

# Philippine Professional Standards for School Heads and its Impact on the Performance of Public Elementary Schools

**Abstract.** This study assessed the Philippine Professional Standards for School Heads (PPSSH) and their impact on the performance of public elementary schools. It aimed to determine the degree of PPSSH manifestation among school heads and its relationship with school performance. A descriptive-correlational research design was employed, involving five school heads and 109 teachers. A modified questionnaire based on DepEd Order No. 24, series of 2020 was used to assess the level of PPSSH manifestation, while school performance was measured using Quarterly Assessment Results and School-Based Management (SBM) Level of Practice. Statistical analyses, including Pearson's  $r$ , weighted mean, percentage, and t-test, were conducted. The findings revealed that school heads demonstrated a high level of PPSSH manifestation. Three schools were classified as "Maturing" and two as "Advanced" in the SBM level, with an overall composite mean of 66.89 for school performance. A significant difference was found between teachers' and school administrators' assessments of PPSSH manifestation. Furthermore, a strong correlation was observed between school performance and the school heads' adherence to PPSSH. Based on these findings, the study recommends further enhancing school leadership through professional development initiatives.

**Keywords:** School leadership; School performance; Professional development initiatives.

## 1.0 Introduction

For radical, social, and economic reasons, the educational system of the twenty-first century has undergone significant changes on a global scale. In contrast to traditional management schemes that maintain an inward focus to achieve the goal of cutting costs, upholding rules, and dividing labor to emphasize control and enforced standards, this ushered in a new revolution in educational leadership structures, which have become less hierarchical, more direct, and fluid, resulting in smoother organizations. To address the complex transformational issues, enhance student learning, and achieve educational goals, school heads are essential. Iskak and Pa-also (2019) state that they have a type of leadership that has been under pressure to produce not just the implementation of educational plans and objectives but also to be accountable for raising generations to be qualified in a rapidly changing time.

Based on the research by Beshiri and Bicaj (2019), the Ministry of Education, Science, and Technology established professional practice standards for school directors as strategic guidelines to support their professional development. By extending the function of school directors beyond merely technical and administrative duties, these guidelines sought to professionalize the position. They ensured that the development plan for the school institution they applied to was taken into consideration when selecting management personnel, in addition to the candidate's educational background and professional experience. It was also necessary to clearly define their duties, provide them with access to suitable professional development throughout their careers, and recognize their critical role in enhancing student and school performance to build school leaders.

Concerning the Philippine context, DepEd Order No. 24 s. 2020, the Philippine Professional Standards for School Heads (PPSSH) are adopted and put into effect. The PPSSH aims to engage school heads in professional development, establish clear expectations for them at various career stages, and foster their learning and growth. Through domains, strands, and indicators that measure professional development, capable practice, and successful leadership, the standards define what constitutes quality school leadership. The standards explicitly outline the knowledge, skills, and values that school administrators should possess to enhance teacher quality and learner outcomes. School leaders may use the criteria as a public declaration of professional accountability to evaluate and reflect on their methods. The PPSSH will serve as the foundation for pertinent human resource systems, policies, and professional development initiatives, according to DepEd.

However, while discussing school effectiveness, Hardiansyah and Rasia's (2022) study identified three pillars: transparent management, community participation, and active, innovative, creative, effective, and enjoyable learning.

The Schools Division Office of Calamba City conducted its "TRAIN TO EXCEL: Transforming and Inspiring Exceptional Calamba Educational Leaders' Development Program" in response to the realities regarding school heads' competencies in terms of their professional standards and school performance through effective management, encompassing various factors. The program's objectives were to familiarize school heads with the provisions of Philippine Professional Standards for School Heads and to equip them with knowledge of pertinent laws and current issuances.

Due to the findings of earlier research and the actions taken, this study looked more closely at the significance of public elementary school heads' manifestation of Philippine Professional Standards as well as the "what" and "how" of school performance based on the results of the Quarterly Assessment and the School-Based Management Level of Practice in cluster 9 public elementary schools in the Division of Calamba City.

## **2.0 Methodology**

### **2.1 Research Design**

The descriptive-correlational research method was employed in this study. Yanzon et al. (2019) state that the primary goal of this project was to characterize the variables and the relationships that usually exist between them through a descriptive-correlational design. It was relevant to the current study because its primary goals were to characterize the degree to which school heads were exhibiting the Philippine Professional Standards and to investigate any potential connections between school performance and the outcomes of the Quarterly Assessment and the School Based Management Assessment. Additionally, the researcher chose this approach because it aligned with the study's goals and the other authors' perspectives on the descriptive method.

### **2.2 Research Participants**

Using G\*power and stratified random sampling, with a 95% confidence level and a 5% margin of error, 104 teacher-participants out of the 140 total teaching force in Cluster 9, Division of Calamba City, were the final number of participants. Additionally, five school heads from the same area participated as responders in this study. The total number of participants, including the school head, was 145 based on the available data handled by the researcher.

### **2.3 Research Instrument**

The researcher utilized the main instrument, which was an adapted questionnaire from the DepEd Order No. 24 s, 2020, entitled "National Adoption and Implementation of the Philippine Professional Standards for School Heads" to determine the level of manifestation of Philippine Professional Standards of the Cluster 9 public elementary school heads in the Division of Calamba City. The survey questionnaire was divided into five subscales with corresponding sets of query items: 7 items for leading strategically, 6 for managing school operations and resources, 8 for focusing on teaching and learning, 8 for developing self and others, and 5 for building connections; and which will be then quantified in a four (4)-point responses of Likert scale such as 1 = strongly disagree, 2=disagree, 3= agree, and 4 strongly agree. The results of these were computed by calculating the weighted mean of each indicator and averaging to obtain the general assessment, thereby providing an overall perception of the level of manifestation of Philippine Professional Standards for School Heads, which was then translated into their Verbal and Descriptive Equivalents. Furthermore, the Quarterly Assessment Results and the School-Based Management Level of Practice, as documented in the school records, were considered in determining their relationship to the level of manifestation of Philippine Professional Standards among school heads.

### **2.4 Data Gathering Procedure and Analysis**

Upon approval, the endorsement letter was handed personally to the principal to initiate data-gathering procedures through Google Forms and hard copies, as well as to ensure adherence to the ethical considerations outlined in the letter. Throughout the process, assistance from the advisers was requested for efficient data collection. The data in this study were processed using the Statistical Package for the Social Sciences (SPSS). First, a weighted mean was used to assess how well the five categories of the Philippine Professional Standards – strategic leadership, teaching and learning, fostering relationships, overseeing school operations, and the development of school heads themselves and others – were being manifested. Additionally, the T-Test was used to identify any significant differences between the responses provided by the respondents (teachers and school

leaders) to the Philippine Professional Standards. Lastly, the Pearson Product-Moment Correlation Coefficient (Pearson  $r$ ) was used to determine whether the Philippine Professional Standards for School Heads' manifestation level and school performance, including quarterly assessment results and SBM ratings, were significantly correlated.

## 2.5 Ethical Considerations

At every step of the research procedure, the researcher ensured that the ethical guidelines established by the LCBA Research Ethics and Integrity Council (LCBA-REIC) were followed correctly. This satisfied the LCBA research manual's requirements, which included conducting the study strictly in line with the submitted proposal, submitting it to an anti-plagiarism checker meeting the 20% similarity index, and closely adhering to the paper's ethical guidelines. Teachers and school administrators received a thorough explanation of the inquest's goals. The letter informed teachers and school administrators of the duty they would be performing to ensure the study's success. Additionally, it was made clear that people would not be required to participate in the poll, mainly if it were done against their choice. To protect the respondents' identities and ensure the confidentiality of the material, the gathered questionnaires were handled appropriately. Similarly, this study acknowledged and cited the efforts of several bodies.

## 3.0 Results and Discussion

### 3.1 Level of Manifestation of the Philippine Professional Standards (PPSSH) Among School Heads

#### *In terms of Leading Strategically*

Leading Strategically was Highly Manifested (3.67) in terms of the level of manifestation of the Philippine Professional Standards (PPSSH) among school heads, as assessed by both teachers and school heads in Cluster 9 public elementary schools in the Division of Calamba City (see Table 1). All indicators were verbally interpreted as Highly Manifested. The indicators "The school head communicates the DepEd vision, mission, and core values to the wider school community to ensure shared understanding and alignment of school policies, programs, projects, and activities." and "The school head implements programs in the school that support the development of learners." yielded the highest mean score of 3.81. On the other hand, the indicator "The school head utilizes relevant research findings from reliable sources in facilitating data-driven and evidence-based innovations to improve school performance." received the lowest mean score of 3.45.

**Table 1.** *Level of Manifestation of the Philippine Professional Standards (PPSSH) Among School Heads in terms of Leading Strategically*

Indicators	School Heads		Teachers		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
The school head:						
1. Communicates the DepEd vision, mission, and core values to the broader school community to ensure shared understanding and alignment of school policies, programs, projects, and activities.	4.00	HM	3.61	HM	3.81	HM
2. Develop and implement school plans in collaboration with the planning team that aligns with institutional goals and policies.	3.80	HM	3.51	HM	3.66	HM
3. undertakes policy implementation and review in the school to ensure that operations are consistent with national and local laws, regulations, and issuances.	3.60	HM	3.47	HM	3.54	HM
4. Utilizes relevant research findings from reliable sources to facilitate data-driven and evidence-based innovations that improve school performance.	3.40	HM	3.49	HM	3.45	HM
5. Implement programs in the school that support the development of learners.	4.00	HM	3.62	HM	3.81	HM
6. Utilizes learner voice, such as feelings, views, and/or opinions, to inform policy development and decision-making for school improvement.	4.00	HM	3.51	HM	3.76	HM
7. Utilizes available monitoring and evaluation processes and tools to promote learner achievement.	3.80	HM	3.56	HM	3.68	HM
<b>General Composite Assessment</b>	<b>3.80</b>	<b>HM</b>	<b>3.54</b>	<b>HM</b>	<b>3.67</b>	<b>HM</b>

Note: 3.25 - 4.00 Highly Manifested (HM), 2.50 - 3.24 Manifested (M), 1.75 - 2.49 Slightly Manifested (MM) , 1.00 - 1.74 Not Manifested (NM)

It suggests that school heads have a thorough understanding of DepEd's vision, mission, and fundamental principles and can translate them into goals for their programs, projects, and activities. The students are the most

significant stakeholders in the school community, but they also contribute to all instructors, parents, barangay authorities, community partners, private individuals and businesses, and non-governmental organizations. On the other hand, every school is more equipped to do research, which will serve as a platform for sharing and showcasing best practices to everyone. Enhance the school's performance and the ability of all instructors to identify potential solutions to issues. The Basic Education Research Fund (BERF), established by the Department of Education (DepEd), is available to anyone working on various topics, including governance, teaching and learning, disaster management, partnerships, and more. The special education fund also funds division-wide research initiatives.

According to studies by Özdemir et al. (2020) and Iskak and Pa-alisbo (2019), school leaders faced numerous obstacles in cultivating their professional leadership skills in the twenty-first century. Principals of schools were under constant pressure to exercise a particular style of leadership. They were now responsible for raising generations and preparing them for a rapidly evolving world, rather than just implementing educational programs and goals. No leadership philosophies or tactics were found to be more successful than others. The learning environment, the administrators' personalities, their training and experience, the social and economic background, technology, and other elements all had a role. Lastly, there were professional and technical skills, also referred to as "technical skills," which encompassed skills related to the administrative field. Most of the managerial abilities required by school administrators were classified as "conceptual skills." In contrast, another skill that involved interpersonal relationships was referred to as "human relations skills" in the literature.

### *In terms of Focusing on Teaching and Learning*

Focusing on Teaching and Learning was Highly Manifested (3.72) in terms of the level of manifestation of the Philippine Professional Standards for School Heads (PPSSH) among school heads, as assessed by both teachers and school heads in Cluster 9 public elementary schools in the Division of Calamba City (Table 2). All indicators were verbally interpreted as Highly Manifested. The indicators "utilizes learning outcomes in developing data-based interventions to maintain learner achievement and attain other performance indicators." and "The school head provides technical assistance to teachers in using learning assessment tools, strategies and results consistent with curriculum requirements to ensure accountability in achieving higher learning outcomes." had the highest mean score of 3.77. Meanwhile, the indicator "The school head ensures integration of career awareness and opportunities in the provision of learning experiences aligned with the curriculum." had the lowest mean score of 3.58.

**Table 2.** *Level of Manifestation of the Philippine Professional Standards (PPSSH) Among School Heads in terms of Focusing on Teaching and Learning*

Indicators	School Heads		Teachers		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
The school head:						
1. Assists teachers in reviewing, contextualizing, and implementing learning standards to make the curriculum relevant for learners.	4.00	HM	3.48	HM	3.74	HM
2. Provide technical assistance to teachers on teaching standards and pedagogies within and across learning areas to improve their teaching practice.	4.00	HM	3.51	HM	3.76	HM
3. uses validated feedback obtained from learners, parents, and other stakeholders to help teachers improve their performance.	4.00	HM	3.51	HM	3.76	HM
4. Utilizes learning outcomes in developing data-driven interventions to maintain learner achievement and achieve other performance indicators.	4.00	HM	3.53	HM	3.77	HM
5. Provides technical assistance to teachers in using learning assessment tools, strategies, and results that are consistent with curriculum requirements, ensuring accountability in achieving higher learning outcomes.	4.00	HM	3.54	HM	3.77	HM
6. Manages a learner-friendly, inclusive, and healthy learning environment.	3.80	HM	3.51	HM	3.66	HM
7. Ensures the integration of career awareness and opportunities within the provision of learning experiences aligned with the curriculum.	3.60	HM	3.55	HM	3.58	HM
8. Implement learner discipline policies that are developed in collaboration with stakeholders, including parents, school personnel, and the broader community.	3.80	HM	3.59	HM	3.70	HM

<b>General Composite Assessment</b>	<b>3.90</b>	<b>HM</b>	<b>3.53</b>	<b>HM</b>	<b>3.72</b>	<b>HM</b>
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Note: 3.25 - 4.00 Highly Manifested (HM), 2.50 - 3.24 Manifested (M), 1.75 - 2.49 Slightly Manifested (MM) , 1.00 - 1.74 Not Manifested (NM)

It implies that the heads of the schools are very skilled in overseeing various aspects of the classroom, providing feedback, and supporting educators. They understand that data-driven interventions are necessary to meet the Department of Education's performance indicators and to utilize the learning environment effectively. The provision of technical assistance by the school head is crucial for teachers to maintain the school's reputation in terms of teaching and learning progress. However, the indicator with the lowest mean was how school heads integrated career awareness and opportunities into curriculum-aligned learning experiences. The Department helps school heads strengthen their capacity to support career advancement through interventions at the Central to Division level. Using the School Learning Action Cell, they can assist in contextualizing their support to meet their requirements and align with the existing curriculum.

According to a study by Susanti et al. (2020), a correlation coefficient of 99.4% was found, indicating that principals' academic supervision had a favorable and significant impact on the quality of instruction provided by teachers. With a correlation coefficient of 92.5%, school culture was also found to have a favorable and significant impact on the quality of teacher instruction, and with a correlation coefficient of 99.4% and a determinant coefficient of 98.8%, academic supervision, and school culture together had a very high impact on the quality of teacher instruction. The study concluded that raising the standard of instruction required both academic supervision and the creation of a positive school climate. The findings of this groundbreaking study by Avnet et al. (2019) have had a significant impact on educational policy, practices, and the development of creative classroom teaching techniques. However, it was crucial to keep in mind that parents, teachers, and schools were often held accountable for pupils' education and future performance. Empirical research has consistently shown a positive correlation between parental involvement in schools and academic achievement. Furthermore, studies have shown that this type of interaction enhances children's self-esteem, academic performance, school attendance, and retention (Lara & Saracostti, 2019).

### ***In terms of Building Connections***

Building Connections was Highly Manifested (3.69) in terms of the level of school heads' manifestation of the Philippine Professional Standard for School Heads (PPSSH), as assessed by school heads and teachers. All indicators were verbally interpreted as Highly Manifested (Table 3). The indicator "The school heads exhibit inclusive practices, such as the gender and development program and physical and mental health awareness, with cultural responsiveness to foster awareness, acceptance, and respect," received the highest mean score of 3.77. However, the indicator "The school head initiates partnerships with the community, such as parents, alumni, authorities, industries, and other stakeholders, to strengthen support for learner development, as well as school and community improvement" received the lowest mean response of 3.47.

**Table 3.** *Level of Manifestation of the Philippine Professional Standards (PPSSH) Among School Heads in terms of Building Connections*

Indicators	School Heads		Teachers		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
The school head:						
1. Build constructive relationships with authorities, colleagues, parents, and other stakeholders to foster an enabling and supportive environment for learners.	4.00	HM	3.51	HM	3.76	HM
2. Manages school organizations, such as learner organizations, faculty clubs, and parent-teacher associations, by applying relevant policies and guidelines to support the attainment of institutional goals.	4.00	HM	3.47	HM	3.74	HM
3. Exhibits inclusive practices, such as gender sensitivity, awareness of physical and mental health, and cultural responsiveness, to foster awareness, acceptance, and respect.	4.00	HM	3.54	HM	3.77	HM
4. Communicates effectively in speaking and in writing to teachers, learners, parents, and other stakeholders through positive use of communication platforms to facilitate information sharing, collaboration, and support.	4.00	HM	3.44	HM	3.72	HM

5. Initiates partnerships with the community, including parents, alumni, authorities, industries, and other stakeholders, to strengthen support for learner development and school and community improvement.	3.40	HM	3.54	HM	3.47	HM
<b>General Composite Assessment</b>	<b>3.88</b>	<b>HM</b>	<b>3.50</b>	<b>HM</b>	<b>3.69</b>	<b>HM</b>

It suggests that the school administrators in Calamba City's Cluster 9 Division are qualified to establish relationships with educators, students, parents, and other stakeholders. To promote understanding, acceptance, and respect, school leaders who demonstrate inclusive practices, including gender sensitivity, awareness of physical and mental health, and cultural responsiveness, have the highest mean. Sensitivity and gender awareness are appropriately displayed. The significance of demonstrating knowledge and inclusion to everyone entails school administrators' responsiveness to cultural shifts and indifferences. Even though a person or instructor should have differences, respect allows for equal opportunity.

The indicator with the lowest mean, on the other hand, is that school heads use communication platforms to promote information sharing, teamwork, and support by communicating effectively both in writing and speaking to teachers, students, parents, and other stakeholders. Open and transparent communication is essential for school administrators. By communicating clearly and transparently, educators, students, parents, and other stakeholders can establish a positive and open communication environment that fosters understanding and trust. The highest mean suggested that school administrators regularly share helpful information. By keeping everyone updated on significant announcements, activities, and changes at the school, regular communication fosters a sense of inclusion and involvement. The school administration warmly welcomes stakeholder feedback. By establishing feedback channels, school administrators can communicate in both directions, comprehend the issues and viewpoints of the school community, and make well-informed decisions. Establishing feedback channels allows school administrators to communicate in both directions, comprehend the issues and viewpoints of the school community, and make well-informed decisions.

The study by Barredo (2023) found that various educational outcomes were associated with the leadership attributes of school administrators, as they were considered essential for flourishing in the classroom and fostering a positive learning environment. Participating in professional development programs is essential for principals to understand the importance of assisting their staff in realizing their full potential. The Department of Education (DepEd) strongly emphasizes professional development opportunities for school administrators and lifelong learning to ensure that children receive an excellent education.

#### ***In terms of Managing School Operations and Resources***

Managing School Operations and Resources was Highly Manifested (3.68) in terms of the level of school heads' manifestation of PPSSH, as assessed by both teachers and school heads themselves. All the indicators were verbally interpreted as Highly Manifested (Table 4). The indicator "The school head manages staffing, including teaching load distribution and grade level and subject area assignment, in adherence to laws, policies, guidelines, and issuances, based on the school's needs" yielded the highest mean score of 3.76. On the other hand, the indicator "The school head manages school data and information using technology, including ICT, to ensure efficient and effective school operations." received the lowest mean score of 3.57.

**Table 4.** *Level of Manifestation of the Philippine Professional Standards (PPSSH) Among School Heads in terms of Managing School Operations and Resources*

Indicators	School Heads		Teachers		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
The school head:						
1. Manages school data and information using technology, including ICT, to ensure efficient and effective school operations.	3.60	HM	3.54	HM	3.57	HM
2. Manages finances, adhering to policies, guidelines, and issuances related to allocation, procurement, disbursement, and liquidation, aligning with the school plan.	4.00	HM	3.36	HM	3.68	HM
3. Manages school facilities and equipment in adherence to policies, guidelines, and issuances on acquisition,	3.80	HM	3.51	HM	3.66	HM

recording, utilization, repair and maintenance, storage, and disposal.

4. Manage staffing, including teaching load distribution and grade level and subject area assignments, in accordance with laws, policies, guidelines, and issuances that address the school's needs.	4.00	HM	3.51	HM	3.76	HM
5. Manages school safety for disaster preparedness, mitigation, and resiliency to ensure continuous delivery of instruction.	3.80	HM	3.55	HM	3.68	HM
6. Manages emerging opportunities and challenges to encourage equality and equity in addressing the needs of learners, school personnel, and other stakeholders	3.80	HM	3.59	HM	3.70	HM
<b>General Composite Assessment</b>	<b>3.83</b>	<b>HM</b>	<b>3.51</b>	<b>HM</b>	<b>3.68</b>	<b>HM</b>

The observation implies that the school heads of Calamba City Cluster 9 Division possess exceptional managerial skills, as seen by their ability to assign teaching loads per subject and grade level while adhering to relevant laws, regulations, guidelines, and directives. A vital component of effective school leadership is adhering to legislation, regulations, rules, and directives while tailoring these practices to meet the school's specific requirements. This ability demonstrates a commitment to creating a clean and effective learning environment that complies with educational laws and meets the needs of the school community. An efficient way to handle teaching assignments benefits the school by ensuring that teachers are assigned appropriately, which in turn allows for a balanced workload and the optimal use of staff members.

On the other hand, the school lacks the necessary technology infrastructure, like dependable internet access and modern hardware and software. Insufficient technological resources may have impeded the effective use of ICT for school data management. Worries about privacy and data security may have hindered the adoption of data management technology. Should the principal of the school have been concerned about the security of sensitive data, they might not have rushed to implement ICT solutions. The absence of a comprehensive plan for incorporating technology into data management procedures may be the cause of a lower mean. A well-thought-out plan is needed to guarantee a seamless and effective transition to technology-driven procedures.

Garret's (2021) study employed a mixed-methods action research approach to investigate strategies for enhancing the self-efficacy of international school heads about school governance. The study found that participants' perceived self-efficacy could be increased by a virtual community of practice that utilized specific case studies. Through the pipeline of school administrators and leaders, many ISHs advanced quickly. As a result, people often struggle to fulfill their new responsibilities and tasks as executive leaders. They might have struggled to meet the demands of their government. Many found it challenging to maintain their executive role for multiple contracts. Speaking about the problem, several ISO school leaders attributed it to inadequate executive leadership training in the workplace. Most leaders of ISO schools were trained.

Information and communication technology (ICT) has grown in significance in education in the twenty-first century, as demonstrated by Wannapiroon et al. (2022). This shift led to the emergence of numerous new learning models, including blended learning and the flipped classroom. With these innovative approaches, students took charge of their education, allowing them to choose when and how to engage with the content. As a result, in-person instructors could focus on guiding students through problem-solving exercises and answering specific questions and concerns about the subject matter. Consequently, the teacher's function in these digitally enabled settings evolved to become that of a "knowledge facilitator" (KF).

#### ***In terms of Developing Self and Others***

Developing Self and Others was Highly Manifested (3.69) in terms of the level of manifestation of the Philippine Professional Standards (PPSSH) among school heads, as assessed by both teachers and school heads in Cluster 9 public elementary schools in the Division of Calamba City (Table 5). All indicators were verbally interpreted as Highly Manifested. The indicator "The school head implements professional development initiatives to enhance strengths and address performance gaps among school personnel." yielded the highest mean score of 3.77. However, the indicator "The school heads implement laws, policies, guidelines, and issuances on the rights, privileges, and benefits of school personnel to ensure their general welfare" received the lowest mean of 3.54.



**Table 5.** *Level of Manifestation of the Philippine Professional Standards (PPSSH) Among School Heads in terms of Developing Self and Others*

Indicators	School Heads		Teachers		Composite	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
The school head:						
1. sets personal and professional development goals based on self-assessment aligned with the Philippine Professional Standards for School Heads.	3.80	HM	3.59	HM	3.70	HM
2. applies professional reflection and learning to improve one's practice.	3.80	HM	3.56	HM	3.68	HM
3. participates in professional networks to upgrade knowledge and skills and to enhance practice.	4.00	HM	3.49	HM	3.75	HM
4. implements the performance management system with a team to support the career advancement of school personnel, and to improve office performance.	4.00	HM	3.52	HM	3.76	HM
5. implements professional development initiatives to enhance strengths and address performance gaps among school personnel.	4.00	HM	3.54	HM	3.77	HM
6. provides opportunities to individuals and teams in performing leadership roles and responsibilities.	3.80	HM	3.52	HM	3.66	HM
7. implements laws, policies, guidelines and issuances on the rights, privileges, and benefits of school personnel to ensure their general welfare.	3.60	HM	3.47	HM	3.54	HM
8. implements a school rewards system to recognize and motivate learners, school personnel and other stakeholders for exemplary performance and/or continued support.	3.80	HM	3.54	HM	3.67	HM
<b>General Composite Assessment</b>	<b>3.85</b>	<b>HM</b>	<b>3.53</b>	<b>HM</b>	<b>3.69</b>	<b>HM</b>

It suggests that school heads in Calamba City's Cluster 9 Division are strategically implementing professional development programs, which serve as a transformative force in educational institutions. School leaders enable teachers to thrive in their roles by emphasizing strengths, addressing performance gaps, and fostering a culture of ongoing professional development. A dedication to data-driven decision-making, tailored strategies, resource allocation, cooperation, leadership by example, feedback mechanisms, and recognition all help to raise the bar for education and support the overall growth of school staff. Utilizing these endeavors, school administrators play a crucial role in shaping the course of instruction, fostering excellence, and equipping instructors and learners for success. Principals become essential designers of constructive transformation in schools.

On the contrary, the role of school heads in implementing laws, policies, guidelines, and issuances on the rights, privileges, and benefits of school personnel is foundational to the success and well-being of the entire educational community. Their diverse duties include adhering to the law, implementing fair policies, promoting professional growth, ensuring health and wellbeing, providing just compensation, and fostering a supportive school environment. Through their tireless efforts, school administrators safeguard the rights and well-being of their staff members, fostering an environment in which teachers can thrive and make meaningful contributions to the noble goal of education. An atmosphere where educators can thrive is created by their commitment to upholding the law, implementing fair policies, promoting professional development, prioritizing health and well-being, ensuring just compensation, and fostering a healthy school culture. School leaders play a vital role in the noble endeavor of education by protecting the rights and well-being of their staff members and making sure that they can flourish and make meaningful contributions to the group's quest for knowledge and enlightenment.

From Nindie (2022) and Crispin et al. (2022), educational institutions must broaden their knowledge and promote innovative thinking, considering scientific and technological advancements to produce graduates of the highest caliber. In the era of globalization, schools were expected to perform at a high standard, demonstrate leadership qualities, and represent a diverse range of viewpoints. Specifically, the performance of a school was greatly influenced by its principal, a role that required both technical proficiency and an innovative mindset. Education was once thought of as a program that shapes and prepares for the future of human development. It was crucial to the advancement of civilized human development within the context of community development. Moreover, effective school management and the development of a cohesive educational community—which includes



parents, teachers, students, general services, and the broader society – require a range of specialized skills and competencies. These demands involved complex cognitive processes, including relationships, leadership, knowledge, pedagogical procedures, and the handling of technological, legal, and financial considerations. These elements influenced how educational institutions function. Experts in the field disagreed on how to interpret the complicated concept of school management.

### 3.2 Difference Between the Assessment of the Teachers and the School Heads

As shown in Table 6, there is a significant difference in the assessment of teachers and school heads regarding the level of manifestation of the Philippine Professional Standards (PPSSH) among school heads in Cluster 9 public elementary schools in the Division of Calamba City. The probability values of 0.033, 0.007, 0.001, 0.044, and 0.000, respectively, were all less than the level of significance at 0.05, thus rejecting the null hypothesis.

**Table 6.** *Test of Significant Difference Between the assessment of the teachers and of the school heads*

Variables	T-test	P value	Remarks	Decision
Leading Strategically	2.719	.033	Significant	Reject Ho
Managing School	3.728	.007	Significant	Reject Ho
Focusing	4.905	.001	Significant	Reject Ho
Developing Self	2.478	.044	Significant	Reject Ho
Building Connections	5.549	.000	Significant	Reject Ho

In the complex web of the educational environment, the viewpoints of teachers and school administrators meet and diverge, creating a dynamic interaction that influences the professional standards inside an organization. The rejection of the null hypothesis suggests that there are notable differences in the opinions of teachers and school administrators regarding the manifestation of professional standards and that these differences are unlikely the result of random variation. Due to the stark contrasts in the perspectives of school administrators and teachers regarding the implementation of the Philippine Professional Standards for School Heads (PPSSH), the educational environment faces both opportunities and challenges. Recognizing the significance of this distinction enables targeted interventions, collaborative initiatives, and a restructuring of leadership positions.

According to the results of Alvarez and Delavin's (2022) study, school heads were at Career Stage 3 for managing school operations and resources, but at Career Stage 2, which was their lowest domain for strategic leadership. This was a result of a lack of knowledge, tools, and strategies. Common deficiencies included a lack of forms and tools, a lack of efficiency strategies, and a lack of understanding of conventional practices. A guidebook for school heads that would address these issues by providing templates, strategies, and guidelines was proposed. Individual attitudes also played a role. Many school officials were reluctant to adopt new practices or regulations because they had become used to the status quo.

### 3.3 School Performance

#### *Quarterly Assessment using the MPS*

Quarterly Assessment garnered Did Not Meet Expectations (66.89) as to the school performance level in S.Y. 2022-2023 of Cluster 9 public elementary schools in the Division of Calamba City (Table 7). School E revealed the highest MPS which was 72.80 followed by School C which was 69.75 and School D which was 67.18. School B yielded the lowest MPS which was 61.75. All schools did not meet the expectations based on the School Monitoring, Evaluation, and Adjustment (SMEA) system.

**Table 7.** *School Performance in terms of Quarterly Assessment using the MPS*

Schools	First	Second	Third	Fourth	Overall	Interpretation
School A	59.33	64.57	61.98	66.00	62.97	Did Not Meet the Expectations
School B	57.96	61.21	63.07	64.76	61.75	Did Not Meet the Expectations
School C	68.73	68.15	69.37	72.74	69.75	Did Not Meet the Expectations
School D	61.20	65.81	69.28	72.44	67.18	Did Not Meet the Expectations
School E	70.01	70.66	73.19	77.32	72.80	Did Not Meet the Expectations
<b>Overall Result</b>					<b>66.89</b>	<b>Did Not Meet the Expectations</b>

**Note:** 90 - 100 Outstanding, 85 - 89 Very Satisfactory, 80 - 84 Satisfactory, 75 - 79 Fairly Satisfactory, 74 and Below Did Not Meet the Expectations

As a call to action rather than a declaration of failure, this suggests that all schools have fallen short of the standards set by the School Monitoring, Evaluation, and Adjustment (SMEA) system. Schools can realign their

practices with the requirements of the SMEA system by comprehending the complex issues, resolving resource limitations, giving capacity building priority, improving community engagement, and embracing continuous improvement. Collaboration, flexibility, and a common dedication to delivering high-quality education to all students – regardless of their socioeconomic backgrounds or geographic locations – are necessary for this path to excellence. Developing focused improvement initiatives requires an understanding of the complex interactions between these components.

To aid in the modernization and enhancement of the Department of Education's (DepEd) School Monitoring, Evaluation, and Adjustment (SMEA) System, an evaluation of its implementation was conducted, according to Paragoso and Barazon Jr. (2019). It was determined that the most crucial prerequisite was for indicators to consider each school's unique setting and surroundings. Among the recommendations were accepting accountability for the metrics and developing a sense of dedication. A systems approach was also proposed, using popular educational systems like Monitoring and Evaluation Systems, Results-Based Performance Management Systems, and School Improvement Planning. The study's findings may help with school management, policy improvement, and DepEd system development.

### ***School-Based Management Level of Practice***

Schools B and E were classified as Advanced, indicating a high level of performance and maturity in School-Based Management while schools A, C, and D fall under the Maturing category. Table 8 presents the performance assessment of five schools based on two main components: Performance Improvement (60%) and SBM Assessment Score-DOD (Department of Education) (40%). The Overall SBM (School-Based Management) score was computed by combining these two components.

**Table 8. School Performance in terms of School-Based Management Level of Practice**

Schools	Performance Improvement (60%)	SBM Assessment Score-DOD (40%)	Overall SBM	Interpretation
School A	2.55	1.54	2.14	Maturing
School B	2.70	2.25	2.52	Advanced
School C	1.73	2.65	2.09	Maturing
School D	1.73	2.26	1.94	Maturing
School E	2.63	2.91	2.74	Advanced

**Note:** 2.50 – 3.00 Level III (Advanced) 1.50 – 2.49 Level II (Maturing) 0.50 – 1.49 Level I (Developing)

It suggests that the classification into Advanced and Maturing categories underscores the dynamic nature of SBM and the importance of continuous improvement. Advanced schools focus on sustaining their high-performance standards while Maturing schools are encouraged to adopt a growth mindset, identifying specific areas for improvement and systematically addressing them. Schools B and E have been classified as Advanced, signifying a high level of performance and maturity in School-Based Management. This designation suggests that these schools have demonstrated excellence in both Performance Improvement and SBM Assessment Score-DOD components. Their practices and strategies can serve as benchmarks for other schools, showcasing effective implementation of SBM. Schools A, C, and D fall into the Maturing category, indicating progress in SBM implementation but with areas for development. This classification acknowledges their commitment to improvement and indicates that they are on a trajectory to advance in the SBM framework. These schools may benefit from targeted support, capacity-building initiatives, and the sharing of best practices to accelerate their maturity within the SBM system.

Ballarta et al. (2022) sought to determine the extent to which a sample of public elementary schools from each of the seven school divisions in the DepEd MIMAROPA region were using the school-based Management Framework by 2022. School-Based Management (SBM) themes such as Curriculum and Learning, Accountability and Continuous Improvement, Leadership and Governance, and Resource Management were seen as well-established mechanisms that exhibited ACCEs. Except for financial sources, location, and geographic location, the degree of school-based management practice in terms of curriculum, learning, leadership, and governance was strongly correlated with the school's profile.

### 3.4 Relationship Between Philippine Professional Standards Level and School Performance

The cluster 9 performance level of schools and the extent to which school heads follow the Philippine Professional Standards were significantly correlated (Table 9). Some of the important relationships that have been shown include Focusing on Teaching and Learning and Improvement and Overall SBM; Managing School Operations and 1st Quarter MPS; Managing School Operations and 2nd Quarter MPS; Managing School Operations and SBM Performance; and Building Connections and 1st Quarter MPS, 2nd Quarter MPS and Building Connections and Overall Assessment. The null hypothesis was rejected since the probability values for these correlations were less than the significance level of 0.05, specifically .006, .004, .005, .000, .004, .002, .040, .047, .000, .025, .031, and .001, respectively.

Developing Self and Others and Quarterly MPS, Focusing on Teaching and Quarterly MPS, Managing School Operations and Third Quarter MPS, Managing School Operations and Fourth Quarter MPS, Building Connections and First Quarter MPS, Building Connections and Third and Fourth Quarter MPS, and Building Connections and Assessment Scores, however, did not significantly correlate with Leading Strategically and Quarterly MPS. The variables' probability value exceeded the significance level at .05. In the global public education system, the emphasis on school administration has moved from centralized to decentralized approaches, mainly due to modern management practices in commercial and industrial organizations, claims Martin (2019). Dissatisfaction with centralized education systems has led to the emergence of several school reform efforts aimed at improving the effectiveness, equity, and quality of education. Several analysts considered one of the most significant developments in the current restructuring of educational institutions to be the implementation of School-Based Management (SBM), which shifted decision-making power from the federal level to the school level. Ultimately, they oversaw the school's overall performance and success.

**Table 9.** Test of Significant Relationship Between Philippine Professional Standards Level and School Performance

PPST	School Performance	r value	p-value	Remarks	Decision
Leading Strategically	1st Q MPS	.151	.070	Not Significant	Accept Ho
	2 <sup>nd</sup> Q MPS	.146	.079	Not Significant	Accept Ho
	3 <sup>rd</sup> Q MPS	.047	.571	Not Significant	Accept Ho
	4 <sup>th</sup> Q MPS	-.014	.865	Not Significant	Accept Ho
	Overall SBM	.228**	.006	Significant	Reject Ho
Managing School	1st Q MPS	.237**	.004	Significant	Reject Ho
	2 <sup>nd</sup> Q MPS	.232**	.005	Significant	Reject Ho
	3 <sup>rd</sup> Q MPS	.114	.172	Not Significant	Accept Ho
	4 <sup>th</sup> Q MPS	.046	.581	Not Significant	Accept Ho
	Overall SBM	.301**	.000	Significant	Reject Ho
Focusing on teaching and learning	1st Q MPS	.139	.094	Not Significant	Accept Ho
	2 <sup>nd</sup> Q MPS	.134	.107	Not Significant	Accept Ho
	3 <sup>rd</sup> Q MPS	.025	.765	Not Significant	Accept Ho
	4 <sup>th</sup> Q MPS	-.046	.580	Not Significant	Accept Ho
	Overall SBM	.251**	.002	Significant	Reject Ho
Developing self and others	1st Q MPS	.171*	.040	Significant	Reject Ho
	2 <sup>nd</sup> Q MPS	.165*	.047	Significant	Reject Ho
	3 <sup>rd</sup> Q MPS	.032	.699	Not Significant	Accept Ho
	4 <sup>th</sup> Q MPS	-.049	.561	Not Significant	Accept Ho
	Overall SBM	.304**	.000	Significant	Reject Ho
Building Connections	1st Q MPS	.186*	.025	Significant	Reject Ho
	2 <sup>nd</sup> Q MPS	.180*	.031	Significant	Reject Ho
	3 <sup>rd</sup> Q MPS	.056	.500	Not Significant	Accept Ho
	4 <sup>th</sup> Q MPS	-.027	.747	Not Significant	Accept Ho
	Overall SBM	.283**	.001	Significant	Reject Ho

### 4.0 Conclusion

Based on the data gathered and discussed, the following conclusions were drawn: (a) activities, programs, and initiatives are being carefully planned and implemented by school leaders in accordance with the DepEd's vision, mission, and core values. In order to promote awareness, acceptance, and respect through inclusive practices like gender sensitivity, physical and mental health awareness, and cultural responsiveness, as well as through effective

staff management and meeting the needs of students, school personnel, and other stakeholders through the use of emerging opportunities and challenges based on the needs of the school, they use learning outcomes to develop data-based interventions and have strong relationships with parents, colleagues, authorities, and other stakeholders. They consistently improved their knowledge and abilities to benefit both teaching and non-teaching staff members, promoting their personal and professional growth, (b) the substantial disparities in the evaluations of the two groups – teachers and school administrators – can be linked to the distinct nature of their jobs in terms of their accountability duties and obligations. To foster cooperation, share knowledge, and facilitate effective decision-making in schools, it is essential to acknowledge and address differing viewpoints, (c) The data available for the Quarterly Assessment Results using the MPS and the School-Based Management Level of Practice revealed that the schools' performance varied, which can be attributed to several factors, including the school's location, resources, teachers, and students. When defining the school's performance and the factors influencing it through the intervention provided by the school heads, the school's size and population should also be considered, (d) The performance of schools is impacted by how well school heads implement the Philippine Professional Standards. The performance level of the Cluster 9 schools is positively impacted by the standards mentioned by the school heads, (e) The researcher's proposed development program, "Honing Engagement and Activating Diversified Strategies for School Heads," will enable school heads to better adhere to the Philippine Professional Standards, ultimately improving the intended outcomes for both teacher and student performance. This program's goal is to create a thorough and all-encompassing learning environment that supports schools' success.

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# Flipped Classroom Approach in Teaching Science in Senior High School

**Abstract.** Teaching in today's classroom is a complex and challenging profession, in which the integration of technology is widely advocated to meet the demands of 21st-century learning. However, there is limited research on addressing complex topics such as Bioenergetics using the Flipped Classroom Approach. The study investigated (1) students' economic status, ICT background, and accessibility of ICT devices; (2) students' performance before and after the implementation of the Flipped Classroom Approach, specifically in the different content areas in Bioenergetics; (3) the statistical significance of the performance of the students between the flipped and traditional classroom approaches; and (4) students' and teacher's experiences in using the approach. A pretest-posttest quasi-experimental design was employed with 85 Grade 11 students from a public national high school, comprising two experimental groups: 25 students from ABM, 38 from HUMSS, and a control group of 22 students from GAS. A teacher-made test, aligned with Department of Education standards, was used to assess the student's performance. Statistical analysis using ANOVA confirmed that there was no assignment bias among the groups before treatment. Results showed that the student's performance was at the lower end of mastery before the implementation. After implementing the Flipped Classroom Approach, scores increased significantly, with students progressing toward mastery in all content areas. Statistical analysis confirmed that the experimental groups outperformed the control group, demonstrating the effectiveness of the approach. The qualitative data from the interviews and focus group discussions, using Braun and Clarke's thematic analysis, revealed that students' and teachers' experiences aligned with the four pillars of F-L-I-P learning: flexible learning, learning culture, intentional content, and professional educator. The study recommends integrating the flipped classroom approach into subjects with the least learned competencies, expanding student access to ICT devices to support digital learning, and establishing a school-wide Learning Management System for effective implementation.

**Keywords:** Bioenergetics; Earth and Life Science; Flipped classroom approach; F-L-I-P learning; Information and communications technology; Senior high school.

## 1.0 Introduction

Addressing learning gaps in science education remains a challenge, especially when dealing with complex topics in Science, such as Bioenergetics. The use of traditional methods, such as lecture-style approaches, tends to disengage students, resulting in minimal retention and understanding of the subject matter. This makes teaching in today's classroom a challenging profession. The teacher needs to possess a broad repertoire of skills and the ability to adapt to the changes brought about by technological advancements. According to the Partnership for 21st Century Skills (2019), people live in a generation and media-driven environment with rapid advancements in technological equipment. Hence, teachers should re-equip themselves with current trends in teaching, such as the integration of technology to meet the demands of 21st-century learning, which involves the use of the Flipped Classroom Approach (FCA) to improve students' learning.

The Flipped Classroom Approach (FCA) is a growing movement in both K-12 and higher education that prompts educators to rethink how to utilize valuable class time with learners. A flipped classroom is a pedagogical model in which lectures are provided to students for access outside of the classroom. At the same time, class time is dedicated to scaffolding, skill development, and collaborative sessions (Bok Center for Teaching and Learning, 2024). This approach utilizes short video lectures, providing students with the flexibility to learn at their own pace. Class time is dedicated to interactive discussions, exercises, and hands-on activities. According to Fields (2023), FCA benefits both slow and fast learners, as slower learners can pause and repeat instructional materials while fast learners can progress to advanced topics. In Japan, the use of the flipped classroom approach is emerging, which enhances students performance and improved learning environments (Zhang & Wang, 2022). However, despite its growing adoption, the studies on its effectiveness in the Philippine context remain limited.

The increasing availability of digital technology further justifies the integration of FCA into the curriculum. The Department of Education (DepEd) has issued revised guidelines to enhance the implementation of the



Computerization Program, which aims to equip public schools with suitable ICT devices to enrich the teaching and learning process (Department of Education, 2023). As of 2025, 64,816 laptops and smart TV packages worth Php. 1.913 billion will be delivered across 16 regions, aiming to address the 69.3% insufficient student-to-device ratio (Department of Education, 2025). These investments in the public school system demonstrate improvement in digital accessibility in education and highlight the potential of FCA in addressing learning gaps.

Furthermore, research on the use of the Flipped Classroom Approach is increasing exponentially, according to the Institute of Education Sciences (ERIC) database; however, more research on the Flipped Classroom Approach in local settings remains scarce. Existing studies have focused on the implementation of FCA in general education, but few have explored its effectiveness in teaching Bioenergetics. The study aims to fill this gap by investigating the effectiveness of FCA on students' performance in Bioenergetics, comparing it with the use of traditional classroom methods, and exploring the experiences of both students and teachers with the approach. The findings will contribute to the growing research on FCA, provide insights into its applicability in Philippine settings, and address the least-learned competencies in science subjects.

## **2.0 Methodology**

### **2.1 Research Design**

The study employed a pretest-posttest quasi-experimental design to assess the impact of the Flipped Classroom Approach (FCA) on student performance. In this design, two groups (HUMSS and ABM) were assigned as experimental groups, while one group (GAS) served as the control group. The assignment was based on their existing class sections. The experimental groups received instruction using the FCA, while the control group followed the traditional classroom approach. According to Thomas (2020), a quasi-experimental design is an approach often employed when randomization is impractical, aiming to minimize threats to internal validity by using non-random criteria for group assignments. In addition, it involves comparing scores from different groups or conditions and uses a non-manipulative variable to define the groups or conditions being compared. To complement the quantitative data, a phenomenological research design was used to explore students' and teacher's experiences with FCA. The data was collected through an interview and a Focus Group Discussion to unveil the commonality of experiences in this approach.

### **2.2 Research Participants**

The participants in the study were the Grade 11 students of a public national high school, specifically those in classes with a subject in Earth and Life Science during the first semester of the 2017-2018 school year. There were 25 students in Accountancy, Business, and Management (ABM), 38 students in Humanities and Social Sciences (HUMSS), and 22 students in the General Academic Strand (GAS), totaling 85 students.

### **2.3 Research Instrument**

This study utilized an adapted and modified questionnaire from the Erasmus+ Programme: "21st Century European Classroom: Meeting the Challenge of the Digital Era with Innovation and Creativity." The questionnaire was used to identify the profile of the respondents, including their economic status, ICT background, and accessibility of ICT devices. The questionnaire was modified by simplifying the language used, additional questions on digital literacy, and adjustments to fit the local educational context. To evaluate students' performance in various content areas of Bioenergetics, a 75-item multiple-choice test with one correct answer and three distractors, along with a Table of Specifications, was developed. The validity of the teacher-made test was established through expert review, ensuring alignment with the DepEd Learning Competencies. The teacher-made test was pilot-tested twice with Grade 12 students who had previously taken the Earth and Life Science subject. The teacher-made test underwent item analysis and option analysis during the first pilot testing, resulting in a reduction of the test items to 30 multiple-choice questions. The 30 multiple-choice items underwent reliability testing using Kuder and Richardson-20 after the second pilot testing. The KR-20 of the teacher-made test was 0.6, indicating a moderate internal consistency for a test. In exploring the experiences of students and teachers, interview and Focus Group Discussion guides were developed. Research experts validated the guides using content analysis to ensure relevance, clarity, and alignment with research objectives.



## 2.4 Data Gathering Procedure

This study used specific steps to collect data. First, permission was obtained from the Schools Division Superintendent and school administrators before the data collection. Before the intervention was implemented, the students completed the questionnaire and took the pre-test to establish baseline performance levels. The result of the pre-test was analyzed using ANOVA to determine if assignment bias existed across the groups before the application of the treatment. The ANOVA revealed that no assignment bias existed among groups ( $F(2,82)=2.07$ ,  $p>.01$ ).

In the implementation of the FCA, the experimental groups (ABM and HUMSS) received instruction through validated flipped classroom videos, instructional materials, and lesson exemplars developed by the researcher following the DepEd standards. The control group (GAS) received the traditional lectures and conventional assessments. After the implementation, all students took the post-test identical to the pre-test to measure the learning gains. A Focus Group Discussion (FGD) was conducted with nine students, purposively selected to represent diverse perspectives based on their performance levels and class engagement. The teacher was also interviewed about their experience with FCA.

In the analysis of data, the pre-test and post-test results were analyzed using paired-sample t-tests and ANOVA to assess the effectiveness of the FCA. Braun and Clarke's 6-Step Thematic Analysis was used to identify the themes that emerged from the transcribed and translated responses in the Focus Group Discussion and interview.

## 2.5 Ethical Considerations

Several potential ethical issues were considered in the conduct of the study. The researcher considered the consequences of the research for the participants as an important area of concern. The names of the schools and the respondents/participants remained anonymous, and the information gathered was confidential and stored securely. All participants were provided with written information about the research in advance, and signed contract forms were collected at the beginning of the FGD. All participants were informed of their rights to withdraw or refuse to participate at any stage of the research. Anonymity and confidentiality were assured to all participants since the researcher was fully aware of the Data Privacy Act of 2012. Approval was obtained from the Institutional Ethics Committee and school administration to ensure compliance with the ethical guidelines.

## 3.0 Results and Discussion

### 3.1 Students' Economic Status

The results (see Table 1) showed that the majority of the students in each strand have a family average monthly income between Php. 5,001.00 to Php. 10,000.00 (49.4%). According to the 2021 Family Income and Expenditure Survey (FIES) of the Philippine Statistics Authority (PSA) (2022), the survey revealed that the average annual family income of Filipino families was approximately Php. 307,190. Hence, if the annual family income of Filipino families were divided over 12 months, the average monthly income of every Filipino family is approximately Php 25,600 per month. Thus, the family average monthly income of the students in each strand was below the expectations set by the 2021 Family Income Expenditure Survey conducted by the Philippine Statistics Authority (PSA). In addition, the average family's monthly income will most likely be spent on necessities that they deem necessary, rather than purchasing gadgets or other ICT devices such as smartphones, tablets, and computers, which are considered ancillary needs for an average or below-average income-earning Filipino family.

**Table 1.** Frequency and percentage distribution of respondents in terms of economic status

Economic Status	Frequency	Percentage (%)
Below Php. 5,000.00	26	30.6
Php. 5,001.00 to Php. 10,000.00	42	49.4
Php. 10,001.00 to Php. 15,000.00	11	12.9
Php. 15,001.00 to Php. 20,000.00	4	4.8
Php. 20,001.00 to Php. 25,000.00	2	2.3
Above Php. 25,001.00	0	0.0
<b>Total</b>	<b>85</b>	<b>100.0</b>

### 3.2 ICT Background

The results (see Table 2) showed that, in terms of students' knowledge of different ICT activities, the majority were participating in various social networking sites (90.6%). In terms of searching online information, it revealed that

most of the students know about editing online text containing internet links and images (54.1%), can e-mail a file to someone (40.0%), and can participate in a discussion forum on the internet (41.2%). In comparison, only a few students know how to create and maintaining blogs or websites (16.5%), and create and/or edit a questionnaire or poll online (30.6%). In 2023, Filipinos spent an average of 3 hours and 34 minutes per day on social media platforms worldwide, ranking them as the top social media users globally (Statista, 2024). With the exponential increase of students' participation in social networking sites, teachers can use this in the implementation of the flipped classroom approach as a Learning Management System (LMS) and make the students' time spent on the internet productive, such as the use of blogs or forums, questionnaires or online forms, and use of emails.

**Table 2.** *Frequency and percentage distribution of respondents in terms of ICT Background*

ICT Background	Frequency	Percentage (%)
Produce text using a word processing program	55	64.7
Edit digital photographs or other images	53	62.4
Edit online text containing internet links and images	46	54.1
Create a database	19	22.4
Create and/or edit a questionnaire or poll online	26	30.6
Email a file to someone	34	40.0
Save electronic documents on the computer	44	51.8
Use a spreadsheet program	24	28.2
Create a multimedia presentation	47	55.3
Participate in discussion forums on the internet	35	41.2
Create and maintain blogs or websites	14	16.5
Install software	40	47.1
Participate in social networks	77	90.6
Judge the reliability of information found on the internet	41	48.2
Use the internet safely	77	90.6
Use information found on the internet without copying or pasting in homework/assignment	39	45.9
Protect yourself from spam, junk mail, and computer viruses	69	81.2

In terms of student's knowledge of the basic skills and operations of ICT devices, it revealed that most of the students know about producing text using a word processing program (64.7%), editing photographs or other images (62.4%), creating a multimedia presentation (55.3%), save electronic documents in computer (51.7%), install the software (47.1%). In comparison, only a few students know how to create a database (22.4%) and use a spreadsheet program (28.24%). In terms of using ICT devices as a tool for information searching, the majority of students know how to use the internet safely (90.6%) and protect themselves from spam, junk mail, and computer viruses (81.2%). In comparison, most students (48.2%) are aware of judging the reliability of information found on the internet, and 45.9% use the information found on the internet without copying or pasting it into homework or assignments. This implies that the student's background in basic skills and ICT device operations is limited. Hence, the teacher's assistance is a prerequisite for the implementation of the Flipped Classroom Approach, in which the use of ICT devices is important.

### 3.3 ICT Accessibility

The results (see Table 3) showed that, in terms of accessibility to ICT devices, the majority of students can access various devices outside school (100.0%) and at school (76.5%). Furthermore, it also revealed that the majority of students can access ICT devices, specifically at home (31.8%) and in internet cafés (45.9%). This implied that the majority of the students can access a wide variety of ICT devices outside school, specifically at home and in the internet cafés. The Philippine Statistics Authority (PSA, 2020) reported that 56.1% of households had internet access. This underscores the importance of internet cafes in providing internet access, as only a few households

can afford to own a computer and have an ISP subscription due to the cost. Therefore, the utilization of school resources, including the Computer Laboratory and Table PCs, has been employed to address the accessibility gap.

**Table 3.** Frequency and percentage distribution of respondents in terms of ICT Accessibility

ICT Background	Frequency	Percentage (%)
Outside School	85	100.0
At home	27	31.8
At a friend's home	9	10.6
At a family member's home	9	10.6
Business establishments	1	1.2
In the public library	0	0.0
Internet café	39	45.9
Internet at school	63	74.1
ICT devices at school	65	76.5

### 3.4 Students' mastery levels before and after the traditional and FC approach was used

The results (see Table 4) showed the students' mastery level before the traditional and flipped classroom approaches were used; they revealed that Sections A and B attained a low mastery in the topic of cell structure and function, with a mean score of 34.1 in Section A and 30.0 in Section B. In addition, Section C demonstrated an average mastery of the topic of cell structure and its organelles, with a mean score of 36.0. This indicates that students have not yet mastered the competencies related to cell structure and its function. Sections A, B, and C attained an average mastery of the topic of photosynthesis. Section A attained a mean score of 45.3, Section B a mean score of 44.0, and Section C a mean score of 45.6. This implied that all the sections were familiar with the topic of photosynthesis. Sections A, B, and C attained an average mastery of the topic of cellular respiration. Section A attained a mean score of 41.4, Section B a mean score of 39.2, and Section C a mean score of 48.0.

**Table 4.** Students mastery level before the traditional and flipped classroom approach was used

Section	Cells		Photosynthesis		Cellular Respiration	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
A	34.1	Low Mastery	45.3	Average Mastery	41.4	Average Mastery
B	30.0	Low Mastery	44.0	Average Mastery	39.2	Average Mastery
C	36.0	Average Mastery	45.6	Average Mastery	48.0	Average Mastery

This implies that all sections are familiar with the topic of cellular respiration. The various topics in bioenergetics were already covered in Integrated Science in both elementary and junior high school. In the K to 12 Science Curriculum Guide (2023), cell structure and function are emphasized in the Grade 7 Second Grading Period, while photosynthesis and cellular respiration are undertaken in the Grade 9 First Grading Period. Thus, the pre-test results revealed that the students had grasped the content of Bioenergetics to some extent. However, the topics under bioenergetics were considered not yet mastered by Science teachers due to their difficulty in teaching the topics.

The results (see Table 5) showed the students' mastery levels after the traditional and flipped classroom approaches were used; they revealed that Sections A, B, and C achieved an average mastery of the topic of cell structure and its function. Section A attained a mean score of 34.6, Section B 46.1%, and Section C with 58.0%. This indicated that students in Section A showed a slight improvement in the topic of cell structure and its function, while Sections B and C demonstrated significant improvement from a mean percentage in the pre-test, which was near the borderline between low mastery and average mastery. Sections A and B attained an average mastery in the topic of photosynthesis, with a mean score of 51.8% in Section A and 56.3% in Section B. Moreover, Section C demonstrated a significant improvement in the topic of photosynthesis, achieving a mean score of 65.6%.

**Table 5.** Students mastery level after the traditional and flipped classroom approach was used

Section	Cells		Photosynthesis		Cellular Respiration	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
A	34.6	Average Mastery	51.8	Average Mastery	39.6	Average Mastery
B	46.1	Average Mastery	56.3	Average Mastery	53.7	Average Mastery
C	58.0	Average Mastery	65.6	Moving Towards Mastery	59.2	Average Mastery

This implied that Sections A and B showed improvement based on the mean scores in the pre-test and post-test, while Section C demonstrated the most significant improvement. Sections A, B, and C attained an average mastery of the topic of cellular respiration. The Section A attained a mean score of 39.6%, Section B a mean score of 53.7%, and Section C a mean score of 59.2%. This indicated that students in Section A showed slight improvement in the topic of cellular respiration, while Sections B and C demonstrated significant improvement from a mean percentage in the pre-test, which was near the borderline between low mastery and average mastery. Thus, students who underwent the flipped classroom approach showed significant improvement and grasped the content and competencies in Bioenergetics under the Earth and Life Science class more effectively than before.

In the Earth and Life Science Curriculum Guide (2016), the topics under bioenergetics are emphasized in the Second Quarter with a learning code of S11/12LT-IIbd-4-8. The learning codes were emphasized in the making of the materials, lesson plans, and video materials to establish coherence in the curriculum guide. On the other hand, the interpretation of mean scores and mean percentages in both the pre-test and post-test, in which the majority of students attained average mastery. This was due to the disparity in the range of percentages in the Seven-Descriptive Equivalent of Mastery Level of DepEd-NETRC, which was used in data analysis and interpretation. With these varied and rich experiences and learnings shared by the students after the flipped classroom approach was implemented, it implied that the students were able to grasp important concepts and come up with realizations in the topic of bioenergetics.

### 3.5 Significant differences before and after the traditional and FC approach was used

The results (see Table 6) showed the students' performance before and after the traditional classroom approach was implemented in Section A. The computed  $t$ -value of 0.40 was less than the  $t$ -critical value of 2.52 at a 0.01 level of significance with 21 degrees of freedom. The null hypothesis was, therefore, accepted. This means that the result in the pre-test was comparable with the post-test. This implies that the traditional classroom approach in Section A was ineffective in improving students' performance in this study. Implementing a traditional classroom approach does not improve students' mastery and development of higher-order thinking skills. However, teachers are still using the traditional classroom approach despite the criticism from various researchers because it is easier to implement. Additionally, it does not require a significant amount of time or money, allows for easy communication with students, is easier to prepare and complete the set standards and competencies, and promotes active learning between teachers and students.

The results (see Table 7) showed the students' performance before and after the flipped classroom approach was implemented in Section B. Since the computed  $t$ -value of 9.20 was more significant than the  $t$ -critical value of 2.43 at a 0.01 level of significance with 37 degrees of freedom. The null hypothesis was therefore rejected in favor of the research hypothesis. This means that the post-test result was higher than the pre-test result. It implied that the use of the flipped classroom approach in Section B was effective in improving students' performance.

The results (see Table 8) showed the students' performance before and after the flipped classroom approach was implemented in Section C. Since the computed  $t$ -value of 8.68 was more significant than the  $t$ -critical value of 2.49 at the 0.01 level of significance with 24 degrees of freedom. The null hypothesis was therefore rejected in favor of the research hypothesis. This means that the post-test result was higher than the pre-test result. It implied that the use of the flipped classroom approach in Section C was effective in improving students' performance. This data presented in Tables 7 and 8 revealed that the use of the flipped classroom approach in the class was effective in improving students' performance.

**Table 6.** Summary table for the  $t$ -test for the student's performance before and after the traditional classroom the approach was implemented in Section A (GAS)

Treatment	Mean	Variance	df	Computed $t$ -value	$t$ -Critical value
Pre-test	12.14	10.79	21	0.40 <sup>ns</sup>	2.52
Post-test	12.59	18.16			

ns - significant at 1%

**Table 7.** Summary table for the t-test for the student's performance before and after the flipped classroom the approach was implemented in Section B (HUMSS)

Treatment	Mean	Variance	df	Computed t-value	t-Critical value
Pre-test	11.32	7.95	37	9.20**	2.43
Post-test	15.61	7.22			

\*\* - significant at 1%

**Table 8.** Summary table for the t-test for the student's performance before and after the flipped classroom the approach was implemented in Section C (ABM)

Treatment	Mean	Variance	df	Computed t-value	t-Critical value
Pre-test	12.96	12.29	24	8.68**	2.49
Post-test	18.28	15.63			

\*\* - significant at 1%

**Table 9.** Summary table for the Analysis of Variance (ANOVA) of the student's performance among the different treatments

Source of Variation	df	SS	MS	Computed F-value	Tabular F-value
Between Groups	2	378.75	189.38	15.17**	4.87
Within Groups	82	1023.44	12.48		
Total	84	1402.19			

\*\* - significant at 1%

**Table 10.** Comparison of the mean scores among the different groups using Scheffe's test

Between Groups	F'	(F.01) (K-1) (4.87) (2)	Interpretation
A (GAS) vs B (HUMSS)	10.18	9.74	Significant
A (GAS) vs. C (ABM)	30.36	9.74	Significant
B (HUMSS) vs C (ABM)	8.61	9.74	Not Significant

According to Baig and Yadegaridehkordi (2023), the flipped classroom improves critical thinking, teamwork, and problem-solving abilities among students. This study was supported by a meta-analysis that students in flipped classrooms outperformed those in traditional classrooms (Roehling & Bredow, 2021). Hence, the flipped classroom approach is a student-centered approach that enhances content mastery and skills as compared to the traditional classroom approach, where the teacher is the center of learning. Moreover, the teacher-made test used in the study comprised higher-order thinking skills (HOTS) questions, which the traditional classroom approach failed to establish. Unlike the flipped classroom approach, low-order thinking skills (LOTS) were developed through assignments, while higher-order thinking skills (HOTS) were emphasized and practiced in the classroom.

### 3.6 Analysis of Variance of students' performance among the different treatments

The results (see Table 9) showed the students' performance across different treatments (traditional and flipped classroom approaches) used in various sections, as analyzed using Analysis of Variance (ANOVA). The F-computed value of 15.17 was more significant than the tabular F-value of 4.87 at the 0.01 level of significance with 2 and 82 degrees of freedom. This indicated a significant difference in the mean scores on the post-test among the groups after the treatment was applied. Furthermore, the average post-test scores between the control and experimental groups differed significantly. The results (see Table 10) showed a significant difference in the mean scores on the post-test between Sections A and B and Sections A and C. However, Sections B and C do not significantly differ in their mean scores. This implied that the use of the flipped classroom approach in Sections B and C was more effective than the traditional classroom approach in Sections A. The use of the flipped classroom approach improved students' performance compared to the traditional classroom approach, as indicated by the pre-test and post-test results, as well as the comparisons among the groups in this study.

### 3.7 Students' and Teacher's Experiences

The following data presents the qualitative and descriptive findings of students' and teachers' experiences with the Flipped Classroom Approach in Earth and Life Science. From their experiences, the following themes emerged.

#### Theme 1: Flexible Time and Space

The Flipped Classroom is flexible in several ways. As classroom time is spent on various activities, the physical space must be flexible, allowing for the rearrangement of desks, chairs, tables, and materials according to the type

of activity. Having a flexible classroom encourages interaction and connection between students and teachers, providing teachers with an opportunity to facilitate the learning process (Cole et al., 2021). Moreover, the time is also flexible, allowing students to learn at their own pace and at their own convenience, as opposed to the traditional format. In the implementation of the flipped classroom approach, students shared different experiences with relevance to flexible time and space.

S-3: *"It is nice to watch at home, specifically at nighttime, because it is very quiet, and I can hear the words being uttered by Ma'am [teacher-demonstrator]."*

S-4: *"If I am alone in our home, I watch the video lectures of the teacher-demonstrator, Ma'am." I can easily understand the lessons about cells and photosynthesis."*

S-5: *"Once I am using my cellphone and headset, I can easily focus and internalize what the video implies."*

S-2: *"...every time I finished watching the videos, I learned many things, and I could easily recall the ideas and other details upon returning home." If I get bored at home, I watch the videos. That is why I can easily understand and recall.*

This suggests that the majority of students experienced flexibility in terms of time and space. Students also reported that they preferred using video materials at home because they could focus and internalize the lessons more effectively. Hence, learning at one's own pace and during class time is one of the key features of the flipped classroom. The result is associated with a decreasing attention span and the use of technology in their studies or in their spare time. As students are given the flexibility to learn at their own pace and in their own time, there is a need to safeguard them if they have watched the assigned videos. With this, it is ensured that when students enter the classroom, they are already ready for the assignment and series of activities.

S-9: *"Ma'am [teacher-demonstrator] always reminded us to play or watch the videos in advance so we could gain ideas and information about the lesson." Then, if the videos are played during class, we already have an idea about the lesson and new information will be added during class hours.*

Based on the students' responses, it implied that students experienced flexibility in time and space, were able to overcome barriers that hindered their learning of the content, and that the teacher safeguarded them from watching the videos.

T-D: *"...in the absence of the teacher, with the presence of a video still, the class will proceed."*

T-D: *"...every one of the students has a TV at home. Therefore, even if they are doing other things, such as working on their projects or cooking, they are still doing their homework. They can play the video and listen to what I am talking about. Therefore, this video can help them a lot, even if they are doing other things.*

This indicates that the teacher-demonstrator experienced the flexibility of time and space, allowing students to learn the content either at home, in the science laboratory, or outside the classroom. The teacher-demonstrator also noted that even when students are doing other tasks or the teacher is not present. The class is still going on. According to the Center for Research on Learning and Teaching (2021), there are low-tech strategies to overcome challenges, such as partial flipping, where traditional lectures are supplemented with hands-on activities as the class gradually transitions to the flipped classroom model. Through this, the learning process continues.

## **Theme 2: Instructional Materials**

In a flipped classroom approach, the use of various teaching materials that aid learning is essential. The teacher can either utilize the resources available in the school or on the internet, or create instructional videos using various applications, software, and programs. After implementing the flipped classroom approach, the students described and shared their experiences with the materials used.

S-2: *"In the video, you can repeat it as many times as needed for us to understand."*

S-7: *Specifically, to those subjects where students find it difficult and to those subject teachers who teach too quickly, causing students to fall behind and struggle to understand the lesson. I prefer to use videos so we can pause and take notes.*

Based on the students' responses, the students cited the advantages of the instructional materials, such as easy repetition of content and easier note-taking.

T-D: *"...the teacher herself is the teacher demonstrator in the video, and the students can connect with the teacher because they have already established a rapport ahead of time."*

T-D: *"It is well presented because, aside from the fact that the teacher is discussing the concepts, diagrams, and illustrations are also presented, making it easy for students to follow what the teacher is talking about."*

T-D: *"I think that for me, listening to the video and what I've talked about so many times." I think the students can memorize and master the lesson I am teaching them.*

This indicates that video lectures are used as instructional materials in the implementation of the flipped classroom approach. It also revealed that the teacher-demonstrator in the video lectures is the one who teaches the subject. This is excellent because the teacher-demonstrator and the students already have an established relationship, making students motivated, responsible, and easily understand the content in video lectures. Additionally, the instructional materials can help students master the lessons through repetition, as outlined in Thorndike's Law of Exercise.

### **Theme 3: Differentiated Activities and Meaningful Learning**

Learning culture is one of the pillars of flipped learning, describing the shift from a traditional teacher-centered model to a learner-centered approach. As a result, students are allowed to participate and evaluate their learning in a meaningful manner (Bok Center for Teaching and Learning, 2024). Hence, in the flipped classroom, the teacher should consider providing students with opportunities to engage in meaningful and varied activities that enhance the skills they have learned and develop those they have not yet mastered. In the flipped classroom, the teacher should consider providing students with opportunities to engage in meaningful and varied activities that enhance the skills they have learned and develop those they have not yet mastered. Students shared varied experiences about differentiated and meaningful activities.

S-2: *"I experienced photosynthesis during our experiment with the beaker, where we counted the number of bubbles that rose every 3 minutes."*

S-7: *"The class was interesting, especially when we experimented with the onion, cell, and saliva." I realize that there were many concepts that we did not know. I had a great time experimenting with the balloon. When I shook the balloon, it inflated. Afterward, we measured the size of the balloon. I enjoyed it much."*

S-8: *"I discovered: "How and why certain things occur?", "Where do those things come from?" "If the cell did not exist, how would our body, plants, or animals respond?" and how did it all begin? In this case, this approach enables us to discover what made us feel amazed."*

Based on the students' responses, they experienced differentiated activities in which they performed various laboratory tasks and engaged in introspection afterward, promoting meaningful learning experiences. Hence, through the differentiated activities experienced by the students, they were able to grasp and understand the significant concept, making the learning experience more meaningful.

T-D: *"...there were different activities given to the students to help them understand what the video is about and, of course, to provide a clear idea or understanding of the topic."*

T-D: *"...after the assignment is given, followed by a discussion, and then a series of activities."*

Based on the teacher-demonstrator's experience, it was revealed that differentiated activities are considered in the implementation of the flipped classroom approach. It also revealed that using differentiated activities provides students with a clearer understanding of the lesson and enables them to arrive at correct answers to the questions. This makes learning more meaningful.

### **Theme 4: Maximizing Classroom Time**

In the flipped classroom, the use of various instructional methods, such as active learning strategies, peer instruction, or problem-based learning, helps maximize classroom time.



S-3: *"She just gave us only a warm-up on our mind [brainstorming activities]."*

S-4: *"She always calls on a student to summarize the lessons and activities we have previously done." It was our daily routine to give a summary of the past lessons."*

S-5: *"It makes us active."*

Based on the shared experiences of the students, it was evident that the teacher maximized classroom time by incorporating brainstorming activities and recapitulating previous lessons or activating prior knowledge. With this, active learning strategies are emphasized in the flipped classroom.

T-D: *"...the activities given are not only knowledge-based but also require students to think beyond what is in the lesson."*

T-D: *"It is not only a flipped classroom strategy, but also a question-answer relationship strategy that is being integrated into that approach, wherein students utilize higher-order thinking skills, as mentioned in Bloom's Taxonomy."*

Based on the teacher's shared experience, it was revealed that the teacher maximized classroom time by using challenging activities, as described by the teacher-demonstrator as "not simply knowledge." This indicates that classroom time was effectively utilized in developing higher-order thinking skills (HOTS). According to Samadi et al. (2024), flipped classrooms have a significant influence on learners' development of higher-order thinking skills through engagement in evaluative, analytic, and synthesis processes. This enables the class to maximize time in a more meaningful and important way.

#### **Theme 5: Students' Responsibility and Autonomy**

Giving students responsibility and autonomy is a key feature of the flipped classroom. It is a setting where students are responsible for their own learning while teachers provide support and guidance.

S-8: *"She gave us the autonomy to learn on our own; either we would watch the video or we would discover and try to learn from it on our own."*

S-5: *"...we have the autonomy to gather ideas using videos to answer questions."*

S-6: *"The teacher-demonstrator allows or permits us to discover and learn new things on our own."*

Based on the shared experiences of the students, it was revealed that they are given responsibility and autonomy in their learning, such as using instructional materials as a source of information, performing tasks independently, and allowing them to discover or explore new things. This concept is closely tied to the idea of independent learning. According to Susiani et al. (2022), independent learning fosters a supportive learning environment, enhancing student motivation, confidence, and inclusion. Hence, as students become responsible and independent, learning becomes more meaningful.

#### **Theme 6: Scaffolding and Giving Feedback**

Scaffolding and giving feedback are important aspects of the flipped classroom approach. In this aspect, teachers help learners maximize their learning, identify their strengths and areas for improvement or limitations, support students, seek solutions to improve and provide continuous guidance even outside the classroom.

S-4: *"She always asked for clarifications or additional questions to ensure that we got the ideas and information in the video that she wanted us to learn."*

S-5: *"She also asked if we understood the lessons or not and if my classmates said 'No,' she explained it thoroughly again for us to understand the lesson."*

S-7: *"The misconceptions that we believed were being corrected."*

Based on the shared experiences of the students, it was revealed that the teacher scaffolds students, specifically those who did not grasp the main point and assists them. Scaffolding is practical and can benefit the students in building their experiences and knowledge as they learn new skills. It showed that the teacher gives feedback to

the students by correcting misconceptions, clarifying ideas, and allowing students to ask questions. According to Buhl-Wiggers et al. (2023), the success of implementing the flipped classroom approach varied depending on the teacher's approach, resulting in varying levels of student achievement.

T-D: *"I first presented the video to them, and then I gave the assignment. After giving the assignment, we had a discussion, followed by a series of activities."*

T-D: *"I can also connect to them because we have this so-called, "Messenger" or "Facebook" in which I could follow up with our students if they were able to watch the video and if they were able to answer the different activities given to them and be prepare themselves for the formative or even summative test that will be given..."*

Based on the teacher's shared experience, it was revealed that the teacher provides feedback to students by discussing the answers in their assignments. Additionally, the teacher-demonstrator revealed that the assignment was given during the first part of the lesson. Providing feedback on their assignments in the first part of the class helps students identify their strengths and areas for improvement. With this, the teacher determines which students require support and which students need to progress to more advanced material.

#### **Theme 7: Collaboration with Other Educators**

Collaboration with other educators is one of the important characteristics of becoming an effective teacher. Through collaboration, teachers are willing to share, support, participate in, and explore ideas that will reduce teacher attrition, improve student learning, and enhance professional aspects.

T-D: *"During our MPRE [Mid-Year Performance Review and Evaluation] in the making of instructional materials, I presented the flipped classroom to our fellow teachers in science, and we were delighted because they responded positively."*

T-D: *"I encourage my Grade 11 teachers to use this kind of strategy in remediating our students because we have problems with absenteeism. By giving videos and using the flipped classroom strategy, we can connect with and reach out to our students."*

T-D: *"It could also be applied to other subjects, such as mathematics." It could also be applied to English."*

Based on the teacher's shared experience, it revealed that the teacher preferred the use of the flipped classroom approach by other teachers and different subjects. The teacher also emphasized the importance of the flipped classroom approach in remediation, particularly for students with attendance issues and those with below-average or average performance. With this, the teacher not only taught the students but also provided them with continuous, real-time feedback. Hence, collaboration with other educators plays a crucial role in professional development, enabling teachers to identify their strengths and weaknesses.

## **4.0 Conclusion**

Students who underwent the flipped classroom approach (FCA) showed significant improvement in their performance in Bioenergetics. Before the implementation, the student's performance level was between low and average mastery, but after the implementation, the results indicated a shift towards mastery. Using statistical analysis, it is confirmed that there are improvements in students' performance levels, with t-test results showing a significant difference in students' performance before and after the use of FCA. In contrast, no significant difference was found in the use of the traditional approach. Analysis of Variance further supported the effectiveness of FCA, demonstrating a significant difference in students' post-test scores among groups. Scheffe's test revealed that the experimental groups outperformed the control group.

The FCA demonstrated flexibility in time and space, allowing students to engage in learning at their own pace by using the flipped classroom videos. Students found the materials engaging and comprehensive, which highlights the benefits such as repetition of the content, enhanced note-taking skills, and constructive scaffolding of teachers. The teacher emphasized that FCA aids in improving student understanding through continued monitoring of online platforms and an emphasis on higher-order thinking skills (HOTS). Even if the students have access to ICT devices despite financial constraints, further research may be conducted to explore how socioeconomic factors and digital access influence students' performance levels. Furthermore, additional studies

may be conducted to examine the impact of FCA on different subject matters with varying demographics, facilitating efficient integration in diverse educational settings.

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# Sustainability Initiatives as Drivers of Institutional Effectiveness: Insights from San Pablo Colleges

**Abstract.** This study evaluates the sustainability initiatives at San Pablo Colleges and their correlation with perceived institutional effectiveness using the Triple Bottom Line model. It examines economic, social, and environmental sustainability, governance, and continuous improvement through a descriptive-correlational quantitative design. Data were collected from 129 college stakeholders via a validated survey, with composite means computed for each sustainability domain. Findings indicate that social sustainability is the institution's strongest area, emphasizing inclusivity and equity, while governance and leadership also score positively, reflecting effective decision-making. However, environmental sustainability received the lowest rating, highlighting opportunities for improvement in ecological practices. Institutional effectiveness, particularly stakeholder satisfaction with customer service, registered a high composite mean. Correlation analysis ( $r = 0.87$ ) revealed a strong positive relationship between sustainability efforts and perceived institutional success. The study recommends enhancing environmental initiatives, increasing stakeholder engagement, and expanding sustainability training to align institutional practices with global standards. By fostering a culture of continuous improvement, San Pablo Colleges can strengthen its commitment to sustainability and institutional excellence.

**Keywords:** Continuous improvement; Institutional sustainability; Institutional effectiveness; Sustainability initiatives.

## 1.0 Introduction

The pursuit of institutional sustainability has become a critical focus for educational institutions seeking to enhance their effectiveness and adaptability in an ever-evolving landscape. At San Pablo Colleges, recent studies have highlighted the essential interplay between sustainability initiatives and overall institutional effectiveness. The research conducted by Lunar and Eala (2023) explored employees' attitudes, values, intentions, and readiness toward innovation, revealing a strong correlation between these factors and their engagement in innovation initiatives. This study found that a positive attitude among staff aligns with institutional goals and fosters a culture of readiness for change, which is vital for any institution aiming to innovate effectively. Further building on this foundation, the follow-up institutional study by Lunar, Eala, and Perez (2024) examined the practices and processes surrounding quality assurance at San Pablo Colleges, emphasizing the institution's commitment to continuous improvement. This research identified key accreditation and curriculum development strengths while highlighting critical areas requiring attention, such as customer feedback mechanisms and risk management strategies. The findings underscored the positive relationship between the effectiveness of quality assurance practices and stakeholder satisfaction, suggesting that effective quality assurance is not merely an administrative function but a cornerstone of institutional sustainability.

The growing body of literature on institutional sustainability underscores the importance of integrating sustainability practices into various aspects of institutional operations. Regarding educational institutions, sustainability ensures long-term viability by balancing environmental responsibility, social equity, and effective governance. Frameworks like the Triple Bottom Line Model emphasize balancing economic, social, and environmental factors. Research indicates that sustainability enhances institutional credibility and fosters stakeholder engagement (Davis & Johnson, 2020), with robust monitoring and evaluation frameworks being key (Garcia & White, 2019). Additionally, strategic partnerships are crucial in advancing sustainability goals (Black & Lee, 2020), though challenges remain in balancing immediate needs with long-term objectives (Davis et al., 2019). Economic sustainability supports the long-term goals of educational institutions by focusing on efficient financial resource management. Studies show that institutions with strong financial practices are better positioned to navigate economic challenges, such as tuition fee fluctuations or staff reductions (Erwin et al., 2024). Social sustainability emphasizes inclusivity, equitable access to resources, and community engagement, with research showing that diversity, equity, and inclusion efforts positively impact institutional identity and stakeholder

commitment (De Matos Pedro et al., 2023). Environmental sustainability initiatives, such as responsible resource management and energy-efficient practices, contribute to an institution's reputation, especially among environmentally conscious students and faculty (Loremia et al., 2020). Effective governance and leadership are crucial for embedding sustainability goals into institutional culture, and institutions led by sustainability-focused leaders tend to achieve lasting success (Stupak et al., 2021). Continuous improvement, driven by data assessments and stakeholder feedback, is vital for adapting to evolving sustainability standards (Shi et al., 2023).

Institutional effectiveness, assessed through frameworks like Baldrige, evaluates an institution's ability to fulfill its mission. Key indicators include stakeholder satisfaction, economic stability, and the integration of sustainability practices (NIST, 2023). Institutions that excel in stakeholder engagement often show higher retention, graduation rates, and community trust, contributing to long-term success (Salamah et al., 2022; Findler et al., 2019). Additionally, economic sustainability enables institutions to manage funding fluctuations better while maintaining educational quality, enhancing their stability and attractiveness (Khoo et al., 2024).

Despite these contributions, there remains a significant gap in understanding how various sustainability dimensions—economic, social, environmental, governance, and continuous improvement—collectively influence institutional effectiveness. While individual aspects of sustainability have been investigated, a comprehensive analysis of their interconnected impact on institutional success has been largely overlooked. This study aims to address this gap by examining the sustainability initiatives at San Pablo Colleges and their correlation with perceived institutional effectiveness. Anchored in Elkington's (2018) Triple Bottom Line Model, the research integrates economic, social, and environmental sustainability considerations, alongside governance and continuous improvement, to provide a holistic evaluation of the institution's sustainability framework. Additionally, the study applies the Baldrige Excellence Framework (2023) to assess overall institutional effectiveness. By bridging this research gap, the study contributes valuable insights into how sustainability efforts shape institutional performance, guiding future strategies for continuous improvement and long-term viability in the higher education sector.

## 2.0 Methodology

The study employed a descriptive-correlational quantitative approach to examine sustainability activities at San Pablo Colleges and their association with the institution's perceived overall effectiveness. This research design enabled a more structured examination of the relationship between sustainability practices and institutional effectiveness. It provided a data-based starting point for assessing the present endeavors in economic, social, and environmental sustainability and governance and improvement programs.

Data were collected through a researcher-made questionnaire that underwent validation and reliability testing, confirming its suitability for accurately capturing information on the evaluation of institutional sustainability initiatives—encompassing economic, social, and environmental sustainability, governance and leadership, and continuous improvement—as well as the assessment of perceived overall institutional effectiveness, which includes leadership, strategy, customer relations, measurement and analysis, knowledge management, workforce, operations, and outcomes.

A total of 129 respondents participated in the study. The sample size was determined using a sample size calculator based on the total population of 195 individuals at San Pablo Colleges. The survey gathered input from diverse respondents, including teachers, non-teaching professionals, and administrative staff. It assessed every domain using rating measures that measured respondents' perceived efficacy, obstacles, and satisfaction levels.

Descriptive statistics were utilized to examine the data, providing an overview of trends and average scores across sustainability areas. Pearson's correlation coefficient (Pearson's  $r$ ) was used to assess the correlations' strength and direction between sustainability activities and perceived institutional effectiveness. This investigation identified particular sustainability variables that connect with favorable assessments of institutional success.

A researcher-made questionnaire was developed to capture data on institutional sustainability initiatives and overall effectiveness. To ensure the validity and reliability of the instrument, content validation was conducted by sustainability experts and institutional researchers. The questionnaire underwent a pilot test, and Cronbach's alpha was computed to determine internal consistency, yielding a reliability coefficient of 0.89, indicating high



reliability. These measures ensured that the survey instrument was both credible and robust in assessing institutional sustainability efforts and stakeholder perceptions. Response confidentiality was rigorously upheld, and all respondents' data were anonymized to ensure privacy. Ethical guidelines, encompassing voluntary participation and informed consent, were adhered to, maintaining the study's integrity and respect for participants.

### 3.0 Results and Discussion

#### 3.1 Institutional Sustainability Initiatives

Table 1 below presents the composite means of each sustainability initiative (Economic, Social, Environmental, Governance and Leadership, and Continuous Improvement) at San Pablo Colleges. These composite scores represent an average response level in each area, contributing to an overall mean indicating the institution's sustainability standing.

**Table 1.** *Assessment of institutional sustainability initiatives at San Pablo Colleges*

Sustainability Initiatives	Composite Mean
Economic Sustainability	3.39
Social Sustainability	3.58
Environmental Sustainability	3.24
Governance and Leadership	3.45
Continuous Improvement	3.39
<b>Overall Mean</b>	<b>3.41</b>

With a composite mean of 3.39, economic sustainability reflects a concerted effort by San Pablo Colleges to maintain financial stability while allocating resources for sustainable initiatives. Economic sustainability in educational institutions often involves strategic budget planning, resource allocation, and investment in sustainable practices that support long-term viability. According to Cullingford and Blewitt (2019), financial stability forms the foundation for sustainable growth, enabling institutions to fund initiatives that benefit the institution and its stakeholders. At San Pablo Colleges, focusing on economic stability likely aids in supporting various programs and sustainable practices, enhancing the institution's resilience to external financial pressures. However, economic sustainability in educational settings extends beyond simply maintaining balanced budgets; it also entails investing in practices that minimize waste and maximize resource efficiency, such as energy-saving infrastructure and sustainable procurement strategies. Strengthening these practices can further position the college as a financially responsible and sustainability-focused institution, particularly if future resource allocations consider environmental impacts alongside economic gains.

Social sustainability emerged as the highest-rated dimension (3.58), indicating that San Pablo Colleges prioritizes supportive, inclusive, and equitable practices that foster community well-being. Social sustainability in education encompasses a range of practices that promote a positive campus climate, support student and staff well-being, and facilitate stakeholder engagement. Barth and Rieckmann (2016) highlight that socially sustainable educational environments contribute to student empowerment, which drives engagement and a sense of belonging. By emphasizing social sustainability, San Pablo Colleges likely supports initiatives that value diversity, promote inclusivity, and foster meaningful community relationships. This dimension's high rating suggests that the institution has established effective social policies and programs that strengthen these aspects, reinforcing a campus culture where all members feel valued and engaged.

Educational literature also underscores the role of social sustainability in fostering resilient educational communities. Sterling (2016) argues that institutions with strong social sustainability practices create environments that encourage collaborative learning and mutual respect, qualities that enhance institutional resilience and adaptability. The college's positive score in this area could thus reflect robust support structures, such as counseling services, inclusivity programs, and community-building activities. To further amplify these efforts, the college might consider expanding initiatives that support mental health, student development, and intercultural competence. Engaging students, faculty, and staff in regular discussions on social equity, inclusion, and belonging can reinforce the social sustainability culture and contribute to long-term institutional effectiveness.

Environmental sustainability received the lowest rating (3.24), highlighting an area for improvement in San Pablo Colleges' ecological initiatives. This dimension evaluates how institutions minimize their environmental footprint, enhance resource efficiency, and educate stakeholders on ecological responsibility. While some efforts are in place, there is a clear need to expand environmental sustainability initiatives to strengthen institutional commitment and align with global sustainability goals. Research by Leal Filho et al. (2019) emphasizes the critical role of higher education institutions in advancing environmental awareness, which not only benefits the campus community but also fosters a broader culture of sustainability. Despite growing global emphasis on environmental sustainability, its implementation in educational institutions remains challenging. At San Pablo Colleges, several factors may contribute to the lower rating. Large-scale sustainability projects, such as renewable energy systems, water conservation efforts, and waste reduction programs, often require substantial initial investments, making them difficult to prioritize alongside more immediate operational and academic needs. Additionally, there may be limited institutional awareness and expertise in environmental sustainability compared to social and economic dimensions. Without clear leadership and dedicated policies, sustainability initiatives can become fragmented and less effective. Furthermore, effective environmental programs frequently require collaboration with external stakeholders, including government agencies, local organizations, and industry partners, adding complexity to planning and execution. To enhance environmental sustainability, San Pablo Colleges may adopt a comprehensive approach that includes infrastructure improvements, curriculum integration, and strategic collaborations. Strengthening waste reduction programs, expanding recycling initiatives, and incorporating energy-efficient technologies can create tangible environmental benefits. Embedding sustainability education into the curriculum will further reinforce environmental responsibility among students, equipping them with the knowledge and values needed for sustainable practices beyond graduation. Research by Lozano et al. (2017) suggests that students who engage with sustainability education are more likely to adopt environmentally responsible behaviors in the long term. A well-defined sustainability plan, outlining clear objectives, measurable targets, and key performance indicators, can guide institutional efforts in reducing energy consumption, managing waste effectively, and minimizing carbon emissions. Engaging students and faculty in sustainability planning ensures collective ownership and long-term commitment to ecological initiatives. Establishing an environmental task force comprising administrators, faculty, students, and external partners can further enhance coordination, monitor progress, and recommend policy adjustments that align with sustainability goals. Regular sustainability audits can help identify inefficiencies in resource usage, leading to the implementation of energy-efficient lighting, rainwater harvesting systems, and campus-wide recycling programs. Additionally, partnerships with local organizations, government agencies, and businesses can provide valuable support, resources, and expertise in advancing sustainability initiatives. Collaborative projects such as community cleanups, reforestation efforts, and resource-sharing programs can strengthen institutional ties while reinforcing the college's role in promoting environmental stewardship.

Governance and leadership received a positive rating of 3.45, suggesting that the institution has a stable and effective governance structure that aligns with sustainability goals. Governance plays a pivotal role in institutional sustainability, as leaders set the strategic vision, prioritize initiatives, and foster a culture of accountability. Sterling (2016) emphasizes that strong leadership is crucial in embedding sustainability across all levels of an institution, as it guides decision-making and encourages faculty, staff, and students to participate in sustainability efforts. The favorable rating in this area implies that San Pablo Colleges has a governance framework that supports sustainability practices, likely involving transparent decision-making processes and alignment with the institution's long-term goals.

An effective governance model is also essential for fostering stakeholder trust, as it promotes accountability and responsiveness. Institutions with solid governance structures can more easily adapt to changes and address emerging challenges, enabling continuous progress toward sustainability goals. The positive rating in this area indicates that San Pablo Colleges has leadership practices prioritizing effective management, adaptability, and engagement in sustainability. To build on this strength, the institution could consider establishing a dedicated sustainability committee within its governance structure responsible for monitoring and guiding sustainability initiatives. This approach would ensure consistent oversight and provide a platform for continuous assessment and improvement.



With a composite mean of 3.39, continuous improvement reflects San Pablo Colleges' commitment to iterative enhancement in its practices, processes, and sustainability initiatives. Continuous improvement is a vital principle in sustainability, emphasizing the need for regular evaluation, adaptation, and optimization. Shriberg and Harris (2018) discuss how educational institutions that embrace continuous improvement are better positioned to adapt to changing educational needs and sustainability expectations. For San Pablo Colleges, the positive score in this area suggests it has established mechanisms to monitor and refine its sustainability initiatives, supporting a culture of ongoing learning and development.

Continuous improvement in sustainability can take various forms, including assessing the effectiveness of current practices, setting benchmarks, and implementing stakeholder feedback. By continuously evaluating its sustainability initiatives, San Pablo Colleges can identify areas for enhancement and ensure alignment with broader institutional goals. Future efforts could involve developing performance indicators for sustainability initiatives, conducting regular audits, and engaging faculty, staff, and students in the improvement process. Such practices reinforce the institution's commitment to sustainability and cultivate a campus environment where continuous learning and adaptation are valued.

The overall sustainability mean of 3.41 suggests a generally positive perception of sustainability practices at San Pablo Colleges, with social sustainability and governance emerging as key strengths. However, the comparatively lower score in environmental sustainability highlights an opportunity for the institution to adopt a more comprehensive sustainability framework that balances social, economic, and environmental priorities. The research underscores the importance of an integrated sustainability approach considering all three dimensions to achieve holistic impact and institutional resilience (Adams, 2020). By addressing the areas that scored lower, such as environmental practices, the institution can enhance its overall sustainability standing and better meet stakeholder expectations.

### 3.2 Perceived Overall Institutional Effectiveness

Table 2 provides composite mean scores for key indicators of perceived overall institutional effectiveness, including Customers, Environmental and Social Sustainability, and Economic Sustainability. These composite scores reflect stakeholder satisfaction and perceptions of institutional performance across these dimensions, contributing to an overall mean score.

The assessment of perceived overall institutional effectiveness at San Pablo Colleges provides a comprehensive view of stakeholder satisfaction across core areas—customers, environmental and social sustainability, and economic sustainability. These dimensions are essential to understanding the institution's impact, reputation, and sustainability. Table 2 presents the composite mean scores for these indicators, with an overall mean of 3.43, reflecting a generally positive perception among stakeholders regarding the college's effectiveness in fulfilling its mission. Each area, as discussed below, provides insights into both achievements and areas for growth, supported by relevant literature.

**Table 2.** *Perceived overall institutional effectiveness at San Pablo Colleges*

Overall Institutional Effectiveness Indicators	Composite Mean
Customers	3.49
Environmental and Social Sustainability	3.41
Economic Sustainability	3.39
<b>Overall Mean</b>	<b>3.43</b>

Customers (3.49), the highest-rated dimension, highlights strong stakeholder satisfaction and engagement, suggesting that San Pablo Colleges has effectively prioritized student and stakeholder needs. In educational institutions, "customers" generally include students, parents, alumni, employers, and community partners, all with vested interests in the institution's quality, reputation, and service offerings. Customer satisfaction is a key indicator of institutional effectiveness, as it directly impacts student retention, recruitment, and overall engagement (Kotler & Fox, 2018). A high composite mean in this area suggests that San Pablo Colleges likely provides a responsive and supportive environment, successfully addressing stakeholder expectations and reinforcing trust.

Research by Bejou and Bejou (2016) indicates that focusing on students and stakeholders strengthens an institution's adaptability and responsiveness to external demands, which is essential in a competitive educational landscape. The high rating in customer satisfaction at San Pablo Colleges may reflect robust support services, clear communication channels, and a responsive approach to stakeholder feedback. Engaging students and stakeholders through feedback mechanisms, regular updates, and advisory boards can further bolster satisfaction, as these practices promote a sense of ownership and belonging. Future enhancements could focus on expanding customer-centric initiatives, such as personalized support services and accessible information channels, to ensure that students and stakeholders remain connected and supported throughout their engagement with the college.

Environmental and social sustainability achieved a moderate yet positive score (3.41), indicating that San Pablo Colleges has established some impactful sustainability practices but with room for growth. Environmental and social sustainability in educational institutions encompasses initiatives to minimize the institution's environmental footprint and promote social equity and community engagement. Recent literature underscores the significance of these practices in shaping perceptions of institutional effectiveness, as educational institutions are increasingly expected to act as role models in advancing sustainability (Christensen et al., 2017).

In today's educational climate, stakeholders—including students, faculty, and community members—are often more aware of and invested in an institution's environmental and social responsibility. Institutions perceived as leaders in sustainability are often viewed more favorably, as they demonstrate a commitment to global and community well-being. The relatively high rating in this area for San Pablo Colleges may indicate effective community engagement programs, support for social equity initiatives, and preliminary steps in environmental sustainability, such as recycling, energy conservation, or awareness campaigns.

However, there remains an opportunity to deepen these efforts, especially in environmental sustainability, which has become a critical expectation in modern educational institutions. Leal Filho et al. (2019) emphasize that institutions that integrate sustainability into their curriculum and campus practices contribute positively to student learning outcomes as they gain firsthand exposure to sustainable values and practices. Enhancing environmental initiatives at San Pablo Colleges could include establishing a comprehensive sustainability framework, offering sustainability-themed courses, and expanding student involvement in environmental programs. Such initiatives would improve the institution's environmental footprint and provide meaningful educational experiences that align with stakeholder expectations.

Economic sustainability received a composite mean score of 3.39, indicating a generally favorable view of San Pablo Colleges' financial stability and resource management. Economic sustainability in educational institutions is essential for operational effectiveness, as it ensures that resources are available to support academic programs, infrastructure, and personnel. Drezner (2017) notes that sound financial health enables institutions to make long-term investments, impacting the institution's resilience and ability to deliver consistent, high-quality services.

San Pablo Colleges' relatively strong economic sustainability score suggests that stakeholders perceive the institution as having effective financial management practices. This may reflect a balanced approach to budgeting, resource allocation, and financial planning, enabling the college to provide necessary resources while maintaining financial stability. Economic sustainability also involves revenue diversification, efficient use of funds, and strategic investment in resources that enhance institutional performance and resilience.

San Pablo Colleges might consider adopting more innovative financial strategies to enhance economic sustainability, such as increasing partnerships, expanding revenue sources, or enhancing philanthropic efforts. Drezner (2017) highlights that institutions with diverse revenue streams are better positioned to weather financial uncertainties and invest in long-term improvements. For instance, collaborations with industry partners, alumni donations, and grants can all contribute to financial resilience. Developing financial strategies that support sustainability initiatives—such as energy-efficient buildings or community programs—can also yield economic benefits over time, creating a positive feedback loop that reinforces the institution's overall sustainability and effectiveness.

The overall mean of 3.43 reflects a generally positive perception of institutional effectiveness at San Pablo Colleges, with particular strengths in customer satisfaction. This suggests that the college has successfully balanced different

aspects of sustainability and institutional effectiveness, addressing key stakeholder concerns while maintaining financial and operational stability. A holistic approach to institutional effectiveness requires that each dimension—customer satisfaction, environmental and social responsibility, and economic sustainability—be balanced and mutually reinforcing. When institutions achieve this balance, they are better positioned to adapt to changing demands and ensure long-term success.

However, as evidenced by the individual composite scores, there remains room for further development, particularly in environmental and economic sustainability. According to Adams (2020), effective institutions continuously adapt their strategies to meet evolving expectations and improve upon existing practices. The relatively moderate scores in environmental and economic sustainability suggest that while San Pablo Colleges has made progress, there is potential to deepen its commitment to these areas. For example, emphasizing sustainability in strategic planning can create a roadmap for enhancing institutional effectiveness that aligns with stakeholder expectations and global sustainability goals.

The findings on perceived institutional effectiveness provide valuable insights into strategic areas that can be prioritized to enhance San Pablo Colleges' overall sustainability profile. For instance, customer satisfaction emerged as a strength, indicating that existing strategies for engaging stakeholders are effective. However, continuous investment in student-centric initiatives and support services will be essential for maintaining this positive perception as educational demands shift. Expanding digital engagement platforms, offering tailored support services, and ensuring accessible information channels can improve stakeholder experiences, reinforcing the institution's reputation and effectiveness.

Environmental and social sustainability, while positively perceived, also present growth opportunities. Expanding environmental initiatives can improve the college's sustainability and create experiential learning opportunities for students. By embedding sustainability into curriculum and campus operations, San Pablo Colleges can meet growing expectations from students and stakeholders who value environmental stewardship. Furthermore, increasing community partnerships and sustainability-focused programs can enhance the institution's impact, as these initiatives support environmental goals and strengthen ties with the local community.

San Pablo Colleges is viewed favorably in economic sustainability, yet there remains potential to strengthen financial strategies to support sustainability efforts more robustly. Innovative approaches to revenue generation, such as partnerships, grants, and philanthropic efforts, can provide additional resources for sustainable initiatives without compromising financial stability. Such strategies can also create long-term financial resilience, enabling the college to continue offering quality education and services despite external financial pressures.

**3.3 Correlation Between Overall Institutional Sustainability Initiatives and Institutional Effectiveness**

Table 3 presents the Pearson correlation coefficient (r) calculated between the overall composite mean of all sustainability initiatives and the overall composite mean of perceived institutional effectiveness. This analysis provides insight into how sustainability practices at San Pablo Colleges align with perceptions of institutional effectiveness.

Table 3. Correlation between sustainability initiatives and overall institutional effectiveness	
Correlation Metric	Pearson's r
Sustainability Initiatives vs. Institutional Effectiveness	0.87

The strong correlation coefficient ( $r = 0.87$ ) highlights the critical role sustainability plays in shaping stakeholder perceptions of institutional success. Institutions that actively implement sustainability programs not only enhance their environmental and social impact but also experience tangible benefits, such as increased stakeholder trust, financial efficiency, and academic reputation. A commitment to sustainability aligns with global societal values, strengthening credibility and fostering trust among students, parents, faculty, and external partners.

In a competitive academic environment, institutions that integrate sustainability into their core policies distinguish themselves by attracting students and faculty who prioritize ecological and social responsibility. Sustainable practices contribute to long-term financial and operational efficiency by optimizing resource consumption and reducing waste, leading to cost savings that can be reinvested into academic and infrastructure improvements. Moreover, embedding sustainability within governance structures, curricula, and campus operations fosters a

culture of responsibility and innovation. This approach not only prepares students for leadership roles in sustainability-driven fields but also reinforces the institution's mission of developing responsible global citizens.

Each component of sustainability – economic, social, environmental, governance, and continuous improvement – plays a vital role in shaping institutional effectiveness. Economic sustainability ensures effective resource management and financial stability, enabling investments in critical areas such as infrastructure, faculty development, and student services. Disterheft et al. (2016) emphasize that sound financial practices are essential for sustaining long-term institutional effectiveness, as they directly impact the quality of education and resources available to students. Social sustainability promotes equitable and inclusive practices that strengthen community relationships and foster a sense of belonging among stakeholders. Institutions that prioritize social responsibility are often viewed more favorably, as these initiatives align with growing societal expectations for diversity, equity, and inclusion. When students, faculty, and the broader community feel valued and supported, they are more likely to engage positively with the institution, enhancing its reputation and overall effectiveness.

Although environmental sustainability received the lowest score in this study, it remains a crucial component of institutional effectiveness. As awareness of environmental issues increases, stakeholders expect institutions to demonstrate ecological responsibility. Initiatives such as waste reduction, energy conservation, and environmental education contribute to sustainability goals while enhancing institutional reputation. According to Disterheft et al. (2016), environmentally responsible institutions attract students and partners who value ecological stewardship, further reinforcing institutional effectiveness.

Governance and leadership also play a critical role in linking sustainability with institutional effectiveness. Strategic decision-making ensures that sustainability efforts are well-coordinated, transparent, and aligned with the institution's mission and values. As Sterling (2016) notes, strong leadership fosters a culture of accountability and ethical responsibility, building trust among stakeholders and strengthening institutional resilience. When governance structures support sustainability initiatives, institutions can better adapt to evolving educational and societal expectations, ensuring long-term success.

Through these interconnected benefits, sustainability initiatives become more than just ethical obligations – they serve as strategic tools that enhance institutional effectiveness, strengthen stakeholder engagement, and ensure long-term resilience in an evolving educational landscape.

#### **4.0 Conclusion**

The findings of this study confirm a strong correlation between sustainability initiatives and perceived institutional effectiveness at San Pablo Colleges. Sustainability efforts across economic, social, environmental, governance, and continuous improvement dimensions contribute significantly to stakeholder perceptions of institutional success. Social sustainability, governance, and continuous improvement emerged as the institution's strongest areas, highlighting the importance of a supportive and well-governed environment. The Pearson correlation coefficient ( $r = 0.87$ ) further underscores the alignment between a cohesive sustainability strategy and stakeholder expectations, reinforcing institutional resilience and adaptability.

While San Pablo Colleges demonstrates strengths in social responsibility, governance, and financial management, environmental sustainability remains an area for growth. Strengthening environmental initiatives will enhance the institution's alignment with global sustainability standards and promote ecological consciousness among students and staff. Expanding efforts in this area will not only improve institutional effectiveness but also reinforce the college's commitment to sustainable development and continuous improvement.

To address this, the study recommends prioritizing environmental sustainability through waste reduction programs, energy-efficient operations, and awareness campaigns. Engaging stakeholders through surveys and focus groups can help refine initiatives, ensuring they are responsive to institutional needs. Providing regular sustainability training for faculty and staff will foster shared responsibility and a culture of continuous improvement. Embedding sustainability into curricula and student activities, such as student-led projects and community partnerships, can further strengthen ecological awareness and institutional impact. Enhancing governance structures with clearly defined sustainability goals and risk management strategies will also promote

institutional accountability. A data-driven approach to monitoring and improving sustainability efforts will support long-term progress, ensuring alignment with institutional and global sustainability objectives.

Beyond reinforcing the importance of sustainability in institutional effectiveness, this study highlights key areas for future research and practical applications. Further investigation into the cost-benefit impact of sustainability investments—such as renewable energy installations, waste management systems, and eco-friendly infrastructure—could provide valuable insights into financial viability and long-term benefits. Comparative studies across educational institutions may reveal best practices, common challenges, and benchmarks for sustainability initiatives. Additionally, longitudinal assessments tracking the long-term effects of sustainability interventions on stakeholder engagement and institutional performance could enhance strategic decision-making.

Exploring the role of digital technology in advancing sustainability efforts is also crucial. Digital platforms, including sustainability dashboards, artificial intelligence-driven energy management systems, and virtual awareness campaigns, could improve transparency and efficiency in sustainability practices. In practice, institutions can apply these insights by forming interdisciplinary sustainability committees, integrating sustainability themes throughout curricula, and fostering partnerships with community organizations to maximize impact. By adopting a strategic, data-driven approach, San Pablo Colleges and similar institutions can reinforce their commitment to sustainability while enhancing overall institutional effectiveness and stakeholder satisfaction.

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JMP SAMPLES

# Spelling Intervention Reimagined: Enhancing Grade 6 Students' Spelling Literacy through Tactile, Digital, and Phonetic Strategies

**Abstract.** This study provides a novel comparative analysis of tactile, digital, and phonetic strategies among Grade Six students, highlighting the superior performance of phonetic methods while offering actionable insights into the specific benefits and challenges associated with each approach. Employing a counterbalanced quasi-experimental design to three different groups with a total of 200 students through complete enumeration, the study reveals that students' exposure to the phonetic strategy was found to be most effective, which resulted in Outstanding performance, while the digital strategy resulted in Satisfactory performance, and tactile strategy yielded a Fairly Satisfactory performance. The phonetic strategy resulted in significant differences in students' mean spelling scores ( $p < 0.001$ ). Highlights for tactile strategy include the fun factor in gamification, which enhances effectiveness due to ease of manipulation. In contrast, digital strategy incorporates the fun factor in gamification to aid in remembering, provides a helpful challenge, and motivates users through a ranking system. Phonetic strategy, meanwhile, involves chunking words based on syllables, which enhances the effectiveness of learning a word and offers the flexibility to divide words. Lowlights for tactile strategy include difficulty in finding the letters, limited number of letters, and level of difficulty, while for digital strategy include random tapping or placement of letters, technical issues, and anagrammatic words, and for phonetic strategy include single or multiple syllables, level of difficulty, and effectivity silent or double letters. It is recommended that grade school teachers, especially in the grade six level who are teaching spelling, should look into the dynamics of these three strategies in terms of performance results, highlights, and lowlights in contextualizing instructions, as well as considering the mixture of all three strategies rather one focusing only on one to address the varied needs of the students. Further, this paper recommends the conduct of parallel studies in other grade levels or public schools to compare results and to have a better viewpoint of the topic being studied.

**Keywords:** Counterbalanced quasi-experimental design; Digital strategy; English spelling literacy; Phonetic strategy; Tactile strategy.

## 1.0 Introduction

The loss of competence in spelling ability experienced by students (Rzepka et al., 2022) is a concern that should be taken seriously by schools, as it leaves at least 763 million adults worldwide still unable to read and write, and 250 million children failing to acquire basic literacy skills (UNESCO, 2023). Teaching spelling to children should be systematic so they learn how the writing system works and not just memorize how words are spelled (Treiman, 2018); however, teachers are aware that not all students benefit from the traditional spelling instruction method, but in the absence of a more effective strategy, they revert to the old ways (Berger, 2016). The emphasis on language literacy, which focuses on the knowledge of words and their meanings in isolation and/or in context, understanding the parts and structure of words, and how they are used in spelling and to make meaning (Matatag Curriculum, 2023) has called for educators to revitalize strategies in teaching spelling across grade levels. To date, existing studies on developing spelling literacy have focused primarily on the early stage between preschool and primary years but not in the intermediate grades. Thus, this counter-balanced quasi-experimental design study aims to investigate the effectiveness of strategies in developing spelling skills among intermediate pupils.

A significant characteristic of language is its ability to convey meaning across oral and written forms (Levesque et al., 2021). As the smallest units of meaning in a language, morphemes are the foundational building blocks that convey meaning, and morphological skills enable their effective use in both oral and written language. Growing evidence implies that morphological skills are correlated to literacy outcomes, including word reading, spelling, and reading comprehension. Orthography, a standardized writing system for a specific language that defines how letters represent sounds and words, including spelling rules (Hopkins, 2019), serves as a foundational element of language and literacy (Kirby, 2019). According to Ehri's (2005, 2014) Phase Theory of Reading Development, morphological processes begin to impact literacy once a robust foundation in the alphabetic principle is established. Spelling tests are practical measures tapping an individual's ability to retain precise knowledge of the

orthographic structure of words, a prime ability in reading, according to Conrad et al. (2019) and Ouellette et al. (2017). For instance, it was believed that one of the handy tools for exploring literacy difficulties in children, when early appropriate interventions and supports can still be provided, is a computer-scored spelling measure. This has emphasized that orthographic skills are not only an essential element of language but also a practical means of early assessment of literacy difficulties, thereby finding ways to address them at an early stage in their education.

In academia, various strategies and interventions have been devised by both teachers and researchers to develop students' spelling competence; this study will employ three varied learning strategies. First, the Tactile strategy refers to the use of manipulative letters that can be moved together or apart to represent abstract concepts of phonemic blending and segmentation (Pullen & Lane, 2016), such as Scrabble letter tiles, which hold a child's attention. When a student's attention is being maintained, they can focus on the learning at hand (Rippel, 2021). Second, the digital strategy refers to the use of digital-based spelling games, such as Spelling City, to investigate the effects on student spelling achievement. This results in a significantly more significant spelling improvement in the active training group compared to the control group in general spelling ability (Holz et al., n.d.). Third, the phonetic strategy refers to a word decoding strategy that involves chunking words into known phonetic sounds. In her classroom research, Mentink (2022) found that after introducing the "chunking" strategy, students could eventually chunk the word in whatever way they wanted and figure out their own way to spell it. This strategy taught them how to chunk for future words when not working in small groups. In addition, Ravara (2020) found that when students use a phonetic strategy, they look for familiar sounds in words that can be applied to unfamiliar spelling words with similar sounds.

While these strategies are already research-based and have been conducted in the classroom setting, language teachers still struggle to identify which strategies would best fit the context of their students, as well as their knowledge of teaching spelling, for its conversion into an effective classroom pedagogy. This paper aims to investigate the effectiveness of tactile, digital, and phonetic strategies in developing spelling skills among Grade 6 students at Sacred Heart School-Ateneo de Cebu. Specifically, it aims to address the following: (1) students' spelling performance after being exposed to the tactile strategy; (2) students' spelling performance after being exposed to the digital strategy; (3) students' spelling performance after being exposed to the phonetic strategy; and (3) whether or not there are statistically significant differences in the spelling performance of students after being exposed to the three different strategies; and highlights and lowlights of each strategy.

## **2.0 Methodology**

### **2.1 Research Design**

This research employed a counterbalanced quasi-experimental design, in which three groups were exposed to three different treatments, but in a different order than the other groups (Fraenkel et al., 2012). In this quantitative design, the number of groups was equal to the number of treatments, although the order in which the groups received treatment was randomly determined (Gay et al., 2009) to describe the spelling performances of the Grade 6 students through three sets of researcher-made spelling tests. Additionally, it employed a qualitative method to identify the highlights and lowlights of the three strategies used, as determined through interview questions in the Focus Group Discussion (Nyumba et al., 2018).

### **2.2 Research Participants**

Through A complete enumeration was conducted, and all 200 Grade 6 students at Sacred Heart School-Ateneo de Cebu were invited to participate in this study. This grade level was purposively chosen as this is the exit year for the Grade School level. Additionally, this batch will undergo pilot testing of the Matatag Curriculum during the 2024-2025 school year. Then, fourteen purposively selected students from the entire population. Seven of them were chosen from the highest-performing bracket, while the other 7 were chosen from the lowest-performing bracket. Individuals who did not meet these specifications or those unwilling to participate were excluded to ensure the integrity of the data collected.

### **2.3 Research Instrument**

This study utilized 4 research-made instruments that at least two experts validated: The set A Spelling Test, which was administered after the Tactile strategy; Set B Spelling Test, which was administered after the Digital strategy;

Set C Spelling Test, which was administered after the Phonetic strategy; and an Interview Questionnaire for the FGD. All the words in each set were randomly selected from the main list of 300 spelling words for 6<sup>th</sup> grade (Fisher, 2011).

## 2.4 Data Gathering Procedure

### *Pre-implementation*

The six sections in Grade Six were purposively divided into three groups based on the composition of each section: Group A consisted of Loyola and Regis, Group B comprised Canisius and Bellarmine, and Group C included Claver and Gonzaga. They were oriented with the three different learning experiences to which they were exposed. Questions and clarifications were addressed to them before the implementation started.

### *Implementation*

The implementation of the three learning strategies ran within nine cycles during the 2<sup>nd</sup> trimester of the school year 2023-2024. The table below shows the differentiated schedules of the three groups about the three strategies.

**Table 1.** *Schedule of Three Sets of Interventions for Three Groups*

Schedule	GROUP A (Loyola & Regis)	GROUP B (Canisius & Bellarmine)	GROUP C (Claver & Gonzaga)
Session 1	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Session 2	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Cycle 1 Session 3	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Session 4	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Session 5	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Session 6	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Cycle 2 Session 7	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Session 8	Set A: Tactile (5 words)	Set B: Digital (5 words)	Set C: Phonetic (5 words)
Session 9			
Session 10	Set A Posttest	Set B Posttest	Set C Posttest
Cycle 3 Session 11			
Session 12			
Session 1	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Session 2	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Cycle 4 Session 3	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Session 4	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Session 5	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Session 6	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Cycle 5 Session 7	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Session 8	Set B: Digital (5 words)	Set C: Phonetic (5 words)	Set A: Tactile (5 words)
Session 9			
Session 10	Set B Posttest	Set C Posttest	Set A Posttest
Cycle 6 Session 11			
Session 12			
Session 1	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Session 2	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Cycle 7 Session 3	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Session 4	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Session 5	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Session 6	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Cycle 8 Session 7	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Session 8	Set C: Phonetic (5 words)	Set A: Tactile (5 words)	Set B: Digital (5 words)
Session 9			
Session 10	Set C Posttest	Set A Posttest	Set B Posttest
Cycle 9 Session 11			
Session 12			

#### *Implementation of Tactile Strategy*

In this strategy, forty randomly selected words were equally distributed across the eight sessions. In every session, the teacher gave five words, which were said aloud twice. The students formed the given word using their manipulatives (i.e. Scrabble tiles)

#### *Implementation of Digital Strategy*

While class Group A is using the Tactile strategy, class Group B uses the Digital strategy. In this strategy, a second set of forty randomly selected words was also distributed equally across the eight sessions. This time, every set of words was preloaded into each student's iPad, and they played a pre-installed application or web-based game that contained the given words.

#### *Implementation of Phonetic Strategy*

This strategy was first utilized by class Group C. In this strategy, the students were first taught how the process of "chunking" a word works. It is for them to see how they can break down the words into pieces based on the sounds they hear within the word. Afterward, the teacher read the words aloud, and the students chunked the words on their own by putting every chunk in a box or circle or using dots or slashes. The students will be given the freedom to group the letters according to the sound of each word.

Two cycles were allotted for exposure of each strategy, and then on the 3<sup>rd</sup> cycle, they were given the posttest.

#### ***Post-implementation***

During the posttest, ten randomly selected words derived from the forty given words were used. The teacher said every word twice, and the students spelled out the words by writing on a sheet of paper. Answers were checked and documented.

### **2.5 Data Analysis**

In terms of quantitative analysis, this study employed the Kruskal-Wallis test to identify whether there were statistically significant differences in students' spelling performance after exposure to the three different strategies. For the qualitative analysis, the study utilized Braun and Clarke's (2006) Thematic Analysis through a Focused Group Discussion (FGD) to gather in-depth insights into the students' experiences with each strategy.

### **2.6 Ethical Considerations**

Before the study, endorsements and approvals were sought from the Sacred Heart School-Ateneo de Cebu grade school principal's office and the institutional research council, respectively. Moreover, since the study involves minor participants (those under eighteen), a consent form explaining the purpose of the study, procedures, risk assessment, benefits, duration of participation, statement of confidentiality, voluntary participation, and termination of participation was sought from both the participants and their parents or guardians. By the Data Privacy Act of 2012, all data were gathered, analyzed, kept, and disposed of with utmost confidentiality.

## **3.0 Results and Discussion**

### **3.1 Students' Spelling Performances**

In this phase, the researchers investigated the impact of three different spelling strategies on students' spelling performance. The students were exposed to a tactile strategy, a digital strategy, and a phonetic strategy, each designed to support the development of their spelling skills. Then, posttests were administered to each group following the counterbalanced quasi-experimental research design.

The following dataset, presented in Table 2, suggests that the student's spelling performance was positively impacted by the use of the Tactile Strategy, yielding the highest mean score and falling within the "Satisfactory" range, as exhibited by Group A. However, the performance of Groups B and C fell within the "Fairly Satisfactory" limit, which is lower compared to Group A's performance. This means that the Tactile Strategy might have been more effective for one type of student over another, or, more likely, other factors, such as learning style and prior knowledge, may also affect students' performances. Further research identified that manipulatives, such as Scrabble tiles, allowed students to visualize and utilize letter combinations and phonemic blending while spelling (Ehri & Wilce, 1980). Other studies have established the need for spelling instruction to incorporate substantial

time using multisensory approaches with activities that allow for both tactile and kinesthetic engagement, making many options for spelling development possible, including those with auditory processing difficulties.

**Table 2.** *Students' Spelling Performance after Exposure to Tactile Strategy*

Group	n	Mean (SD)	Transmuted Grade	Description
Group A	69	6.81 (0.896)	80	Satisfactory
Group B	60	6.38 (1.209)	77	Fairly Satisfactory
Group C	67	6.34 (1.388)	77	Fairly Satisfactory

**Table 3.** *Students' Spelling Performance after Exposure to Digital Strategy*

Group	n	Mean (SD)	Transmuted Grade	Description
Group A	69	7.83 (0.907)	87	Very Satisfactory
Group B	60	7.35 (1.459)	83	Satisfactory
Group C	67	7.51 (1.160)	84	Satisfactory

**Table 4.** *Students' Spelling Performance after Exposure to Phonetic Strategy*

Group	n	Mean (SD)	Transmuted Grade	Description
Group A	69	9.14 (0.692)	94	Outstanding
Group B	60	8.45 (1.199)	90	Outstanding
Group C	67	8.37 (1.358)	89	Very Satisfactory

According to the dataset presented in Table 3, the Digital Strategy has indeed helped improve the spelling performance of the students. Group A achieved the highest mean score within the "Very Satisfactory" range, while Groups B and C also performed exceptionally well, with their mean scores falling within the "Satisfactory" range. This suggests that the digital strategy may have been effective in improving their spelling skills across the three groups. A recent study highlighted that digital tools, such as educational software and online resources, enhance spelling development by enabling interactive and personalized learning (Qamariah & Wahyuni, 2018). The integration of technology-based approaches with traditional approaches can lead to improved spelling outcomes in students, as noted by Little et al. (2018).

Based on Table 4, it can be observed that the Phonetic Strategy was highly effective and achieved significant success in spelling for all three groups. The mean scores of the three groups fell within the categories "Outstanding" and "Very Satisfactory." This was far above the achievements in previous data, achieved through the use of Tactile and Digital Strategies. Research findings consistently indicate that a phonics-based approach effectively assists learners in developing strong spelling skills (Ehri, 2014; Torgesen & Hudson, 2006). Probably, the phonetic approach worked best in general for the students' spelling skills since it systematically devoted instructional time to letter-sound relationships and phonemic awareness. The findings underscore the inherent importance of incorporating multisensory, evidence-based approaches—such as phonics-based instruction—into spelling development supports.

Since the Shapiro-Wilk test reported a significant violation of normality in the dataset ( $p < .05$ ), the Kruskal-Wallis test was performed to check for significant differences in mean spelling scores across the three different strategies employed by the students. In Table 5, the Kruskal-Wallis test statistic for the Tactile Strategy was  $\chi^2 = 5.39$  with 2 degrees of freedom (df) and a p-value of 0.067. In the case of the Digital Strategy, the test statistic was 2.27 with two df and a p-value of 0.321. These p-values are above the standard level of significance, 0.05, indicating that the mean score differences between groups were not significant for the items assessing Tactile and Digital Strategies.

**Table 5.** *Kruskal-Wallis Test on Students' Mean Score Differences in Tactile, Digital, and Phonetic Strategies*

	$\chi^2$	df	p	Pairwise comparisons	W	p
TACTILE Strategy	5.39	2	0.067	Group A-Group B	-2.994	0.086
				Group A-Group C	-2.636	0.149
				Group B-Group C	0.404	0.956
DIGITAL Strategy	2.27	2	0.321	Group A-Group B	-1.844	0.393
				Group A-Group C	-1.811	0.406
				Group B-Group C	0.121	0.996
PHONETIC Strategy	18.63	2	< .001	Group A-Group B	-5.513	< .001
				Group A-Group C	-5.067	< .001
				Group B-Group C	-0.145	0.994



However, the Kruskal-Wallis test of the phonetic strategy yielded a test statistic of 18.63 with two degrees of freedom and a p-value of less than 0.001. Thus, there was a statistically significant difference in average spelling scores across groups using the Phonetic Strategy. Pairwise comparisons were performed using the Wilcoxon rank-sum test with the Bonferroni correction. It showed that in the Phonetic Strategy, the mean scores of Group A were significantly higher than those of Group B ( $W = -5.513$ ,  $p < 0.001$ ) and Group C ( $W = -5.067$ ,  $p < 0.001$ ). No significant difference was, however, detected between Group B and Group C ( $W = -0.145$ ,  $p = 0.994$ ).

In summary, the Kruskal-Wallis test revealed a statistically significant difference among the students' average spelling scores for the Phonetic Strategy, with Group A outperforming Groups B and C. However, there was no significant difference between the groups in the use of either the Tactile or Digital Strategy. This would, therefore, indicate that the Phonetic Strategy may be more effective in improving spelling performance compared to both the Tactile and Digital strategies.

### 3.2 Highlights and Lowlights of Each Intervention

Results from the thematic analysis are highlighted in this phase, showcasing both the highlights and lowlights of each intervention based on the qualitative responses from participants during the focus group discussions.

#### *Highlights*

##### **Tactile Strategy**

###### *Fun Factor in Gamification*

Throughout, these gamification themes were described by participants like P5 as "fun" and "enjoyable," likened to "playing games." Hands-on, game-like, tactile approaches using physical tiles were described as innovative and exciting ways to learn how to spell. As P7 expressed, "Tactile was unique and fun; working with blocks was enjoyable." Another added, "It was so much fun and easy because it was like Scrabble." The idea of this as an enjoyable process appears to have been one of the motivating factors, as one respondent articulated, "It allowed me to have fun," referring to the process as "a fun experience." Research has repeatedly shown that multisensory instruction yields positive results in literacy skills, particularly in spelling. More crucial, concrete and kinesthetic activities typically lead to higher levels of engagement, motivation, and retention in learning, as noted by Boyer & Ehri (2011) and Ehri (2013). If such tactile approaches are further enriched with gamification, the benefits can become manifold, rendering the latter a highly effective technique for teachers in their endeavor to ensure spelling mastery.

###### *Effectivity due to Ease of Manipulation*

This theme is described as the view of strategy as helpful in the way students perceive it due to the ease with which one can manipulate the materials. The participants repeatedly indicated during the research that the strategy "really helped me how to spell words" and "helped me develop my skills." Furthermore, the physical arrangement of the tiles facilitated better visualization and understanding of the structure of words, while P7 supported this, saying, "It helps figure out which letters go together." Moreover, with easy manipulation, students can visually see the components of words and quickly correct their spelling. Approaches that allow students to manipulate letters and words physically can make abstract concepts of phonemic blending and segmentation more concrete and tangible, thereby making them more accessible. Pullen & Lane, (2016). As P11 noted, "It allowed me to see the letters and easily change the spelling if it was wrong." Research has shown that the use of tiles or blocks with letters enables students to visually depict the letters and then phonetically provide the sound, which helps enhance word-letter association. Besides enhancing phonemic awareness, research has suggested that manipulability with ease, as provided by tactile materials such as letter tiles or blocks, makes spelling activities easier to enjoy and access. As one of these studies mentioned, "letter tiles hold a child's attention," thereby enabling them to "focus on the learning at hand" (Rippel, 2021). The results show that manipulative spelling instruction using letter tiles can effectively capture students' improvement in spelling skills by presenting word structures more concretely. This will surely enhance not only phonemic awareness but also make the learning process more interactive, leading to better retention and application of spelling concepts.

## **Digital Strategy**

### *Fun Factor in Gamification Aids in Remembering*

The participants consistently described the digital strategy as “fun,” “enjoyable,” and engaging, primarily due to the use of familiar technology presented in a game-like format. The participants mentioned that this strategy was more enjoyable because it included games (P4), and they felt like playing an online game while also learning (P6). The interactive element of the game was seen as a positive aspect, especially since the participants were already familiar with using devices like iPads or tablets, and they felt that “it is easier to navigate” (P3). As P5 expressed, “Most Grade 6 students are more used to using gadgets, and it is fun.” The enjoyable experience not only made the learning process engaging, but it also appeared to enhance the student’s ability to remember word spellings. P4 stated, “It uses online games, which helped me remember. When things are fun, you can remember them more, including the spelling of the words.” Rippel (2021) expresses that “When students are enjoying the learning experience, the information is more likely to be encoded and stored in their long-term memory.” These results suggest that creating a fun, interactive, and multisensory learning environment can be a helpful tool for heightening the engagement, attention, and focus of today’s learners, who are accustomed to using technology in their daily lives.

### *Helpful Challenge*

Albeit challenging, the participants testify that this strategy is effective in developing their spelling skills, particularly in the context of unscrambling and spelling challenging words. One reported that it “helped me unscramble words and figure out how to spell them. (P7) The most famous challenge was unscrambling the words, but that was perceived as a positive aspect because it allowed some fun and interactivity into the teaching process itself. According to one of the participants in a research study, “the digital strategy helped unscramble words that had been misspelled and correct them entirely,” providing immediate feedback and reinforcement. This mix of challenge, interactivity, and immediate feedback will make learning more memorable, thereby helping students retain their spelling knowledge. One student summed it up this way: “Sometimes the words had odd spellings that added to the challenge and made it more fun.” As another person added, “The digital strategy helped me unscramble hard-to-spell words, which developed my spelling skills.” These judgments imply that the digital approach not only provides a fun and engaging way to learn to spell but also offers rigorous yet helpful activities that can enhance students’ skills and even boost their confidence in their spelling abilities. By leveraging the engaging and interactive nature of technology, educators can create learning experiences that enhance student motivation, memory retention, and overall spelling skill development.

### *Motivation in Ranking System*

The participants found the ranking system employed in this strategy to be an enjoyable and motivating feature. Participants noted that the strategy was “fun because there was a ranking system. (p. 10) This engages them in seeing who scored the highest or lowest. (P12) The competitive element introduced by the ranking system appears to have enhanced not only the fun factor but also the motivation of students to perform well. The motivational elements of the ranking systems and point-based rewards can help maintain the attention and investment of students who may struggle with more traditional, teacher-directed instruction, providing a more enjoyable and rewarding learning experience (Pennington, 2015; Rippel, 2021). The activities that introduced a sense of challenge or competition likely helped these students remain focused and, in turn, showed their investment in spelling activities. Such findings suggest that the ranking system can be a potentially successful inclusion in the gamification elements of the digital intervention, enabling students to enjoy the activities more and motivating them to develop their spelling skills.

## **Phonetic Strategy**

### *Chunking Based on Syllables/Sounds*

The results of this study demonstrate the effectiveness of chunking words into syllables and individual sounds as a strategy for enhancing spelling skills. Indeed, participants consistently reported that breaking words into smaller, more manageable “chunks” helped them better understand and apply spelling concepts. This perspective was further shared by P7, “Chunking the words helps me divide them to know how to spell them and develop my spelling skills.” Similarly, Pullen and Lane (2016) say that by segmenting words into their respective phonemes or syllables, such approaches make abstract concepts of phonemic blending and segmentation tangible and achievable. Chunking words by syllables enables learners to recognize meaningful patterns organized around

vowel sounds, thereby helping to develop phonological awareness, which is essential for both reading and spelling. Similarly, the segmenting and manipulating of individual sounds within a word. As P12 explained, "helps me to know the spelling." Such segmentation and manipulation of sounds support students' knowledge of Grapheme-Phoneme Correspondences (GPC) and lead them to apply their learning to new words. Furthermore, P9 explained, "The dots depend on the syllables or if there are smaller words within the word." This leads to an awareness of how chunking sometimes will expose smaller words to larger ones. Phonetic strategies, when combined with chunking, can render structured and systematic content both more palatable and enjoyable to students, therefore significantly improving their spelling capabilities.

#### *Effectivity in Learning About a Word*

In this part, participants consistently stated that this strategy is the most effective one for them, noting that it teaches them syllables, pronunciation, and spelling in a clear and structured way. Since the chunking method involved breaking down words into simpler ones, it was praised for its simplicity and usefulness, with one student stating, "Chunking the words by syllable, rather than just focusing on one part, was very helpful. (P7)" Chunking will also allow the participants to "know the word more deeply" by understanding how syllables interact with each other. Dymock and Nicholson continue to suggest that phonetic strategies have also been shown to be effective in reinforcing spelling skills and facilitating the transfer of learning to new words. The phonetic strategy also requires adherence to "rules that were very simple and laid out, which allowed me to do it quickly, (P11)", making it more accessible and quicker to learn and apply. Participants also found chunking makes it "easy to know the spelling," and this is a strategy that best suits them to indicate its effectiveness in supporting participants' individual learning needs. These findings, therefore, indicate that the chunking method of teaching syllables, pronunciation, and spelling is among the most effective methods for students, as its simplicity and structured approach enhance understanding of word interactions and address the learning needs of each student to master spelling skills in a faster and more profound way.

#### *Liberty to Divide Words*

This theme highlights how this approach gives students a significant amount of autonomy and flexibility in the way they chunk and manipulate words. P1 commented that this approach enabled the students to "chunk a word on my own according to its pronunciation" rather than having one set method drilled into them. As one student further commented, "The chunking technique is interesting because I can chunk words in many different ways. (P2) The actual ownership of the chunking process seemed to be an empowering aspect of this phonetic strategy for themselves. Pullen and Lane (2016) state, "The freedom to chunk words in a manner that has meaning for them empowers students to use phonics knowledge more effectively." This freedom to experiment and find their ways to chunk words effectively likely gave them a sense of ownership in their learning process. These findings also confirm that given an opportunity, students will interact with spelling in a manner consistent with their unique learning preferences and strengths. If allowed to apply these rules and patterns in meaningful ways, this approach has the potential to provide the student with a toolset of approaches that can be generalized to a large number of words.

#### ***Lowlights***

##### **Tactile Strategy**

##### *Difficulty in Finding the Letters*

This downfall, created by Tactile Strategy, involved searching for letters in a Scrabble set. They cited that "finding the correct letters to make the words (P8)" or "finding the letters in the Scrabble set (P12)" appears to be a challenge, given that letters were often hard to find quickly. One noted that "the teacher says the word, and I have to unscramble the letters" (P12), adding a complication over and above pure spelling. As Rippel (2021) mentioned, this difficulty can be particularly pronounced for students with limited fine motor skills or those who are not accustomed to working with physical manipulatives. Some participants also expressed concerns that "some blocks get lost, and it would not help" (P6), indicating that the potential drawbacks of the tactile materials could be significant if not correctly managed. In addition, the time required to set up the tactile activity often caused the teacher to start before the students were ready, leading to frustration. The participants remarked that they "kept looking for the letters, but it consumed much time" and that sometimes, "we could not flip them quickly." These limitations can undermine the overall impact of the tactile approach, as students may not be able to fully engage

with the material due to physical constraints. Thus, educators should be aware of this limitation and consider alternative strategies to ensure that all students have equal opportunities to succeed in spelling instruction.

#### *Limited Number of Letters*

Another key theme that emerged in this study is the potential drawback of this strategy due to the limited number of available letters, particularly less common letters like X and Z. P2 highlighted that with “two of each letter”, it was often “hard to find the ones needed.” This leads to a word with “missing letters because there were so few available (P3)”. This scarcity of letters led the students to “improvise by using alternatives, such as turning an N upside down for a Z” (P3). Working in partners intensified the problem, for “I cannot have the same letter as my partner (P3)” and “sometimes, my seatmate would form the word very fast. (P13)” This can be particularly problematic for students who require more targeted, individualized support (Adewunmi, 2023). This lack of individual access to the tiles can undermine the hands-on, multisensory benefits that make tactile strategies effective in the first place. If students are not able to actively manipulate the letters, they may not be as engaged or motivated to learn. Overall, the issue of letter availability should be considered when using this strategy to ensure that students can fully engage with the spelling activities without being deprived of equal opportunities due to a lack of necessary materials.

#### *Level of Difficulty*

This theme is evident in how, for some participants, it was “a little bit harder than the other strategies” (P10). As one study demonstrated, “The tactile strategy was less effective for students who struggled to manipulate the letter tiles or blocks, and it generalized poorly to untrained words” (Rippel, 2021). The fact that this might be limiting could reduce the overall effectiveness of the tactile strategy. In light of this, some participants suggested that the teacher should also review the words to be added so that an appropriate level of difficulty could be considered. In addition, P13 has said that “adding different levels” would better define the challenge and allow for considering students of differing spelling abilities. This multi-level Tactile Strategy can be beneficial in maintaining students' interest and catering to their learning needs, considering their varying capabilities, from basic spellers to proficient spellers. Given this fact, teachers can maximize the value of this activity, knowing that no individual child will be excluded from this classwork due to their spelling skill level.

#### **Digital Strategy**

##### *Random Tapping or Placement of Letters*

Another possible weakness of the strategy was that it would allow students to “tap random letters to form words” (P1). As P2 said, they can “randomly place letters until they get the word correct, w/o thinking.” Another weakness was “spamming the buttons and clicking random ones (P8)” as this may result in getting the correct answer without knowing the spelling. This confirms that the ease of accessing information and tools, such as spell-check and autocorrect, on digital platforms can lead to a phenomenon known as Cognitive Offloading (Risko & Gilbert, 2016). This can reduce students' active engagement with the spelling process and their development of independent word analysis strategies. With this, participants recommended implementing a security system where kids cannot tap random letters (P1) and suggested features like a limited number of ‘lives’ or attempts, where students would be ‘knocked out’ (P12) if they made too many incorrect guesses. This would encourage more thoughtful engagement with digital activities and prevent students from simply “cheating very fast (P13)” by clicking rapidly. Due to the impact of technology, students do not always recognize the importance of truly understanding the English language (Purcell et al., 2013), implying that learning spelling, grammar, and sentence structure is unnecessary because technology can do the task for them (Bromley, 2010; Purcell et al., 2013; Alhusban, 2016).

##### *Technical Issues*

Another downside of this strategy, as highlighted by the participants, is the occurrence of technical problems, such as internet issues and trouble logging in or out of accounts. (P3) Technical issues, such as software glitches, system crashes, or unreliable hardware, can directly interfere with the learning process, frustrating students and thereby undermining the potential benefits of digital game-based learning (Nadeem et al., 2023). Furthermore, P6 mentioned that “the only potential challenge was if the link was not working,” highlighting the importance of ensuring that all digital resources are accessible and functional. If students repeatedly encounter technical problems during game-based learning activities, it can diminish their interest and motivation to participate.

### *Anagrammatic Words*

The majority of the participants also emphasized a downside of the Digital Strategy in terms of Anagrammatic Words, mainly described as a word that can form another or many words using the same letters. As P5 stressed, "The challenge was having a hard time figuring out what the words were," suggesting that the process of unscrambling the letters and identifying the correct word was more difficult in the digital format. P14 also mentioned that the strategy was "difficult for me, and I do not like it because I had to apply various alphabets." Indicating that the need to manipulate and rearrange letters on a digital platform was not preferred. This process places additional cognitive demands on students, as they must manipulate and rearrange letters to identify the correct word (Ehri, 2005; Treiman, 2017). These comments highlight that while technology can provide engaging and interactive experiences, some students may struggle with tasks that require higher-level word analysis and decoding skills in a digital context. Students who struggle with these foundational skills may find tasks involving anagrammatic words particularly challenging, even in a digital context (National Reading Panel, 2000).

### *Level of Difficulty*

In this strategy, some participants also felt that the level of difficulty could be improved to better challenge the students. Suggestions included 'including more challenging words, such as" onomatopoeia, "so students can practice spelling them (P7)' and 'making them more difficult.' (P8)" P9 also expressed that "I did not find the Digital Strategy challenging." This is supported by a study that states, "Tasks that are neither too easy nor too difficult tend to be the most effective for learning" (Vygotsky, 1978; Csikszentmihalyi, 1990; Chaiklin, 2003; Hong & del Busto, 2020). When activities are too easy, students may become bored and disengaged, limiting the potential for skill development. P13 felt that this strategy "became too easy, and I no longer learned anything from it." To address this, P14 recommended "having different levels" of difficulty, which "may help improve my spelling skills and ability to remember spellings." Providing digital strategies with multiple levels of difficulty can help ensure that all students are appropriately challenged and can progress at their own pace (Tomlinson, 2014).

### **Phonetic Strategy**

#### *Single or Multiple Syllables*

In this strategy, some participants encountered challenges when dealing with words that did not form the expected patterns due to the number of syllables present in a word. The primary issue highlighted was "not knowing if a word has one or more syllables, (P1)" which made it challenging to apply the chunking method effectively. P3 mentioned, "The main problem in Phonetics is trick questions (words) that do not require chunking." According to (Treiman & Kessler, 2014), "some words do not follow the expected syllable patterns or may have unexpected syllable divisions," resulting in some participants expressing "difficulty in separating the syllables, (10)" even for words that did have multiple divisions. Through these findings, it can be stated that educators should also be mindful of incorporating a range of word types, including single-syllable words and words with irregular or unexpected syllable structures. Providing practice on identifying the number of syllables in a word and strategies for handling words that do not fit the typical chunking pattern may help address these challenges and ensure that students can fully benefit from this approach.

#### *Level of Difficulty and Effectivity*

In this strategy, most students expressed that "there is not much challenge in the chunking technique" (P10), suggesting that this strategy may have been too simplistic for some learners. P3 further suggested "inclusion of more challenging words which are difficult to chunk into syllables" and "longer words so that students have a bigger challenge in chunking them. (P7)". Whereas P4 added that it was "simple but less enjoyable" and just "similar to the old way of writing words, (P9)", suggesting that maybe the technique was not that interesting or novel compared to the other strategies. Research documented that the difficulty level of words within the phonetic strategy impacts its effectiveness and level of engagement (Ehri, 2005; Graham & Santangelo, 2014). P4 also added that this strategy was "not as effective as normal spelling" for those who "know the words already". Hence, it might suggest that although chunking was perceived as easy and straightforward to use, the total lack of challenge and engagement in this method may reduce its effectiveness for some learners, and it should incorporate more complex words to enhance both motivation and learning outcomes.

### *Silent or Double Letters*

Some also experienced problems with words with silent or double letters: "My only problem was that sometimes these words were awkward to repeat because they included silent letters," said P11. This suggests that the unusual letter combinations made chunking these words into syllable units problematic. This "separating syllables" problem indicated that chunking was less effective for the monosyllabic words. This may be due to the complex nature of the English language's orthographic system. Many words have letter patterns that do not align with the typical phonetic rules. (Treiman, 1993; Venezky & Wagner, 1999; Treiman & Kessler, 2014). To address the challenge, participants recommended "additional things to be added, such as signs or the teacher explaining silent letters" (P11), emphasizing the need for explicit instruction on letter patterns that do not follow typical phonetic rules. If addressed, educators can help the student navigate the complexities of the English language and apply the chunking technique more effectively, even when encountering words with silent or double letters.

### **3.3 Combination with Other Strategies**

This study also highlights the benefits that arise from combining these strategies. The participants noted that combining strategies can be beneficial, as incorporating tactile strategies with other approaches enables students to benefit from both methods (P11). For example, when tactile is combined with phonetic strategy, which involves breaking words into chunks, it can "make it easier in some situations because they are somewhat similar, allowing you to use both at once to spell and fix words" (P7). Moats (2005) and Birsh (2018) even mentioned that combining tactile strategies, such as using letter tiles or blocks, with other approaches allows students to engage multiple senses, reinforcing the concepts learned through phonics instruction.

Similarly, combining digital strategy with other approaches, such as utilizing both auditory and visual features like hearing the word chunked and seeing it presented digitally, "may help me understand more and see what would happen (P11 According to Mangen (2013) and Shamir & Korat (2015), "the combination of digital strategies with other approaches, like the use of both auditory and visual features, can lead to fuller comprehension and retention of spelling concepts in students.

Participants also noted that integrating phonetic strategy with tactile strategy provided an outlined framework through which word structure and pronunciation are learned. At the same time, the hands-on, multisensory nature of the tactic heightened the concepts learned through the phonics instruction. This helped students "really learn how to spell" (P3). This evidence highlights the effectiveness of a multimodal approach to spelling instruction, which engages students' senses while providing explicit phonics instruction and offering practice opportunities in both hands-on and digital formats.

Research has suggested that multi-faceted strategies and activities for spelling instruction create student motivation and engagement more robustly than single-instruction curriculum design (Patall et al., 2010; Gambrell, 2011). By engaging students' senses, providing them with structured frameworks, and differentiating teachers' support, they will develop robust spelling skills and a solid foundation to support them throughout their lifelong literacy.

## **4.0 Conclusion**

It is thus concluded from this study that the different interventions to which the Grade Six students are exposed result in a variation in their performance records. The Phonetic Strategy was found to be the to be most effective, resulting in *Outstanding* performance. Given the superior effectiveness of the Phonetic Strategy, as evidenced by significantly higher mean spelling scores ( $p < 0.001$ ), this study underscores the critical importance of prioritizing and strengthening phonics-based instruction in elementary spelling curricula. Meanwhile, the Digital Strategy achieved satisfactory performance, and the Tactile Strategy yielded reasonably satisfactory results. Highlights for the Tactile Strategy include a fun factor in gamification effectivity due to ease in manipulation, while the Digital Strategy includes a fun factor in gamification aids in remembering, helpful challenge, and motivation in the ranking system; and the Phonetic Strategy includes chunking based on syllables/sounds, effectivity in learning about a word, and liberty to divide words. While the Tactile and Digital Strategies offered certain benefits, particularly in terms of engagement and motivation, their limitations suggest that they should be considered supplementary tools rather than primary methods for spelling instruction. Lowlights for the Tactile Strategy include difficulty in finding the letters, a limited number of letters, and level of difficulty, while the Digital Strategy



includes random tapping or placement of letters, technical issues, and anagrammatic words; and for the Phonetic Strategy includes single or multiple syllables, level of difficulty and effectivity, and silent or double letters. Moving forward, future research should investigate how to effectively integrate elements of gamification and personalized learning, as observed in the Digital and Tactile strategies, into the phonics-based approach to enhance engagement and cater to diverse learning styles without compromising instructional efficacy. This might involve designing digital phonics games or incorporating tactile manipulatives to reinforce phonetic concepts.

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# Inclusive Education in School Leadership: An Appreciative Inquiry

**Abstract.** This study employed an appreciative inquiry approach, a qualitative methodology that focuses on identifying and amplifying existing strengths to foster positive change. Data collection involved semi-structured interviews with school administrators, teachers, and students, as well as focus group discussions to explore shared experiences and perspectives. Document analysis of school policies and program materials provided contextual understanding. The appreciative inquiry framework guided the research through four phases: Discovery, Dreaming, Designing, and Destiny. Discovery involved identifying and appreciating current inclusive practices. Dreaming explored stakeholders' visions for an ideal inclusive environment. Designing focused on collaboratively developing actionable strategies. Finally, Destiny is involved in proposing implementation and sustainability plans. Thematic analysis was employed to synthesize qualitative data, revealing key leadership strategies and support systems that contribute to inclusive education at the University of the Visayas, Dalaguete Campus.

**Keywords:** Appreciative inquiry; CDIO framework; Diverse learners; Inclusive education; Professional development.

## 1.0 Introduction

Inclusive education, a cornerstone of equitable and quality education, aims to ensure that all learners, regardless of their diverse needs and backgrounds, have access to meaningful learning opportunities (UNESCO, 2020). Globally, there is a growing recognition of the importance of fostering inclusive educational environments driven by principles of social justice and the belief that diversity enriches the learning experience (Florian, 2014). In the Philippines, this commitment is reflected in the Department of Education's mandate to provide quality education for all Filipino citizens (Llego, 2022) and the issuance of DepEd Order No. 43, s. 2013, which promotes inclusive education within the basic education system. Despite these policy initiatives, the practical implementation of inclusive education faces significant challenges.

Research consistently highlights a gap between policy and practice, particularly in higher education settings (Sales, 2019). Studies indicate that while educators recognize the importance of inclusivity, they often lack the necessary training, resources, and leadership support to implement inclusive practices (Muega, 2016) effectively. Furthermore, much of the existing research focuses on individual teacher preparedness rather than the systemic and collaborative efforts required for successful inclusive education (Florian & Linklater, 2010). This emphasis overlooks the crucial role of school leadership in fostering a culture of inclusivity, where policies, practices, and resources are aligned to support diverse learners. Moreover, while theoretical frameworks such as the CDIO (Conceive, Design, Implement, Operate) framework (Crawley, Ostlund, & Brodeur, 2014) and Universal Design for Learning (UDL) (CAST, 2018) offer valuable guidance for developing inclusive practices, their effective adaptation and implementation require robust leadership and collaborative effort.

However, there is a lack of empirical evidence on how these frameworks are applied in the context of school leadership to enhance inclusive education, particularly in the Philippine higher education landscape. This research, conducted at the University of the Visayas-Dalaguete Campus, addresses this critical research gap by examining the integrated perspectives of educators and school administrators in implementing inclusive education. The primary problem addressed in this study is the gap between the policy mandate for inclusive education and its practical implementation at the University of the Visayas-Dalaguete Campus, characterized by a lack of integrated leadership strategies, insufficient preparedness among educators and administrators, and limited understanding of the challenges and strengths associated with adopting inclusive practices.

This study is significant for several reasons: it provides practical insights and actionable recommendations, contributes to existing literature, informs policy development, and offers a contextual understanding of inclusive education in a Philippine higher education setting, aligning with Sustainable Development Goal 4 (Saini, 2023). Specifically, the objectives of this research are to identify and evaluate existing leadership strategies, assess perceived preparedness, explore challenges and strengths, and propose actionable recommendations, ultimately

providing a comprehensive understanding of the current state and potential improvements in inclusive education at the University of the Visayas-Dalaguete Campus.

## 2.0 Methodology

### 2.1 Research Design

This study employed a qualitative research design, drawing upon Social Cognitive Theory (Bandura, 1986) to understand how administrators and teachers develop their beliefs and practices regarding inclusive education. Appreciative Inquiry's (4D) model guided the research, focusing on discovering strengths and envisioning improvements (Creswell, 2014).

### 2.2 Research Participants

A purposive sample of 20 participants was selected, comprising 8 non-teaching and 12 teaching personnel. The criteria for inclusion as co-researchers were: (1) current employment at the University of the Visayas-Dalaguete Campus, (2) direct involvement in educational practices or administrative roles, and (3) willingness to share their experiences and perspectives on inclusive education. The sample size was determined by data saturation. Social factors, such as gender, age, and ethnicity, were not considered as study variables, focusing instead on professional roles and experiences.

### 2.3 Research Instrument

The primary instrument was a semi-structured interview guide developed to explore participants' beliefs, attitudes, and practices related to inclusive education. The interview guide was expert-validated by three educational researchers with experience in inclusive education, ensuring content validity and clarity.

### 2.4 Data Gathering Procedure

Prior to data collection, ethical approval was obtained from the University of the Visayas-Dalaguete Campus administration. Formal letters outlining the study's objectives and ethical considerations were submitted. Interviews were conducted in private settings on campus at a time convenient for participants. Interviews were audio-recorded with participants' consent, and the recordings were transcribed verbatim. Thematic analysis was used to analyze the interview data, following Braun and Clarke's (2006) six-phase approach: familiarization, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the report. Thematic analysis was chosen to identify patterns and themes related to inclusive education practices rather than categorizing errors.

### 2.5 Ethical Considerations

Ethical considerations were prioritized throughout the study. Informed consent was obtained from all participants, who were thoroughly briefed on the study's objectives, procedures, and potential risks and benefits. Participants were assured of their right to withdraw at any time and were provided with contact information for the researchers. Confidentiality was maintained by using pseudonyms in all transcripts and reports. The researcher maintained objectivity, transparency, and respect for participants, creating a safe and trustworthy environment. Participants were informed of available support services in case discussions about inclusive education evoked emotional responses.

## 3.0 Results and Discussion

### 3.1 School Leadership Practices for Inclusive Education

The findings of this study illuminate the practices employed by UV Dalaguete in fostering inclusive education within the framework of school leadership. These practices have been categorized into four key themes: Policy and Structural Support, Instructional Design Strategies, Student-Centered Approaches, and Operational Adjustments. Each theme reflects a significant aspect of how school leadership can promote inclusivity.

**Table 1.** School Leadership Practices for Inclusive Education

Themes	Categories	CDIO Perspective
Policy and Structural Support	Inclusive policies and funding for accessibility	Conceive: Ensure foundational policies and funding structures that support inclusivity across resources, technology, and teacher training.

	Leadership training on inclusivity in decision-making	
<b>Instructional Design Strategies</b>	Differentiated instruction Multimodal presentation (visual, auditory, kinesthetic) Flexible assessment options (e.g., projects, oral exams)	Design: Structure inclusive teaching plans tailored to student need, with specific adaptations for diverse styles.
<b>Student-Centered Approaches</b>	Cooperative learning and peer tutoring Personalized feedback and flexible deadlines Real-life examples and hands-on learning	Implement: Engage students in collaborative activities emphasizing community and peer support.
<b>Operational Adjustments</b>	Regular evaluation and feedback for policy effectiveness Professional development focused on inclusive pedagogy and reflective practices	Operate: Optimize classroom processes to address real-time challenges in large or diverse classes, ensuring that all students remain engaged.

### ***Policy and Structural Support***

Creating inclusive policies and securing adequate funding for accessibility are essential for promoting inclusivity in schools. One administrator highlighted this commitment, stating, *“Our leadership team is dedicated to making sure every student, regardless of their background or ability, has access to the resources they need”* (Transcript 1). This aligns with the principles outlined in UNESCO's Global Education Monitoring Report 2020, which emphasizes the crucial role of policy frameworks and resource allocation in creating accessible learning environments (UNESCO, 2020). To reinforce this commitment, the University of the Visayas-Main Campus offers specialized leadership training that focuses on inclusivity. These sessions equip selected administrators and teachers with the necessary skills to effectively implement inclusive policies, a practice supported by research emphasizing the importance of targeted professional development for inclusive education (Darling-Hammond, Hyler, & Gardner, 2017). Not all teachers are required to attend; instead, selected educators are chosen based on specific criteria to participate in these training programs. To facilitate their attendance, the satellite campus provides transportation allowances and accommodation for these teachers. This support addresses the need to reduce barriers to participation in professional development, a crucial aspect of promoting equity and access (Ryan, 2010). This support ensures that they can focus on their training without financial constraints, allowing them to engage fully in the learning process. One teacher expressed, *“The training serves as an eye-opener for us participating teachers about the importance of inclusivity in the classroom”* (Transcript 2). Furthermore, this training demonstrates the University's commitment to developing leaders for inclusion, a practice highlighted as essential for creating inclusive school environments (DeMatthews & Mawhinney, 2014)."

### ***Instructional Design Strategies***

Differentiated instruction and multimodal presentations allow teachers to cater to various learning styles, which is essential for an inclusive classroom. However, these strategies are often challenging in classrooms with large student numbers, where tailoring lessons for each individual becomes difficult and time-consuming. To address this, the institution is currently employing two methods of instruction: face-to-face learning and the Blackboard Learning Management System (LMS). The Blackboard LMS, a platform provided by the main university, supports its satellite campuses by enabling teachers to enhance their instructional practices and offer additional resources to students, especially teachers supporting large class sizes.

One teacher shared, *“I always try to use different methods in my lessons. Some students learn better by seeing things, while others prefer listening or doing hands-on activities”* (Transcript 8). This reflects a commitment to accommodating diverse learning styles, ensuring that every student has an opportunity to succeed. Another teacher highlighted the benefits of the Blackboard LMS, stating, *“With the Blackboard LMS, I can post videos, quizzes, and assignments, which helps meet different learning needs”* (Transcript 3).

This platform enables teachers to offer a range of learning materials, making it easier for students to engage with the content in a manner that suits them best. A third teacher added, *“Incorporating online resources alongside in-person classes enables the administration to reach a broader range of students and provide diverse learning opportunities. This approach ensures that all students can engage with the material in ways that best suit their individual learning*



*preferences, ultimately enhancing their educational experience"* (Transcript 1). This combination of online and face-to-face instruction enhances the learning experience, making it more flexible and accessible for all students.

### ***Student-Centered Approaches***

Student-centered methods, such as cooperative learning, personalized feedback, and hands-on activities, are powerful tools for promoting inclusivity and diversity. These approaches enable students to engage in collaborative activities that support peer learning and foster a sense of belonging. As one teacher explains, *"When we work in groups, students can share their strengths and support one another." For example, one student may excel at writing, while another is more skilled at drawing. They collaborate to complete a project"* (Transcript 10)

Another teacher emphasizes the value of personalized feedback, stating, *"I always try to give tailored feedback to my students. It makes them feel supported and shows that I care about their progress"* (Transcript 14)

Hands-on activities also play a crucial role in engaging students. One teacher noted, *"Working on projects that involve building or creating something makes learning more exciting. It allows students to connect what they learn in class to real-life situations, which keeps them engaged"* (Transcript 14)

However, managing such approaches in a large class can be challenging, as providing individualized attention and supporting peer interactions requires strong classroom management skills. Education leadership that encourages teacher collaboration and reflective practice can help mitigate these challenges, as seen in studies that emphasize appreciative inquiry as a tool for fostering a supportive classroom culture (Johnson & Lee, 2021). To address the challenges of implementing student-centered approaches in large classes, the university employs several strategies, primarily through effective systems such as Blackboard LMS and robust student management systems. This platform helps educators manage student profiles, providing information about individual learning needs, which is crucial for teachers to offer personalized support to their students in a systematic manner, regardless of class sizes.

Blackboard LMS is an effective tool for teachers in UV-Dalaguete to learn about their students, regardless of the class size. It creates detailed student profiles that include important information, such as grades and participation. The real-time analytics feature helps teachers monitor student progress by tracking key metrics, such as attendance and assignment submissions, making it easier to identify those who may require additional support.

Teachers can also observe how students engage with course materials, which helps them adjust their teaching methods accordingly. They can provide personalized feedback using grading rubrics and comments, which encourages student growth. Blackboard also fosters communication between students and teachers, ensuring that everyone remains connected. Even in large classes, the organized structure of Blackboard ensures that all students have access to the same resources while allowing teachers to focus on individual needs. This adaptability is particularly significant within the context of the CDIO framework, which emphasizes the importance of designing inclusive teaching plans that accommodate diverse learning styles.

The "Design" phase of the CDIO framework is crucial for developing inclusive policies and practices that extend beyond the classroom. It encourages teamwork among teachers, students, and faculty, which helps spark new ideas (Crawley, Ostlund & Brodeur, 2014). Effective leadership is crucial in enabling teachers to share their best practices and reflect on their teaching methods, thereby fostering a culture of ongoing improvement (Fullan, 2016). Adding Appreciative Inquiry to this framework improves the classroom atmosphere by focusing on what works well and celebrating successes. This creates a supportive environment that promotes effective learning and teaching strategies (Johnson & Lee, 2021).

### ***Operational Adjustments***

To maintain inclusive practices, it is important to regularly evaluate policies and provide professional development on inclusive teaching methods. The university has a policy to assess and evaluate its programs and curriculum every three years, ensuring that they remain relevant and practical. An administrator explained, *"We regularly review our programs to identify what is working and what needs improvement, particularly in how we support our teachers"* (Transcript 1). Supporting this, one teacher shared, *"Every semester, at the end of classes or before they start,*



*we are all sent for a retooling session at the main university." Also, our senior leaders will evaluate our policy and curriculum every 3 years or 4 years.)"* (Transcript 5). This ongoing evaluation aligns with the "Operate" phase of the CDIO framework, ensuring that classroom processes are adjusted to meet current challenges. This commitment to regular assessment and comprehensive training fosters a supportive environment where both teachers and students can thrive.

In summary, this study highlights the University of the Visayas-Dalaguete's efforts in advancing inclusive education through effective school leadership. We identified four key themes: Policy and Structural Support, Instructional Design Strategies, Student-Centered Approaches, and Operational Adjustments. Starting with Policy and Structural Support, it is clear that having inclusive policies and sufficient funding is crucial. Both administrators and teachers have emphasized that a genuine commitment to inclusivity fosters a welcoming culture where every student can access high-quality education.

When it comes to Instructional Design Strategies, the university is actively working to meet different learning styles. They employ various teaching methods and incorporate technology, such as the Blackboard Learning Management System, which broadens learning opportunities for everyone. The focus on Student-Centered Approaches highlights the power of cooperative learning, personalized feedback, and hands-on activities. These strategies foster collaboration among students and help create an environment where everyone feels valued and engaged in their learning. Lastly, Operational Adjustments remind us of the importance of regular check-ins and ongoing professional development. Through conducting structured assessments and providing training, the university ensures that educators are equipped to tackle the diverse challenges of their classrooms. In general, these findings illustrate the pivotal role that effective school leadership plays in shaping inclusive educational practices at UV Dalaguete. Their commitment to inclusivity not only aligns with the CDIO framework but also meets the evolving needs of education.

### 3.2 Ways to Improve School Leadership Practices for Inclusive Education

The findings of this study emphasize the strategies employed by UV Dalaguete to improve inclusive education through effective school leadership. These strategies are categorized into three primary themes: Resource Allocation and Support, Professional Development and Training, and Institutional Policies and Collaboration. Each theme shows the essential aspect of how school leadership can actively promote an inclusive educational environment for all students.

#### *Need for More Resources and Support*

The findings from this study highlight critical challenges in promoting inclusive education at the University of the Visayas-Dalaguete, particularly concerning the need for more resources and support. Both leaders and teachers identified a significant gap in adaptive teaching materials, which are essential for meeting the diverse needs of students, even though there are currently no special education students enrolled. Planning for future inclusivity is important, as proactive measures can create a more accommodating environment when the situation arises. Materials such as visual schedules, tactile resources, sensory tools, assistive technologies, and specialized software are essential in creating an inclusive learning environment. Research supports this need, indicating that having such resources significantly enhances engagement and participation among students with disabilities (Schwartz & Drager, 2018). One teacher shared, *"Without proper materials, it is tough to meet the needs of all my students. We need those basic tools"* (Transcript 5). This sentiment was echoed by an administrator who noted the challenges posed by budget constraints, stating, *"While we want to support our teachers, budget constraints make it challenging to provide these resources consistently"* (Transcript 1). The disconnect between leadership aspirations and the realities of resource availability reveals systemic issues that must be addressed now to prepare for future inclusivity.

**Table 2.** *Ways to Improve School Leadership Practices for Inclusive Education*

Themes	Categories	CDIO Perspective
Need for More Resources and Support	Specialized Resources	Conceive: Distribute basic adaptive teaching materials (e.g., visual schedules, simple tactile resources)
	Training and Professional Development	Design: Implement a single-day workshop on IEP development and differentiated instruction at the start of every school year.

<b>Institutional Support</b>	Leadership and Policy Support	Design: Provide a two-hour training session on using commonly available assistive technologies (e.g., text-to-speech apps) for all teachers by the end of the first term. Implement: Develop and communicate clear guidelines supporting inclusive practices by the end of the first semester, ensuring all staff have access to these policies.
	Resource Allocation	Operate: Allocate specific budget lines for essential special education resources (e.g., sensory materials) in the upcoming school year,
	Mentoring and Collaboration	Implement: Establish regular collaboration meetings for general and special education teachers to share strategies

In addition to material needs, a significant gap exists in professional development for educators. Both leadership and teaching participants emphasized the lack of specialized training, particularly in areas critical for effective inclusion. Specific training needs identified include SPED training, cultural competence, differentiated instruction techniques, and behavior management strategies. The literature emphasizes the importance of ongoing professional development in special education strategies, noting that teachers equipped with appropriate training are better able to meet the needs of all students (Baker et al., 2021). One administrator remarked, *"Our teachers need more targeted training in SPED. They want to do well, but they often lack the specific skills"* (Transcript 1). Similarly, a teacher commented, *"It would be great to have training that addresses the real challenges we face in the classroom"* (Transcript 9). The disparity between leadership's understanding of training needs and the realities faced by teachers shows a problem that must be bridged to promote a more inclusive educational environment.

Moreover, leadership challenges, such as budget constraints and policy limitations, further complicate the implementation of inclusive practices. Administrators often find themselves grappling with tight budgets that restrict their ability to allocate necessary funds for resources and training. As the leader noted, *"We have great ideas, but financial limitations often hold us back from fully implementing them"* (Transcript 1). This reflects the broader systemic issues in education funding that can inhibit effective leadership in inclusive education. Fullan (2016) suggests that flexible policies and adaptable budgeting strategies are crucial for addressing the diverse needs of learners. Therefore, advocating for policy changes that enable greater flexibility in funding and resource allocation is a crucial step to take. Through this, educational institutions can better support both educators and students, creating a more equitable and inclusive learning environment.

In summary, addressing the challenges identified in the study requires a concerted effort to enhance resource availability, provide targeted professional development, and advocate for more flexible policies that support inclusive education. Although no special education students are currently enrolled, preparing now with the right tools and training will ensure that the institution is ready to welcome and support all learners in the future.

### ***Institutional Support***

A key action to take is to ensure strong leadership and clear policy support, which involves developing and communicating comprehensive guidelines that facilitate inclusive practices. All educational institutions are required to align their policies with the standards set by the Commission on Higher Education (CHED). However, even if the inclusive education policy is not well explained to teachers, these policies must be explicitly communicated rather than assumed to be understood simply because they exist. Kozleski et al. (2015) state that clear and accessible policies are foundational for promoting an inclusive environment, as they help unify the approaches of all staff members. One teacher emphasized this need, stating, *"Having clear guidelines would help us understand what is expected and how we can support all students"* (Transcript 7). This feedback shows the importance of transparency in policy communication, allowing educators to implement inclusive practices effectively.

Another significant area for improvement is resource allocation. The recommendation to allocate specific budget lines for essential special education resources, such as sensory materials like fidget tools, weighted blankets, and visual schedules, aligns with literature emphasizing the necessity of adequate resources in promoting inclusivity. These materials can support students with diverse learning needs by helping them engage more effectively in the classroom. For instance, fidget tools can help students with attention challenges by providing a physical outlet that enhances focus. At the same time, weighted blankets can help reduce anxiety for students who require a

calming influence. Visual schedules offer clear, structured guidance for daily activities, aiding students who benefit from routine and predictability.

The materials discussed above—fidget tools, weighted blankets, and visual schedules—represent some of the most common and fundamental resources that classrooms should have to promote inclusivity effectively. Fidget tools are particularly beneficial for students who struggle with attention and focus. These tools allow students to channel excess energy into physical activity, which can enhance their concentration. Research indicates that sensory-based strategies, such as fidgeting, can enhance focus and academic performance, particularly for students with Attention Deficit Hyperactivity Disorder (ADHD) (Kirk & Gallagher, 2018).

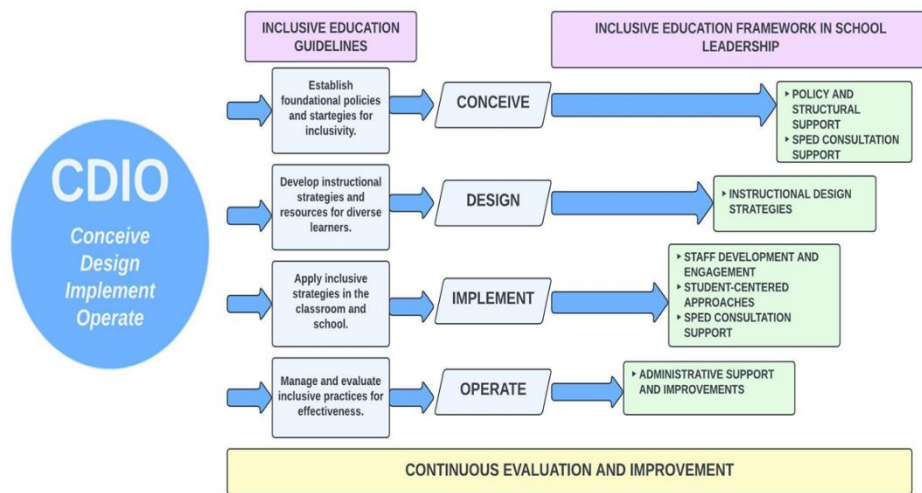
Weighted blankets are also beneficial, as they provide comfort and security, which can be particularly helpful for students experiencing anxiety or sensory processing challenges. A study found that the use of weighted blankets can reduce anxiety levels in children, contributing to a calmer learning environment (Hancocks et al., 2020). The pressure from these blankets simulates the feeling of being held, making them practical tools for students with sensory needs. Visual schedules are another crucial resource for promoting understanding and predictability in daily routines. These tools are handy for students on the autism spectrum or those with cognitive impairments. Research demonstrates that visual schedules enhance task completion and promote independence among students with special needs by clearly outlining expectations and reducing anxiety associated with transitions (O'Neill et al., 2020).

According to Baker et al. (2021), having the right materials can significantly enhance engagement among students with diverse learning needs. An administrator pointed out, *"Without a dedicated budget, we struggle to provide even the basic materials our teachers need here in UV-Dalaguete."* (Transcript 1). This lack of funding can severely impede the creation of an inclusive environment, making it imperative for the university to prioritize financial support for these essential resources.

Establishing regular collaboration meetings for general and special education teachers is crucial for fostering a culture of shared learning and ongoing improvement. Such collaboration is known to enhance teacher effectiveness and support the integration of inclusive strategies (Goddard et al., 2015). However, as one teacher highlighted, *"We do not have even one SPED major here on campus, so we could not ask for someone who can guide us on how to navigate special education, or even a focal person for this. We are also not saying that there are no learners with special needs in Dalaguete, but there is no official list or diagnosis for them, so we do not know if they truly require special services. We only rely on our observation and assessment of the child."* This absence of a SPED-trained educator leaves teachers without essential support or expertise, limiting their ability to address special needs in the classroom confidently.

The lack of a specialized focal person for SPED not only restricts teachers from having meaningful exchanges about effective practices but also challenges their ability to identify and address special needs effectively. This gap highlights the need to provide teachers with access to SPED expertise, whether through hiring qualified professionals or establishing networks with trained mentors. Such support would enable teachers to share strategies, seek guidance, and develop practices that truly foster an inclusive environment where every student can thrive.

In conclusion, the actions proposed in the study—strengthening leadership and policy support, ensuring adequate resource allocation, and fostering collaboration among educators—are critical for creating an inclusive educational environment at UV Dalaguete. By focusing on these areas, the university can build a foundation that not only prepares for future needs but also empowers teachers and enhances the learning experiences of all students. Such initiatives are essential for responding to the diverse needs of learners and ensuring that the university is well-equipped to provide quality education for all.



**Figure 1.** *Inclusive Education Framework in School Leadership Context*

The Inclusive Education Framework in School Leadership Context aims to address inclusivity by encompassing aspects of support required in educational settings, including policy, instructional strategies, administrative practices, staff engagement, student-focused approaches, specialized consultation, and continuous improvement. It emphasizes a collaborative and systemic approach that incorporates faculty, staff, and administrative support, offering a balanced focus on both instructional and administrative improvements.

The inclusive education guidelines, aligned with the CDIO framework, provide guidelines to further promote inclusive practices in UV-Dalaguete. Initially developed for engineering education, CDIO is adaptable for various educational initiatives and helps guide schools through the cycle of building and improving practices. The Conceive phase establishes foundational policies for accessibility and equality. The design focuses on creating diverse instructional strategies, while implementation ensures these strategies are applied in classrooms to support all learners. In the operation phase, continuous assessment and adjustments are made to improve inclusivity efforts.

This framework, supported by school leadership, promotes a collaborative and responsive approach to inclusion, integrating faculty, staff, and administrative support to create a supportive and sustainable school environment. Policy and Structural Support align with the "Conceive" stage of the CDIO framework, focusing on establishing a strong foundation for inclusive education through clear policies, funding allocations, and administrative training. Literature supports the importance of inclusive policies that involve multiple stakeholders (Schimmel, 2020) and highlights the need for adequate funding to ensure that resources and services are available to all students (Avramidis & Norwich, 2002). Administrative training, as discussed by Theoharis (2007), is crucial for developing leaders who can promote inclusivity within school cultures, aligning with CDIO's emphasis on conceptualizing comprehensive policy frameworks that prioritize accessibility and equality. School leaders would collaborate with teachers, administrators, and possibly parents to develop an inclusive framework tailored to their school's unique needs.

Instructional Design Strategies closely align with the "Design" phase of CDIO, focusing on the planning and creation of learning experiences tailored to diverse student needs. Drawing from Tomlinson's (2001) differentiated instruction model, the framework advocates for multimodal presentations (Mayer, 2009) and flexible assessments (Black & Wiliam, 1998), which allow students to demonstrate their learning in ways that suit their unique abilities. These design strategies align with CDIO's approach by encouraging educators to actively construct inclusive lessons and assessments that respect individual learning styles and preferences. Here, leaders design specific policies and practices for inclusive teaching methods, resource allocation, and professional development. For example, they might design flexible assessment formats to cater to diverse learning styles or create specialized training sessions for teachers on inclusive practices.

Administrative Support and Improvements reflect the "Operate" phase in CDIO by emphasizing the role of effective administration in maintaining inclusivity initiatives. This section of the framework, supported by Leithwood and Riehl's (2003) research on collaborative leadership, highlights the importance of teamwork among school leaders in promoting inclusivity. Furthermore, Wayman (2005) demonstrates the value of data-driven decision-making, which enables administrators to adjust their policies and resource allocations based on measurable outcomes, thereby enhancing overall administrative effectiveness and support for inclusivity. The school leadership monitors progress, gathers feedback from staff and students, and makes adjustments as needed. Data collection systems, including surveys and performance assessments, are utilized to evaluate the effectiveness of inclusive practices. Leaders periodically update the policies and provide continuous support to teachers, helping to sustain an environment where all students feel valued and supported.

The Staff Development and Engagement component aligns with the "Implement" stage of the CDIO framework, ensuring that faculty and staff are equipped to implement inclusive practices. This aspect is supported by Garet et al. (2001), who emphasize the importance of continuous professional development for teachers, enabling them to grow and effectively implement inclusivity. Studies by Goddard et al. (2007) emphasize the role of collaboration among staff members, fostering a culture of shared strategies and mutual support. Recognition programs (Hargreaves & Fullan, 2012) motivate staff to consistently contribute to inclusivity efforts, enabling sustained implementation of inclusive practices. During this phase, school leadership initiates teacher training programs, introduces the use of data to monitor inclusivity efforts, and launches instructional practices meant to accommodate diverse learning needs. Regular meetings and check-ins among school leaders, teachers, and the Inclusivity Committee help ensure that implementation aligns with established goals.

Student-centered approaches, encompassing cooperative learning, personalized feedback, and hands-on learning, are also part of the "Implement" stage in CDIO. Supported by research from Johnson and Johnson (1999) and Hattie and Timperley (2007), these approaches foster active, supportive, and engaging classroom environments that value students. They focus on giving students agency in their learning, thereby fostering motivation and personal growth – essential elements of an inclusive educational setting. SPED Consultation Support integrates both the "Conceive" and "Implement" phases of CDIO by establishing structures for ongoing collaboration with SPED professionals. Friend and Cook (2010) emphasize that effective partnerships between general and special education staff are essential for promoting inclusivity in practice. The use of remote consultation systems (Smith & Neumann, 2021) represents an innovative solution to support educators, ensuring that expertise in special education is readily accessible and integrated into daily instructional practices.

Finally, Continuous Evaluation and Improvement exemplify the "Operate" phase of the CDIO model. Consistent with the recommendations of the National Center on Inclusive Education (2015), this section underscores the importance of regular evaluations to adapt and refine inclusive practices. Through the process of implementing feedback mechanisms and assessing outcomes, administrators, faculty, and staff can continuously enhance their approach, ensuring that inclusivity remains responsive to the evolving needs of students. In conclusion, the Inclusive Education Framework is grounded in literature and integrates the CDIO framework across its key components, reinforcing the interconnected roles of faculty, staff, and administrators. This framework advocates for an educational environment where inclusivity is embedded within every level of operation, from policy and design to practical implementation and evaluation. Through this holistic and evidence-based approach, the framework provides a structure that not only fulfills the requirements of inclusive education but also aligns with CDIO's systematic and iterative processes to foster a sustainable, supportive, and responsive school culture. This highlights how leadership serves as the central driver of inclusive practices, influencing every other aspect of the educational system.

**Table 3. Proposed Policy for Sustaining Inclusive Education Framework in School Leadership**

Section	Description
<b>Title</b>	<i>Proposed Policy for Sustaining Inclusive Education Framework in School Leadership Context</i>
<b>Executive Summary</b>	This policy aims to support an inclusive education framework within school leadership at the University of the Visayas-Dalaguete (UV-Dalaguete). The objective is to create an environment that values and includes all students, with a focus on enhancing administrative and teaching practices. The primary areas are policy guidelines, instructional design, administrative collaboration, and continuous improvement.

<b>Introduction / Aim of the Policy</b>	This policy proposes making inclusivity a core value in school leadership to create a welcoming school environment for all students. Key focus areas include support for teachers, student-centered learning, and effective school management, ensuring all students have equal opportunities to succeed.
<b>Problem Statement</b>	Many schools practice some level of inclusivity, but a structured, leadership-supported approach is often lacking, resulting in inconsistent experiences and gaps in student support. Teachers and staff often want to contribute to inclusive practices but need structured guidelines and administrative support to do so. This policy aims to fill those gaps by offering a clear, supported framework.
<b>Background Information</b>	Inclusive education is increasingly recognized globally for its positive impact on student outcomes and school culture. Frameworks like the CDIO (Conceive-Design-Implement-Operate) provide helpful structures for schools to develop, implement, and improve inclusive practices. Research highlights the importance of leadership in fostering inclusivity (Schimmel, 2020; Theoharis, 2007), as well as the role of data-driven approaches in supporting these initiatives (Wayman, 2005).
<b>Literature Review</b>	Key literature includes: <ol style="list-style-type: none"> <li>1. Policy and Structural Support: Schimmel (2020) and Avramidis and Norwich (2002) emphasize the importance of adequate funding and inclusive policies that involve all stakeholders.</li> <li>2. Instructional Design Strategies: Tomlinson (2001) emphasizes the use of flexible assessments and strategies that cater to diverse learning needs.</li> <li>3. Administrative Collaboration: Collaborative leadership is shown to be vital in maintaining inclusive practices (Leithwood &amp; Riehl, 2003).</li> <li>4. Continuous Improvement: Studies by the National Center on Inclusive Education (2015) emphasize the importance of ongoing evaluation to adjust practices as student needs evolve.</li> </ol>
<b>Proposed Solution</b>	This policy suggests: <ol style="list-style-type: none"> <li>1. Policy &amp; Structural Support: Form a committee to develop inclusivity guidelines and allocate resources for teacher training.</li> <li>2. Instructional Design: Implement teaching strategies that address diverse needs, including multimodal methods and flexible assessments.</li> <li>3. Admin Support: Conduct regular meetings with school leaders to review inclusivity data and make decisions based on findings.</li> <li>4. Continuous Evaluation: Establish a survey and data collection system to monitor inclusivity progress and implement necessary improvements.</li> <li>5. Review current CMO and DO's: Develop and deploy a student and faculty survey, integrated with a data collection system, to identify barriers to inclusivity and drive targeted improvements in policy and practice.</li> </ol>
<b>Implementation Plan.</b>	<ol style="list-style-type: none"> <li>1. Inclusivity Committee: Establish a committee that represents all departments.</li> <li>2. Develop Guidelines: Establish clear policies that prioritize accessibility and teacher support.</li> <li>3. Teacher Training: Organize workshops and a recognition program for inclusive practices.</li> <li>4. Data and Evaluation Systems: Utilize surveys and data to evaluate inclusivity efforts.</li> <li>5. Monthly Meetings: Hold regular meetings to review progress and adjust as needed.</li> <li>6. Budget Implementation: To ensure the ongoing development and refinement of inclusive practices, the University of the Visayas-Main Campus implements a comprehensive yearly plan that includes a dedicated Committee and Policy Development workshop. This initiative, allocated a total budget of 435,000, reflects the institution's commitment to creating a sustainable and responsive framework for inclusivity. By investing in this annual workshop, the university empowers stakeholders to collaboratively review existing policies, identify areas for improvement, and develop new strategies to serve the diverse needs of its students better. This structured approach to policy development underscores the institution's proactive stance in fostering an equitable and accessible learning environment for all.</li> </ol>
<b>Conclusion</b>	Inclusive education enhances both student outcomes and school culture. Adopting this policy at UV-Dalaguete can ensure that inclusivity is an integral part of school leadership and daily operations. This structured approach fosters a lasting, positive environment for all students, staff, and the broader school community.

## 4.0 Conclusion

This study titled *Inclusive Education in School Leadership: An Appreciative Inquiry* shows how school leaders can help create and maintain inclusive education at UV Dalaguete. Through the use of an appreciative inquiry approach, the study identified successful practices and areas that require improvement, emphasizing that strong leadership is crucial for making inclusive education effective. The suggested framework in this study offers steps for school leaders to follow. It is based on the CDIO model, which encompasses the steps of Conceive, Design, Implement, and Operate. This model enables leaders to bring their vision for inclusive education to life by breaking it down into manageable steps.

The study also gathered important insights from UV Dalaguete, showing that while school leaders are dedicated to inclusivity, they face challenges such as limited resources and a lack of training for teachers. To improve inclusivity, leaders should focus on providing professional development that targets explicitly inclusive education. This could include training teachers on Individualized Education Programs (IEPs) and assistive technologies. Additionally, encouraging teamwork between general education and special education teachers can



help them better meet the needs of all students. The findings from this study are valuable not only for UV Dalaguete but also for other schools. This study demonstrates that continuous support and effective policy implementation are crucial for integrating inclusivity into a lasting part of the school culture.

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# A Journey of Trials and Hopes of Individuals with Orofacial Clefts

**Abstract.** Orofacial clefts, including conditions such as cleft lip and palate, represent much more than mere congenital conditions – they signify a profound journey characterized by visible and invisible challenges that extend beyond medical treatment into psychological and social realms. This study explores the lived experiences of individuals with orofacial clefts, highlighting their past and present struggles and aspirations. A review of existing literature reveals the multifaceted challenges these individuals face, including persistent stigma, discrimination, and issues related to self-esteem, all exacerbated by financial burdens and social isolation. To address these matters, this research employs a qualitative-narrative design, utilizing semi-structured interviews with three married female participants aged 31 to 60 from the SOCCSKSARGEN region, specifically General Santos City and Alabel in Sarangani, selected through purposive sampling. The data were analyzed using Bingham and Witkowski's (2022) five-phase approach, combining inductive and deductive methods to derive meaningful insights. The findings highlight the urgent need for supportive environments and inclusive policies to empower individuals, enhance well-being, and provide comprehensive support for their emotional, social, and psychological needs.

**Keywords:** Cleft lip and palate; Experiences; Hopes; Orofacial clefts; Trials.

## 1.0 Introduction

Orofacial clefts present complex challenges that impact individuals' physical appearance, social experiences, and overall well-being. These conditions arise from incomplete fusion of the palate and lip during early development, disrupting facial development and carrying both physical and emotional implications (Phalke & Goldman, 2024; Pittsburgh Orofacial Studies, n.d.). Due to the human face's central role in identity and social recognition, individuals with orofacial clefts may struggle with feeding, speech, and hearing while facing social challenges. While advancements in surgical procedures and therapies offer the potential for improved function and appearance, the psychological impact of living with an orofacial cleft remains a significant concern.

Further, individuals born with orofacial clefts are dealing with a set of unique challenges. Few studies identified their vulnerability to bullying, low self-esteem, and distress (Akpasa et al., 2022; Atik et al., 2020; Broutin et al., 2023). These circumstances, the potential for speech difficulties, and frequent medical interventions add further trials to their lives since they often face stigma and discrimination, and these negative social encounters compound existing challenges that can significantly impact psychological well-being (Ardouin et al., 2021; Arias-Urueña et al., 2023). These experiences underscore the need to understand the struggles faced by individuals with orofacial clefts.

Despite the significant challenging experiences, individuals with orofacial clefts demonstrate remarkable resilience and optimism. Ribeiro-Neto et al. (2018) and Wehby and Cassell (2009) highlighted that individuals with orofacial clefts undergo surgery to improve their quality of life and pursue their aspirations. The studies mentioned above reveal that they display determination in addressing appearance concerns through surgery, reflecting a desire for self-improvement and acceptance. Beyond physical transformation, they prioritize emotional and social well-being, demonstrating resilience by seeking support and engaging in social activities despite challenges.

While orofacial clefts are studied globally, individuals' unique challenges in regions like SOCCSKSARGEN, Philippines, warrant in-depth exploration. Despite recent initiatives, such as the free cleft lip and palate (CL/P) surgery program by the Cotabato Regional and Medical Center (2024) in collaboration with the Ministry of Health - BARMM and Operation New Face and Philippine Smile Group and the surgical mission conducted by Dr. George P. Royeca City Hospital in partnership with the Medical Mission of Mercy USA (LGU GenSan, 2024), there remains a lack of comprehensive research focusing on the lived experiences of individuals with orofacial clefts within this region. Further research is crucial to understand these challenges better and to inform more comprehensive, region-specific interventions that address the needs of individuals with orofacial clefts in SOCCSKSARGEN, ultimately improving their overall quality of life.

Given that individuals with orofacial clefts navigate a remarkable path of challenges and aspirations, their journeys remain largely unexplored. This research aims to shed light on their experiences, delving into their trials and hopes. Doing so seeks to contribute valuable psychological understandings, particularly regarding resilience and coping strategies within understudied populations, inform future studies, and foster community understanding. Hence, this exploration of trials and hopes of individuals with orofacial clefts recognizes the importance of giving voice to their stories and elucidating their unique experiences.

## **2.0 Methodology**

### **2.1 Research Design**

The study employed a qualitative-narrative research design. A qualitative research design delved into the complexities of human experiences, exploring meanings, beliefs, attitudes, and behaviors (Jain, 2023). This approach offered a depth of understanding beyond surface-level analysis. Furthermore, the narrative approach complemented this research by exploring subjective experiences, particularly the emotional and psychological complexities associated with visible differences. This methodology emphasized the analysis of stories, allowing researchers to examine how individuals constructed narratives, expressed themselves, and conveyed their thoughts within a specific context (Salkind, 2010).

Moreover, the narrative approach was ideal for this study because it enabled a deep exploration of the emotional and psychological impact of orofacial clefts. This approach provided a nuanced understanding of human experiences through storytelling (DeMarco, 2021), making it a valuable qualitative research method for exploring personal narratives, identity, culture, and historical experiences. Focusing on narratives illuminated coping mechanisms, social interactions, and personal growth exhibited by individuals with orofacial clefts. Examining these elements sheds light on the human side of this condition (Butina, 2015). Ultimately, narrative design enabled researchers to capture the depth and richness of the experiences of individuals with orofacial clefts, providing valuable insights that quantitative data alone may not have fully captured.

### **2.2 Research Participants**

This study employed a purposive sampling method grounded in a homogeneous approach, meticulously selecting participants who all shared the everyday experience of living with an orofacial cleft. This strategic choice allowed for a concentrated exploration within the specific scope of the research (Etikan et al., 2016). Ultimately, three (3) individuals were carefully chosen for participation, facilitating an in-depth understanding of their narratives through quality, extended individual interactions. This approach fostered closer relationships, likely encouraging the participants to provide more candid and authentic responses. Subedi (2021) highlighted that narrative inquiries can yield profound insights, even when working with a small population, sometimes comprising as few as three participants.

In order to capture a nuanced understanding of the myriad experiences associated with orofacial clefts, the study focused specifically on female, married adults aged 31 to 60 residing in the SOCCSKSARGEN region, particularly in Katangawan and Alabel. The participants were individuals with nonsyndromic orofacial clefts, showcasing a spectrum of variations in their clefts, ranging from unilateral to bilateral and from complete to incomplete forms, potentially affecting the lip, the palate, or both structures (Khan et al., 2020). This clear delineation of criteria allowed for exploring shared challenges and triumphs adults face in this geographical context while remaining inclusive of their diverse educational backgrounds. This deliberate approach underscored the esteem and significance attributed to the rich variety of their experiences.

The decision to exclude individuals under the age of 30 and those presenting with syndromic conditions was made thoughtfully, acknowledging the distinct experiences and potential complexities associated with these populations. Including younger adults could have introduced more comprehensive developmental factors related to identity formation and social interactions, necessitating a separate focus in future studies. Moreover, individuals with syndromic orofacial clefts typically contend with a broader spectrum of symptoms and physical manifestations (Kini, 2023; Venkatesh, 2009), resulting in experiences that differ significantly from those of individuals with nonsyndromic conditions. This awareness justified the need for a more specialized and refined exploration of their unique trials and hopes.

### **2.3 Research Instrument**

The researchers employed a qualitative methodology through face-to-face, semi-structured interviews to explore the participants' experiences. This method involved asking carefully constructed questions within a predetermined thematic framework, balancing systematic questioning with the flexibility necessary for spontaneous exploration of possible topics (George, 2023). By incorporating open-ended questions, the interviewer was empowered to navigate relevant stories, which could potentially unveil fresh perspectives and insights, thereby enriching the overall comprehension of the study (Cohen & Crabtree, 2006).

At the core of the study was a meticulously created interview guide designed by the researchers, which comprised twenty (20) questions. These questions were thoughtfully categorized to encompass various aspects of the participants' lives: five (5) questions probed into their experiences, twelve focused on their past and present trials, and three sought to uncover their hopes and aspirations as individuals living with orofacial clefts. Further, two (2) qualified psychologists and one (1) registered psychometrician conducted a rigorous review to validate the questionnaire's effectiveness, ensuring that it met professional standards.

Moreover, a pilot interview was conducted with an individual fitting the study criteria, serving as a critical step in refining the interview questions. This initial interview was invaluable for pinpointing any areas of ambiguity or discomfort and ensuring that the interview process flow was natural and engaging. These preparatory measures were instrumental in assessing the feasibility of the study, specifically by evaluating how well the inclusion and exclusion criteria identified suitable participants (In, 2017). Also, all interviews were held in private, secluded locations to maintain the confidentiality and privacy of the participants, fostering an environment where they could openly share their thoughts and feelings.

### **2.4 Data Gathering Procedure**

In preparation for the study, the researchers took a proactive approach by securing essential approvals from their college dean and thesis advisor. This foundational step laid the groundwork for conducting a rigorous and ethically sound research plan. Next, the researchers created an online search on Facebook and a pre-survey aimed at individuals diagnosed with nonsyndromic orofacial clefts, ensuring that participants were within the specified age range and in the SOCCSKSARGEN region. The responses from this survey served as key data, allowing the researchers to refine the study's inclusion and exclusion criteria thoughtfully, thus enhancing the overall focus of the research.

Building on the insights gained from the pre-survey, the researchers developed an interview guide questionnaire tailored for semi-structured interviews. This guide was crafted with careful consideration of the participants' perspectives, aiming to create a safe and supportive environment for them to share their lived experiences with orofacial clefts. Before finalizing the guide, the researchers thoroughly addressed all preliminary components of their research paper, including an in-depth review of existing literature and theories, the research problem, and a research methodology. These foundational steps ensured that the research was coherent and aligned with its intended objectives.

Subsequently, the interview guide consisted of twenty (20) thoughtfully designed open-ended questions to gather rich, qualitative data. This approach was intended to elicit meaningful insights into the participants' experiences, challenges, and aspirations. To guarantee the instrument's reliability, it underwent a thorough validation process by recognized professionals, two (2) registered psychologists, and one (1) psychometrician, ensuring it met high standards of quality and appropriateness.

Moreover, the researchers prepared informed consent and confidentiality agreement forms for the pilot interview. These documents ensured that participants understood the study's purpose and rights throughout the research process. Conducting a pilot interview with a participant who met the study criteria allowed the researchers to identify and address potential logistical issues, refine the clarity of their questions, and confirm that the interview process would be respectful and smooth for all participants in the main study.

To further support their research efforts, the researchers drafted a formal letter seeking permission to conduct the study, requiring signatures from their thesis advisor and college dean. This step underscored their commitment

to transparency and ethical conduct. They also prepared a waiver for their parents, reflecting their openness and confirming support for gathering data in specified locations within SOCCSKSARGEN, particularly in Katangawan and Alabel.

Before the interviews commenced, participants signed the informed consent form, demonstrating their understanding and voluntary participation in the study. The researchers made sure to clearly explain the nature and purpose of the research, emphasizing that participants had the right to withdraw at any stage without consequence. Upon beginning the data collection phase, the researchers applied a meticulous five-phase inductive and deductive coding strategy to analyze the collected information, facilitating a thorough interpretation of the findings. They utilized the validated instrument to conduct individual semi-structured interviews in the participants' communities, fostering trust and openness.

The researchers held ethical considerations in high regard throughout the data collection process. They prioritized the anonymity and confidentiality of all participants, treating their information with the utmost respect. By upholding the rights of rehabilitation professionals concerning data usage, the researchers demonstrated their commitment to maintaining the integrity of the research process, ensuring that every step was constructive and ethical.

## **2.5 Data Analysis**

Bingham and Witkowsky's (2022) five-phase approach presents a comprehensive framework designed to enhance the understanding of qualitative data through careful organization and analysis. The initial phase establishes order within the dataset, which is crucial for any qualitative researcher. In this phase, researchers engaged in attribute coding to meticulously label interview transcripts, considering significant demographic factors such as the age and location of participants. This systematic categorization provided a robust foundation for further analysis and valuable insights into potential emerging patterns based on participants' backgrounds.

Following this, the second phase shifted the researchers' focus toward ensuring that the data aligned with their specific research questions. To facilitate this alignment, they implemented predetermined topic codes – examples being "*Trials*" and "*Hopes*" – to systematically categorize excerpts from the interviews. This targeted coding methodology streamlined the analytical process, allowing researchers to delve directly into participants' lived experiences regarding their challenges and aspirations. Using topic codes, they could efficiently navigate the data and extract meaningful themes pertinent to their inquiry.

The third phase emphasized using open or initial coding in conjunction with the constant comparative method. During this critical phase, researchers meticulously examined excerpts categorized under "*Trials*" and "*Hopes*." They generated detailed codes that reflected and captured the participants' unique perspectives and nuances. This process was vital in ensuring that the analysis remained grounded in the participants' lived experiences, allowing for a rich exploration of individual and collective narratives.

In the subsequent phase, researchers took the findings from the initial coding process and focused on identifying recurring patterns among the codes. By consolidating these codes into broader themes, they ensured that their analysis directly addressed the central research questions posed at the study's outset. This thematic organization enabled a more cohesive interpretation of the data and facilitated a deeper understanding of the participants' experiences.

Finally, researchers connected their emergent findings to existing literature and theoretical frameworks in the fifth phase. This involved drawing upon relevant theories related to orofacial clefts and psychological development, which enriched the analysis with additional depth and context. By linking their findings to established knowledge, researchers could illustrate how their study contributed to the field by expanding upon existing concepts or challenging established assumptions. This final phase was critical in highlighting the overall significance of the research, illustrating its relevance and the insights it offered into the complexities of the phenomenon under investigation.



## 2.6 Ethical Considerations

The researchers strictly safeguarded participants' identities throughout data collection, analysis, and reporting. Anonymity, the practice of ensuring that research participants' identities remained undisclosed (Hoft, 2021), was rigorously maintained. All identifying information was kept confidential to ensure privacy and minimize any potential risks associated with participation. The researchers upheld the participants' rights to dignity and self-determination. The researchers were committed to upholding the highest standards of confidentiality in line with the Data Privacy Act of 2012. This included ensuring a clear separation between participant data and personally identifiable information. Techniques such as secure coding and data storage were employed (Hoft, 2021). All participant data remained strictly confidential and was never disclosed without explicit consent. This commitment extended to respecting the rights of individuals with orofacial clefts, ensuring their data was handled with the utmost care. The researchers prioritized ethical research conduct, requiring individuals' informed consent and voluntary participation (Josephson & Smale, 2020). Potential participants received comprehensive information about the study's nature, potential risks, and benefits. Informed consent forms clearly outlined the right to voluntary participation and the ability to withdraw at any time. This process empowered individuals with orofacial clefts to make informed decisions about their involvement, fostering trust and transparency within the researcher-participant relationship.

## 3.0 Results and Discussion

The identified themes are based on the experiences of individuals with orofacial clefts. To provide a comprehensive view, the data has been organized into four tables, each highlighting key aspects of their experiences, including their past and present trials and hopes for the future.

### 3.1 Experiences of Individuals with Orofacial Clefts

Living with an orofacial cleft brings forth many distinctive challenges and profound experiences that significantly influence an individual's life journey. This study aimed to gain deeper insights into these unique experiences by exploring the narratives of individuals with orofacial clefts. Through careful analysis of the collected data, two (2) prominent themes emerged, each intricately woven to portray a rich and vivid representation of their lived realities. These themes encapsulate a wide range of aspects related to their experiences and will be presented in the following sections:

#### *Theme 1: Staying Optimistic*

The theme of staying optimistic emerges prominently in the experiences of individuals with orofacial clefts, highlighting a remarkable capacity for resilience and a sustained positive outlook amidst their challenges. Research findings indicate that participants consistently express gratitude for their lives and demonstrate a determined commitment to persevere, regardless of their conditions' physical and emotional hurdles. This optimism is not merely a superficial cheerfulness but is deeply intertwined with their coping mechanisms and overall psychological health.

For instance, participants such as Nanay Dalisay and Nanay Hiraya illustrate this resilience. Nanay Dalisay's reflections reveal that, despite the various challenges presented by her condition, she remains profoundly thankful for the life she leads and the future opportunities that await her. This expression of gratitude is a cornerstone for her optimistic perspective, enabling her to navigate difficulties with a sense of hope and purpose. Similarly, Nanay Hiraya acknowledges the sadness accompanying her experiences but reinforces her resolve to move forward, showcasing an inner strength characteristic of many individuals with orofacial clefts. These narratives collectively underscore the critical role of a positive mindset in fostering resilience.

This aligns with existing psychological research that emphasizes the importance of optimism in coping with long-term adversities, particularly for individuals facing visible differences or disabilities. Studies have demonstrated that gratitude significantly enhances the psychological well-being of people with disabilities, fostering a more positive outlook on life (Lestari & Fajar, 2020). Venkatesan et al. (2023) further substantiate this notion, illustrating that individuals with disabilities frequently maintain a cheerful disposition and a sense of gratitude, crucial protective factors in their psychological resilience.

Additionally, Phillips et al. (2022) found that gratitude predicts flourishing among adults with disabilities, asserting that gratitude mediates adaptation to one's disability. This suggests that a grateful mindset promotes



immediate emotional coping and contributes to longer-term psychological adjustment and well-being. Lestari and Fajar (2020) reinforce this perspective, highlighting the importance of cultivating a positive mindset to manage the challenges accompanying disabilities effectively.

The narratives shared by individuals with orofacial clefts provide compelling qualitative evidence of this connection. Their expressions of gratitude and intrinsic motivation to maintain a positive outlook illustrate their active engagement in coping strategies that embrace resilience. By confronting the social and emotional complexities that arise from visible differences with a sense of optimism, these individuals effectively redefine their experiences and promote their psychological health.

### ***Theme 2: Family's Emotional Support***

The findings from this study underscore the critical role of family emotional support as a vital source of strength for individuals, particularly those with orofacial clefts. Participants consistently expressed the profound impact of familial acceptance and pride on their emotional well-being and identity formation. For instance, one participant, Nanay Ligaya, expressed that the unwavering support from her children was her greatest blessing. Their acceptance of her, irrespective of her condition, instilled a positive self-image and strengthened her resilience in the face of external judgments. Similarly, Nanay Hiraya emphasized the importance of her siblings' reassuring words, which affirmed her sense of belonging and normalcy within the family unit.

These strong familial connections significantly contribute to the emotional resilience of individuals, reaffirming their identities and ensuring that they feel accepted and valued within their familial circles. The power of emotional support from family is well-documented in the literature, aligning with research that highlights the correlation between familial support and improved mental health outcomes. Specifically, Stojkow and Żuchowska-Skiba (2018) noted that family relationships provide essential social, emotional, and financial backing, ultimately enhancing the overall quality of life for individuals with disabilities.

The narratives emerging from this study vividly illustrate how familial support protects against the stigma that can arise from societal perceptions of disabilities. Participants expressed a deep sense of gratitude for their families' unwavering acceptance, which served as a protective factor against potential negativity and social isolation. This finding resonates with Friedman's (2019) research, which asserts that intimate, solid relationships, particularly with family members, contribute to greater self-acceptance and a reduction in internalized stigma among individuals with disabilities.

Moreover, the significance of familial involvement extends beyond immediate emotional sustenance; it plays a crucial role during pivotal life transitions, such as the shift from school to adulthood. Morningstar et al. (1995) emphasized that family input and support during this transitional phase are vital for shaping the personal aspirations and future visions of individuals with disabilities. The participants' narratives in this study reinforce this assertion, illustrating how the emotional backing from family serves to cope with daily challenges and as a foundation for their long-term development and personal growth.

### **3.2 Past Trials Faced by Individuals with Orofacial Clefts**

Individuals with orofacial clefts exhibit remarkable resilience and optimism despite facing unique challenges. This study delved deeply into these challenges by analyzing the lived experiences of individuals with orofacial clefts to identify their past trials. Through carefully analyzing the collected data, two (2) distinct themes emerged, highlighting the various difficulties they have navigated. The following sections will provide a detailed discussion of these challenges, illuminating the multifaceted nature of their experiences:

#### ***Theme 1. Social Discrimination***

The theme of social discrimination sheds light on the diverse challenges faced by individuals with orofacial clefts, emphasizing the importance of understanding and addressing these issues. Participants in this study shared valuable insights into their experiences with workplace stigma, educational obstacles, and social prejudice, revealing a need for greater awareness and acceptance of facial differences in our society. For instance, one participant, Nanay Hiraya, illustrated the difficulties she encountered in the workplace. She described facing repeated rejections during job applications, highlighting the barriers individuals with facial differences often

experience when seeking employment. Research indicates that adults with orofacial clefts may struggle with higher levels of social anxiety and lower self-esteem compared to their peers (Berk et al., 2001). Acknowledging these emotional challenges can foster more supportive workplace environments that promote inclusivity and empower individuals to thrive in their careers. Similarly, studies by Ardouin et al. (2021) have shown that addressing workplace discrimination and bullying is essential for enhancing job satisfaction and career growth.

In educational settings, Nanay Hiraya's account of her on-the-job training (OJT) experience underscores the vital role that schools and training programs play in shaping attitudes toward individuals with facial differences. By implementing programs that foster acceptance and understanding, educational institutions can serve as supportive environments for all students. Nanay Ligaya also shared her struggles in school, including the challenges of repeated grades due to bullying. This underlines the need for comprehensive anti-bullying initiatives and support systems in educational contexts, as highlighted by research from Arias-Urueña et al. (2023) and Tiemens et al. (2012), which show that a stigma-free learning environment can significantly enhance students' psychological well-being and academic success.

Throughout broader social interactions, Nanay Ligaya and Nanay Dalisay shared their experiences of verbal prejudice and bullying. For example, Nanay Ligaya described the impact of being mocked for her communication skills. Nanay Dalisay reflected on how her appearance made her shy and hesitant to engage socially before surgery. These personal stories reveal the need for increased awareness and education about orofacial clefts to combat misconceptions and foster a culture of empathy and inclusion. Research by Adeyemo et al. (2016) and Sablada and Amparado (2020) supports this, showing that educating communities about such conditions can reduce stigma and encourage participation in social activities. These findings align with Social Identity Theory (Tajfel & Turner, 2004), which suggests that addressing and reframing negative societal perceptions can help individuals with visible differences build a positive self-image. Research from Florian-Vargas et al. (2016) and Arias-Urueña et al. (2023) underscores the importance of creating environments where individuals feel safe and accepted, allowing them to pursue their aspirations without fear of negative social encounters.

### ***Theme 2. Difficulties in Forming Connection***

The second theme of this analysis investigates the notable challenges individuals with orofacial clefts face in fostering meaningful interpersonal connections. The distinctive effects of their condition can complicate communication, which is vital for building and maintaining social bonds. Understanding these complexities is essential for addressing the feelings of disconnection and isolation that may arise and for supporting individuals in developing their interpersonal relationships. For example, Nanay Hiraya shared her experiences of feeling different due to her condition, which sometimes made it difficult for her to connect with others and form friendships. Similarly, Nanay Ligaya recounted how she often avoided social settings because of verbal communication challenges, expressing herself in writing to ensure her thoughts were conveyed clearly. This adaptation reflects her commitment to being understood while highlighting the barriers limiting social engagement. Additionally, Nanay Dalisay expressed a sense of self-consciousness about her appearance before her cleft lip surgery, leading her to withdraw from social situations out of fear of judgment. This response can be seen as a protective measure to shield herself from discomfort or embarrassment.

These narratives are supported by existing research that emphasizes the social challenges experienced by individuals with cleft conditions. The everyday struggles with self-expression often translate into difficulties in social interactions and aspirations for a better quality of life and equitable treatment. For instance, Sablada and Amparado (2020) found that children with clefts often face social withdrawal and challenges in making friends, impacting their self-esteem and social development. Furthermore, Adeyemo et al. (2016) highlighted those misconceptions about cleft conditions can lead to discrimination and social exclusion for both individuals and their families, fostering feelings of mockery, isolation, and shame during social interactions, as noted by Arias-Urueña et al. (2023). Oka et al. (2022) illustrated how these experiences can affect self-perception, necessitating the development of coping strategies to navigate the emotional effects of stigma.

It is also essential to recognize that the challenges associated with clefts extend beyond childhood. Ongoing medical treatments, visible facial differences, and speech difficulties can lead to long-lasting social and emotional effects, as Jensen et al. (2022) identified. While earlier research, such as that by Collett and Speltz (2006), found

minimal links between clefts and behavioral issues or self-concept in children, the experiences shared in this study reveal that emotional difficulties can persist into adulthood. Participants often expressed self-reflection, grappling with their circumstances and perceiving their cleft as an obstacle in their social and personal lives.

### **3.3 Present Trials Faced by Individuals with Orofacial Clefts**

Individuals with orofacial clefts face a range of challenges in their daily lives. This study aimed to investigate these experiences and identify the ongoing difficulties they encounter. A detailed analysis of the data collected revealed two (2) primary themes that represent the present trials related to orofacial clefts. The subsequent sections offer a discussion of these challenges, emphasizing the complexity and multifaceted aspects of their experiences:

#### ***Theme 1. Having Self-Doubts***

A prominent and concerning theme observed among individuals with orofacial clefts is a profound sense of self-doubt, significantly impacting their perceptions of self-worth and confidence. For instance, Nanay Hiraya openly articulated her feelings of self-pity, grappling with why she had to endure her particular condition. This highlights an ongoing internal struggle with self-acceptance and the emotional toll it takes on her life. She shared her profound difficulty in expressing her emotions, particularly to her parents, which resulted in significant internalized distress. This emotional repression often culminated in episodes of crying in solitude, accentuating her feelings of isolation and loneliness. Such a challenge effectively creates a barrier to fostering intimate relationships, as the inability to communicate feelings can lead to a more profound sense of alienation and misunderstanding.

Similarly, Nanay Dalisay provided illuminating insights into how her condition has shaped her life trajectory. She mentioned that she ultimately abandoned her dreams and ambitions, overshadowed by an overwhelming sense of shame and hopelessness that left little room for personal aspirations. This emotional burden not only suppressed her ambitions but also contributed to a pervasive feeling that her worth was diminished, illustrating the tragic impact that orofacial clefts can have on one's life choices and self-perception.

Feelings of self-doubt and self-pity frequently arise from the stigma and societal perceptions surrounding orofacial clefts. Ardouin et al. (2021) research highlights the unfortunate reality that individuals with clefts often encounter stigma and discrimination, leading to negative self-views. This scenario aligns with the Social Identity Theory by Tajfel and Turner in 2004, which posits that societal judgments can become internalized, resulting in feelings of unworthiness and inferiority. Nanay Hiraya's and Nanay Dalisay's narratives serve as examples of how societal pressures and judgment have reinforced their ongoing struggles with self-doubt and self-acceptance.

Furthermore, existing research backs this narrative, as Hamlet and Harcourt (2015) noted, revealing that individuals with clefts often grapple with feelings of inadequacy. They may question their worth and ask poignant yet painful questions like, "*Why me?*" This existential inquiry underscores a larger psychological struggle common among those with visible differences. Additionally, scholars such as Brown et al. (2021) and Hamlet and Harcourt (2015) emphasize that many individuals hesitate to openly discuss their condition due to a pervasive fear of judgment or misunderstanding from others. This fear not only exacerbates their challenges but also contributes to a more profound sense of social isolation, mirroring the distress expressed by Nanay Hiraya as she described her difficulties in finding emotional outlets and coping mechanisms.

The feelings of being mistreated, as articulated by Nanay Hiraya, are deeply connected to the stigma and discrimination outlined in the literature. According to Ardouin et al. (2021) and Adeyemo et al. (2016), individuals with clefts often encounter a range of negative social interactions, including experiences of workplace discrimination and bullying. These adverse interactions foster feelings of injustice and resentment, reinforcing their perception of inequity in social interactions and relationships.

Additionally, the emotional ramifications of stigma are evident in the narratives related to feelings of shame and a loss of ambition. These experiences powerfully illustrate the psychological effects documented in research regarding self-esteem issues. Florian-Vargas et al. (2016) note that societal perceptions surrounding facial differences significantly contribute to low self-esteem in individuals with orofacial clefts. As a result, this often leads to a lack of motivation or confidence in pursuing personal goals. Hamlet and Harcourt (2015) further

articulate those individuals facing these struggles may experience profound despair and hopelessness, prompting them to question the value of aspiring to personal achievements when they feel inherently flawed or unworthy.

### ***Theme 2. Experiencing Emotional Strains***

A significant theme that emerged from the narratives is the emotional strain faced by participants due to their circumstances. Nanay Hiraya revealed her ongoing battles with bullying, which followed her into adulthood, leaving her with a heightened sense of feeling different. This experience aligns with the research conducted by Ardouin et al. (2021) and Lorot-Marchand et al. (2015), who noted that bullying is a frequent challenge for individuals with orofacial clefts, profoundly affecting their mental health and self-esteem. Additionally, Gifalli et al. (2024) emphasized that the stigma and bullying experienced by those with clefts often continue into adulthood, deepening feelings of exclusion and the perception of being different.

Furthermore, Nanay Ligaya discussed the emotional toll of feeling rejected because of her disability, especially in workplace settings. This sense of rejection sparked profound sadness and frustration, highlighting the societal hurdles that come with living with a perceived disability. These experiences are mirrored in the findings of Adeyemo et al. (2016), who pointed out that negative societal attitudes frequently lead to social exclusion and workplace discrimination against individuals with clefts. Stock et al. (2015) also observed widespread job-related difficulties, mirroring broader systemic issues. These insights resonate with the Social Model of Disability (Oliver, 2013), which argues that the primary sources of exclusion and emotional distress stem from societal barriers rather than the disability itself.

Family dynamics compounded the emotional burden, as Nanay Hiraya faced years of verbal abuse, leaving deep emotional scars. This narrative mirrors the research by Ardouin et al. (2021) and Crerand et al. (2020), which documented how individuals with clefts often encounter negative comments and stigma, increasing feelings of isolation and distress. Florian-Vargas et al. (2016) also shed light on how unequal treatment within families can intensify feelings of unworthiness, emphasizing familial relationships' critical role in emotional development.

These accounts underscore the persistent challenges of societal stigma, bullying, and familial dynamics, all of which significantly affect the mental health and overall quality of life for individuals with orofacial clefts. Experiences of verbal abuse, rejection, and discrimination contribute to profound emotional strain, highlighting the necessity for psychological support and social interventions. Research by Stepp et al. (2022) and Stock et al. (2015) emphasizes the need for ongoing care, advocacy, and strategies to build resilience to tackle these challenges and enhance the quality of life for those with orofacial clefts.

### **3.4 Hopes of Individuals with Orofacial Clefts**

Individuals with orofacial clefts face challenges, yet they exhibit remarkable resilience and a strong hope for their futures. This study was conducted to better understand their hopes by examining their lived experiences. Through thorough data collection and analysis, two (2) significant themes emerged, illuminating their hopes and dreams. The following sections explore these aspirations in detail, emphasizing their ambitions and the positive outlooks they cultivate despite obstacles:

#### ***Theme 1. Desire for Child's Success***

A notable theme from the interviews is the strong aspiration of individuals with orofacial clefts for their children's success. For Nanay Ligaya, this aspiration is deeply rooted in her desire for her child to complete their education and secure a stable future. She envisions her child overcoming challenges and establishing a fulfilling life, underscoring her commitment to her family's well-being. Additionally, she places great value on financial stability, dreaming of her child owning property and building a home, symbolizing independence and security. This reflects her emotional investment in her child's future and illustrates her resilience in pursuing a better life and facing societal challenges.

This aligns with the research of Loewenstein et al. (2008), which highlights the connection between a sense of agency and the ability to support others and its role in positive adaptation for individuals with facial differences. In initiatives like Positive Exposure, participants empower individuals with facial differences to become advocates, share experiences that enhance self-esteem, and foster a sense of purpose. The narratives of individuals

like Nanay Ligaya showcase their aspiration to rise above personal challenges and invest in their family's future. These hopes reveal how individuals with orofacial clefts harness their resilience and determination to create opportunities for their loved ones, highlighting their capacity to adapt positively to societal challenges.

### ***Theme 2. Having an Optimistic Attitude in Life***

A significant theme that emerged is the participants' remarkable ability to maintain an optimistic outlook despite the challenges associated with having an orofacial cleft. For instance, Nanay Ligaya is an inspiring example of resilience, as she expresses pride in her identity and stands firm against criticism or judgment from others. She underscores the importance of self-acceptance and composure, regardless of external perceptions or treatment. Similarly, Nanay Hiraya highlights cultivating a positive mindset by focusing on what truly matters and filtering out negativity. She emphasizes the importance of surrounding oneself with supportive individuals while acknowledging that it is impossible to please everyone. This mindset showcases a commendable strength and determination to rise above societal stigma and foster emotional well-being.

These observations align with research highlighting how self-efficacy and personal agency are crucial in enhancing the well-being of individuals with facial differences. A study by Vezzù et al. (2013) found that individuals with solid self-determination and confidence in their abilities often report a quality of life comparable to those without orofacial clefts. Empowering individuals to take charge of their lives, pursue personal goals, and embrace their capabilities can considerably boost their overall well-being and life satisfaction. This proactive approach to personal development proves essential when navigating the challenges posed by societal stigma and internal struggles.

Furthermore, this theme aligns well with Erik Erikson's (1963) Psychosocial Development Stages, which provides a valuable framework for understanding individuals' identity, relationships, and social roles during different life stages. For those with orofacial clefts, these transitions may present unique challenges, such as managing societal perceptions and self-image. However, they also offer valuable opportunities for personal growth and a strengthened sense of self. By enhancing communication skills, seeking supportive relationships, and advocating for themselves, individuals can effectively navigate these transitions and improve their overall quality of life.

This approach to building resilience and self-confidence also resonates with the Affirmative Model of Disability (Swain & French, 2000), which shifts the focus away from deficit-based views of disability to emphasize the strengths and positive identities that individuals with disabilities can cultivate rather than being solely defined by physical or medical limitations, those with orofacial clefts can embrace their unique identities and challenge societal stigma by focusing on their strengths and fostering positive self-perceptions.

These narratives highlight the exceptional resilience and optimism of individuals with orofacial clefts. Their ability to rise above adversity, maintain a positive outlook, and embrace their identities exemplifies a proactive approach to overcoming challenges and nurturing emotional well-being, a powerful testament to personal strength in the face of societal barriers.

## **4.0 Conclusion**

This research provides important insights into the experiences of individuals with orofacial clefts in SOCCSKSARGEN, Philippines, highlighting the complex relationship between their trials and hopes. It demonstrates how these individuals navigate social difficulties, confront stigma and discrimination, and pursue their aspirations. Central to their experiences are concepts such as self-efficacy, positive identity development, and hope, which empower them to overcome adversity and lead fulfilling lives. The most significant finding of this study is the critical role of resilience and optimism in the lives of individuals with orofacial clefts. Despite societal stigma, emotional challenges, and discrimination, participants exhibited unwavering gratitude, hope, and determination. These findings emphasize the importance of fostering self-efficacy and supportive familial relationships, which help individuals adapt to challenges and thrive despite adversity.

The study makes a significant contribution to the field of psychology by extending theoretical frameworks, including Bandura's Social Cognitive Theory, Erikson's Psychosocial Development Theory, and Snyder's Hope Theory. It enhances the understanding of resilience, hope, and identity formation by illustrating how individuals

with visible differences actively develop coping mechanisms and adaptive strategies to navigate societal barriers. This research challenges deficit-focused perspectives by emphasizing individuals with orofacial clefts' strengths and proactive efforts to create fulfilling lives.

The findings highlight the urgent need to cultivate supportive environments that build self-confidence, enhance social connections, and enable individuals with orofacial clefts to achieve their personal and social goals. These individuals must be equipped to manage their condition and shape their futures with optimism and determination. This research calls on families, healthcare professionals, educators, and policymakers to collaborate in creating inclusive spaces where individuals with orofacial clefts can thrive without fear of discrimination or social exclusion. Recognizing these individuals' resilience, valuing their unique perspectives, and actively working to empower them to achieve their aspirations are crucial steps toward building a more inclusive and equitable society. Investing in their well-being is a moral obligation and a vital contribution to the collective good. It fosters a society where all individuals can participate fully and contribute to the common welfare, regardless of their challenges.

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