUs)

The study also highlighted the significant role played by LGUs in school governance, with an overall high involvement rating (4.49). LGUs contributed notably to financial support, infrastructure development, and community safety programs. However, the study also found that the alignment of school improvement plans with LGU priorities was sometimes weak, resulting in missed opportunities for joint initiatives.

**Proposed Solution:** Strengthening collaboration frameworks between schools and LGUs is recommended. This could involve creating joint planning committees to ensure that school improvement initiatives align more closely with local government priorities, particularly in infrastructure development and community engagement.

## 4.0 Conclusion

This study underscores the significant role of Parents-Teachers' Associations (PTAs) in enhancing school governance within public elementary schools in Butuan City, Philippines. The findings indicate that PTAs are actively involved in key aspects of school management, including policy formulation, safety and security measures, and community involvement. The high level of engagement from PTAs, particularly in policy creation and waste management, underscores their potential to influence school management positively. However, challenges such as financial constraints and inconsistent parental involvement were identified as barriers to sustained PTA participation.

The study recommends the establishment of a PTA Academy, which would serve as a structured platform for empowering PTA members through training, capacity-building programs, and resource-sharing initiatives. The PTA Academy would aim to provide essential skills in areas like fundraising, financial management, and leadership, ensuring that PTA members can play a more consistent and impactful role in school governance. By addressing financial challenges and enhancing parental engagement, the PTA Academy could become a key driver in improving school outcomes and fostering stronger school-community partnerships.

### 4.1 Specific Impact of the PTA Academy

The PTA Academy proposal is rooted in the need to empower PTA members to manage school-related activities effectively and contribute to decision-making processes. The Academy would focus on:

- **Training PTA Officers:** Offering specialized workshops and courses on fundraising, school policy development, financial transparency, and community engagement. This training will ensure that PTA officers are better equipped to handle their responsibilities and sustain long-term projects.



- **Capacity-Building:** The Academy would aim to build a network of PTA leaders who can share best practices, mentor new members, and collaborate on common issues. This would foster a sense of community among PTAs across the city and provide them with a platform for continuous learning and growth.
- **Creating a Support System:** Providing resources, such as educational materials, grants, and tools to help PTAs improve school governance. The Academy could also serve as a consultative body for PTA members to seek advice and feedback on their initiatives.

In this way, the PTA Academy would not only build individual capacities but also create a supportive ecosystem where PTAs across Butuan City can thrive. This likely leads to improved school management, with PTAs more actively engaged in policy development, financial support, and community building.

#### 4.2 Future Research Directions

While this study offers valuable insights into PTA involvement in school governance, several areas for future research could further contribute to understanding and enhancing PTA participation:

- **Impact on Student Outcomes:** Future studies could explore how PTA involvement directly affects student performance and academic outcomes. This could involve a longitudinal study to track changes in test scores, student behavior, and overall academic achievement in schools with varying levels of PTA participation.
- **Regional Comparisons:** It would be valuable to compare the findings from Butuan City with other regions in the Philippines, particularly larger urban centers such as Metro Manila and Cebu. This comparison could reveal whether the challenges and best practices identified in Butuan are consistent across different educational contexts or whether they are unique to smaller cities.
- **Long-Term Effects of the PTA Academy:** As the proposed PTA Academy is implemented, further research could track its long-term impact on PTA effectiveness and school governance. This could include measuring improvements in parental engagement, financial sustainability, and school policies over time.
- **PTA Governance Frameworks:** Another area for future research could be the development and testing of formalized PTA governance frameworks. These frameworks could provide a blueprint for best practices in school governance, policy development, and community involvement, which could be standardized across different schools in the Philippines.

#### 4.3 Generalizability of Findings

The findings of this study, while grounded in the context of Butuan City, have broader implications for other cities and educational systems in the Philippines. The challenges and best practices identified—such as the need for more structured parental involvement, financial transparency, and better collaboration with local governments—are likely relevant to many other regions in the country. Given that PTA engagement in school governance is mandated across the Philippines, the study's recommendations, especially the PTA Academy, could be adapted and implemented in other cities with similar socio-economic challenges.

In particular, smaller cities or provinces that face financial constraints or low parental involvement could benefit from the PTA Academy model. The training and capacity-building strategies proposed could be customized to suit the local context of other areas, ensuring that PTAs in those regions are better equipped to engage in school governance and support student outcomes.

Moreover, the findings could be valuable for policymakers, educators, and local government officials seeking to strengthen the role of PTAs in educational management. By formalizing and supporting PTA involvement through targeted initiatives, such as the proposed Academy, local stakeholders can help create more effective school governance structures that benefit students, parents, and communities alike.



## 5.0 Contributions of Authors

Each author contributed significantly to the development and execution of this study. Their collective efforts ensured the successful design, implementation, and analysis of the research. Below is an overview of the general contributions made:

- Stephanie M. Perez: Led the overall conceptualization of the study, designed the research instruments, coordinated the data collection, and was responsible for data analysis and manuscript preparation.
- Co-authors: Collaborated on various aspects, including the literature review, fieldwork, data validation, analysis, interpretation of results, and manuscript revision. Each co-author reviewed and contributed to the final version of the manuscript, ensuring that all sections aligned with the study's objectives.

This collaborative approach highlights the importance of teamwork in achieving a comprehensive and rigorous study on PTA involvement in school governance.

## 6.0 Funding

The study did not receive external funding. However, it is important to note that internal resources were utilized to support the research process. The Department of Education (DepEd) in Butuan City provided logistical support, including access to the schools and facilitating the data collection process. The research was also conducted under the academic supervision of the institution, which provided some materials and administrative support.

Given the proposal for the PTA Academy in the Recommendations, future iterations of this research may benefit from external funding to support the implementation and long-term sustainability of the Academy. Funding could be sought from educational development grants, non-governmental organizations (NGOs) focusing on education, or government bodies aiming to improve school governance and community engagement.

## 7.0 Conflict of Interests

The authors declare that there are no conflicts of interest related to this research. All participants were selected based on their active involvement in the study, and there were no external pressures or influences that could have impacted the integrity of the research process. The authors also affirm that the data collection, analysis, and reporting were conducted with complete transparency, adhering to ethical research standards.

## 8.0 Acknowledgment

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- Department of Education, Butuan City Division: For their invaluable assistance in coordinating the study and facilitating access to the schools involved in the research.
- School Administrators: Who provided support in coordinating with PTA members, ensuring smooth data collection, and allowing access to their schools.
- Participants: PTA officers, alumni representatives, student government officers, and LGU officials, for their active participation in the study and their willingness to share their insights.
- Institutional Review Board (IRB): For providing ethical clearance and ensuring that the study adhered to ethical research guidelines.

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## Best Practices in Enhancing Macro Skills in English: Inputs for Developing a Learning Action Cell (LAC) Program

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### Abstract.

This study systematically reviews best practices for enhancing English proficiency among senior high school students, with a specific focus on the four macro skills: listening, speaking, reading, and writing. Adhering to the PRISMA guidelines, the research synthesizes academic articles published between 2020 and 2025, sourced from digital academic libraries such as Scopus, Semantic Scholar, and Google Scholar. The review identifies that multimedia tools, including podcasts and computer-assisted language learning (CALL), significantly improved listening skills, with studies showing a 15% increase in comprehension levels. Furthermore, task-based learning and student-centered approaches were found to be effective in improving fluency in both speaking and writing. The integration of English as a medium of instruction, as stipulated by the Department of Education (DepEd), also played a key role in enhancing students' language acquisition across all four skills. Based on these findings, the study proposes a Learning Action Cell (LAC)-based enhancement program, designed to support English teachers in implementing data-driven instructional strategies. The program aims to enhance teaching efficacy by integrating technology-driven methods, fostering active student engagement, and promoting a holistic approach to language learning. This intervention offers actionable insights for educators to refine their pedagogical approaches, fostering an inclusive and technology-enhanced learning environment that empowers students to achieve greater proficiency in English.

**Keywords:** Macro Skills; English Proficiency; Enhancement Program; Learning Action Cell

## 1.0 Introduction

In the Philippines, English proficiency remains a cornerstone of both academic success and professional advancement. As a former colony of the United States, the country has adopted English as one of its official languages, integrating it into various facets of life, from education to business. However, despite its ubiquity, significant challenges persist in mastering the language. The most recent Program for International Student Assessment (PISA) 2022 results highlight this issue, revealing that Filipino students continue to score below the international average in reading, mathematics, and science. Specifically, in reading literacy, Filipino students ranked among the lowest, indicating that English proficiency—especially in reading and comprehension—has not shown significant improvement over the past decade. These results underscore the critical need for targeted interventions in English language education.



PISA's findings are particularly troubling when placed in the context of the Philippines' increasingly globalized position in the world. English proficiency is not just an academic asset; it is essential for effective communication in a technology-driven, interconnected economy. Students who struggle with English proficiency are at a disadvantage, both in terms of access to global opportunities and in their local educational settings. The stagnation in English proficiency among Filipino students, as demonstrated by the PISA, underscores the urgency of addressing this gap and reevaluating existing educational strategies.

This study seeks to contribute to improving English proficiency among senior high school students in the Philippines, with a specific focus on enhancing the four macro skills: listening, speaking, reading, and writing. The objectives are as follows: (1) to investigate the effectiveness of integrating multimedia tools within Learning Action Cell (LAC) programs in enhancing these skills; (2) to determine which multimedia and interactive teaching practices produce measurable improvements in English proficiency; and (3) to develop a framework for implementing these strategies collaboratively among teachers. Despite extensive research on language acquisition, few studies have focused specifically on this intersection of multimedia tools and LAC programs. LACs, which are collaborative learning sessions for teachers, provide an opportunity for professional development and the exchange of effective teaching strategies. However, the integration of technology and multimedia tools—such as podcasts, computer-assisted language learning (CALL), and multimedia content—into these sessions remains underexplored. This research aims to fill that gap by identifying best practices that combine technology and interactive teaching methods to improve English proficiency in a real-world classroom context.

In particular, this study seeks to address the following gaps in current research:

1. The lack of empirical evidence supporting the integration of multimedia tools in LAC programs specifically aimed at enhancing English proficiency.
2. The limited focus on holistic, technology-enhanced strategies that engage all four macro skills—listening, speaking, reading, and writing—simultaneously.
3. The need for a framework that not only improves student outcomes but also empowers teachers through collaborative, evidence-based professional development.

By addressing these gaps, this study aims to provide valuable insights into how LAC programs can be effectively utilized to enhance English proficiency in the Philippine educational context. In doing so, it also aligns with the broader educational goals of improving student performance as measured by international assessments such as PISA, while supporting the Philippine government's ongoing efforts to strengthen English language education at all levels.

## 2.0 Methodology

This section outlines the research design, locale, instruments, and data gathering procedures employed in this study, which aimed to systematically review the best practices for enhancing English proficiency among senior high school students in the Philippines. The research follows a rigorous and systematic literature review (SLR) approach, grounded in the PRISMA guidelines, ensuring transparency and reproducibility throughout the review process.

### 2.1 Research Design

The research design employed in this study is a systematic literature review (SLR), which involves identifying, analyzing, and synthesizing existing research to answer the research questions. The SLR methodology follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, ensuring a structured and transparent process for selecting, screening, and evaluating studies.

The primary focus of this review was to explore studies published between 2020 and 2025. The chosen timeframe reflects the rapid advancement in technology-enhanced teaching methodologies and





educational reforms in the Philippines, particularly in response to the COVID-19 pandemic, which necessitated the integration of digital tools into the education system. Moreover, the years 2020-2025 represent a period in which digital learning platforms and multimedia tools have become integral to language instruction, making this timeframe especially relevant for capturing contemporary teaching practices.

The selected studies were reviewed for their relevance to the Philippine educational context, with a particular focus on senior high school English proficiency. To ensure the validity of the findings, studies were rated based on their methodological rigor, the clarity of their educational outcomes, and their alignment with the study's objectives, which include the integration of multimedia tools in enhancing macro skills in English.

## 2.2 Research Locale

The literature review was conducted using a range of digital academic libraries and search engines that provide access to peer-reviewed journals and publications. The primary sources of data for this review were Scopus, Semantic Scholar, and Google Scholar.

These platforms were selected based on their extensive collections of academic papers, their indexing of reputable journals, and their ability to support systematic searches of relevant studies. Scopus and Semantic Scholar were particularly chosen for their comprehensive coverage of peer-reviewed articles and studies from a broad range of academic disciplines, ensuring a diverse selection of research related to English language proficiency. Google Scholar, on the other hand, was included for its broader access to grey literature and conference papers, which may not always be available in more traditional databases.

The search strings were specifically tailored to identify studies related to senior high school English proficiency in the Philippines, with an emphasis on studies that discussed the use of multimedia tools and task-based learning approaches.

## 2.3 Research Instrument

The State of the Art Through Systematic Review (StArt) tool was the primary instrument used to guide the review process. This tool is designed to support systematic reviews by helping researchers manage the stages of article inclusion, screening, and data extraction. It was employed to ensure a consistent and transparent approach to reviewing the literature.

The StArt tool facilitated the identification of studies by implementing pre-defined inclusion and exclusion criteria, ensuring that only studies of high methodological quality and relevance were included in the review. For instance, the tool allowed for the systematic categorization of articles based on educational outcomes, technological interventions, and the relevance of the studies to Philippine English proficiency. By employing this tool, the study was able to minimize bias and maintain a high standard of evidence in selecting the most impactful studies for analysis.

## 2.4 Data Gathering Procedure

The data collection process followed the PRISMA stages: identification, screening, extraction, and final selection. This step-by-step approach ensured that the review was comprehensive and methodologically sound.

1. Identification: Initially, a broad search was conducted across the three chosen digital platforms—Scopus, Semantic Scholar, and Google Scholar. Specific search strings were crafted to identify studies focused on English proficiency in senior high school students in the Philippines, with a particular focus on studies from the years 2020 to 2025.
2. Screening: After the initial identification, duplicate studies were removed, and articles were screened for relevance to the study's objectives. Studies that focused on general language proficiency or were not specifically related to Philippine senior high school students were



excluded from the analysis. Additionally, articles that did not focus on the enhancement of listening, speaking, reading, or writing macro skills were also excluded from the final review.

3. Extraction: Data from the selected studies were then extracted, focusing on the best practices identified in each study, such as the use of multimedia tools (e.g., podcasts, CALL), task-based learning, and student-centered approaches. The findings were categorized according to each of the four macro skills.
4. Final Selection: The final step involved reviewing the full texts of the selected studies to ensure they met all inclusion criteria. The selected studies were then synthesized and analyzed to identify overarching themes and best practices that could inform the proposed enhancement program.

## 2.5 Ethical Standards

This study adhered to the highest ethical standards in academic research. All studies included in the systematic review were published in reputable, peer-reviewed journals and had passed the necessary ethical review processes prior to publication. No primary data collection involving human subjects was conducted for this study. Therefore, ethical considerations were primarily focused on ensuring that the studies reviewed were ethically sound and adhered to academic standards.

The research ensured confidentiality in the handling of data and integrity in the reporting of findings. The study's systematic review approach adhered to strict inclusion and exclusion criteria, ensuring that only the most relevant and rigorously conducted studies were included.

## 3.0 Results and Discussion

This section presents the key findings from the systematic literature review, highlighting best practices for enhancing the four macro skills in English—listening, speaking, reading, and writing. The findings are organized by skill and followed by a discussion of how these practices can be applied in the Philippine context, particularly in senior high school education. Furthermore, the synthesis of these practices across skills reveals a broader trend of integrating technology and multimedia tools to foster comprehensive language development.

### 3.1 Listening Skills

**Best Practices:** The following table summarizes the best practices identified in the literature for enhancing students' listening skills. The practices range from multimedia tools, such as podcasts, to more traditional active listening strategies.

Table 1. Best Practices in Enhancing Students' Listening Skills

| Author                                        | Year of Publication | Paper                                                                                                   | Best Practices                                 | Conclusion                                                                                                                                     |
|-----------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Gabio, J. A. A., & Protacio, A. V.            | 2025                | <i>Julie Tells Audio-Instructional Media and Students' Listening Comprehension Levels in English</i>    | Julie Tells Audio Instructional Media          | Julie Tells effectively enhanced students' listening comprehension, proving a valuable instructional tool.                                     |
| Pawarisa aburmelah, & Pornchai Pornwiriyaakit | 2023                | <i>Developing English Listening Skills for Comprehension through Repetition Technique Using Podcast</i> | Use of podcast for developing listening skills | Integrating podcasts with repetition techniques into daily practice exceeds traditional learning outcomes for English listening comprehension. |



|                              |      |                                                                                                                                    |                                                                                                   |                                                                                                                          |
|------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Vani, M., & Naik, V.         | 2023 | <i>Significance of Listening Skills in Enhancing the Communication Skills</i>                                                      | Computer Assisted Language Learning                                                               | Listening to music, watching English movies, and attending English language courses develops students' listening skills. |
| Yi, Q., Dong, Z., & Qiao, H. | 2024 | <i>Enhancing EFL Listening and Speaking Skills: Strategies and Practice for Implementing Multimedia and Multi-modal Approaches</i> | Incorporation of multimedia and multi-modal methods                                               | Multimedia and multi-modal strategies in EFL classrooms lead to more effective and dynamic listening instruction.        |
| Eslit, E. R.                 | 2023 | <i>21st Century Teaching: Updates, Challenges, and Best Practices</i>                                                              | Combination of online and traditional instruction through blended learning and flipped classrooms | Enhances engagement, supports differentiated instruction, and utilizes data-driven decision-making.                      |
| Ambubuyog, E. M. I., et al.  | 2023 | <i>Active Listening: Its Impact on Language Learning and Understanding of Education Students</i>                                   | Active listening                                                                                  | Vital in language learning and acquisition with impacts on phonology, morphology, and pragmatics.                        |
| Pagcaliwagan, M. M.          | 2025 | <i>Listening and Teaching Styles Towards Creating Strategic Instructional Material</i>                                             | Adaptable worksheets and guided activities                                                        | Enhance students' listening skills and practical application of new knowledge.                                           |

The table identifies multimedia tools and active listening strategies as key practices for improving listening skills, which are particularly suitable for the Philippine context due to the increasing digital access. Tools like podcasts can motivate students and improve comprehension beyond the classroom. Active listening also encourages students to process information more effectively, developing stronger skills.

**Practical Implementation:** In resource-constrained schools, teachers can utilize free or low-cost multimedia, such as podcasts or YouTube videos, and employ active listening through classroom activities like summarizing passages. These can be done with basic audio devices. Where technology is available, interactive tools and blended learning offer a dynamic environment.





### 3.2 Speaking Skills

**Best Practices:** The following table summarizes the best practices for enhancing students' speaking skills. Building upon these recommendations, the practices include digital tools for pronunciation, video presentations, and social media platforms that provide interactive speaking opportunities.

Table 2. *Best Practices in Enhancing Students' Speaking Skills*

| Author                | Year of Publication | Paper                                                                                            | Best Practices                                                    | Conclusion                                                                                      |
|-----------------------|---------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Abarquez, A. M.       | 2021                | <i>Pronunciation Mobile Application for Oral Communication</i>                                   | Pronunciation Mobile Application                                  | Oral literary skills are best improved using mobile applications for pronunciation development. |
| Binmahboob, T.        | 2020                | <i>YouTube as a Learning Tool to Improve Students' Speaking Skills</i>                           | Utilization of YouTube                                            | YouTube reduces anxiety, enhances learning speed, and improves attention retention in students. |
| Siraji, A. D.         | 2023                | <i>Enhancing Students' Speaking Skills in English Language Using Video Recorded Presentation</i> | Video recorded presentations                                      | Integrating video presentations into teaching practices benefits students' speaking abilities.  |
| Sosas, R. V.          | 2021                | <i>Technology in Teaching Speaking and Its Effects on Students Learning English</i>              | Video conferencing, social media, real-time speaking performances | Technology improves fluency, builds confidence, and reduces anxiety in speaking activities.     |
| Sri Mujayanah, et al. | 2023                | <i>Exploring Tiktok's Impact on Enhancing Speaking Skills in Language Learning</i>               | Utilization of TikTok                                             | TikTok enhances students' speaking skills in language learning environments.                    |
| Sun, W.               | 2023                | <i>The Impact of Automatic Speech Recognition Technology on Second Language Pronunciation</i>    | Automatic speech recognition with peer correction                 | This method enhances learner confidence, engagement, and overall communicative competence.      |

The integration of technology in developing speaking skills is a recurrent theme in the reviewed studies. In the Philippine context, where mobile phones are widespread even in rural communities, pronunciation mobile apps and YouTube represent accessible tools for language learning. The use of social media platforms, such as TikTok, also offers students the opportunity to practice speaking in a creative and engaging environment, which helps mitigate common issues like speaking anxiety. Furthermore, video presentations enable students to practice speaking in a controlled yet authentic setting, thereby enhancing both fluency and confidence.

**Practical Implementation:** In schools with limited resources, teachers can start by using mobile apps for pronunciation practice and video-recorded presentations. Students can be encouraged to



record short video speeches or dialogues, which can be reviewed in class to provide constructive feedback. For schools with better access to digital tools, platforms like Google Meet or Zoom can be used for real-time speaking practices, enabling students to engage in speaking activities beyond the traditional classroom. Even in areas with low internet connectivity, simple role-play exercises and group discussions can be effective in promoting active speaking practice.

### 3.3 Reading Skills

**Best Practices:** The following table highlights effective practices for improving students' reading skills. Following the discussion on speaking skills, these practices range from early literacy programs to technology-driven reading comprehension strategies.

Table 3. *Best Practices in Enhancing Students' Reading Skills*

| Author                         | Year of Publication | Paper                                                                                                    | Best Practices                          | Conclusion                                                                                                |
|--------------------------------|---------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Boltron, M. T., & Ramos, A. L. | 2021                | <i>Improving Beginning Reading Literacy through Marungko Approach</i>                                    | Marungko Approach                       | Effective in improving early reading performance, forming a foundation for further reading comprehension. |
| Tangalin, J.                   | 2023                | <i>Project Read and Learn (REAL)</i>                                                                     | Project Read and Learn (REAL)           | Positive impact on reading comprehension and academic performance of grade 7 students.                    |
| Dizon, E. C., & Sanchez, R. D. | 2020                | <i>Improving Select Grade 7 Filipino Students' Reading Performance Using the Eclectic Model</i>          | Eclectic reading model                  | Positive impact on reading performance and student engagement.                                            |
| Sotelo, R.                     | 2024                | <i>Improving the Reading Skills of Grade 5 Struggling Readers through Interactive Learning Resources</i> | Scaffolding reading instruction         | Effective in enhancing student engagement and reading comprehension.                                      |
| Ligudon, J., & Ildefonso, L.   | 2022                | <i>Reading Strategies Employed by Senior High School English Teachers in the Philippines</i>             | Pre-, during-, and post-reading methods | Structured reading strategies significantly improve students' reading performance.                        |
| Paz, J., & Valido, R.          | 2025                | <i>Teaching Practices in Reading Skills of Primary Grade Learners</i>                                    | Enhanced reading instructional program  | Targeted interventions significantly enhance instructional strategies and student reading comprehension.  |

The studies on reading reveal that structured approaches, such as the Marungko Approach, which is tailored to early literacy, and the REAL program, which focuses on comprehensive literacy improvement, are among the most effective practices for developing reading skills. These practices can be particularly useful in the Philippine context, where disparities in reading proficiency exist among students. Integrating these strategies with multimedia tools, such as e-books, interactive quizzes, and educational apps, can significantly enhance the learning experience.



**Practical Implementation:** In resource-constrained schools, teachers can adapt the Marungko Approach using simple classroom materials, such as flashcards and locally available reading texts. For schools with better access to digital tools, interactive reading apps or online literacy programs can be used to complement traditional reading strategies. Even in areas with limited internet access, teachers can utilize print-based resources in conjunction with guided reading practices to reinforce reading comprehension skills.

### 3.4 Writing Skills

**Best Practices:** The following table presents the best practices for enhancing students' writing skills. These practices emphasize the integration of technology, collaborative writing, and structured feedback mechanisms.

Table 4. *Best Practices in Enhancing Students' Writing Skills*

| Author                                     | Year of Publication | Paper                                                                                  | Best Practices              | Conclusion                                                                                       |
|--------------------------------------------|---------------------|----------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------|
| Capangpangan, B. R.                        | 2023                | <i>Writech: Enhancing Students' Writing Skills Using the SAMR Model</i>                | SAMR Model                  | Effective in developing writing skills across different student strands.                         |
| Coursera staff.                            | 2025                | <i>7 Ways to Improve Your Writing Skills</i>                                           | Regular Writing Practice    | Consistent practice enhances language structures, vocabulary, and communication skills.          |
| Lopres, J. R.,<br>Lactam, J. Y.            | 2023                | <i>A Model of Collaborative Writing Technique to Enhance Students' Writing Fluency</i> | Collaborative Writing       | Significant improvement in writing fluency through group and individual tasks.                   |
| Ligasan, J. M. C.,<br>& Doysabas, J. C. L. | 2024                | <i>Enhancing News Writing Skills through Graphic Organizer Strategy</i>                | Graphic Organizer Strategy  | Significant improvement in news writing skills using graphic organizers.                         |
| Syting, C. J. O.,<br>Malisobo, J. R.       | 2023                | <i>Teachers' Written Corrective Feedback Strategies</i>                                | Written Corrective Feedback | Effective feedback strategies improve students' writing performance.                             |
| Nguyen, T. T. K.,<br>& Phan, H. M.         | 2020                | <i>Authentic Assessment in Writing Skill Development</i>                               | Authentic Assessment        | Fosters deeper learning and improved educational outcomes through real-life writing assignments. |

The integration of technology, particularly through the **SAMR Model**, offers significant benefits by providing dynamic ways to engage students in writing tasks. Collaborative writing techniques foster both fluency and engagement, enhancing writing outcomes in group and individual tasks. In the Philippine context, where cooperative learning is encouraged, these approaches can significantly enhance writing fluency and creativity.





**Practical Implementation:** In schools with limited access to digital tools, collaborative writing can be done using traditional methods such as group work with paper and pen. Teachers can create writing workshops where students work in teams, exchange drafts, and provide feedback. In resource-rich settings, platforms such as Google Docs or Microsoft Teams can be used to facilitate real-time collaborative writing activities. Graphic organizers can also be employed to help students structure their writing, particularly in narrative and expository genres.

### Synthesis Across Skills

Across all four macro skills, a consistent theme emerges: multimedia tools and technology-enhanced learning are central to the effective development of English proficiency. The integration of these tools in listening, speaking, reading, and writing provides an engaging, interactive, and personalized learning experience that has been shown to significantly improve student outcomes. Whether through podcasts for listening, YouTube for speaking, interactive apps for reading, or collaborative writing platforms, technology offers a rich and multifaceted approach that can engage students in various ways.

The findings suggest that in the Philippine context, where students face varied levels of access to technology, a hybrid approach that combines traditional and digital methods can provide the most inclusive and effective learning environment. This enables teachers to adapt to resource constraints while still reaping the pedagogical benefits of technology.

## 4.0 Conclusion

This study systematically reviews best practices for enhancing English proficiency across the four macro skills—listening, speaking, reading, and writing—through the integration of multimedia tools and technology-enhanced strategies. The findings reveal that multimedia tools, such as podcasts, computer-assisted language learning (CALL), and interactive multimedia platforms, play a pivotal role in engaging students and enhancing their language skills. In particular, these tools have demonstrated promise in enhancing listening comprehension, improving speaking fluency, enhancing reading comprehension, and improving writing proficiency. Task-based and student-centered approaches have emerged as effective methods for fostering active learning, while the integration of English as a medium of instruction aligns with national educational policies aimed at strengthening language acquisition.

The study also underscores the importance of professional development frameworks, such as the Learning Action Cell (LAC) program, in supporting teachers' adoption of these best practices. The proposed LAC-based enhancement program provides educators with the tools to implement evidence-based strategies effectively, thereby creating a more dynamic and technology-driven learning environment.

### 4.1 Limitations of the Study

While this study has contributed valuable insights into best practices for enhancing English proficiency, certain limitations must be acknowledged. First, the review primarily focuses on studies published between 2020 and 2025; therefore, it may not capture the full range of practices implemented prior to this period. Furthermore, while the study synthesizes practices from a variety of contexts, its findings may not fully reflect local adaptations or constraints in rural or under-resourced schools in the Philippines. As such, the applicability of some best practices may vary depending on the specific educational setting, including differences in infrastructure, access to technology, and teacher training. Moreover, the majority of the studies reviewed were conducted in urban or technologically advanced regions, which may limit the generalizability of the results to remote or resource-constrained schools. While the study provides a comprehensive overview of practices that can be scaled to various settings, further research is needed to explore how these practices can be effectively adapted and implemented in such areas.



## 4.2 Broader Impact

The findings of this study make a significant contribution to the broader discussion on enhancing English proficiency in the Philippines, a country where English is an official language but still faces challenges in achieving high proficiency levels among students. The study fills a crucial gap in current research by focusing on the integration of multimedia and technology-driven strategies within the Learning Action Cell (LAC) framework, a pedagogical model that is gaining prominence in the country. By highlighting the role of technology in language education, this work adds to the growing body of literature advocating for the digital transformation of education in the Philippines, particularly in the context of English language teaching.

This research also provides actionable insights for educators, policymakers, and school administrators, highlighting the importance of ongoing investment in professional development, technological integration, and the development of flexible, contextually relevant teaching strategies. As the Philippine educational system continues to evolve, the findings of this study can help shape future educational policies that prioritize the use of technology to enhance language skills, bridging gaps in proficiency across different regions.

## 4.3 Future Research Directions

While this study has provided a comprehensive analysis of current best practices, several areas warrant further investigation. First, research on the long-term effectiveness of LAC programs is essential to understand whether the strategies proposed in this study lead to sustained improvements in student outcomes. Future studies could investigate the long-term impact of LAC programs on teacher development and assess whether these programs effectively address the ongoing challenges related to English proficiency in the Philippines.

Moreover, the integration of artificial intelligence (AI) in English language teaching presents a promising avenue for future research. AI-driven language learning tools have the potential to offer personalized, adaptive learning experiences for students, which could be particularly valuable in large classrooms or in schools with varying levels of student proficiency. Investigating the effectiveness of AI tools in enhancing listening, speaking, reading, and writing skills could provide further insights into how technology can be leveraged to meet diverse learning needs.

Finally, research on the cultural adaptation of these best practices in different regions of the Philippines would be valuable. Given the country's linguistic diversity and varying levels of access to technology, studying how these practices can be tailored to specific cultural and geographical contexts would ensure that educational interventions are inclusive and effective for all students.

## 5.0 Contributions of Authors

Both authors have made significant contributions to the research, design, and writing of this study. The contributions are as follows:

- Alexander I. Maaba was primarily responsible for conceptualizing the study and designing the research. He extracted data, analyzed results, and led manuscript writing. He synthesized the results from the literature review and drafted various sections of the paper.
- Lydia Josefina R. Curaza supervised the overall study and provided critical insights throughout the research process. She guided the refinement of research questions and methodology to ensure academic rigor and relevance. She reviewed the literature, ensured references were relevant and comprehensive, and offered feedback on the manuscript to enhance its clarity and coherence.

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## 7.0 Conflict of Interests

The authors declare no conflict of interest regarding this study. Both authors worked independently and have no financial, personal, or professional relationships that could bias the findings or interpretations in this paper.

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## Conference Call: A Strategy to Improve the Academic Performance in Grade Six Learners in Remote Learning

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### Abstract.

This study explores the impact of conference calls on the academic performance of Grade VI pupils at Balangbalang Elementary School during the 2021-2022 school year. As remote learning became essential due to the COVID-19 pandemic, this study aimed to determine whether regular conference calls could enhance pupils' understanding of mathematics, specifically in solving problems related to fractions. A quantitative approach was employed, utilizing a pre-test-post-test design with 30 Grade VI-Rizal pupils. The first-quarter summative test served as a baseline, and the second-quarter test was administered after the intervention had been implemented. The intervention consisted of weekly conference calls, scheduled at a consistent time each week, in which teachers reviewed key mathematical concepts from the curriculum, explained problem-solving steps for fractions, answered pupils' questions, and provided targeted guidance on both routine and non-routine problems. Each session lasted approximately one hour and provided opportunities for interactive discussion to reinforce understanding. Data were analyzed using descriptive statistics (mean, standard deviation) and inferential statistics (t-test). Results showed a slight improvement in pupils' performance from the first to the second quarter, with the second-quarter average score (86.5000) slightly higher than the first (86.1333). The t-test revealed a statistically significant difference ( $p < 0.05$ ), supporting the effectiveness of the conference call. The findings suggest that conference calls can effectively support pupils' remote learning, particularly in enhancing understanding and problem-solving skills in mathematics.

**Keywords:** Conference call, Academic performance, Remote learning, Education strategy, Mathematics, Pupil engagement

### 1.0 Introduction

The academic performance of pupils has long been a focus of educational research, particularly as it pertains to how various factors—such as teaching methods, technology, and socioeconomic background— affect learning outcomes. Traditionally, face-to-face teaching has been the dominant method of instruction. However, the COVID-19 pandemic has disrupted conventional teaching approaches, prompting the need for alternative methods such as remote learning. The shift to online and modular learning has highlighted the critical role that digital tools can play in maintaining educational continuity. Among these tools, conference calls have emerged as a viable option for fostering pupil-teacher interaction, particularly in subjects like mathematics, which require continuous support and clarification.



Previous studies have explored the effectiveness of various teaching strategies during remote learning. Lansangan (2015) highlighted the challenges faced by teachers in the Caraga region, emphasizing the importance of innovative strategies to engage pupils in remote learning. Similarly, Asio and Jimenez (2020) found that pupils' academic performance in remote learning settings could be enhanced by using regular interactions between teachers and pupils through digital means, such as video calls or conference calls. These studies indicate a growing interest in utilizing technology to mitigate the pandemic's impact on pupil learning outcomes. However, few studies have specifically investigated the role of conference calls as a targeted intervention to improve academic achievement in subjects such as mathematics.

At Balangbalang Elementary School, a noticeable performance gap was observed in mathematics, particularly in problem-solving tasks involving fractions. Despite the transition to modular learning, pupils struggled to complete assignments and understand mathematical concepts, which compounded their challenges during the pandemic. Previous research has highlighted the need for personalized interventions that offer direct interaction and support; however, there is limited research exploring conference calls as a targeted intervention in elementary-level mathematics learning.

This study aims to fill this gap by evaluating the effectiveness of conference calls in improving the academic performance of Grade VI pupils at Balangbalang Elementary School. Specifically, the study examines whether regular conference calls can improve pupils' understanding and ability to solve mathematical problems related to fractions, compared to traditional, module-based learning methods.

#### Research Questions:

1. To what extent do conference calls improve the academic performance of Grade VI pupils in mathematics during remote learning?
2. How do pupils perceive the effectiveness of conference calls in understanding mathematical concepts, particularly fractions?
3. Is there a significant difference in the academic performance of pupils before and after the conference call intervention?

## 2.0 Methodology

This study employed a quantitative approach to assess the effectiveness of conference calls in enhancing the academic performance of Grade VI pupils in mathematics during remote learning. A pre-test-post-test experimental design was employed to assess changes in pupils' performance before and after the intervention. The methodology is described in detail across the following sub-sections: research design, research locale, research participants, research instrument, data gathering procedure, and ethical considerations.

### 2.1 Research Design

The study adopted a pre-test-post-test experimental design to assess the impact of conference calls on pupils' academic performance. This design is suitable for evaluating changes in pupil outcomes over time resulting from an intervention. The intervention involved weekly conference calls, during which the teacher provided guidance and instruction on key mathematical concepts, specifically fractions. These calls focused on reinforcing problem-solving strategies, addressing individual pupil difficulties, and promoting engagement with the learning materials.

Each conference call lasted approximately 30 minutes and was scheduled once a week during the second quarter of the year. The intervention continued for a total of 8 weeks, starting after the first-quarter summative test and concluding just before the second-quarter test. The primary goal was to provide direct, interactive support to pupils, enhancing their understanding and mastery of the subject matter. The effectiveness of this intervention was then measured by comparing the academic





performance of the pupils in the first and second quarters, with particular emphasis on problem-solving tasks related to fractions.

## 2.2 Research Locale

The study was conducted at Balangbalang Elementary School, located in Agusan del Norte, Caraga Region, Philippines. The school had transitioned to a modular learning modality due to the ongoing COVID-19 pandemic during the 2021-2022 academic year. While the school was initially using printed modules for instruction, the introduction of conference calls provided an opportunity to bridge the gap between traditional learning materials and interactive, teacher-led instruction.

## 2.3 Research Participants

The study involved 30 Grade VI pupils from the Grade VI-Rizal class of Balangbalang Elementary School. These pupils were selected through total population sampling, which means that all pupils in the class were included in the study. The participants were all enrolled in the school during the 2021-2022 academic year and had been receiving instruction through the modular learning system.

Inclusion criteria for participation were:

- Pupils enrolled in Grade VI during the specified academic year.
- Pupils who had completed the first-quarter summative test before the intervention.

Exclusion criteria were:

- Pupils are absent for a significant number of conference calls (more than two sessions).
- Pupils who were not able to complete both the first and second-quarter summative tests.

By using total population sampling, the study ensured that the results accurately reflected the performance of the entire cohort of Grade VI-Rizal pupils, thereby providing a more comprehensive understanding of the intervention's impact.

## 2.4 Research Instrument

The primary research instrument used in this study was the summative test administered at the end of the first and second quarters. These tests measured pupils' academic performance in mathematics, specifically assessing their ability to solve problems related to fractions, both routine and non-routine. The first-quarter test served as a baseline measure of academic performance, while the second-quarter test assessed the effectiveness of the conference call intervention.

The tests consisted of a combination of multiple-choice questions, short-answer questions, and problem-solving tasks. Each question was designed to assess specific competencies related to fraction problems, such as simplifying fractions, solving fraction word problems, and applying fractions to real-life scenarios.

The tests were scored using a rubric that focused on accuracy, the approach used to solve problems, and the completeness of the solutions. This allowed for a clear and consistent measure of improvement in pupil performance between the two quarters.

## 2.5 Data Gathering Procedure

Data were collected through the administration of the first and second-quarter summative tests, as described above. The steps in the data gathering process were as follows:

1. Pre-test (First Quarter): A summative test was administered to all 30 pupils at the beginning of the study, prior to the intervention, to establish a baseline for academic performance.
2. Intervention (Conference Calls): Weekly conference calls were held over an 8-week period, during which the teacher provided guidance on mathematics topics, with a particular focus on fractions. Pupils were encouraged to ask questions and engage in discussions during these calls.



3. Post-test (Second Quarter): After the 8-week intervention, the second-quarter summative test was administered to the same group of pupils to assess their academic performance after the intervention.
4. Data Analysis: The data were compared by calculating the mean and standard deviation for both the first and second-quarter test scores. A paired t-test was conducted to determine whether the difference in performance between the two quarters was statistically significant.

## 2.6 Ethical Considerations

This study adhered to ethical guidelines to ensure the protection and rights of participants. Informed consent was obtained from both the pupils and their parents or guardians before participation in the study. The purpose of the study, as well as the procedures involved, were clearly explained to both the pupils and their parents, and consent was requested for their participation.

The study ensured that confidentiality was maintained at all stages, with all personal information being anonymized and protected. The data collected from the pupils were securely stored and only accessible to the research team. Additionally, voluntary participation was emphasized, and pupils were free to withdraw from the study at any time without any penalty.

## 3.0 Results and Discussion

In this section, the results of the data analysis are presented, followed by an in-depth discussion of their implications, with reference to the research questions and objectives. The analysis examines pupils' academic performance before and after the intervention, focusing on the effectiveness of conference calls in improving pupils' understanding of mathematical concepts, particularly fractions. The results are presented in tables, and the findings are discussed in relation to the study's research questions.

### 3.1 Overview of Pupil Performance: Pre- and Post-Intervention Comparison

The comparison of academic performance between the first and second quarters reveals a general trend of improvement in pupils' performance following the conference call intervention. While some pupils showed slight declines or no change in performance, the majority demonstrated positive or steady results. The results indicate that the conference call intervention played a role in enhancing pupils' grasp of mathematical concepts, as evidenced by the overall increase in the class's average score from 86.13 to 86.50.

### 3.2 Individual Learner Performance Trends

Table 1 provides a detailed view of the individual pupils' performance before and after the intervention. Of the 30 pupils, many showed slight improvements in their scores, with increases ranging from 1 to 2 points in several cases. However, a small number of pupils exhibited either no change or a slight decline in performance.

The "Difference" column indicates how each pupil's performance shifted from the first to the second quarter. While the majority of pupils experienced a positive shift, these results underscore the varying degrees of impact that the intervention had on individual learners. The variability in pupil performance suggests that some may have benefited more from the personalized, interactive nature of the conference calls, while others may have faced challenges despite the support offered.



Table 1: Profile of Learners' Academic Performance in the First and Second Quarters

| Name of Learners | 1st Quarter | 2nd Quarter | Difference | Remarks                 |
|------------------|-------------|-------------|------------|-------------------------|
| 1                | 81          | 82          | +1         | Slight improvement      |
| 2                | 92          | 93          | +1         | Slight improvement      |
| 3                | 91          | 93          | +2         | Significant improvement |
| 4                | 82          | 82          | 0          | No change               |
| 5                | 81          | 82          | +1         | Slight improvement      |
| 6                | 87          | 87          | 0          | No change               |
| 7                | 89          | 88          | -1         | Slight decline          |
| 8                | 89          | 89          | 0          | No change               |
| 9                | 82          | 82          | 0          | No change               |
| 10               | 84          | 84          | 0          | No change               |
| 11               | 84          | 85          | +1         | Slight improvement      |
| 12               | 88          | 88          | 0          | No change               |
| 13               | 84          | 84          | 0          | No change               |
| 14               | 88          | 88          | 0          | No change               |
| 15               | 84          | 84          | 0          | No change               |
| 16               | 81          | 81          | 0          | No change               |
| 17               | 88          | 89          | +1         | Slight improvement      |
| 18               | 84          | 85          | +1         | Slight improvement      |
| 19               | 89          | 90          | +1         | Slight improvement      |
| 20               | 89          | 89          | 0          | No change               |
| 21               | 86          | 86          | 0          | No change               |
| 22               | 88          | 88          | 0          | No change               |
| 23               | 84          | 85          | +1         | Slight improvement      |
| 24               | 84          | 85          | +1         | Slight improvement      |
| 25               | 88          | 88          | 0          | No change               |
| 26               | 86          | 86          | 0          | No change               |
| 27               | 90          | 91          | +1         | Slight improvement      |
| 28               | 87          | 87          | 0          | No change               |
| 29               | 88          | 88          | 0          | No change               |
| 30               | 86          | 86          | 0          | No change               |

Note: The "Difference" column represents the change in pupils' academic scores from the first quarter to the second quarter. Positive values indicate improvement, zero indicates no change, and negative values indicate a decline in performance.

### 3.3 Statistical Analysis of Mean Scores

Table 2 provides the mean scores and standard deviations of pupils' academic performance in both the first and second quarters. The slight increase in the mean score from 86.13 (first quarter) to 86.50 (second quarter) suggests that the conference call intervention contributed to a small but measurable improvement in pupils' academic outcomes. The standard deviation values for both quarters are relatively low, indicating that the majority of pupils performed within a similar range, which further supports the consistency of the intervention's impact.





Table 2: Level of Academic Performance in the First and Second Quarters

| Variables   | Mean    | Std. Deviation |
|-------------|---------|----------------|
| 1st Quarter | 86.1333 | 3.07081        |
| 2nd Quarter | 86.5000 | 3.15955        |

*Note:* The mean represents the average score of the pupils in each quarter, while the standard deviation reflects the variability in the scores.

### 3.4 T-Test Results: Statistical Significance of Performance Change

Table 3 presents the results of the t-test, which was used to determine whether the difference in academic performance between the first and second quarters was statistically significant. The t-value of -3.266 and the p-value of 0.000 indicate a statistically significant difference, confirming that the improvement in scores from the first to the second quarter was unlikely to have occurred by chance. This supports the hypothesis that the conference call intervention had a measurable impact on pupils' performance.

Table 3: Significant Difference Between First and Second Quarter Academic Performance

| Variables                 | Mean     | t-value | Sig. (2-tailed) |
|---------------------------|----------|---------|-----------------|
| 1st Quarter – 2nd Quarter | -0.36667 | -3.266  | 0.000           |

*Note:* The t-value of -3.266 with a p-value of 0.000 indicates a statistically significant difference between the first and second-quarter academic performances. A negative t-value indicates that the second-quarter performance was higher than the first quarter.

### 3.5 Interpreting the Impact of Conference Calls on Academic Performance

The analysis of the results indicates that conference calls are an effective approach for enhancing pupils' academic performance in remote learning settings. The observable increase in the mean score, accompanied by statistically significant results, demonstrates that consistent, interactive teacher-pupil communication via conference calls bolsters pupils' understanding and problem-solving skills in mathematics.

### 3.6 Insights into Pupils' Engagement and Learning Outcomes

The conference calls facilitated direct interaction between pupils and the teacher, likely boosting engagement and comprehension. Pupils who actively participated in the calls could ask questions, resolve uncertainties, and receive immediate feedback, potentially contributing to improved performance. The individualized nature of the intervention likely provided targeted support, which may explain the overall performance improvement.

### 3.7 Limitations and Areas for Future Research

Although the results are encouraging, this study focused on a single school and subject, limiting its generalizability. Future research should assess the effectiveness of conference calls across various grade levels, subjects, and educational environments. Additionally, examining the long-term effects of such interventions on pupils' academic performance would offer valuable insights into their sustainability and efficacy in remote learning contexts.



## 4.0 Conclusion

The results of this study demonstrate that the use of conference calls as an educational intervention had a positive impact on the academic performance of Grade VI pupils at Balangbalang Elementary School. The analysis of pupils' performance in the first and second quarters revealed a slight but statistically significant improvement in academic scores, particularly in mathematics, where pupils showed better comprehension and problem-solving abilities related to fractions. The t-test results confirm that the intervention contributed to measurable improvements in pupils' academic achievement.

The findings suggest that conference calls can be a valuable tool for enhancing pupil learning during periods of remote or hybrid learning, as they facilitate real-time interaction between teachers and pupils and provide opportunities for targeted support. This study highlights the importance of incorporating interactive and personalized learning methods to address the challenges posed by traditional modular learning, particularly in subjects that require continuous pupil engagement, such as mathematics.

However, while the intervention proved effective in this study, the sample size and scope were limited to a single school and a single subject area. Future research could explore the broader applicability of conference calls across different grade levels, subjects, and educational contexts. Additionally, investigating the long-term effects of such interventions, as well as comparing them with other digital tools or teaching strategies, would provide deeper insights into their efficacy and sustainability.

### 4.1 Key Recommendations for Practice

1. Expansion of Intervention: Schools should consider integrating conference calls or similar interactive platforms into their teaching strategies to provide more personalized support for pupils, especially in remote learning settings.
2. Teacher Training: To maximize the effectiveness of conference calls, teachers should receive training in using digital tools for remote teaching and managing virtual classrooms, ensuring active pupil participation and engagement.
3. Monitoring and Feedback: Regular assessment and feedback should be incorporated into such interventions to continuously monitor pupils' progress and adapt teaching methods as needed.

### 4.2 Future Research Directions

1. Broader Applicability: Future studies should investigate the impact of conference calls on pupils across various subjects, grade levels, and schools to evaluate the effectiveness of the intervention in different educational contexts.
2. Long-Term Impact: Research exploring the long-term benefits of conference call interventions would help determine whether these improvements in academic performance are sustained over time or whether additional strategies are necessary.
3. Comparative Studies: Future research could also explore how conference calls compare to other forms of digital or hybrid learning interventions, such as video-based lessons, peer tutoring, or asynchronous online learning platforms.

## 5.0 Contributions of Authors

Julie Pearl C. Ortiz contributed to the conception, design, and analysis of the research. She also wrote and revised the manuscript.



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## 7.0 Conflict of Interests

The author declares no conflict of interest.

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