EduHeart Book Publishing

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Instructional Leadership and Community Engagement Challenges in The Implementation of Green Curriculum of Selected Secondary Schools in The Divisions of Cavite Province: Input to Enhanced Collaborative Practices

Ruth R. Pinpin
Technological University of the Philippines, Manila
Email:

ABSTRACT

This study explores the challenges faced by secondary schools in Cavite, Philippines, during green curriculum implementation. It also aims to identify practices for educators and communities to support student learning through green education. The qualitative phase, employing a mixed-methods approach, used the Delphi Technique to identify and gain consensus on challenges and practices from experts (n = 12), including school principals, master teachers, and head teachers. A quantitative phase surveyed 155 teachers to statistically analyze the identified challenges. We used thematic analysis and ANOVA along with Pearson correlation to analyze the quantitative data. The study revealed several key challenges in the instructional leadership dimension: preparedness gaps, limited innovative practices, curriculum integration challenges, undervalued environmental education, and assessment and evaluation needs. The study identified several key challenges in community engagement, including disengaged leadership, resource constraints, cultural and communication barriers, community disenfranchisement, building strong school-community partnerships, and resistance to collaboration. There is no significant difference in instructional leadership across different age groups, length of service, and educational attainment. There is no significant relationship between instructional leadership, community engagement, and age; no significant relationship exists between instructional leadership, community engagement, and length of service. There is no significant relationship between instructional leadership, community engagement, and educational attainment. There is a significant relationship between challenges in instructional leadership and community engagement in the implementation of green curriculum. The findings also demonstrated a positive correlation between effective instructional leadership and community engagement in green curriculum implementation. Based on the combined qualitative and quantitative results, the study proposes enhanced collaborative practices to address these challenges and improve green curriculum implementation in schools.

Keywords: *Collaborative practices, instructional leadership, community engagement, green curriculum*

INTRODUCTION

Education has a vital role to play in fostering the knowledge, skills, values, and attitudes that are necessary for sustainable development and global citizenship. Environmental and social challenges require urgent and collective action from all sectors of society, specifically the education sector. However, education itself needs to be transformed to align with the principles and practices of sustainability. One of the ways to achieve this transformation is to green the curriculum, which means integrating climate mitigation and adaptation, ecological principles, environmental solutions, and sustainable development across all subjects and levels of education (UNESCO, 2022).

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

An educational strategy known as green curriculum attempts to instill in students a sense of sustainability, social responsibility, and environmental awareness. It centers on the ideas of diverse integration, experiential learning, and literacy about the environment. Green curriculum can help students develop critical thinking, problem-solving, and collaboration skills that are essential for addressing the complex environmental challenges of this generation (Abdurahman & Omar, 2021). Moreover, a school that promotes a green curriculum can help students develop a holistic understanding of the interconnections between the environment, economy, and society, inspiring them to act for sustainability in their personal and professional lives in the future.

However, implementing green curriculum in schools requires the support and commitment of instructional leaders, who play a key role in shaping the vision, culture, and practices of their schools. When trying to incorporate green curriculum into existing curricula, they face a variety of challenges and barriers. Their roles are critical in creating a conducive environment and culture for greening the curriculum, as well as mobilizing and empowering teachers and other stakeholders to participate in the process.

Community partners' active engagement can provide resources for collaboration and support. It is important to understand how instructional leaders perceive and cope with these challenges, as well as what strategies they use to promote and sustain green curriculum in their schools.

Statement of the Problem

This exploratory sequential mixed method study aimed to comprehensively examine the challenges related to instructional leadership and community engagement in the implementation of the green curriculum in selected secondary schools in Cavite province.

The study sought answers to the following research questions:

Qualitative

1. What are the challenges encountered by the instructional leaders in the implementation of green curriculum?
2. What are the community engagement challenges encountered by instructional leaders in the implementation of green curriculum?
3. What are the practices of the schools in the implementation of green curriculum?
4. How may the instructional leaders address the challenges pertaining to instructional leadership and community engagement in green curriculum implementation?

Quantitative

5. To what extent do the respondents assess the challenges in the implementation of green curriculum in terms of:
   5.1 instructional leadership
   5.2 community engagement
6. Is there a difference in the instructional leadership and community engagement challenges in the implementation of green curriculum when grouped according to the profile?
7. Is there a relationship between instructional leadership and community engagement in the implementation of green curriculum?

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Mixed Qualitative and Quantitative Questions

8. What recommendations can be proposed to enhance the collaborative practices for green curriculum implementation in secondary schools in Cavite?

Scope and Limitation

This study is limited only to the exploration of instructional leadership and community engagement challenges in the implementation of green curriculum in selected secondary schools in DepEd Cavite. The respondents were instructional leaders composed of school principals, head teachers, master teachers, teachers, and coordinators. The researcher conducted the study in selected secondary schools in Cavite province.

The factors that were considered as inputs to the study are the demographic profile of instructional leaders, which includes their age, teaching position, length of service, educational attainment, training attended, and the challenges of instructional leadership and community engagement in the implementation of green curriculum as perceived by instructional leaders and teachers.

Review of Related Literatures

To improve and enrich instructional leadership and community engagement in the implementation of green curriculum, research is being performed in educational institutions in an effort to obtain new perspectives. Both domestically and globally, people have implemented strategies to address the issues. The academic community and school community have observed how crucial instructional leaders' roles are to the success of basic education programs in both public and private settings. Hence, reviews of updated literature and studies from online sources and manuscripts about instructional leadership, community engagement, and challenges encountered in green curriculum implementation are undertaken and presented accordingly.

Co-curricular projects to enhance environmental awareness. The study also identified several problems, such as a lack of resources for environmental projects, making them unsustainable. There is no continuity of such projects because of the lack of interest of community leaders. The inclusion of the concept of sustainable development and enhancement of environmental concepts together with co-curricular projects and activities through the Youth for Environment in Schools Organization (YES-O) were recommended.

Instructional leaders must overcome these challenges and be prepared physically and cognitively in their journey to implement the green curriculum. To conquer these challenges, school leaders have to understand the contextual factors that affect its implementation. Mulford (2003) classifies these challenges as the policy environment, school culture, stakeholder engagement, and external support.

Instructional Leadership Practices in Green Curriculum Implementation

Philippine Professional Standards for School Heads (PPSSH) Domain 3, Focusing on Teaching and Learning, concentrates on the work of school heads in promoting quality teaching and learning. This domain emphasizes the school heads' commitment to providing instructional leadership towards improving competence among teachers and outcomes among learners (Llego, 2023). In this domain, school heads are expected to provide technical assistance on instruction that relates to curriculum, practice, and performance. With school improvement in all aspects as the primary responsibility of principals, identifying and understanding instructional leadership practices is paramount to the school's success. Principals in schools that are deemed successful and

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

effective frequently employ the following practices:
analyzing assessment results; working from a clear moral compass; fostering respect and trust between staff and parents; providing a variety of learning opportunities; and using data in conjunction with other related strategies of instructional leadership practices (Day et al., 2016).

It was shown that school principals practice the following procedures to address challenges in the implementation of green curriculum as instructional leaders, such as giving priority to classroom visits, assisting teachers in using data, recognizing the job that educators do, supporting their professional growth, collaborating with educators, and delegating leadership to teachers (Sowell, 2018).

Consistency in school leaders' instructional practices refers to the degree to which school leaders maintain and apply the same standards, expectations, and actions to support and improve the teaching and learning process in their schools. Consistency ***Instructional Leadership in Green Curriculum Implementation***

Instructional leadership is a term that refers to the actions and behaviors of school leaders that support the development of teaching and learning. Instructional leaders have a clear vision for their school, set specific goals for student achievement, and provide guidance and resources for teachers to improve their instruction.

Instructional leadership plays an important role in enhancing the quality of education and fostering a culture of excellence and collaboration in schools. Its positive impact is evident on student outcomes and teacher effectiveness, as well as the overall performance and reputation of the school. The Philippine Professional Standards for School Heads (PPSSH) compose of five (5) domains and collectively comprise 34 strands that refer to specific dimensions of school instructional leadership and practices (DO No. 24, s. 2020). The implementation of this order institutionalizes standard practices for school heads.

Some studies have explored environmental green concept implementation and how it relates to school organization (Mogren et al., 2018). Those who have investigated successful implementation highlight the importance of the instructional leader, who is substantial in assisting teachers to develop pedagogical strategies and establishing the school as an environmental agent within the community (Kadji-Beltran et al., 2012). It stated that proactive leadership is a key aspect of implementation.

Other studies have shown that an instructional leader's personal care and commitment to environmentalism and sustainable development play a large role in implementing Education for Sustainable Development (ESD) in school policy (Desfandi et al., 2016). Commitment within the context of professional service is an important component of success. It involves retaining good relationships that act as motivators to stakeholders. Commitment and trust therefore predict loyalty and consistency (Frow, 2007). Other key factors identified as essential to an effective ESD program are distributive leadership and active integration of involvement from other school staff and the community (Leo & Wickenberg, 2013). Distributive leadership is an innovative leadership practice where teachers are empowered to make decisions regardless of their positions.

The findings of Chan, Ridley, and Morris (2022) in their study indicate that principals at all levels, elementary, secondary, and tertiary, strongly support their teachers in the curriculum implementation. They hold their teachers accountable for their instructional approaches while giving them the flexibility to achieve their goals. The three-curriculum implementation approaches to “expectation, pressure, and support” are unique. Their study also revealed that principals implement the curriculum in general by providing professional growth for teachers, observing

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

good practices, evaluating teacher performance, and keeping teachers aware of alternative instructional strategies to meet student needs.

Instructional leadership can be performed by principals as well as other teachers who take on leadership roles in their school. In general, school principals are expected to act as leaders in the following tasks: framing and communicating school goals, supervising and evaluating instruction, coordinating curriculum, developing high academic standards and expectations, monitoring student progress, promoting the professional development of teachers, and developing incentives for students and teachers (Hallinger & Murphy, 1986, p. 6–9). The DECS Manual 2002 Section IV stated the functions of the school principal as the curriculum manager, instructional planner, delivery, and supervision. This manual is a comprehensive and useful document that provides the framework and guidelines for the implementation of the BEC in the Philippines.

Instructional leadership is a term that refers to the actions and behaviors of school leaders that support the development of teaching and learning. Instructional leaders have a clear vision for their school, set specific goals for student achievement, and provide guidance and resources for teachers to improve their instruction.

Challenges of Instructional Leadership in Green Curriculum Implementation

A school green curriculum leader will exert strong leadership to support the school dynamic curriculum by helping staff and any curriculum workers contemplate and select a curriculum design to suit the student needs. Additionally, The Wallace Foundation (2013) established the five primary duties of a school principal in carrying out their curriculum leadership role: 1) establishing a goal of academic achievement for every student; 2) fostering an environment; 3) fostering leadership in others; 4) enhancing instruction; and 5) managing personnel, information, and procedures.

Hargreaves & Fink (2006) believed that changes in curriculum are “easy to propose, hard to implement, and extraordinarily difficult to sustain." Their study provides a valuable input in the field of school leadership by proposing a framework of sustainable leadership that is based on principles that balance the needs of the present and the future, as well as the local and global communities. Their perspective on school leadership is that it should not only focus on short-term results and individual achievements, but also on long-term impact and collective responsibility. This is one of the objectives of implementing the green curriculum.

Sutherland (2013) argues that sustainable leadership is essential for school improvement and educational change, as it ensures the depth, length, breadth, justice, diversity, resourcefulness, and conservation of the teaching and learning process. They also suggested that sustainable leadership can be developed and practiced by school leaders at different levels, and that it requires a collaborative and supportive culture among the stakeholders. Accordingly, the study suggested that school leaders should foster a culture of learning, collaboration, and innovation, and use the available resources wisely and efficiently.

The study of Kamis (2018) explored the green skills of secondary school students in the Philippines and the role of school leaders in implementing a green curriculum. The study found that the students had low levels of green skills and that the school leaders faced various challenges, such as lack of resources, training, and support in the proper implementation of environmental education in the curriculum. The study recommended that school leaders should collaborate with stakeholders, adopt innovative strategies, and promote a green culture in their schools.

Cole-Foppe (2016) investigated how teachers viewed principals as leaders of the green curriculum. The study's conclusions showed that instructors thought principals had not committed

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

enough time because the length of the educational curriculum is important. In their roles as curriculum leaders, the study's school administrators agreed that they could have done more.

However, Kleidon (2018) and Ng (2019) found that principals felt that they were not well prepared to serve their roles as green curriculum designers and instructional leaders even though they had received some training. Their preparation is not enough to give them the confidence they need. Moreover, in the study of Naidoo and Petersen (2015), principals mainly interpreted their roles and functions as school principals to be purely managerial. This indicates that they somehow empower their subordinates to perform their task accordingly. Also, the findings of Sasson's study (2016) indicated school principals were only moderately involved in instructional leadership activities, and that they are more focused on other school activities such as improvements in school facilities and the like. Shaked (2019) also reported that school principals demonstrated limited direct involvement when there are changes in curriculum, one of which is the green curriculum. Master teachers take on this responsibility.

Concerning environmental-based curriculum implementation, Desfandi (2016) reported that the school principal had made an effort to guide and direct curriculum development and instructional programs and supervise their implementation. However, the effectiveness of this effort was hindered by the school principals' lack of commitment and understanding towards environmental issues. School principals' commitment to always give great attention to the implementation of environmental-based curriculum is very influential toward teachers' motivation. It should be the principal who first acts to motivate the teachers.

Benoliel & Berkovick (2021) examined the relationship between school leaders' ecological worldview and their instructional leadership practices in Israel. The study used a mixed-methods approach and found that school leaders who had a more ecological worldview tended to have more democratic, participatory, and empowering leadership styles and were more supportive of teachers' professional development and curriculum innovation. The study also found that school leaders who had a more ecological worldview were more likely to implement environmental education programs and projects in their schools.

According to Müller (2020), implementation of sustainability in schools is a leadership issue. When a school aims at integrating sustainability, green concepts, and Education for Sustainable Development (ESD), the principal plays a pivotal role. School leaders have to support the endeavor wholeheartedly and credibly, organize a participative process of school development, emphasize sustainability and ESD in the daily activities of the school, support teaching staff in the application of ESD, and offer students the opportunities to launch their own initiatives. His study proposes a model and seeks to support principals in leading their schools towards sustainability. He proposed a stepwise approach to a sustainable school where a framework of four stages of the integration of sustainability and ESD in a school is defined. For each of these stages, a number of practical actions and management strategies are suggested and explained in detail.

Another study revealed that principals' lack of willingness to undergo a school transformation and lack of confidence in their own administrative skills are constraining factors of successful green curriculum implementation (Kadji-Beltran et al., 2012). The growth of green curriculum is also limited by a shortage of time and space within another curriculum. McKeown & Nolet (2013). Curriculum congestion happens when there are many subjects that are enfolded within a short span of time.

In China, a research study reported that the proper environment for greening education has not been satisfactory yet. The teachers believe that no means are available at the institutional level

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

for certifying environmental skills in existing qualification standards, no assessment mechanisms, and no proper curriculum is present. The "green attitude" movement has not been adopted by school administrations as an initiative (Dayue, 2016). Furthermore, educators themselves do not view going green as a crucial subject for their students. They even believe they don't have time for environmental education and lack the necessary abilities and confidence in their ability to provide green education. The majority of a teacher's greening training comes from online courses and mentoring from more seasoned educators, but some professional associations and skill councils give them some hope by offering workshops, in-house seminars, and relevant training (Mäki & Crosier, 2019).

The study of Shimin (2022) revealed that the problem-oriented and project-based learning approach (POPBL) they developed was effective in facilitating pedagogical innovation for improving the implementation of green curriculum concepts. Thus, for green curriculum implementation, there is a confirmed need for instructional leaders to develop suitable resources that can help to implement innovative pedagogical practices that will aid teachers.

Perez & Bua (2019) determined the effectiveness of the implementation of environmental education in the formal basic education curriculum. Their study revealed that important environmental concepts like climate change, waste management, biodiversity, and disaster risk reduction are tackled only in the science curriculum, while the concept of sustainable development is not yet included in the curriculum in the majority of schools in the Division of Bulacan. It was suggested that instructional leaders should provide in school leaders' instructional practices as implementers of green curriculum can have positive or negative effects on student achievement, teacher performance, and school culture, depending on the type and quality of the practices (McBrayer et al., 2020). When an instructional leader is consistent in instructional practices, it can enhance student achievement because this action creates a clear and coherent vision, setting high and attainable goals, providing feedback and guidance, and monitoring and evaluating progress. Consistency in school leaders' instructional practices can also improve teacher performance by fostering a culture of trust, belief and innovation, providing professional development and support, and recognizing and rewarding achievements and efforts. School leader serves as a model of reliability and accuracy (Mulford, 2003).

However, in a study by Lee et al. (2012), consistency in school leaders' instructional practices can undermine student achievement by imposing rigid and uniform standards, limiting autonomy and creativity, and ignoring the needs and interests of diverse learners. Consistency in school leaders' instructional practices can also hinder teacher performance by creating a culture of compliance, control, and pressure, neglecting professional development and support, and discouraging risk-taking and experimentation.

Challenges of Community Engagement in Green Curriculum Implementation

Community engagement is the process of working collaboratively with and through groups of people to address issues. This involves building relationships, developing communications, and managing interactions in order to achieve specific outcomes for the organization and the community itself (Villar et al., 2016). Community engagement can take many forms, such as partnerships, coalitions, consultations, or participation, depending on the level of involvement and influence of the community. The school community involves the internal and external stakeholders, which include school leaders, students, teachers, parents, neighboring barangays, civic organizations, and businesses that are partners in the realization of the school's mission and vision.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

There are members of school communities who pose a challenge to instructional leaders as well. Community engagement is very limited because of cultural differences. They may also feel the decision-making and accountability are not shared with them and that their voices and opinions are not heard. They also do not see the incentives or rewards of engaging in the school and may not have clear and realistic goals and outcomes for their involvement (Sowell, 2018). They may also lack the recognition and appreciation for their contributions. Some school communities may face practical challenges and barriers to engaging in the school activities, such as lack of time, money, resources, skills, or information. They may also encounter difficulties in coordinating and collaborating with the school and other stakeholders. These challenges can hinder the flow of the implementation of any program and can affect student learning outcomes.

Numerous studies have been done about the benefits of having family and community engagement. It is a critical resource for individual student accomplishment as well as for sustaining and maintaining school improvement and creating school cultures that support students. (Comer & Haynes, 1992; Epstein, 1995; Henderson & Mapp, 2002; Sebring et al., 2006; Henderson et al., 2007; McAlister, 2013).

There is much research evidence of the positive impact of community engagement in schools. Increased family and community engagement in schools is strongly associated with faster rates of literacy acquisition among children, increased rates of promotion to secondary education, and decreased rates of school dropout. When families and community members are involved in student learning, students improve their academic performance and gain a stronger support system, helping them feel more confident at school.

Before the COVID-19 pandemic, there were educators who regarded community engagement programs as having a minor effect on school operations and the academic success of the students (Ross, 2023), not until the onset of COVID, when educators needed to explore more about how to engage families in green concepts of curriculum because of the experiences and lessons that they learned. The parents, local officers, and civic organizations in the community worked collaboratively for the continuous operation of the schools. The communities' engagement was very evident during these times.

An interesting study about community-engaged teaching stated that community engagement can provide particular, occasionally challenging difficulties that many educators are ill-prepared to handle for both seasoned and novice teachers due to difficulty in balancing professional and personal lives in tight social communities that expect high visibility and involvement from the school leader (Bandy, 2011).

Another study (Lauwo & Mkulu, 2021) focused on bridging the gaps in values, expectations, and communication styles between academics and the community. The most disheartening issues include inadequate meeting times for communities, less effective communication mechanisms, and no home visits by teachers and school leaders. More importantly, Muthoni (2015) asserted that in most cases, school leaders did not attempt to establish a partnership with the community in the surroundings, believing that community members are irrelevant to the schooling process. Furthermore, school leaders alleged that most community members are illiterate or have little educational background, and anything to do with school was intimidating to them. Working with nontraditional communities, such as marginalized or underrepresented groups, that may have different needs and challenges poses a threat to communication and collaboration.

The study conducted by Donoghue (2014) reported that school organizations develop negative perceptions towards poor communities, which seem to pose a wall for less affluent

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

families than those who are more affluent. For decades,
teachers have viewed the community as an unimportant factor in determining school progress. Thus, this perception has led to the development of an unwelcoming atmosphere for the community in schools, a low level of democracy, and ineffective communication between schools and parents. There were communities that are disappointed since the school staff did not let them know about several cases that occurred involving their children.

Prevalent instructional leadership strategies for communities in the local context have been discovered in a study conducted in Singapore by Ng (2019). If the educational objectives of their predecessors are still applicable, school principals may take them on. Ng observes the principals as they employ different facets of instructional leadership in her interactions and meetings with parents, students, and school personnel. Ng proposes further insight into the principal's beliefs and practices of instructional leadership as they engage within the community.

The application of a principle-based approach is essential to fostering consistency in the practice of community engagement. In addition to offering guidance on how to start an engagement process, principals can assist in resolving difficult problems that may arise. In this sense, principals might serve as a useful instrument for evaluation at the conclusion of an engagement process. The strategy for productive community interaction is based on the following principles: timeliness, information and feedback, mutual respect, action learning, and foresight (Cambridge Community Engagement Guide).

According to DepEd (https://www.deped.gov.ph), engaging the community is one of the agency's advocacies. Part of the curriculum in basic education are subjects where students become aware of the importance of the engagement of the community in the school's mission and vision. The subjects Community Engagement, Solidarity, and Citizenship (CSC) is a course for Grade 12 students that focuses on the application of ideas and methods of the social sciences to understand, investigate, and examine challenges of contemporary community life. It aims at enhancing students' sense of shared identity and willingness to contribute to the pursuit of the common good of the community. Civic Engagement is a module for Grade 11 students that aims to develop their awareness, knowledge, skills, and values in engaging with various civic issues and concerns. It also provides opportunities for students to participate in civic activities and projects that address the needs and interests of their communities.

External Partnerships Service (EPS) is a unit of DepEd that facilitates and coordinates the collaboration and partnership with various external stakeholders, such as non-government organizations, the private sector, local government units, and international agencies, to support the learning continuity and quality of education in the country.

However, there is no clear policy that ensures community engagement in public secondary schools in academic-related activities (Muthoni, 2015). Based on this standpoint, community members have been aloof in working together with the educational institutions. The role of community for a long time has remained that of nonacademic related, including provision of finances and manpower for infrastructure developments, attending quarterly meetings, and provision of security and healthcare to their children (Lauwo & Mkulu, 2021). Nonetheless, community-engaged education enables significant improvement for communities, teachers, and students once these obstacles are addressed and overcome.

School principals are typically committed to fostering relationships between the school and the community. In a study by Chan et al. (2022), in order to learn more about the viewpoints of parents on curriculum-related matters, a principal suggested conducting a survey on parents. They stated that they ask parents to join committees that oversee the curriculum. A survey showed that

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

parents of elementary school students appear to collaborate more actively with their communities when it comes to curriculum matters than parents of high school students.

Resistance is a challenge of community engagement that occurs when some individuals or groups are opposed to or reluctant to participate in the collaborative process. Resistance can stem from various factors, such as lack of trust, fear of change, conflicting interests, or different values. The outcome of resistance is that it could delay the change process, increase its costs, or obstruct its implementation (El-Taliawi, 2018). Therefore, resistance can hinder the progress and effectiveness of community engagement in implementing green curriculum, as well as the quality and legitimacy of the outcomes.

A recent study by Lomba-Portela et al. (2022) analyzed the main resistances to change that predominate among teachers at different educational stages in Galicia, Spain. It was reported that the participants did not have great resistance to implementing educational changes. However, the legislative changes and the perception of teachers as having excessive and unnecessary roles were the most common aspects of their resistance. Their resistance to educational reforms such as implementing green curriculum was not perceived positively.

In another study (Yilmaz, 2013), which examined the resistance to implement change in curriculum on green concepts in Germany, the resisting forces and causes of resistance to change, and ways for school administrators to overcome resisting forces and how it was influenced by their self-efficacy, attitude, and perceived behavioral control. They found that resistance to change was negatively related to self-efficacy and attitude, and positively related to perceived behavioral control.

A study that explored the resistance to change in Taiwanese elementary school teachers who implemented the green concept that integrated physical activity and academic learning was done by Chang and Etnier (2018). They found that the teachers faced various challenges, such as lack of time, resources, support, and training, as well as conflicts with parents and students. They also found that the teachers used various strategies to cope with the resistance, such as seeking help, adapting the curriculum, and communicating with stakeholders.

The resistance to change in German secondary school teachers who participated in a professional development program was studied. The program's goal was to foster intercultural competence in green curriculum and diversity awareness. They found that the teachers showed different types and levels of resistance, such as denial, avoidance, rationalization, or criticism. They also found that the resistance was influenced by various factors, such as personal beliefs, professional identity, school culture, and social norms (Val et al., 2013).

Odell et al. (2020) found that because green curriculum is relatively new concept to students, it is possible that their frames of reference for these phenomena are not yet established, making it difficult for them to accept, recognize, and connect their experiences to the new concept.

The challenges in implementing the green curriculum when it comes to community engagement may be grouped into four categories, based on the level and the nature of the challenge (Nevenglosky et al., 2018; https://www.atsdr.cdc.gov).

Individual-level challenges. These are the challenges that affect the personal and professional development of the teachers and the students who are involved in the green curriculum, which include the lack of knowledge, skills, confidence, motivation, and support to engage in multidisciplinary, learner-centered, and action-oriented education for sustainability.

Classroom-level challenges. These are the challenges that affect the instructional design and delivery of the green curriculum in the classroom setting, which include alignment with the

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

existing curriculum standards and assessments, the use
of appropriate pedagogical methods and tools, and the evaluation of the learning outcomes and impacts.

School-level challenges. These are the challenges that affect the organizational culture and climate of the school that implements the green curriculum, which include the leadership, vision, and commitment of the school administration, the collaboration and communication among the teachers and staff, the involvement and participation of the parents and families, and the resources and facilities available for the green curriculum:

Community-level challenges. These are the challenges that affect the partnership and collaboration between the school and the community in the green curriculum, which include the engagement and sustainability of community involvement, the overcoming of differences between and among academics and the community, working with nontraditional communities, initiating a project with a community and developing a community advisory board, and dealing with geographic challenges.

Based on these findings, school leaders need to make concerted efforts to overcome these community engagement challenges, such as finding best practices, encompassing support systems, and exploring innovative partnerships to address ESD effectively in their schools (Abidin et al., 2019).

UNESCO (2022) has proposed substantial activities as strategies to overcome the challenges of curriculum greening at each stage.

Initiation Stage. Provide evidence and examples of the benefits and impacts of green curriculum for students, schools, and society, such as improved learning outcomes, enhanced skills, reduced environmental footprint, and increased civic engagement. Share stories and testimonials of successful green curriculum initiatives from other schools or countries, and inviting experts or peers to showcase their practices and experiences. Create incentives and recognition for the stakeholders who are willing to participate and support the green curriculum, such as awards, certificates, grants, or publicity. Build trust and rapport with the stakeholders by listening to their concerns and expectations, addressing their questions and doubts, and involving them in the planning and decision-making process.

Adoption Stage. Present a clear and compelling proposal that outlines the rationale, objectives, activities, outputs, outcomes, and impacts of the green curriculum, as well as the budget, timeline, and indicators of success. Negotiate the resources and support from the relevant authorities and groups, such as the district or national education authorities, the school board, the parent-teacher association, or the local community, by highlighting the alignment of the green curriculum with their goals, policies, and standards. Form a strong and diverse implementation team that includes representatives from different stakeholder groups, such as teachers, students, parents, administrators, and experts, who can share their expertise, perspectives, and responsibilities.

Execution Stage. Design and develop a green curriculum that is relevant, engaging, and effective for the students, by using a participatory and iterative approach that involves the teachers and the students in the curriculum development process, and by integrating the principles and practices of education for sustainable development across all subjects and levels. Train and coach teachers on to deliver and assess the green curriculum, by providing them with the necessary knowledge, skills, resources, and support, such as workshops, manuals, mentors, or online

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

platforms. Deliver and asses the lessons that incorporate the green curriculum, by using a variety of pedagogical methods and tools, such as inquiry-based learning, project-based learning, experiential learning, or digital learning. Collect and analyze the feedback and data from the teachers, the students, and other stakeholders, by using a range of qualitative and quantitative methods and instruments, such as surveys, interviews, observations, or tests.

Institutionalization Stage. Evaluate and report the results of the green curriculum implementation using a comprehensive and systematic approach that measures the outputs, outcomes, and impacts of the green curriculum, such as the changes in the students' knowledge, skills, attitudes, and behaviors, the improvements in the school's environmental performance, and the contributions to the community's sustainable development. Celebrate and reward the achievements of the green curriculum implementation, by recognizing and acknowledging the efforts and accomplishments of the teachers, the students, and other stakeholders, such as through awards, certificates, events, or publications. Disseminate and replicate the best practices of the green curriculum implementation, by sharing and exchanging the lessons learned, the challenges faced, and the solutions found, with other schools or countries, such as through networks, platforms, or partnerships.

United Nations Framework on Education for Sustainable Development

The UN actively promotes and supports the integration of Education for Sustainable Development (ESD) across various educational sectors globally. The Education 2030 Framework outlines a global roadmap for achieving the education-related goals within the SDGs, which includes: Goal 4.7: Emphasizes the importance of integrating ESD into the curriculum, teacher training, and learning environments at all levels.

The Greening Education Partnership, launched in 2022 by UNESCO, which aims to accelerate the integration of ESD principles into educational systems worldwide, focuses on four key areas. Greening schools by promoting sustainable practices within school environments. Greening curricula by integrating ESD into all subjects and learning areas. Greening teacher education by equipping educators with the knowledge and skills to teach ESD effectively, and Greening education system capacities by building institutional capacity to support and sustain ESD efforts.

Overall, the UN's approach to greening the curriculum is multifaceted and focuses on integrating ESD principles across all subjects and learning levels, equipping educators with the knowledge and skills to teach ESD effectively, promoting sustainable practices within educational institutions, and building capacity and collaboration among countries to achieve global progress in ESD.

REPUBLIC ACT NO. 9512, "National Environmental Awareness and Education Act of 2008"

Section 3 of this Act or the Scope of Environmental Education explains that the Department of Education (DepEd), the Commission on Higher Education (CHED), the Technical Education and Skills Development Authority (TESDA), the Department of Social Welfare and Development (DSWD), in coordination with the Department of Environment and Natural Resources (DENR), the Department of Science and Technology (DOST) and other relevant agencies, "shall integrate environmental education in its school curricula at all levels, whether public or private, including in barangay daycare, preschool, non-formal, technical vocational, professional level, indigenous learning and out-of-school youth courses or programs. Environmental education shall encompass

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

environmental concepts and principles, environmental
laws, the state of the international and local environment, local environmental best practices, the threats of environmental degradation and its impact on human well-being, the responsibility of the citizenry to the environment, and the value of conservation, protection, and rehabilitation of natural resources and the environment in the context of sustainable development. It shall cover both theoretical and practicum modules comprising activities, projects, and programs including, but not limited to, tree planting; waste minimization, segregation, recycling, and composting; freshwater and marine conservation; forest management and conservation; relevant livelihood opportunities and economic benefits; and other such programs and undertakings to aid the implementation of the different environmental protection laws. " This act should serve as a guide to all concerned agencies, most importantly the education sector.

The Green Curriculum in the Department of Education

The school's inclusion of environmental and sustainability education into its curriculum is referred to as having a "green curriculum." Students are encouraged to take action for sustainability in their personal and professional lives by providing them with a comprehensive grasp of the relationships between the environment, economy, and society (UNESCO, 2023).

The development of green curriculum can be traced back to the evolution of environmental education, which is a broader and more interdisciplinary field. The Brundtland Commission Report (Brundtland, 1987) coined and defined the meaning of the term sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (p. 43). The report also proposed policy recommendations and legal principles to achieve sustainable development at the global, national, and local levels. Part of which are policies on integrating education for sustainable development (Louw, 2013).

Green curriculum implementation in the school systems in the Philippines started in the 1970s, when the Department of Education issued various circulars and memoranda that mandated the inclusion of environmental education in the curriculum of elementary and secondary schools. Some of the early initiatives were: the Environmental Education Program (EEP) in 1972, which aimed to develop environmental awareness, knowledge, skills, and values among students and teachers through various activities, such as seminars, workshops, field trips, and projects; The Environmental Education Curriculum Development Project (EECDP) in 1977, which aimed to integrate environmental education in the existing subjects, such as science, social studies, and values education. This integration of environmental education was made possible by the creation and development of instructional materials, teacher training, and evaluation. The Environmental Education in the School System (EESS) in 1980, which aimed to institutionalize environmental education in the school system, through the establishment of environmental education units, committees, and coordinators in the national, regional, and division levels.

However, these initiatives faced many challenges and limitations, such as lack of funding, support, resources, training, and coordination, as well as inconsistency, fragmentation, and duplication of efforts. Therefore, the implementation of green curriculum was not widespread, systematic, or effective in the school systems in the Philippines.

It was not until the 1990s that green curriculum implementation gained more momentum and recognition in the school systems due to the influence of the global environmental and sustainability movements, such as the Brundtland Report in 1987, the Earth Summit in 1992, and Agenda 21 in 1992.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

These developments led to the formulation and implementation of various policies, programs, and projects that aimed to green the curriculum in the school systems in the Philippines, such as the Environmental Education Program Framework (EEPF) in 1998, which provided the guidelines and standards for integrating environmental education in the basic education curriculum, as well as the strategies and mechanisms for implementation, monitoring, and evaluation. This was followed by the Environmental Education Integration Project (EEIP) in 2000, which aimed to enhance the capacity of the DepEd and other stakeholders to implement the EEPF through the development of curriculum guides, learning materials, teacher training modules, and assessment tools.

Finally in 2008, the National Environmental Awareness and Education Act, which mandated the integration of environmental education in the curriculum of all levels and types of education, as well as the establishment of the National Environmental Education and Action Plan (NEEAP) and the Environmental Education and Awareness Council (EEAC) to oversee and coordinate the implementation of the law (https://www.deped.edu.ph).

Components of Green Curriculum

Incorporating a few environmental lessons into already-existing subjects is not enough to implement a green curriculum. The approach must be comprehensive, incorporating sustainability principles into different facets of the learning process to promote students' environmental consciousness, expertise, abilities, and conscientious behavior. The Department of Education, through the school principals' leadership, stressed the indication of the following components as described.

Incorporating a few environmental lessons into already-existing subjects is not enough to implement a green curriculum. The approach must be comprehensive, incorporating sustainability principles into different facets of the learning process to promote students' environmental consciousness, expertise, abilities, and conscientious behavior. The Department of Education, through the school principals' leadership, stressed the indication of the following components as described.

Content Integration

Incorporating a few environmental lessons into already-existing subjects is not enough to implement a green curriculum. The approach must be comprehensive, incorporating sustainability principles into different facets of the learning process to promote students' environmental consciousness, expertise, abilities, and conscientious behavior. The Department of Education, through the school principals' leadership, stressed the indication of the following components as described.

Pedagogical Approaches

Inquiry-based learning encourages students to ask questions, research, analyze information, and develop solutions to real-world environmental problems.

Project-based learning engages students in collaborative projects that address environmental challenges in their communities or schools. Outdoor learning provides opportunities for students to connect with nature firsthand, learn through observation and experience, and appreciate the environment.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

School Environment

Sustainable practices are green practices implemented within the school environment, such as waste reduction, recycling, composting, water conservation, and energy efficiency. Create and maintain school gardens to provide hands-on learning experiences, promote healthy food choices, and connect students with nature. Consider incorporating sustainable architecture, renewable energy sources, and resource-efficient technologies into school buildings.

Community Engagement

Collaborate with local environmental organizations, businesses, and individuals to enrich learning experiences and connect students with real-world environmental initiatives. Engage students in service-learning projects that address community environmental concerns, fostering a sense of responsibility and community engagement. Raise awareness about environmental issues and promote sustainable practices within the larger community through outreach programs and collaborations.

Teacher Training and Support

Professional development happens when educators are equipping with the knowledge, skills, and resources to effectively integrate green topics and pedagogical approaches into their teaching. Support teachers in collaboratively developing engaging and effective green curriculum materials. Share and collaborate in order to create platforms for teachers to share best practices, collaborate on green curriculum initiatives, and learn from each other.

The Department of Education has been implementing and strengthening environmental and climate change education in its institutions. Accordingly, these concepts are integrated with the K-12 curriculum in various subjects such as Science, Health, Araling Panlipunan, Edukasyon sa Pagpapakatao, Mathematics, English, Filipino, Edukasyong Pantahanan at Pangkabuhayan & Technology and Livelihood Education, and Music, Arts, and PE. The DepEd also stated its commitment to reviewing and refining the learning competencies relevant to climate change education and coordinating with various government offices and environmental experts (OM 499, s. 2020). Furthermore, the DepEd issued a memorandum in 2011 that encouraged the school administrators, officials, and teachers to use various instructional materials and activities to make the students aware of environmental issues and to promote their participation in environmental advocacies.

The DepEd is actively committed to promoting climate literacy and supporting climate action in the basic education sector through its Disaster Risk Reduction and Management Service (DRRMS). It aims to enhance learners' and personnel's understanding of climate-related issues and empower them to champion resilient and sustainable schools. The DRRMS is actively involved in reviewing and improving learning materials that address climate change competencies. DepEd collaborates with the Information and Communications Technology Service (ICTS) and the Bureau of Curriculum Development (BCD) to curate resources for teaching climate change.

These resources assist teachers in integrating climate change topics into the curriculum. DepEd Memorandum No. 24, s. 2019, or the 2019 "National Search for Sustainable and Eco-Friendly Schools" was a significant initiative by the Department of Environment and Natural Resources (DENR) in collaboration with the Department of Education (DepEd) and the Commission on Higher Education (CHED). The primary goal of this search was to encourage schools and academic institutions in the Philippines to actively engage with environmental issues at a practical and local level. One of the criteria for determining the level of sustainability of

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

schools is that there must be evident environmental and
climate change-related features of the curriculum. This criterion may be measured by the presence of climate change and disaster risk reduction themes in the curriculum, the presence of in-service environment and climate change training for faculty members, and the presence of environment and climate change support instructional materials for use by teachers and students. It must be evident that there is an ongoing integration of environmental themes in the curriculum.

DepEd Memorandum under the Curriculum and Instruction Division in 2018 issued DM-CI-2018-00284 entitled “Training Workshop on Greening the K-12 Campus in Support to Green Economic Transitions and Sustainable Societies." The training workshop was attended by supervisors, SHS coordinators, and SHS school heads, who were trained on the teaching and learning process with 21st century skills, green skills, and sustainable approaches and practices. They were expected to determine gaps between the existing practices in the field and the teaching and learning processes with 21st century skills.

This training workshop was preceded by the 2017 activity entitled “Seminar Workshop on Just Transition for Green Skills and Sustainable Development for Junior and Senior High School.”.

The DepEd Order No. 5 s. 2014 entitled “Implementing Guidelines on the Integration of Gulayan sa Paaralan, Solid Waste Management, and Tree Planting under the National Greening Program (NGP)” was issued to support the Executive Order (EO) No. 26 s. 2011 entitled “Implementation of the National Greening Program” as a government priority. The DepEd realigns its programs by establishing the three umbrella projects, which are Gulayan sa Paaralan, Ecological Solid Waste Management, and Tree Planting. This project aims to enhance the development of values among learners by integrating curriculum concepts in planting and eating vegetables, waste management, environmental protection, and land conservation pursuant to RA 9512 entitled “An Act to Promote Environmental Education and for Other Purposes." The guidelines also emphasized the involvement of the nearby community to act during the school implementation of these projects. There should also be coordination with DENR, DA, and LGUs when provision of materials and trainings is needed.

The DepEd Order No. 93 s. 2011 entitled “Mandated Programs, Projects, and Activities, Various Forms, and Targets Pertinent to the Youth for Environment in Schools (YES) Program” was issued in support of DepEd Order No. 52 s. 2011.

DepEd Memo No. 58 s. 2011 is a memorandum on the creation of the “Task Force on National Greening Program, which will develop the DepEd National Program Plan aligned with the overall plan of the DENR, formulate policies, strategies, and guidelines on its implementation, coordinate with NGOs, private offices, and other society groups relative to the programs, recommend actions necessary for the improvement of the programs, submit periodic reports, and conduct monitoring and evaluation as appropriate.

These policies, programs, and projects have contributed to the improvement and expansion of green curriculum implementation in the school systems in the Philippines, as well as to the development of green schools, green teachers, and green learners. However, there are still many challenges and gaps that need to be addressed, such as lack of awareness, support, resources, training, and incentives, as well as resistance, inertia, and competing priorities (DO No. 52, s. 2011). Therefore, green curriculum implementation requires not only technical and pedagogical innovations but also institutional and cultural changes within the community. It also requires a long-term vision and commitment to ensure the sustainability and effectiveness of the curriculum.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Theoretical Framework

Theoretical frameworks are considered an important component of research because they map a way for the researcher to conduct appropriate research by providing theoretical underpinnings. The following theories and models were drawn to explain and interpret the data to be collected regarding instructional leadership and community engagement challenges in the implementation of green curriculum in selected secondary schools in Cavite.

A. Interindividual Differences Theory

The theory of Beatty (2022), which was originally initiated by Erikson in 1968 on interindividual differences in perception, states that differences in individual brain structure or factors such as culture, upbringing, and environment influence the perception of humans. These effects on perception include an individual's past experiences, education, values, culture, preconceived notions, and present circumstances. She summarized the three major influences on social perception as the characteristics of 1) the person being perceived, 2) the situation, and 3) the perceiver. The theory of interindividual differences in perception is significant to this study because it supports the notion that each school principal's unique background of education, experiences, and cultural values influences his/her perception of the role as a curriculum leader in school. The unique exploration of individual and comparative perceptions provides a solid foundation on which this study is explored.

B. Diffusion of Innovations Theory

The diffusion of innovations theory of Everett Rogers is a sociological theory that explains how new ideas, practices, or technologies spread and are adopted by individuals and groups within a social system. It helps to understand the factors that affect the rate and extent of adoption, such as the characteristics of the innovation, the communication channels, the time, and the social system. The diffusion of innovations theory can help to analyze the dynamics and challenges of green curriculum implementation, as well as the strategies and conditions that facilitate or hinder the diffusion and adoption of green curriculum in schools (Rogers, 2003).

C. Adaptive Leadership Theory

Instructional leadership challenges associated with implementation and curriculum reform can be better understood through the adaptive leadership theory developed by Heifetz et al. (2009). Instructional leaders are faced with the task of developing curriculum materials and then supporting teachers' implementation of these materials through learning, coaching, and supervision (Bryk et al., 2010; Pak & Desimone, 2019). These are not challenges that can be solved with technical strategies; instead, adaptive challenges require leaders to develop fundamental changes to the status quo. In sum, adaptive curricular challenges frequently manifest for leaders seeking to develop a curricular infrastructure to support teachers' implementation due to the difficulties inherent in creating, executing, and enacting new curricula.

Adaptive leadership is a theoretical framework that is embraced in many leadership sectors, though with little empirical evidence to solidify its claims (Dugan, 2017). We believe that much can be learned from evaluations of educational leaders who recognize the adaptive complexities of curriculum reform and proactively seek to alter their leadership behaviors to account for these complexities (Wolfe, 2015).

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

D. The Fields of Action Model

The Fields of Action model (Muller et al., 2019) in the figure below presented four interrelated stages: initiation, adoption, execution, and institutionalization, depicting the functions of instructional leaders with the activities that must be practiced in the implementation of green curriculum: Although there is a broad range of literature on ESD, the role of principals in the implementation of ESD and sustainability in schools has rarely been taken into consideration.

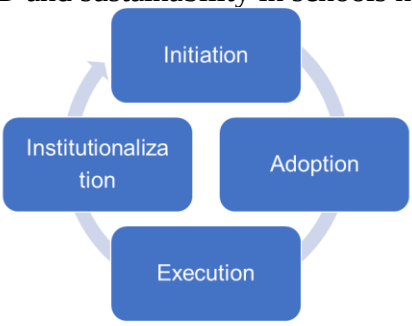

Figure 1. Fields of Action Model by Muller et al, 2020

Each stage has its own objectives, activities, challenges, and strategies. The table below identifies these four stages, and the Muller et al. (2020) model seeks to support principals in leading their roles towards sustainability.

Table 1

Stepwise Approach, 4 Stages for Green Curriculum implementation

STAGES OF IMPLEMENTATION	OBJECTIVES	ACTIVITIES	CHALLENGES	STRATEGIES
I. Initiation	To raise awareness and generate interest among school leaders and stakeholders about the need and benefits of green curriculum.	Conducting a situational analysis, identifying opportunities and challenges, and developing a vision and a plan for green curriculum.	Resistance, opposition, or indifference from stakeholders because of different priorities and preferences.	Persuade and motivate these stakeholders by providing evidence, sharing examples, creating incentives, and building trust.
II. Adoption	To obtain approval and secure support from authorities for the execution of green curriculum.	Presenting a proposal, negotiating the resources, and forming the implementation team.	Difficulties or delays in obtaining the approval, funding, or endorsement from higher-level officials.	Use various strategies to influence and communicate with these authorities, such as lobbying, networking, aligning, and reporting.
	To implement and put into	Designing the curriculum,	Accuracy of approaches in the	Use various strategies to

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

III. Execution	practice and monitor the schools.	training and coaching the teachers, delivering and assessing the lessons, and collecting and analyzing feedback.	implementation, unavailability of coaches, system of delivery of lessons, assessment and feedback mechanism, and delays in obtaining technical assistance.	facilitate and support the change process, such as planning, coordinating, mentoring, and troubleshooting.
IV. Institutionalization	To sustain and scale up the green curriculum in the schools and beyond.	Evaluating and reporting the results, rewarding the achievements, and disseminating and replicating the best practices.	Continuous improvement, support from the community, and enhancing the scale of the green curriculum.	Use various strategies to ensure and enhance the sustainability and scalability of the green curriculum, such as reviewing, documenting, recognizing, and sharing.

Based on Framework of Fields of Action, Muller, Lude & Hancock, 2020, and UNESCO,2023.https://www.unesco.org/en/education-sustainable-development/greening-future/schools.

E. Schoolwide Integrated Framework for Transformation

Community engagement in schools is a critical component for student achievement. Because of their strong influence on students, families, and schools, trusting community partnerships are an integral feature of Gross's Schoolwide Integrated Framework for Transformation (SWIFT). SWIFT is an evidence-based theoretical framework for a fully inclusive educational delivery system that extends beyond the school to include families and communities, as well as state and district policies and practices in the United States (Gross et al., 2015). One of the findings states that school characteristics—strong school leadership, a welcoming school culture, educators' dedication to student success, and the capacity for cooperation and communication with community partners—acted as catalysts for effective school-community collaborations.

Collaborative Implementation Practices

Collaborative implementation is the process of applying a collaborative strategy to execute a plan or project that involves multiple stakeholders. It requires effective communication, coordination, and cooperation among the participants to achieve the desired outcomes (Slater, n.d.). Collaborative implementation can enhance the quality, efficiency, and sustainability of the intervention or practice.

The effectiveness of collaboration between the school leaders and community has been presented in the related literature in various contexts. The Department of Education has always

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

been an advocate of collaboration and its importance in
governance and school operations. There are several memoranda that support the statement. For instance, the DepEd order provides the updated operating manual of Parents-Teachers Associations (PTAs) to regulate their functions and manage collaborative engagements among stakeholders (DO No. 13, s. 2022). In the implementation of the K-12 program, DO No. 40, s. 2015, provides the guidelines between partners to facilitate collaboration among various stakeholders, while during the pandemic in 2020, DepEd provided a framework and strategies for school-family-community partnerships in support of BE-LCP (DO No. 242, s. 2020). DepEd recognizes external partners' support to learning continuity, which acknowledges and appreciates the assistance of more than 130 external partners to learners and teachers in the school year 2021-2022 (https://www.deped.gov.ph).

Griffiths et al. (2021) came up with a model that explains how collaborative elements interact so that effective collaboration will happen. Based on the study, they identified nine key common constructs that led to collaboration: (a) open communication, (b) trust, (c) mutual respect, (d) shared goals, (e) common understanding, (f) shared responsibility, (g) active participation, (h) shared decision-making, and (i) implementation.

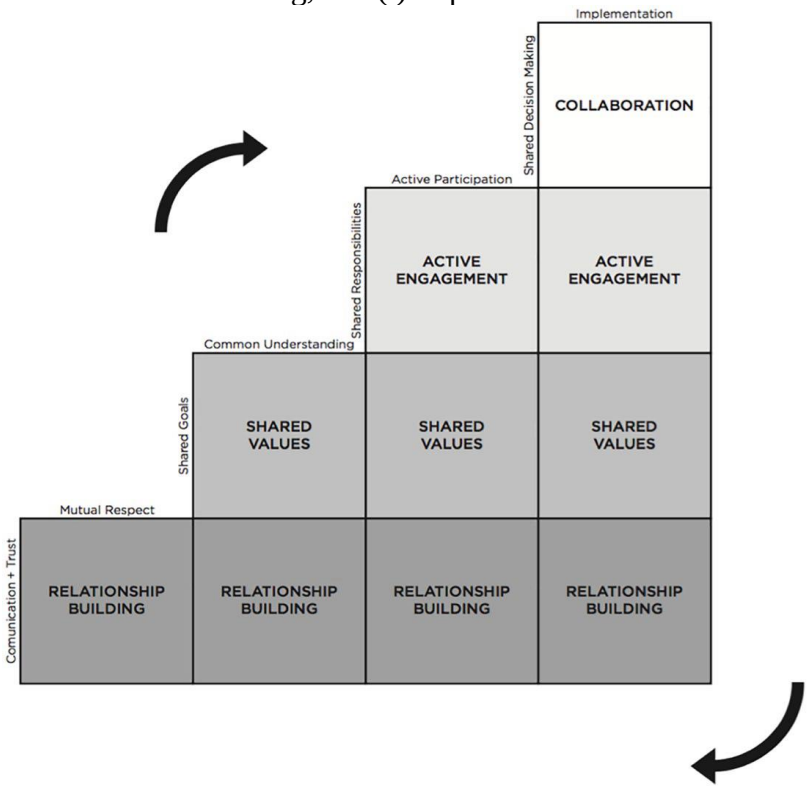

Figure 2. Building blocks of Collaboration
Source: *Griffiths, A.-J., Alsip, J., Hart, S. R., Round, R. L., & Brady, J. (2021)*

Griffiths (2021) highlighted the necessity of developing and cultivating the first building blocks before adding more; the model is presented as a set of building blocks. As the collaborative group strengthens their foundation and progresses through the blocks, it's critical that they keep addressing the fundamental abilities learned. The arrows show that this is an iterative process, meaning that teams will keep going through these different phases and occasionally need to repair certain aspects of their collaborative relationship before continuing.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Building relationships involves establishing mutual respect, open communication, and trust. When people can easily and effectively share ideas with one another, there is open communication. Open, honest, and transparent communication gives everyone the chance to voice their opinions and helps to prevent pointless arguments (Lancaster et al., 2015). Trust is defined as a willingness to make oneself vulnerable to someone else in the belief that one's interests will not be negatively affected (Tschannen-Moran & Gareis, 2015). When high levels of trust and commitment are demonstrated by the team, it results in both student and school success.

The third aspect of relationship building is mutual respect. It is frequently perceived with open communication and trust (Pullon, 2008). When individuals respect one another's abilities, expertise, and knowledge, mutual respect arises (Hallam et al., 2015). When information and ideas are respected, there is mutual trust in one another's skills, and there is flexibility in resolving disputes in a constructive way (Tucker & Schwartz, 2013). It is also crucial for team members to actively address disparities in perceived authority and work toward cultural understanding (Verdon et al., 2016).

A shared objective or issue that unites the team to finish a work that cannot be completed separately is at the heart of collaboration (Fewster-Thuente, 2015). Every team member contributes to the creation of shared goals, which are then decided upon and created collaboratively. When people's areas of expertise are utilized and the team's overall goals cannot be accomplished without cooperation, interdependence is developed.

There also must be a common understanding among all members that, despite differences in experience, knowledge, and skill, collaboration will help them to accomplish their shared goals. As collaborative teams can be diverse in terms of members' experiences, culture, and expertise, part of the foundational process is establishing each member's role and contribution (Griffiths et al., 2021).

When a group notices these characteristics in each person and starts to establish mutual objectives and a shared comprehension, the members might strive for active participation by taking on shared accountability and actively engaging (NASP, 2012). The concept of shared responsibility holds that each member of the collaborative team contributes. Each participant will have a distinct function and possess their own area of expertise in figuring out possible solutions (Hallam et al., 2015). Shared responsibility is taken a step further with active engagement, whereby each member of the collaborative team must play an active and leading role to actively participate.

Once the steps in the process are undertaken, a strong foundation for collaboration is present. The final step and goal of the collaborative process is to determine solutions and implement them. As such, the final stage of collaboration includes shared decision-making and the effective implementation of these decisions. When a team consistently solicits feedback from every member of the team and actively promotes participation throughout the decision-making process, shared decision-making takes place.

The last and possibly most crucial step in the collaborative process is implementation. Griffiths et al. (2021) emphasized the team's ability to carry out decisions while maintaining integrity is what defines implementation, and despite being an essential component of the process, this idea of collaborative implementation was frequently overlooked in the literature.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Conceptual Framework

This research describes instructional leadership and community engagement challenges in the implementation of green curriculum in selected secondary schools in Cavite that can serve as input for enhanced collaborative implementation practices. The figure below illustrates a sequential exploratory design of the mixed method approach based on the foregoing concepts, theories, and related literature.

Phase One: Qualitative Data Collection and Analysis. The qualitative data collection includes interviews with the identified instructional leaders across selected secondary schools in order to gather information on the challenges of instructional leadership and engaging the community in the implementation of green curriculum. Also, the experts will be asked about their implementation practices and ways of coping with those challenges. These instructional leaders, or experts, are school principals, master teachers, head teachers, and coordinators. After collecting the responses, the Delphi technique process follows by generating codes and thematic analysis to identify the themes needed for the second phase of the study. This phase will produce instructional leadership and community engagement challenges' themes, implementation practice's themes, and the experts' statements on ways of addressing the challenges.

Phase Two: Quantitative Data Collection and Analysis. Based on themes from the insights of experts in Phase I, the development of a survey instrument follows. Once developed, an online questionnaire will be devised and executed using Google Forms, and links will be using the schools' email and social media applications. All data collected will be statistically analyzed using Microsoft Excel and IBM SPSS applications. This quantitative part determines the difference between instructional leaders' challenges and their demographic profile, such as age, length of service, educational attainment, and the extent to which the respondents assessed the challenges in the implementation of green curriculum.

Integration and Interpretation. It is when the results of two phases are piled together to form relevant interpretations of instructional leadership and community engagement challenges in selected secondary schools in the Division of Cavite. The integration of qualitative and quantitative data improves and ensures that the limitations of one type of data are balanced by the strength of the other. This is the culmination of the research process, wherein data were translated into actionable insights through triangulation. Based on the results of the study, recommendations for enhanced collaborative practices in the implementation of green curriculum will be crafted.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

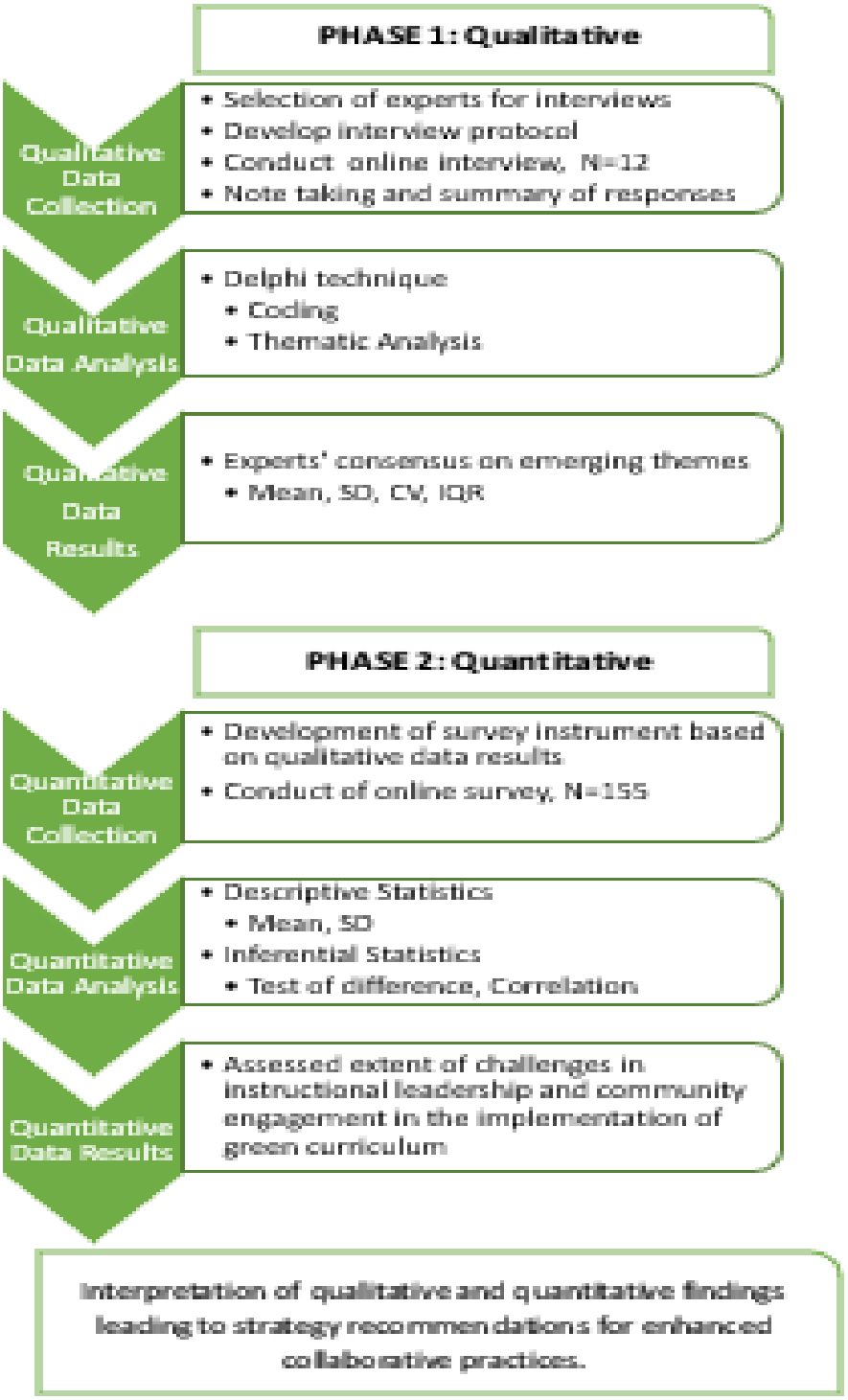

Figure 3. The Conceptual Model of the study showing the flow of the research utilizing a Sequential Exploratory Design of the Mixed Method approach.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

METHODOLOGY

This part presents the method and procedures that were used in the conduct of the study. It includes the research design, sampling procedures, research instruments, validity and reliability, data gathering procedures and statistical treatments for the analysis of data.

Research Design

Due to complex interactions between instructional leadership and community engagement challenges in the implementation of green curriculum, and to gain a comprehensive and in-depth overview narratively and numerically, a mixed method design was implemented in this study (Alrawashde et al., 2021). It is a research approach that involves the integration of quantitative and qualitative methods and was chosen to explore the instructional leadership and community engagement challenges in the implementation of green curriculum within selected secondary schools in Cavite. According to Dawadi (2021), mixed methods are being employed to answer research questions that cannot be adequately addressed by either quantitative or qualitative methods alone.

The study applied a pragmatist approach by choosing the most suitable methods for answering specific questions. The research design included elements of constructivism, where open-ended or semi-structured interview questions were used to gather qualitative data, and positivism, such as structured survey questions to collect quantitative data.

To specifically answer the research questions, a sequential exploratory design was used. The first phase was qualitative data collection and analysis, followed by a second phase of quantitative data collection and analysis, built on the results of the first phase. (Creswell & Plano Clark, 2018).

Combining qualitative and quantitative data is known as exploratory sequential mixed methods. and the phased collection and analysis of quantitative data (Creswell & Clark, Plano (2018)). In the initial stage, investigators gather qualitative data and then conduct an analysis of the data, the findings of which guide the following quantitative phase, which might be a survey or another kind of gathering quantitative data. The qualitative phase is data-driven, which is why it is called "exploratory" (Creswell & Plano, Clark, 2018) as opposed to being guided by a theoretical structure. The collection of quantitative data is delayed because it requires more concepts prior to administering a questionnaire or survey.

The qualitative and quantitative findings were merged to craft recommendations for enhanced collaborative practices in the implementation of green curriculum.

Data collection and sample selection

There are six schools' division offices (SDO) in the province of Cavite. Samples came from four SDOs of public secondary schools: Bacoor City SDO, Dasmariñas City SDO, General Trias City SDO, and Imus City SDO. This study used a non-probability sampling technique, where purposive samples were stratified, as they are often used in exploratory research. In this type of research, the aim was not to test a hypothesis about a broad population but to develop an initial understanding of a small or under-researched population. The participants include instructional leaders, experts, and teachers. In educational institutions, experts are identified and selected individuals or groups of individuals that are especially knowledgeable about or experienced with the phenomenon of interest. In addition, the importance of availability and willingness to participate and the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner were considered (Palinkas et al., 2016).

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

The number of selected secondary schools was calculated using Slovin's formula given the total population of secondary schools in the four SDO in Cavite province as follows: Bacoor City = 11, Dasmarinas City = 13, Gen Trias = 16, and Imus City = 9 (www. Cavite.gov.ph). Slovin's formula was employed because it will help determine the appropriate sample size, ensuring representativeness. After applying the formula, the number of secondary schools and the chosen schools from which the researcher wished to study are shown in Table 2 below. In selecting the sample, proximity of schools, budget, and time constraints were considered.

Table 2
Selected DepEd Secondary Schools in Cavite Province

No.	Name of School	SDO Location
1	Dasmarinas Integrated High School	Dasmariñas
2	Francisco E. Barzaga Integrated High School	Dasmariñas
3	Dasmarinas East Integrated High School	Dasmariñas
4	Dasmarinas North National High School	Dasmariñas
5	Dr. Jose P. Rizal SHS	Dasmariñas
6	New Era National High School	Dasmariñas
7	Paliparan National High School	Dasmariñas
8	Bacoor National High School Main	Bacoor
9	Bacoor National High School VMA	Bacoor
10	Bacoor National High School Mambog	Bacoor
11	Dulong Bayan Senior High School	Bacoor
12	Mariano Gomez National High School	Bacoor
13	Santiago Integrated National High School	Gen. Trias
14	Gov. Ferrer National High School Buenavista	Gen. Trias
15	Gov. Ferrer National High School Main	Gen. Trias
16	Gov. Ferrer National High School Annex	Gen. Trias
17	Parklane National High School	Gen. Trias
18	Tropical Village National High School	Gen. Trias
19	Imus National High School Main	Imus
20	Gen. Tomas Mascardo National High School	Imus
21	Imus National High School Alapan	Imus
22	Gen. Pantaleon Garcia Senior High School	Imus
23	Gen. Emilio Aguinaldo National High School	Imus

In the qualitative phase, the participants are purposefully selected from the schools listed on table 2. The participant selection yielded one (1) school principal, four (4) master teachers, and seven (7) head teachers.

In the quantitative phase, one hundred fifty-five (155) teachers from the selected secondary schools responded to the survey questionnaire.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Data Analysis Methods

To gather data in this study, the following procedures were undertaken:

Preliminary Measures. Prior to the conduct of this study, the researcher sought an endorsement from the Schools Division Superintendent of Bacoor City, Imus City, Dasmariñas City, and General Trias City division offices to conduct study in their respective schools. Upon the release of the endorsement letter, a letter of consent was presented to the school principal, seeking their permission to conduct the interview in their respective school. Upon their approval, the target respondents were determined.

***Qualitative Data Gathering*.** The researcher asked the school principal for the available date and time for the interview. The researcher was reminded of DepEd Order 05, Series 2024, which says that teachers must be focused on increasing "engaged time-on-task" and ensure that the prescribed 205 school days are strictly spent on instructionally relevant activities. It aimed to minimize disruptions caused by activities outside the core curriculum. Moreover, because of the series of memoranda on suspension of in-person classes that started in March 2024 and announced the shift to alternative delivery modes such as asynchronous classes in cases of extreme heat that may compromise the health and safety of learners, teachers, and non-teaching personnel, the school principals suggested data gathering, follow-up, and other future interactions to be done via online meeting, messenger, email, or Google Form. These were the most practical ways under the circumstances. Based on ease of access, instead of the researcher choosing participants and directly contacting them, they answered the questions made available online. To guarantee that the outcomes are precise and objective, it is crucial to properly organize the questionnaire that was sent online. All possible follow-up questions were given. It is also critical to examine the gathered data to spot trends and themes that surface (Lazar & Hochheiser, 2017).

***Quantitative Data Gathering*.**

Online data collection using Google Forms was employed in gathering survey responses from teachers. The letter of consent, the research objectives, and the research instrument were integrated into a single Google form for ease of access. The researcher sought the assistance of the school administrative aid in sending the form to the participants. Because all teachers were busy preparing for the school graduation, school forms, and other documents, data gathering went on for a period of six (6) weeks.

Treatment and Analysis of Data

In processing the data, the following treatment was employed:

The researcher presented first the profile of the respondents using a percentage frequency distribution based on age, teaching position, length of service, educational attainment, and level of training attended.

For qualitative questions 1 to 4, the Delphi technique was employed. The Delphi method is a systematic process of gathering a panel of experts and engaging them in several rounds of questions until a consensus is derived on various subjects, including attitudes and experiences (Brady, 2015). Every answer the experts provide is anonymous, which removes the inherent bias like dominance and group conformity observed only during face-to-face group meetings. The primary purpose of the Delphi technique is to generate a reliable consensus opinion of a group of experts.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

In the first round, the responses of the 12 experts in the questionnaire were gathered. The qualitative responses were analyzed to yield codes, categories, and themes. Round two questionnaire was designed to elicit the experts' consensus on the themes that were generated by calculating the mean, standard deviation, coefficient of variation, and interquartile range. To gain experts' consensus, the coefficient of variation (CV) should not exceed 50%, and the interquartile range (IQR) should be less than or equal to 1. When several statements did not meet the required IQR, no consensus was attained. It was then submitted for the Delphi Round 3 survey. Copies of the survey form were again sent to the experts for reconsideration of several items that did not meet the required IQR value for consensus. Figure 5 displays the summary of the processes involved in the conduct of the Delphi technique.

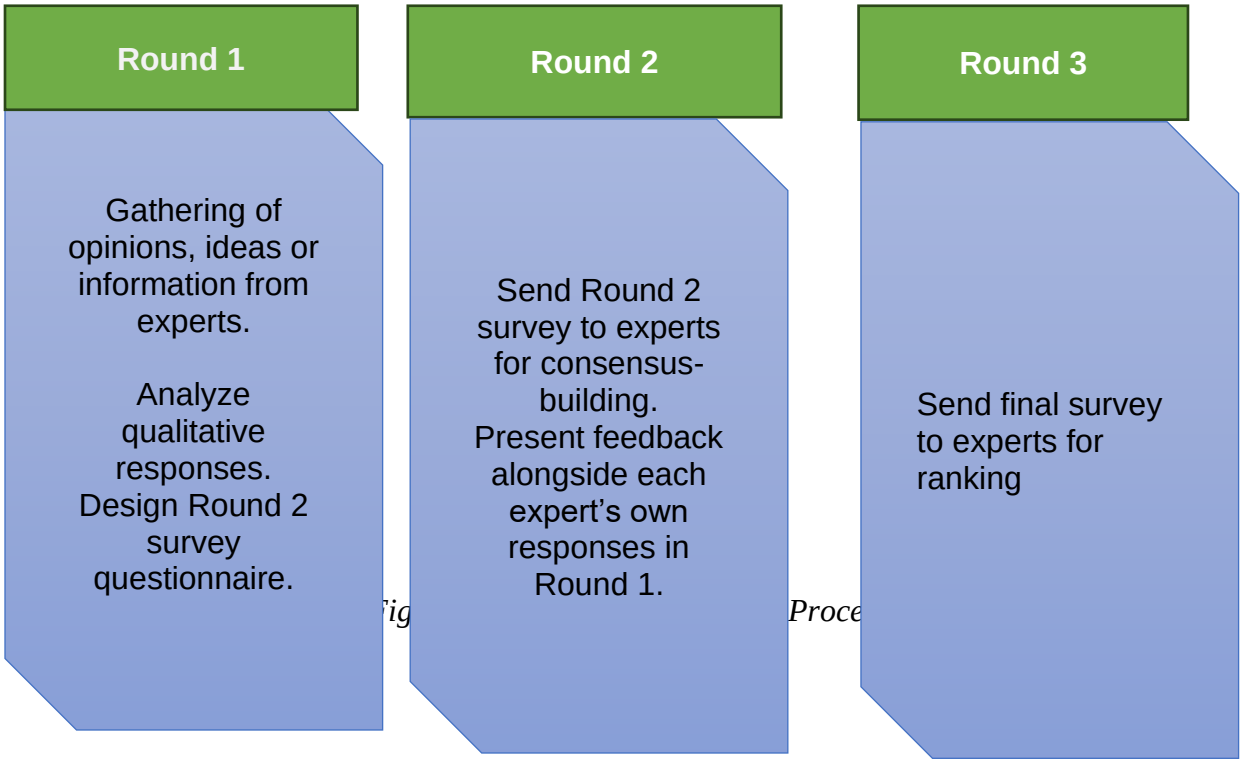

Fig *Proce*

Further interpretation in accordance with the five-point Likert scale as shown below was used.

Table 3
Five-point Likert Scale used for the Delphi interpretation of responses

Response Scale	Descriptive Rating	Scale Range
5	Strongly Agree	4.21-5.00
4	Agree	3.41-4.20
3	Undecided	2.61-3.40
2	Disagree	1.81-2.60
1	Strongly Disagree	1.00-1.80

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

For quantitative questions 5-7, the researcher presented first the profile of the respondents using a percentage frequency distribution based on age, length of service, and educational attainment.

Survey results on the assessment of the extent of instructional leadership and community engagement challenges as perceived by teachers were transformed into descriptive and inferential statistics. Descriptive statistics include weighted mean and standard deviation. Inferential statistics test the hypothesis to draw conclusions about the differences and relationship of instructional leadership and community engagement challenges in the implementation of green curriculum. Statistical Package for Social Sciences (SPSS) and MS Excel were used for the analysis of statistical data. Further interpretation in accordance with the five-point Likert scale as shown below was used.

Table 4

Four-point Likert Scale used for the Extent of the Challenges interpretation of responses

Response Scale	Descriptive Rating	Scale Range
4	Great Extent	3.25-4.00
3	Moderate Extent	2.50-3.24
2	Slight Extent	1.75-2.49
1	Low Extent	1.00-1.74

The generalization used hypothesis testing based on the statement of the problem. Based on the qualitative and quantitative analyses, the study proposed enhanced collaborative practices to address the challenges faced by instructional leaders in the implementation of green curriculum. This proposal hopes to help secondary schools practice enhanced collaboration within their school community.

Research hypotheses and validation

To ensure the validity and reliability of the research instruments employed, the researcher followed a process of peer review, experts' content validation, and piloting of the interview guide and the survey questionnaire.

Peer Review. The researcher asked the colleagues or professors familiar with the research topic to review the research questions. They have provided valuable feedback and suggestions for improvement. The reviewers suggest that relevant keywords be used and preliminary questions be included.

Experts' Validation. The experts were selected based on criteria proposed by Creswell (2014), such as having wide experience in performing decision-making, professional affiliations, availability, willingness, and impartiality. The researcher has chosen five experts and informally did the validation through sit-down interviews one by one and presented the questionnaire for content validity examination. These experts evaluated the questions for their relevance, clarity, and comprehensiveness, and they reached a consensus on the items used in this study. They suggested that follow-up questions must be prepared to arrive with the relevant answers.

Pilot test. A rehearsal was done, which allowed to test the qualitative interview procedure with a small number of test participants. This test will identify any issues with the instrument if revisions of the wording or format of the questions are necessary before using it in the actual study. The questionnaire was tested online by 7 colleagues. Brooks (2016) suggested that 5–10 participants are suitable for refining interview guides or questionnaires, and that the sample size

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

of the pilot study should be sufficient to achieve your
specific goals without being excessively large or resource-intensive. Moreover, the chosen participants for the pilot test share as similar criteria as possible to the group of participants for the major study. The pilot test revealed comments and suggestions for improvement, such as setting a precise range of time for the interview and using terminologies that are more conversational, and if the needs arise, preparing an online platform for the interview, such as text, Messenger, Google Forms, etc. All suggestions were considered and employed in this study.

Ethical considerations

To ensure that this study is conducted in a proper and responsible manner, ethical considerations in research were followed. These considerations are designed to protect the rights, safety, and well-being of research participants, as well as the integrity and credibility of the research itself.

Informed consent was obtained from the participants, which required the researcher to explain the goals, methods, risks, rewards, and right to discontinue the study at any time. By doing this, the participants knew what the researcher expected from them and could decide whether to participate or not. The researcher ensured that participants' privacy and confidentiality are protected as per the Data Privacy Act and must be always upheld (Picciotto, 2021). This means that personal information should be kept confidential and not shared without the participant's consent. Pseudonyms and codes were used to hide their identity. The research study did not discriminate against any group or individual and has treated all participants equally and fairly and did not impose their values and beliefs on the participants. The result of the study was reported to the participants objectively. They were invited to provide feedback and suggestions on how the study could be improved in future research endeavors.

These considerations contributed to a responsible research process that not only protected the participants but also enabled them to generate valuable perceptions about the challenges in the implementation of green curriculum by instructional leaders.

RESULTS AND DISCUSSION

Qualitative Phase

Profile of Experts

The participants were instructional leaders, and their proficiency attributes were considered, such as age, teaching position, length of service, educational attainment, and trainings attended. Understanding the demographic profile of participants is a valuable tool for a meaningful interpretation of data and ensuring its relevance, applicability, and drawing meaningful conclusions. The chosen experts significantly impact the reliability and validity of the results. In determining the diversity of the experts, various domains were identified and used, such as holding the position as being the school head or school principal, master teacher, and head teacher. A total of 12 experts participated in the qualitative phase of the study. Table 3 presents the frequency and percentage distribution of instructional leaders being the experts according to age, teaching position, length of service, educational attainment, and level of training attended. Instructional leadership can be performed by principals as well as other teachers who take on leadership roles in their school.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Table 5
Profile Distribution of Instructional Leaders/ Experts

Profile	Frequency	Percentage
Age		
41-45	3	25.00
51-55	6	50.00
56-60	3	25.00
Teaching Position		
Principal	1	8.33
Master Teacher	4	33.33
Head Teacher	7	58.33
Length of Service		
10-20	3	25.00
21-30	7	58.33
31-40	2	16.67
Educational Attainment		
Bachelor's Degree with Master's Units	6	50.00
Master's Degree	3	25.00
Master's Degree with Doctoral Units	2	16.67
Doctorate Degree	1	8.33
Level of Training/s Attended		
National	1	8.33
Regional	4	33.33
Division	7	58.33

As presented in the table, 50% or 6 among the participants are from the age cluster of 51-55; the age groups of 41-45 and 56-60 have equal representation of 25% or 3. This depicts that half of the participants from selected secondary schools in Cavite are 51-55 years old, while half of the respondents are 41-45 and 56-60. Age is significant to teacher performance because it may affect the teachers' abilities, skills, knowledge, and attitudes in delivering effective teaching and learning (Mohd Ismail et al., 2018). A study by Usop et al. (2013) stated that pupils tend to rate older and more experienced teachers higher because they believe that they are more authoritative and deserving of respect. Their knowledge of green curriculum may come from personal experiences and therefore be more practical in a sense.

Table 5 reveals that 7 or 58.33% of the participants hold the position of head teacher, 4 or 33.33% are master teachers, and there is only 1 school principal (8.33%). The percentage distribution presents a fair spread. An individual's teaching position can hold significance in imparting the green curriculum for several reasons. They are considered highly proficient teachers where they are expected to possess a higher level of competence and skills compared to teachers who are at the proficient level, such as Teachers I, II, and III (RPMS Manual, 2015).

The table also shows that more than half of the participants, 58.33%, or 7 have length of service from 21 to 30 years, while 25%, or 3 have 10 to 20 years of service, and 2 or 16.67% have been teaching from 31 to 40 years. School leaders with longer lengths of service tend to have higher satisfaction than those with shorter lengths of service. The study of Bulanadi (2015) also revealed that length of service has a positive correlation with the intrinsic and extrinsic aspects of job satisfaction, such as achievement, recognition, responsibility, advancement, supervision, and

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

salary, and the study suggested that length of service
can influence job satisfaction by affecting their sense of commitment, loyalty, security, and stability in their profession. The length of service data provides enough representation to generate necessary information because it is a factor in determining the competence and suitability of school leaders.

As presented in the table, 50% or 6 of the participants are holders of a bachelor's degree with master's units, while participants who have a master's degree are 25% or 3, those with a master's degree with doctoral units are 16.67% or 2, and 1 or 8.33% has a doctorate degree. The study has representations of various educational attainments. School leaders with higher educational attainment are perceived to attain a better edge to lead educational institutions. Possessing a higher educational background and teaching experience of school leaders are needed to intellectually assess and monitor the performance of the teachers in teaching green concepts. It is also acknowledged as one criterion for employment and promotion and in the smooth transition when implementing a progression, such as in this study, the green curriculum implementation (DO no. 19, s. 2022).

The table reveals that a greater number of participants—58.33%, or 7—have attended trainings at the divisional level, while 33.33%, or 4 of them—have attended regional level and 8.33%, or 1—has attended national level training for green curriculum concepts. Training refers to the process of learning the skills you need to do a particular job or activity (Cambridge English Dictionary). The significance of the acquisition of training is that it can improve their knowledge, skills, and practices in instructional leadership.

Instructional leaders who receive training on green curriculum implementation may also find it easier to adjust to the ever-evolving policies, standards, technology, and innovations of the educational environment. In addition to improving job happiness, motivation, and performance, training can help instructors define their identities, beliefs, and objectives. Training on green curriculum design and implementation can boost their confidence. It can also benefit society, the teachers' growth and well-being, and the efficacy and quality of students' education (Cogling, 2017).

1. Challenges Encountered by Instructional Leaders in the Implementation of Green Curriculum. As presented in Table 6, instructional leaders face numerous challenges in implementing a green curriculum.

Table 6

Experts' Responses in Instructional Leadership Challenges - Delphi Round 1

Statement No.	Statements
1	Lack of suitable resources that will help to implement an innovative pedagogical practice.
2	Instructional leaders are not committed enough.
3	Lack of interest of leaders about environmental concepts.
4	Preparation is not enough to teach with confidence.
5	Lacking in training and seminars. If ever there is, teachers do not show interest.
6	Lack of resources for environmental projects, which makes it unsustainable.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

7	No proper training on teaching those concepts was provided.
8	Lack of support in the proper implementation of environmental education.
9	Instructional leaders are not committed enough.
10	Unsustainable materials.
11	Lack of motivation that will aid and help the teachers.
12	No training was given for teachers.
13	Lack of comprehension about environmental issues.
14	Lack of resources for environmental projects, which makes it unsustainable.
15	Lack of appreciation and recognition.
16	There is already curriculum congestion.
17	Limited by a shortage of time and space within another curriculum.
18	Educators do not view going green as a crucial subject for the students.
19	We are more focused on other school activities.
20	Instructional leaders lack involvement when there are changes in the curriculum.
21	Not willing to undergo school transformation.
22	Curriculum is now congested with many integrations.
23	Adoptive challenges because there is no preparation.
24	Limited by a shortage of time because of other curriculum integration.
25	Not enough confidence in administrating curriculum implementation.
26	Instructional leaders lack involvement when there are changes in the curriculum.
27	Limited by a shortage of time and space within another curriculum, such as technology integration, reading, and numerical curriculum activities.
28	Lack of support in the proper implementation of environmental education.
29	Lack of understanding and interest toward environmental issues.
30	Lack of motivation for implementation.
31	Assessment mechanisms are not existing to certify environmental skills.
32	Teachers and students do not believe that green concepts are an important subject.
33	Lack of suitable resources that will help to implement innovative pedagogical practices
34	Instructional leaders are more in other school activities.
35	Lack of financial support in the proper implementation of environmental education.
36	Lack of understanding toward environmental issues.
37	Limited by a shortage of time and space within another curriculum.
38	Educators do not consider it as a key subject for the students.
39	Lacking in suitable resources to properly teach those concepts.
40	Instructional leaders are more focused on other school programs.
41	Preparation to teach this is not enough.
42	Teachers do not have enough knowledge about environmental concepts.
43	No confidence in administering the implementation.
44	Lack of resources that will aid the teachers in practical applications such

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	as tree planting, waste management, and climate change.

The responses prompted several ideas from the experts. Those responses were analyzed by grouping the same redundant statements, similar perceptions, or equal in significance, which led to generated codes. Similar codes were further analyzed or grouped together as shown in Table 7. This iterative process leads to a more informed consensus or a comprehensive understanding of the experts' perspectives (Taze et al., 2022).

Table 7
Codes Formed Based on Experts' Responses

Initial Coding	Quoted Responses
Instructional leader disinterest	*"not committed enough..."* *"Lack of interest of leaders..."* *"Lack of appreciation and recognition..."*
Focus on other priorities	*"are more focused on other school activities..."*
Limited involvement in curriculum changes	*"lack involvement when there are changes in the curriculum..."*
Inadequate training	*"Lack of training..."* *"Preparation is not enough to teach with confidence..."*
Limited resources	*"Lack of resources for environmental projects..."* *"Lack of money and resources..."* *"Lack of suitable resources that will help to implement innovative pedagogical practices..."*
Unsuitable pedagogical practices	*"Lack of support in the proper implementation of environmental education..."*
Curriculum congestion	*"Limited by a shortage of time and space within another curriculum..." "Curriculum congestion..."*
Educational value perception	*"Educators do not view going green as a crucial subject for the students..."*
Assessment challenges	*"Assessment mechanisms are not existing to certify environmental skills..."*

The initial codes from Table 7 were further categorized, which led to the generation of themes. As shown in Table 6 below, the statements were thematically analyzed based on the initial codes and conceptually clustered based on the themes that have emerged.

Table 8
Thematic Analysis of Instructional Leadership Challenges

Category	Codes	Themes	Description
I. Lack of support	Lack of	1.Teachers	Instructional leaders not

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

for teachers	Training, Limited Resources	Preparedness Gap	provided with adequate training and resources for teachers to effectively implement green curriculum
	Unsupportive Pedagogical Practices	2. Limited Support for Innovative Practices	Instructional leaders not providing sufficient support for implementing innovative pedagogical approaches in green education.
II. Curriculum and Implementation Issues	Curriculum Congestion, Limited Involvement in Curriculum	3. Curriculum Integration Challenges	Difficulties integrating green curriculum into existing subjects due to overload and potentially limited involvement of leaders in curriculum changes.
	SM Sustainability of Materials	4. Sustainability of teaching materials	Materials for teaching and learning are not sustainable.
III. Educational Value Perception	Educational Value Perception	5. Undervalued Environmental Education	Perception among some educators that environmental education is not a crucial subject for students.
IV. Assessment and Evaluation	Assessment Challenges	6. Assessment and Evaluation Needs	Lack of established assessment mechanisms to gauge student learning and program effectiveness in green curriculum.

Table 8 revealed four categories, seven codes, six themes and descriptions. The Delphi round 2 survey followed. The themes were presented to the experts to yield their level of agreement and take further opinions.

The survey form presented in Table 9 was developed and presented following the significant responses that were gathered during Delphi Round 1. In determining the consensus in this round, the interquartile range (IQR was used, using a five-point Likert scale. Consensus is considered achieved once individual statements have reached an IQR of ≤1. As presented in Table 7, the statements indicative of the six themes were collected and sorted accordingly.

Table 9

Instructional Leadership Challenges - Delphi Round 2

Statement No.	Statements	Mean	SD	CV	IQR
Teachers Preparedness Gap					
1	Lack of suitable resources that will help to implement an innovative pedagogical practice.	4.42	0.5149	11.66	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

3	Lack of interest of leaders about environmental concepts.	4.33	0.4924	11.36	1.00
5	Lacking in training and seminars. If ever there is, teachers do not show interest.	4.42	0.5149	11.66	1.00
6	Lack of resources for environmental projects, which makes it unsustainable.	4.50	0.5222	11.61	1.00
12	No training was given for teachers.	4.33	0.4924	11.36	1.00
23	Adoptive challenges because there is no preparation.	4.67	0.4924	10.55	1.00
28	Lack of support in the proper implementation of environmental education.	4.67	0.4924	10.55	1.00
39	Lacking in suitable resources to properly teach those concepts.	4.42	0.5149	11.66	1.00
41	Preparation to teach this is not enough.	4.00	0.6030	15.08	0.00
44	Lack of resources that will aid the teachers in practical applications such as tree planting, waste management, and climate change.	3.83	0.5774	15.06	0.25
Limited Support for Innovative Practices					
2	Instructional leaders are not committed enough.	4.00	0.0000	0.00	0.00
4	Preparation is not enough to teach with confidence.	4.17	0.3892	9.34	0.00
7	No proper training on teaching those concepts was provided.	4.50	0.5222	11.61	1.00
8	Lack of support in the proper implementation of environmental education.	4.67	0.4924	10.55	1.00
11	Lack of motivation that will aid and help the teachers.	4.50	0.5222	11.61	1.00
21	Not willing to undergo school transformation.	4.17	0.3892	9.34	0.00
33	Lack of suitable resources that will help to implement innovative pedagogical practices	4.33	0.4924	11.36	1.00
35	Lack of financial support in the proper implementation of environmental education.	4.17	0.3892	9.34	0.00
42	Teachers do not have enough knowledge about environmental concepts.	4.50	0.5222	11.61	1.00
43	No confidence in administering the implementation.	4.67	0.4924	10.55	1.00
Curriculum Integration Challenges					
9	Instructional leaders are not committed enough.	4.67	0.4924	10.55	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

13	Lack of comprehension about environmental issues.	4.83	0.3892	8.05	0.00
16	There is already curriculum congestion.	4.83	0.3892	8.05	0.00
17	Limited by a shortage of time and space within another curriculum.	4.33	0.4924	11.36	1.00
20	Instructional leaders lack involvement when there are changes in the curriculum.	4.58	0.5149	11.23	1.00
22	Curriculum is now congested with many integrations.	4.58	0.5149	11.23	1.00
24	Limited by a shortage of time because of other curriculum integration.	4.33	0.7785	17.97	1.00
25	Not enough confidence in administrating curriculum implementation.	4.42	0.7930	17.95	1.00
26	Instructional leaders lack involvement when there are changes in the curriculum.	4.83	0.3892	8.05	0.00
27	Limited by a shortage of time and space within another curriculum such as technology integration, reading and numerical curriculum activities.	4.67	0.4924	10.55	1.00
29	Lack of understanding and interest toward environmental issues.	4.50	0.5222	11.61	1.00
34	Instructional leaders are more into other school activities.	4.33	0.4924	11.36	1.00
36	Lack of understanding toward environmental issues.	4.25	0.6216	14.63	1.00
37	Limited by a shortage of time and space within another curriculum.	4.42	0.5149	11.66	1.00
40	Instructional leaders are more focused on other school programs.	4.17	0.3892	9.34	0.00
Sustainability of Teaching Materials					
10	Unsustainable materials.	3.75	0.9653	25.74	2.00
14	Lack of resources for environmental projects which makes it unsustainable.	3.75	0.8660	23.09	1.25
Undervalued Environmental Education					
18	Educators do not view going green as a crucial subject for the students.	4.33	0.4924	11.36	1.00
19	We are more focused on other school activities.	4.17	0.3892	9.34	0.00
30	Lack of motivation for implementation.	4.17	0.3892	9.34	0.00
32	Teachers and students do not believe that green concepts is an important subject.	4.17	0.3892	9.34	0.00
38	Educators do not consider it as a key subject for the students.	4.75	0.4523	9.52	0.25
Assessment and Evaluation Needs					
15	Lack of appreciation and recognition.	4.83	0.3892	8.05	0.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

31	Assessment mechanisms are not existing to certify environmental skills.	4.75	0.6216	13.09	0.00

Legend: 1.00-1.80 Strongly Disagree, 1.81-2.60 Disagree, 2.61-3.40 Undecided, 3.41-4.20 Agree, 4.21-5.00 Strongly Agree

As shown in Table 9, the 10 statements indicating the teachers' preparedness gap reached the consensus since the coefficient of variation, CV, of all statements is less than 50%. Moreover, looking at the interquartile range, IQR of the individual items, all of which got an IQR of less than or equal to 1, which implies that these have reached a consensus. Noticeably, statement numbers 23 and 28 obtained the highest mean value of 4.67 (SD=0.4924), which revealed a strong agreement by the experts. The Education 2030 Framework outlines a global roadmap for achieving the SDGs' education-related goals, which include: Goal 4.7: Emphasizes the importance of integrating ESD into the curriculum, teacher training, and learning environments at all levels.

Additionally, Table 9 revealed the 10 statements indicating the limited support for innovative practices' coefficient of variation, CV, which is less than 50%, while the IQR values are all less than or equal to 1. The statement numbers 8 and 43 obtained the highest mean of 4.67 (SD = 0.4924), which implies that the experts strongly agree with the two statements and have reached the consensus. The study of Kamis (2018) explored the green skills of secondary school students in the Philippines and the role of school leaders in implementing a green curriculum. The study found that the students had low levels of green skills and that the school leaders faced various challenges, such as lack of resources, training, and support in the proper implementation of environmental education in the curriculum. The study recommended that school leaders should collaborate with stakeholders, adopt innovative strategies, and promote a green culture in their schools.

The CV of the 15 statements under the curriculum integration challenges revealed that all statements did not reach 50%, while the IQR values are all equal or less than 1, indicating that it has also reached a consensus in round 2. Statement numbers 13, 16, and 26 equally got a mean of 4.83 (SD = 0.3892), indicating that the experts strongly agree with these statements. The growth of green curriculum is also limited by a shortage of time and space within another curriculum (McKeown & Nolet, 2013). Curriculum congestion happens when there are many subjects that are enfolded within a short span of time.

The two statements indicating the sustainability of teaching materials revealed a mean of 3.75 (SD = 0.9653). The CV is less than 50%, but the IQR values were greater than 1. This means that since it did not fall on the acceptable IQR value, it will be submitted for the third Delphi round. Perez & Bua (2019), in their study, also identified several problems, such as a lack of resources for environmental projects, making them unsustainable.

The five statements indicating the theme undervalued environmental education reached consensus since the coefficient of variation (CV) of all statements is less than 50%. Moreover, the IQR values are less than or equal to 1, which implies that these have reached a consensus. The highest mean of 4.75 (SD=0.4523) at statement 38 revealed that the experts strongly agreed on the challenge. School administrations have not adopted the "green attitude" movement as an initiative (Dayue, 2016). Educators themselves do not view going green as a crucial subject for their pupils. Cole-Foppe (2016) investigated how teachers viewed principals as leaders of the green curriculum. The study's conclusions showed that instructors thought principals had not committed enough time because the length of the educational curriculum is important. The

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

study's school administrators, in their roles as
curriculum leaders, agreed that they could have done more. Additionally, the findings of Sasson's study (2016) indicated school principals were only moderately involved in instructional leadership activities and that they are more focused on other school activities such as improvements in school facilities and the like.

The CV of the two statements under the assessment and evaluation needs showed that none of the statements met the 50% threshold, and the IQR values were either equal or less than 1, suggesting that a consensus was reached in round 2. Statement 15 had the highest mean of 4.75 (SD = 0.3892), indicating strong agreement among the experts. According to a research study in China, the proper environment for green education has not yet been satisfactory. The teachers believe that there are no means available at the institutional level to certify environmental skills in existing qualification standards, there are no assessment mechanisms, and there is no proper curriculum in place (Dayue, 2016).

A consensus was needed whether to remove or retain the theme of sustainability in teaching materials. Table 10 contains the generated themes, and the experts were asked to rate their agreement. The table revealed the experts' consensus about the theme sustainability of teaching materials.

Table 10
Instructional Leadership Challenges

	Theme	Mean	SD	CV	IQR
1	Teachers Preparedness Gap	5.00	0.0000	0.00	0.00
2	Limited Support for Innovative Practices	4.50	0.5222	11.61	1.00
3	Curriculum Integration Challenges	4.50	0.5222	11.61	1.00
4	Sustainability of teaching materials	2.92	0.9962	34.16	1.25
5	Undervalued Environmental Education	4.58	0.5149	11.23	1.00
6	Assessment and Evaluation Needs	4.50	0.5222	11.61	1.00

As shown in Table 10, the IQR of themes 1, 2, 3, 5, and 6 is less than or equal to 1, while theme 4 has an IQR of 1.25, exceeding the acceptable value. This reflects the result of Table 9, where the two statements under the theme sustainability of teaching materials got an IQR of 2.00 and 1.25, respectively. This result indicates that five out of six of the themes represent the issues, barriers, and hindrances that they faced in the implementation of green curriculum. The standard deviation values suggest that their responses are not different from each other, as reflected on the mean values. The experts strongly disagree on the theme of sustainability of teaching materials as a challenge or barrier in the implementation of green curriculum.

Table 11
Instructional Leadership Challenges - Delphi Round 3

	Themes	Mean	SD	CV	IQR
1	Teachers Preparedness Gap	4.92	0.2887	5.87	0.00
2	Limited Support for Innovative Practices	4.58	0.5149	11.23	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

3	Curriculum Integration Challenges	4.58	0.5149	11.23	1.00
4	Undervalued Environmental Education	4.67	0.4924	10.55	1.00
5	Assessment and Evaluation Needs	4.67	0.4924	10.55	1.00

Table 11, as shown, has a reduced number of themes that were presented to the experts for their feedback and evaluation. The outcomes from round 3 revealed a consensus where the experts rated all the themes with an IQR with an acceptable value of less than or equal to 1. The consensus was evident, which signaled the end of the Delphi exercise.

2. Community Engagement Challenges Encountered by Instructional Leaders in the Implementation of Green Curriculum. Table 12 displays the result of Delphi round 1 for community engagement challenges in the implementation of green curriculum. The question prompted several ideas from the same experts, providing plenty of options to categorized, analyze, and further select the responses for the next round.

Table 12

Experts' Responses on Community Engagement Challenges - Delphi Round 1

Statement No.	Statements
1	Lack of appreciation and recognition.
2	Most community members are illiterate or had little educational background.
3	Lack of interest of community leaders.
4	No community involvement and recognition.
5	Lack of money and resources.
6	They lack in communication skills.
7	They lack recognition and appreciation.
8	They have no time to coordinate with school.
9	No money or resources.
10	They lack skills
11	Lack of ways in information dissemination.
12	Presence of cultural differences.
13	Lack of money and resources.
14	Not confident to discuss school matters.
15	Lack of community interest in joining school projects.
16	In the Presence of cultural differences, they believe that their voices and opinions are not considered.
17	Lack of information dissemination.
18	School leaders are not visible in the community when it is expected to be.
19	No incentives or rewards are provided when they engage in activities.
20	Cultural beliefs are a hindrance.
21	Lack of time and communication skills.
22	No regular, solid partnership with community.
23	Resistance to collaborate due to lack of trust.
24	Fear of change.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

25	Different personal beliefs and social norms.
26	Lack of time, money, and resources.
27	Lack of interest of community leaders.
28	Presence of cultural differences.
29	Differences in values and expectations.
30	Lack of appreciation.
31	Community members are hesitant to work with institutions, especially on academic matters.
32	School leaders are not highly visible in the community.
33	Resistance to collaboration due to lack of trust and fear of change.
34	Not able to gain personal belief in collaboration.
35	They believe that their opinions are not considered.
36	Lack of interest of community leaders.
37	Their efforts are not appreciated.
38	Lack of funds, time, and skills.
39	Differences in values, expectations, and communication styles.
40	There is no attempt to establish a partnership because of the belief that community members are irrelevant.
41	Lack of appreciation and recognition.
42	Schools do not engage in a partnership because of the belief that communities are irrelevant.
43	No system of information dissemination.
44	Community members are aloof in working together when it comes to working with institutions on academic matters.
45	School leaders are not highly visible in the community.
46	No established partnership because they are not consulted on school planning.

These responses were analyzed by grouping redundant statements, similar perceptions, or those equal in significance, which led to generated codes. Similar codes were further analyzed or grouped together as shown in Table 13.

Table 13
Codes Based on Experts' Responses

Initial Coding	Quoted Responses
Lack of Community Leader, Interest	*"Lack of leaders interest of community leaders..."* *"Lack of appreciation and recognition..."* *"School leaders do not attempt to establish a partnership because of the belief that community members are irrelevant..."*
Resource Constraints	*"Lack of money and resources..."* *"No incentives or rewards are provided when they engage in activities...*
Cultural and Communication Barriers	*"Presence of cultural differences..."* *"Differences in values, expectations and communication*

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	styles..." *"School leaders perceive that most community members are illiterate or had little educational background..."*
Community Disenfranchisement	*"They believe that their voices and opinions are not considered..."* *"Community members are hesitant or aloof in working together with institution especially on academic matters..."*
School Leader Visibility and Partnership	*"School leaders are not highly visible in the community when it is expected to be..."* *"School leaders do not attempt to establish a partnership because of the belief that community members are irrelevant..."*
Resistance to Collaboration	*"Resistance to collaboration due to lack of trust, fear of change, personal belief and social norms..."*

As shown in Table 13, initial coding was done, and similar responses were grouped together. Six categories emerged from initial coding. The initial codes from Table 11 were further categorized, which led to the generation of themes. The descriptions were a product of summarizing experts' responses from Table 10.

As shown in Table 14 below, the statements were thematically analyzed based on the initial codes and conceptually clustered based on the themes that have emerged.

Table 14

Thematic Analysis of Community Engagement Challenges

Category	Codes	Theme	Description
Lack of Community Support	Disinterested Community Leaders	1. Disengaged Community Leadership	No community leaders, lack interest in green curriculum initiatives, hindering potential community-wide support.
Resource Limitations	Limited Community Resources	2. Resource Constraints for Community Engagement	Limited financial and resource availability to support community outreach programs, incentives for participation, or addressing community needs related to green curriculum.
Communication and Cultural Barriers	Cultural and Communication Barriers	3. Overcoming Cultural and Communication Gaps	Cultural differences, communication styles, or language barriers can hinder effective engagement with the community.
Community Perception and Trust	Disenfranchised Community	4. Addressing Community Disenfranchisement	Community members feel unheard or undervalued by school leaders. Importance of fostering trust and creating

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

			opportunities for community voice and ownership in the green curriculum program.
School Leadership and Partnership	Lack of School-Community Partnership	5. Building Strong School-Community Partnerships	Importance of proactive leadership in establishing partnerships with the community. School leaders need to be visible, build trust, and actively engage with community members.
Community Disconnect	Community Channel	6. Need of channel for better co-mmunication	The media for communication should always be open and unrestricted.
	Localized Projects and Programs	7. Localization of Projects and Programs	Community representatives must be present when the school is planning its annual activity.
Community Collaboration	Community Resistance	8. Addressing Resistance to Collaboration	Potential for resistance from some community members due to various reasons. Need for strategies to address concerns, identify common ground, and foster collaboration.

Table 14 revealed seven categories, 8 codes, 8 themes and descriptions. The Delphi round 2 survey was followed. We presented the themes to the experts to gain their agreement and gather additional perspectives.

As presented in Table 15, the statements indicative of the eight themes were collected and sorted accordingly.

Table 15

Community Engagement Challenges - Delphi Round 2

Statement No.	Statements	MEAN	SD	CV	IQR
Disengaged Community Leadership					
3	Lack of interest of community leaders.	4.33	0.4924	11.36	1.00
15	Lack of community interest in joining school projects.	4.67	0.4924	10.55	1.00
27	Leaders do not have interest in participating.	4.58	0.5149	11.23	1.00
30	Lack of appreciation.	4.83	0.3892	8.05	0.00
36	Lack of interest of community leaders.	4.08	0.2887	7.07	0.00
Resource Constraints for Community Engagement					
1	Lack of appreciation and recognition.	4.58	0.5149	11.23	1.00
4	No community involvement and recognition.	4.33	0.4924	11.36	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

5	Lack of money and resources.	4.58	0.5149	11.23	1.00
7	They lack recognition and appreciation.	4.75	0.4523	9.52	0.25
8	They have no time to coordinate with school.	4.33	0.4924	11.36	1.00
9	No money or resources.	4.00	0.0000	0.00	0.00
10	They lack skills	4.08	0.2887	7.07	0.00
13	Lack of money, and resources.	4.75	0.4523	9.52	0.25
19	No incentives or rewards are provided when they engage in activities.	5.00	0.0000	0.00	0.00
26	Lack of time, money and resources.	4.58	0.5149	11.23	1.00
38	Lack of funds, time, and skills.	4.33	0.4924	11.36	1.00
41	Lack of appreciation.	4.17	0.3892	9.34	0.00
Overcoming Cultural and Communication Gaps					
6	They lack in communication skills.	4.42	0.5149	11.66	1.00
12	In the presence of cultural differences.	5.00	0.0000	0.00	0.00
16	Presence of cultural differences, they believe that their voices and opinions are not considered.	4.50	0.5222	11.61	1.00
20	Cultural beliefs are a hindrance.	4.50	0.7977	17.73	1.00
21	Lack of time and communication skills.	4.00	0.7385	18.46	0.50
25	Different personal belief and social norms.	4.58	0.6686	14.59	1.00
28	Presence of cultural differences.	4.75	0.4523	9.52	0.25
39	Differences in values, expectations and communication styles.	5.00	0.0000	0.00	0.00
Addressing Community Disenfranchisement					
2	Most community members are illiterate or had little educational background.	4.58	0.5149	11.23	1.00
14	Not confident to discuss school matters.	4.42	0.5149	11.66	1.00
23	Resistance to collaborate due to lack of trust.	4.25	0.7538	17.74	1.00
29	Differences in values and expectations.	4.33	0.7785	17.97	1.00
42	Schools do not engage in a partnership because of the belief that community members are irrelevant.	4.50	0.5222	11.61	1.00
44	Community members are aloof in working together with institution on academic matters.	4.42	0.5149	11.66	1.00
Building Strong School-Community Partnership					
18	School leaders are not visible in the community when it is expected to be.	4.75	0.4523	9.52	0.25
32	School leaders are not highly visible in the community.	4.75	0.4523	9.52	0.25
37	Their efforts are not appreciated.	4.67	0.4924	10.55	1.00
45	School leaders are not highly visible in	4.42	0.5149	11.66	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	the community.				
Need of a Channel for Better Communication					
11	Lack of ways in information dissemination.	4.42	0.9003	20.38	1.25
17	Lack of information dissemination.	4.08	0.7930	19.42	1.25
31	Community members are hesitant to work with institutions, especially on academic matters.	3.73	1.0090	27.07	2.00
35	They believe that their opinions are not considered.	4.42	0.9003	20.38	1.25
43	No system of information dissemination.	4.08	0.7930	19.42	1.25
Localization of Projects and Programs					
22	No regular, solid partnership with community.	3.75	0.9653	25.74	2.00
40	There is no attempt to establish a partnership because of the belief that community members are irrelevant.	4.08	0.7930	19.42	1.25
46	No established partnership because they are not consulted on school planning.	3.67	0.9847	26.86	2.00
Addressing Resistance to Collaboration					
24	Fear of change.	4.33	0.4924	11.36	1.00
33	Resistance to collaboration due to lack of trust and fear of change.	4.42	0.5149	11.66	1.00
34	Not able to gain personal belief in collaboration.	4.75	0.4523	9.52	0.25

As shown in Table 15, the 5 statements indicating disengaged community leadership reached consensus since the coefficient of variation (CV) of all statements is less than 50%. Moreover, looking at the interquartile range, IQR of the individual items, all of which got an IQR of less than or equal to 1, which implies that these have reached a consensus. Noticeably, statement number 30 obtained the highest mean value of 4.83 (SD=0.3892), which revealed a strong agreement by the experts. Numerous studies have been done about the benefits of having family and community engagement. It is a critical resource for individual student accomplishment as well as for sustaining and maintaining school improvement and creating school cultures that support students. (Comer & Haynes, 1992; Epstein, 1995; Henderson & Mapp, 2002; Sebring et al., 2006; Henderson et al., 2007; McAlister, 2013).

Additionally, Table 15 revealed the 12 statements indicating the resource constraint for community engagement's coefficient of variation, CV, which is less than 50%, while the IQR values are all less than or equal to 1. The statement number 19 obtained the highest mean of 5.00 (SD = 0.0000), which implies that the experts strongly agreed with the statement and have reached a consensus. A study that explored the resistance to change in Taiwanese elementary school teachers who implemented the green concept that integrated physical activity and academic learning was done by Chang and Etnier (2018). They found that the teachers faced various challenges, such as lack of time, resources, support, and training, as well as conflicts with parents and students.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

The CV of the 8 statements under overcoming cultural and communication gaps revealed that all statements reached the acceptable value of less than 50%, while the IQR values are all equal or less than 1, indicating that it has also reached a consensus in round 2. Statement numbers 12 scored a mean of 5.00 (SD=0.0000), indicating that the experts strongly agree with this statement. . Another study was focused on overcoming differences in values, expectations, and communication styles between academics and the community (Lauwo & Mkulu, 2021).

The six statements indicating the challenges in addressing community disenfranchisement reached consensus because the CV values are less than 50% while the IQR are all equal or less than 1. Statement number 2 revealed a mean of 4.58 (SD = 0.5149). Muthoni (2015) asserted that in most cases, school leaders did not attempt to establish a partnership with the community in their surroundings, believing that community members are irrelevant to the schooling process. Furthermore, school leaders alleged that most community members are illiterate or have little educational background, and anything to do with school was intimidating to them.

The 4 statements indicating the challenges of building strong school-community partnerships reached consensus since the coefficient of variation and CV of all statements are less than 50%. In addition, the IQR values are less than or equal to 1. The highest mean of 4.75 (SD=0.4523) at statement numbers 18 and 32 revealed that the experts strongly agreed on the challenge. The CV of the 5 statements under the need of channel for better communication revealed that all statements did not reach 50%, while the IQR values are all greater than 1, indicating that it has not reached a consensus in round 2. Statements 11 and 35 got the highest mean of 4.42 (SD=0.9003), which revealed a strong agreement by the experts. Open, honest, and transparent communication gives everyone the chance to voice their opinions and helps to prevent pointless arguments (Lancaster et al., 2015). Trust is defined as a willingness to make oneself vulnerable to someone else in the belief that one's interests will not be negatively affected (Tschannen-Moran & Gareis, 2015). When high levels of trust and commitment are demonstrated by the team, it results in both student and school success.

Additionally, Table 15 revealed the 3 statements indicating the challenge for localization of projects and programs' coefficient of variation, CV, which is less than 50%, while the IQR values exceed the acceptable value of 1, which implies that the statements did not reach a consensus. A 4.08 mean value (SD=0.7930) in statement 40 revealed a strong agreement on this statement. A study about community engagement stated that it can provide occasionally challenging difficulties that many educators are ill-prepared to handle for both seasoned and novice teachers due to difficulty in balancing professional and personal lives in tight social communities that expect high visibility and involvement from the school leader (Bandy, 2011).

The CV of the 3 statements under the challenge of addressing resistance to collaboration revealed that all statements reached the acceptable value of less than 50%, while the IQR values are all equal or less than 1, indicating that it has also reached a consensus in round 2. Statement number 34 scored a mean of 4.75 (SD = 0.4523), indicating that the experts strongly agree with this statement. The study conducted by Donoghue (2014) reported that school organizations develop negative perceptions towards poor communities, which seem to pose a wall for less affluent families than those who are more affluent. The outcome of resistance is that it could delay the change process, increase its costs, or obstruct its implementation (El-Taliawi, 2018).

A consensus was needed whether to remove or retain the themes about the need of channels for better communication and localization of projects and programs.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Table 16 contains the generated themes and reveals the experts' consensus about the need for channels for better communication and localization of projects and programs. The IQR of themes 1, 2, 3, 4, 5, and 8 is less than or equal to 1, while themes 6 and 7 have an IQR of 1.25, exceeding the acceptable value. This reflects the result of Table 15, where the statements under these themes got an IQR of 1.25 (11), 1.25 (17), 2.00 (31), 1.25 (35), 1.25 (43) and 2.00 (22), 1.25 (40), and 2.00 (46), respectively.

Table 16
Community Engagement Challenges

	Theme	Mean	SD	CV	IQR
1	Disengaged Community Leadership	4.50	0.5222	11.61	1.00
2	Resource Constraints for Community Engagement	5.00	0.0000	0.00	0.00
3	Overcoming Cultural and Communication Gaps	4.50	0.5222	11.61	1.00
4	Addressing Community Disenfranchisement	4.50	0.5222	11.61	1.00
5	Building Strong School-Community Partnerships	4.00	0.7385	18.46	0.50
6	Need of channel for better communication	2.92	0.9962	34.16	1.25
7	Localization of projects and programs	2.92	0.9962	34.16	1.25
8	Addressing Resistance to Collaboration	4.75	0.4523	9.52	0.25

This result indicates that six out of eight of the themes represent the issues, barriers, and hindrances that they faced in the implementation of green curriculum. The standard deviation values suggest that their responses are not different from each other as reflected on the mean values, or their responses have the same values. The experts strongly disagree on the need for channels for better communication and localization of projects and programs as community challenges or barriers in the implementation of green curriculum.

A set of surveys was presented to the experts for their consensus. The theme with an unacceptable IQR value was removed.

Table 17
Community Engagement Challenges - Delphi Round 3

	Theme	Mean	SD	CV	IQR
1	Disengaged Community Leadership	4.67	0.4924	10.55	1.00
2	Resource Constraints for Community Engagement	4.58	0.5149	11.23	1.00
3	Overcoming Cultural and Communication Gaps	5.00	0.0000	0.00	0.00
4	Addressing Community Disenfranchisement	4.50	0.5222	11.61	1.00
5	Building Strong School-Community	4.50	0.5222	11.61	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	Partnerships				
8	Addressing Resistance to Collaboration	4.58	0.5149	11.23	1.00

In Table 17, the outcomes from round 3 revealed a consensus where the experts rated all the themes with an IQR of less than or equal to 1. Overcoming cultural and communication gaps has the highest mean of 5.00, which implies that the experts view this as the most challenging among the identified themes. The standard deviation values suggest that their responses are not different from each other as reflected on the mean values, or their responses have the same values. The CV values fall on the acceptable values, which are all less than 50%. The IQR did not exceed the acceptable value of 1.00. The consensus was evident, which signaled the end of the Delphi exercise.

3. Practices of Instructional Leaders in the Implementation of Green Curriculum.

Table 18 shows the first Delphi Round on the practices of instructional leaders in green curriculum implementation. According to experts' statements, the green curriculum is seen as crucial for equipping students with the knowledge and skills to address environmental challenges like climate change and unsustainable practices. It aims to raise awareness, foster environmental responsibility, and encourage sustainable lifestyles. Schools currently integrate environmental concepts into existing activities like Gulayan sa Paaralan (school gardens) and Brigada Eskwela (school clean-up drives). Some teachers incorporate environmental issues and examples into their lessons.

Table 18

Practices of Instructional Leaders in the Implementation of Green Curriculum - Delphi Round 1

Statement No.	Statements
1	The implementation of green curriculum in our school is evident during Gulayan and Brigada Eskwela but is timely in the current condition of our environment.
2	We are facing different natural disasters and calamities. It is about time for the strict implementation.
3	It's a great idea...even though we are touching on some of the environmental issues, there is no support or encouragement to implement projects that will truly help in mitigating climate change impact.
4	Ensuring that the learners are capable of taking on challenges of global warming and climate change, social inequities, unsustainable lifestyles, and the urgent need to switch to a renewable energy-based economy.
5	Green curriculum is a means to ensure that students are capable of adapting to 21st century challenges, especially climate change and other environmental issues.
6	This green curriculum will give us information on the environmental concerns we want to educate our students, how to address climate change with them, and how to encourage the best possible care for the environment, which makes it both very useful and engaging.
7	It should be implemented for the awareness of students about climate change and how it affects them, especially since we encountered El Niño phenomenon.
8	Our school and communities work hand in hand to implement the activities

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	regarding green curriculum.
9	Green curriculum should always be part of the lesson or activities so that students will be more involved.
10	It would be helpful if there is already an activity that will be given for every learning area so as not to burden the teachers with how to incorporate the green curriculum with the existing curriculum.
11	Green curriculum is not, in any way, implicitly stated in the learning competencies of the TVL learning areas.
12	Learning to protect our environment is a challenge and needs a thorough program, implementation, and skills of those charged.
13	The environmental concepts need to have more time to practice, implementing green curriculum concepts across subject areas is essential for fostering environmental consciousness and sustainable practices, especially in science, which could involve studying climate change.
14	It is a must to make the students aware of the effect of climate change because of environmental degradation and abuse.
15	Green Curriculum helps heal our Mother Earth, but it's sad that it is vaguely given emphasis.
16	It is the integration of green ideas in the lesson. The objective is to touch the lessons with environmental concepts.
17	Environmental concepts are taught within the lesson, and the practical application is on the activities like Gulayan sa Paarlan, Brigada Eskwela, and waste disposal practices.
18	Implementation of green curriculum concepts in my subject area helps students understand what is happening around them.
19	The Yes-O committee in our school has had activities that promote environmental awareness, but they were not sustained because the officers were not performing well.
20	I always make it a point to give situations and examples about taking care of the environment or raising awareness of global warming in my lessons.
21	As a science educator, I am fully aware of the lessons about greening the curriculum, but there is no opportunity for practical assessment for the students.
22	With the very congested curriculum we have, the government must really assert its priorities, and I believe this must be at the top of them.
23	Awareness of the current environment alone is not enough; DepEd must require its strict implementation.
24	Green curriculum implementation is the integration of environmental responsibility of learners through application in education, such as creating research that gives solutions to every challenge in the ecosystem as part of the solution.

The first round resulted in 24 statements derived from the experts' perspectives. These responses were analyzed by identifying common themes, trends, and areas of disagreement. The analysis of the first round helped refine the topic and identify key areas for further exploration in the next rounds.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Table 19

Thematic Analysis of Instructional Leaders Practices in the Implementation of Green Curriculum

Category	Codes	Theme	Description
Support for Green Curriculum	Green Support	Supporting the Curriculum	Statements expressing positive views on the green curriculum and its importance.
Challenges in Implementation	Green Challenges	Greening Challenges	Statements highlighting difficulties faced in implementing the green curriculum.
Desired Implementation Strategies	Green Implementation	Desired Practices	Statements suggesting improvements for implementing the green curriculum.
Current Practices	Green Current	Current Practices	Statements describing current practices related to the green curriculum.
Teacher Role	Teacher Role	Teachers' Roles	Statements about the role of teachers in implementing the green curriculum.
Community Awareness	Community Engagement	Community Engagement Practices	Statements mentioning collaboration with the community for the green curriculum.

Table 19 revealed 6 categories, 6 codes, 6 themes, and descriptions. The survey form presented in Table 20 was developed and presented following the significant responses that were gathered during Delphi Round 1.

Table 20

Instructional Leaders' Practices in the Implementation of Green Curriculum - Delphi Round 2

Statement No.	Statements	Mean	SD	CV	IQR
Supporting the curriculum					
7	It should be implemented for the awareness of students about climate change and how it affects them, especially since we encountered the El Niño phenomenon.	4.58	0.5149	11.23	1.00
16	It is the integration of green ideas in the lesson. The objective is to touch the lessons with environmental concepts.	4.33	0.4924	11.36	1.00
21	As a science educator, I am fully aware of the lessons about greening the curriculum, but there is no opportunity for practical assessment	4.58	0.5149	11.23	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	for the students.				
24	Green curriculum implementation is the integration of environmental responsibility of learners through application in education, such as creating research that gives solutions to every challenge in the ecosystem as part of the solution.	4.75	0.4523	9.52	0.25
Greening Challenges					
3	It's a great idea...even though we are touching on some of the environmental issues, there is no support or encouragement to implement projects that will truly help in mitigating climate change impact.	4.00	0.0000	0.00	0.00
11	Green curriculum is not, in any way, implicitly stated in the learning competencies of the TVL learning areas.	4.08	0.2887	7.07	0.00
15	Green Curriculum helps heal our Mother Earth, but it’s sad that it is vaguely given emphasis.	4.75	0.4523	9.52	0.25
19	The Yes-O committee in our school has had activities that promote environmental awareness, but they were not sustained because the officers were not performing well.	5.00	0.0000	0.00	0.00
Desired Practices					
2	We are facing different natural disasters and calamities. It is about time for the strict implementation.	4.33	0.4924	11.36	1.00
4	Ensuring that the learners are capable of taking on challenges of global warming and climate change, social inequities, unsustainable lifestyles, and the urgent need to switch to a renewable energy-based economy.	4.17	0.3892	9.34	0.00
10	It would be helpful if there is already an activity that will be given for every learning area so as not to burden the teachers with how to incorporate the green curriculum with the existing curriculum.	4.33	0.4924	11.36	1.00
13	The environmental concepts need to have more time to practice, Implementing green curriculum	4.33	0.4924	11.36	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	concepts across subject areas is essential for fostering environmental consciousness and sustainable practices, especially in science, which could involve studying climate change.				
23	Awareness of the current environment alone is not enough; DepEd must require its strict implementation.	4.17	0.3892	9.34	0.00
Current Practices					
1	The implementation of green curriculum in our school is evident during Gulayan and Brigada Eskwela but is timely in the current condition of our environment.	4.00	0.0000	0.00	0.00
9	Green curriculum should always be part of the lesson or activities so that students will be more involved.	4.08	0.2887	7.07	0.00
14	It is a must to make the students aware of the effect of climate change because of environmental degradation and abuse.	4.75	0.4523	9.52	0.25
17	Environmental concepts are taught within the lesson, and the practical application is on the activities like Gulayan sa Paarlan, Brigada Eskwela, and waste disposal practices.	5.00	0.0000	0.00	0.00
18	Implementation of green curriculum concepts in my subject area helps students understand what is happening around them.	4.33	0.4924	11.36	1.00
Teachers' Roles					
5	Green curriculum is a means to ensure that students are capable of adapting to 21st century challenges, especially climate change and other environmental issues.	4.17	0.3892	9.34	0.00
6	This green curriculum will give us information on the environmental concerns we want to educate our students, how to address climate change with them, and how to encourage the best possible care for the environment, which makes it both very useful and engaging.	4.00	0.0000	0.00	0.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

12	Learning to protect our environment is a challenge and needs a thorough program, implementation, and skills of those charged.	4.08	0.2887	7.07	0.00
20	I always make it a point to give situations and examples about taking care of the environment or raising awareness of global warming in my lessons.	4.75	0.4523	9.52	0.25
22	With the very congested curriculum we have, the govt must really assert its priorities, and I believe this must be at the top of them.	5.00	0.0000	0.00	0.00
Community Engagement Practices					
8	Our school and communities work hand in hand to implement the activities regarding green curriculum.	4.08	0.2887	7.07	0.00

As shown in Table 20, the 4 statements indicating supporting the curriculum reached the consensus since the coefficient of variation (CV) of all statements is less than 50%. Moreover, looking at the interquartile range, IQR of the individual items, all of which got an IQR of less than or equal to 1, which implies that these have reached a consensus. Noticeably, statement numbers 7 and 21 obtained the highest mean value of 4.58 (SD=0.5149), which revealed a strong agreement by the experts. Philippine Professional Standards for School Heads (PPSSH) Domain 3, Focusing on Teaching and Learning, concentrates on the work of school heads in promoting quality teaching and learning. This domain emphasizes the school heads' commitment to providing instructional leadership towards improving competence among teachers and outcomes among learners (Llego, 2023). In this domain, school heads are expected to provide technical assistance on instruction that relates to curriculum, practice, and performance.

Additionally, Table 20 revealed the 5 statements indicating the greening challenges' coefficient of variation, CV, which is less than 50%, while the IQR values are all less than or equal to 1. The statement number 19 obtained the highest mean of 5.00 (SD = 0.0000), which implies that the experts strongly agreed with the statement and have reached a consensus. It was shown that school principals practice the following procedures to address challenges in the implementation of green curriculum as instructional leaders, such as giving priority to classroom visits, assisting teachers in using data, recognizing the job that educators do, supporting their professional growth, collaborating with educators, and delegating leadership to teachers (Sowell, 2018).

The CV of the 5 statements under the desired practices revealed that all statements reached the acceptable value of less than 50%, while the IQR values are all equal or less than 1, indicating that it has also reached a consensus in round 2. Statement numbers 2, 10, and 13 scored a mean of 4.13 (SD = 0.4924), indicating that the experts strongly agree with this statement. Consistency in school leaders' instructional practices can also improve teacher performance by fostering a culture of trust, belief, and innovation, providing professional development and support, and recognizing

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

and rewarding achievements and efforts. A school leader serves as a model of reliability and accuracy (Mulford, 2003).

The 5 statements indicating the current practices reached consensus because the CV values are less than 50% while the IQR are all equal or less than 1. Statement number 17 revealed a mean of 5.00 (SD = 0.0000), indicating that all experts strongly agreed on the statement. It was shown that school principals practice the following procedures to address challenges in the implementation of green curriculum as instructional leaders, such as giving priority to classroom visits, assisting teachers in using data, recognizing the job that educators do, supporting their professional growth, collaborating with educators, and delegating leadership to teachers (Sowell, 2018).

The 5 statements indicating the teachers' roles reached consensus since the coefficient of variation and CV of all statements are less than 50%. In addition, the IQR values are less than or equal to 1. The highest mean of 5.00 (SD=0.0000) at statement number 22 revealed that all the experts strongly agreed on the statement. The CV of the statement under the practices of the community revealed that the statement did not reach 50%, while the IQR value is 0.00, indicating that it has reached a consensus in round 2. The statement recorded a mean of 4.08 (SD=0.2887), which revealed a strong agreement by the experts. Consistency in school leaders' instructional practices can also hinder teacher performance by creating a culture of compliance, control, and pressure, neglecting professional development and support, and discouraging risk-taking and experimentation (Lee et al., 2012).

This indicates that the Delphi exercise must end with a common level of agreement among experts.

4. Strategies of Instructional Leaders to Address the Challenges Pertaining to Instructional Leadership and Community Engagement in Green Curriculum Implementation. Table 21 presents the experts' responses.

Table 21

Addressing the Challenges Pertaining to Instructional Leadership and Community Engagement in Green Curriculum Implementation, Delphi Round 1

Statement No.	Statements
1	Provide evidence and examples of the benefits and impacts of green curriculum. Present a clear and compelling proposal that outlines the rationale, objectives, activities, outputs, outcomes, and impacts of the green curriculum.
2	Share stories and testimonials of successful green curriculum initiatives from other schools or countries.
3	Build trust and rapport with the stakeholders by listening to their concerns and expectations, addressing their questions and doubts, and involving them in the planning and decision-making process.
4	Form a strong and diverse implementation team that includes representatives from different stakeholder groups, such as teachers, students, parents, and administrators.
5	Promote and share their expertise, perspectives, and responsibilities.
6	Design and develop a green curriculum that is relevant, engaging, and effective for the students by using a participatory and iterative approach.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

7	Use a variety of pedagogical methods and tools, such as inquiry-based learning, project-based learning, experiential learning, or digital learning,
8	Replicate the best practices of the green curriculum implementation, by sharing and exchanging the lessons learned, the challenges faced, and the solutions found, with other schools or countries.
9	Analyze the feedback and data from the teachers, the students, and other stakeholders, by using a range of qualitative and quantitative methods and instruments, such as surveys, interviews, observations, or tests.
10	Create incentives and recognition for the stakeholders who are willing to participate and support the green curriculum.
11	Proposed activities, budget, timeline, and indicators of success
12	Design a pedagogical method that will make the community and students more engaged.

Table 21 shows Delphi Round 1 for Strategies in Addressing the Challenges Pertaining to Instructional Leadership and Community Engagement in Green Curriculum Implementation. Twelve statements were gathered and further modified as suggested for the second round of the Delphi process.

The following seven statements in Table 22 were revealed after analyzing and grouping similar statements, which convey more meaningful and accurate ways on how to address those challenges. The survey was sent to the experts for review and rating.

Table 22

Addressing the Challenges Pertaining to Instructional Leadership and Community Engagement in Green Curriculum Implementation - Delphi Round 2

	Statements	Mean	SD	CV	IQR
1	Demonstrate the positive impacts of a Green Curriculum, including environmental awareness, fostering sustainable practices, and equipping students with skills to address environmental challenges. Examples and success stories from other schools can be powerful tools.	4.00	0.0000	0.00	0.00
2	Build trust and rapport with all stakeholders (teachers, students, parents, administrators). Actively listen to their concerns, address doubts, and involve them in the planning process. This fosters a sense of ownership and increases the likelihood of success.	4.17	0.3892	9.34	0.00
3	Develop a clear proposal outlining the Green Curriculum's rationale, objectives, activities, and expected outcomes and a proposed budget, timeline, and indicators for measuring success.	4.50	0.5222	11.61	1.00
4	Form a strong and diverse team with representatives from different stakeholder groups. Leverage their expertise, perspectives,	4.67	0.4924	10.55	1.00

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	and assign clear responsibilities for effective implementation.				
5	Design engaging and effective curriculum materials relevant to students. Utilize a participatory and iterative approach, incorporating feedback throughout the process.	4.50	0.5222	11.61	1.00
6	Provide teachers with the necessary knowledge, skills, resources, and support to deliver and assess the Green Curriculum. Equip them with appropriate pedagogical methods like inquiry-based or project-based learning.	4.17	0.3892	9.34	0.00
7	Share best practices, challenges faced, and solutions found with other schools to promote wider adoption of successful Green Curriculum initiatives.	4.33	0.4924	11.36	1.00

Table 22 presents Delphi Round 2's summary of statements on how instructional leaders address the challenges in instructional leadership and community engagement. The CV values are all below 50%, and the IQR revealed that experts strongly agreed on the 7 statements, indicating that the Delphi process may conclude in just two rounds gaining a consensus.

The experts' statements showed that school leaders alone cannot function without the help and engagement of the community. Collaboration with communities and all partner stakeholders in addressing curriculum implementation challenges is needed. The Department of Education has always been an advocate of collaboration and its importance in governance and school operations. There are several memoranda that support the statement. For instance, the DepEd order provides the updated operating manual of Parents-Teachers Associations (PTAs) to regulate their functions and manage collaborative engagements among stakeholders (DO No. 13, s. 2022). In the implementation of the K-12 program, DO No. 40, s. 2015, provides the guidelines between partners to facilitate collaboration among various stakeholders, while during the pandemic in 2020, DepEd provided a framework and strategies for school-family-community partnerships in support of BE-LCP (DO No. 242, s. 2020). DepEd recognizes external partners' support to learning continuity, which acknowledges and appreciates the assistance of more than 130 external partners to learners and teachers in the school year 2021-2022 (https://www.deped.gov.ph).

SUMMARY of the Results of the Qualitative Delphi Process

The Delphi process was used in the qualitative phase of the study. It successfully yielded key areas: exploring the challenges of instructional leaders and challenges of community engagement in the implementation of green curriculum. It has also revealed important statements about the practices of instructional leaders and how they address the challenges they encounter and engage the community as they implement the green curriculum in their respective schools.

Challenges of Instructional Leaders in Implementing the Green Curriculum. The Delphi process started with 44 statements, which were summarized, refined, and came up with 6

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

themes, and ultimately achieved consensus on 5 themes
in the third round. The final list of themes is teachers' preparedness gap, limited support for innovative practices, curriculum integration challenges, undervalued environmental education, and assessment and evaluation needs.

Challenges in Engaging the Community in the Implementation of Green Curriculum. The Delphi process started with 46 statements, which were summarized, refined, and came up with 8 themes, and ultimately achieved consensus on 6 themes in the third round. The final list of themes is disengaged community leadership, resource constraint for community engagement, overcoming cultural and communication gaps, addressing community disenfranchisement, building strong school-community partnerships, and addressing resistance to collaboration.

Instructional Leaders' Practices in the Implementation of Green Curriculum.

The process began by collecting 24 statements about practices in the implementation of green curriculum. After analysis, six themes emerged and were presented to the expert for ratings and further evaluation in the second. Themes emerged such as supporting the curriculum, greening challenges, desired and current practices, and teachers' roles and practices concerning community engagement.

Strategies of Instructional Leaders to Address the Challenges Pertaining to Instructional Leadership and Community Engagement in Green Curriculum Implementation.

The process began by collecting 12 statements about instructional leaders' recommendations. The researcher grouped the statements; seven statements emerged. The experts reached the consensus in just two rounds. The final statements included important phrases such as demonstrating the impact of green curriculum through success stories, building trust and rapport with community leaders and members, developing a clear proposal outlining the rationale of green curriculum, leveraging the expertise and perspective and assigning clear responsibilities, designing engaging curriculum materials relevant to students, and providing teachers with necessary knowledge, skills, resources, and pedagogical methods.

Quantitative Phase

Table 23 presents the frequency and percentage distribution of teacher participants according to age, length of service, and educational attainment.

Table 23

Frequency and Percentage Distribution of Teacher Respondents

Profile	Frequency	Percentage
Age		
20-25	5	3.23
26-30	35	22.58
31-35	22	14.19
36-40	25	16.13
41-45	26	16.77
46-50	11	7.10
51-60	31	20
Length of Service		
1-5	61	39.35

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

6-10	46	29.68
11-15	21	13.55
16 and above	27	17.42
Educational Attainment		
Bachelor's Degree	50	32.26
Bachelor's Degree with Masteral Units	78	50.32
Master's Degree	17	10.97
Master's Degree with Doctoral Units	7	4.52
Doctorate Degree	3	1.94

Table 23 presents the results of a survey conducted among teachers of selected secondary high schools located in the Schools Division of Bacoor, Dasmariñas, General Trias, and Imus. A total of 155 teachers responded to the survey. In relation to age, 22.58%, or 35 of the respondents, are 26-30 years old. Only 3.23%, or 5 are those in the age range of 20-25. All age ranges from 31-45 got almost equal numbers of respondents (for 31-35 years old, 22 or 14.19%; for 36-40 years old, 25 or 16.13; and for 41-45 years old, 26 or 16.77%). The distribution suggests that teachers across a broad range of spectrums have responded to the survey question. By having an even spread of ages for most age ranges, the research is less likely to be skewed towards the findings for a specific age group within the range. There was a reduced bias and improved generalizability. Age is significant to teacher performance because it may affect the teachers' abilities, skills, knowledge, and attitudes in delivering effective teaching and learning. Different studies have shown different results on how age influences teacher performance. Some studies have found that younger and less experienced teachers are more effective in teaching Higher Order Thinking Skills (HOTS) than older and more experienced teachers (Mohd Ismail et al., 2018). Green curriculum requires students' higher-order thinking skills because sustainable education covers multiple green global concepts.

In relation to length of service, 39.35%, or 61 teachers, belong to 1–5 years in service. A significant portion of the respondents are new DepEd teachers. This may imply that their performance as teachers is lower compared to those who have longer years in service. Pa-alisbo (2017) emphasized the significance of length of service to the performance of teachers. Those with longer lengths of service may have more expertise and confidence in their performance, such as in the integration of green concepts in their lessons, and may be able to use more effective and diverse strategies. However, in the study of Ünal (2012), length of service is not the only factor that affects performance. There are also other factors, such as academic ability, educational attainment, subject matter and knowledge, certification status, and behaviors. About educational attainment, a very significant number of respondents, 50.32%, or 78, are bachelor's degree holders with master's units. This implies that teachers are pursuing a master's degree to continuously upgrade themselves to enhance teaching abilities, followed by 32.26%, or 50 respondents, having a bachelor's Degree. The survey indicates that most respondents satisfy the target population, and this ensures the research results accurately reflect the perception of the target population.

5. Assessment of the Challenges in the Implementation of Green Curriculum in terms of Instructional Leadership.

Table 24 illustrates the mean distribution of instructional leadership challenges across various facets.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

5.1. Instructional Leadership. Concerning teachers' readiness for implementing the green curriculum, both the teacher training and the availability of professional development opportunities proved to be of "great extent," with mean ratings of 3.45 (SD = 0.9168) and 3.42 (SD = 0.9358), respectively.

Table 24
Assessment of Instructional Leadership Challenges

Indicators	Mean	SD	Interpretation
I. Teacher Preparedness Gap			
Teacher training	3.45	0.9168	Great Extent
Adequacy of teaching resources	3.34	0.9465	Great Extent
Opportunity for professional development	3.42	0.9358	Great Extent
Overall Weighted Mean	**3.33**		**Great Extent**
II. Support for Innovative Practices			
Establishment of suitable pedagogical practices	3.35	0.9544	Great Extent
Sustainability of learning materials	3.20	1.1036	Moderate Extent
Commitment to Innovative practices	3.23	1.0749	Moderate Extent
Overall Weighted Mean	**3.26**		**Great Extent**
III. Curriculum Integration Challenges			
Curriculum congestion	3.29	1.0532	Great Extent
Involvement in curriculum changes	3.25	1.0812	Great Extent
Number of greening activities	3.26	1.0477	Great Extent
Overall Weighted Mean	**3.27**		**Great Extent**
IV. Undervalued Environmental Education			
Uplifting the value of environmental education	3.21	1.0877	Moderate Extent
Engaging learners to give importance to environmental education	3.23	1.0523	Moderate Extent
Willingness to undergo green transformation	3.37	0.9773	Great Extent
Overall Weighted Mean	**3.27**		**Great Extent**
V. Assessment and Evaluation Needs			
Assessment mechanism to gauge student learning	3.42	0.9427	Great Extent
Evaluation tool for program effectiveness	3.29	0.9769	Great Extent
Maintaining a consistent and ongoing curriculum evaluation process	3.25	1.0118	Great Extent
Overall Weighted Mean	**3.32**		**Great Extent**

Scale: 1.00-1.74 Low Extent, 1.75-2.49 Slight Extent, 2.50-3.24; Moderate Extent, 3.25-4.00 Great Extent

Similarly, the adequacy of teaching resources proved to be of "great extent," as indicated by a mean rating of 3.34 (SD = 0.9465). The overall weighted mean of 3.33 underscores the pervasive difficulty in teachers' preparedness for implementing the green curriculum across selected schools in four divisions in Cavite at the time of the survey. In UN SDG Goal 4.7, there

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

is an emphasis on the importance of integrating ESD
into the curriculum, teacher training, and learning environments at all levels.

In terms of support for innovative practices, respondents highlighted several significant challenges. The establishment of suitable pedagogical practices emerged as particularly of "great extent," with a mean rating of 3.35 (SD = 0.9544). Additionally, commitment to innovative practices proved to be of "moderate extent," as evidenced by a mean rating of 3.23 (SD = 1.0749). Furthermore, the sustainability of learning materials received a mean rating of 3.20 (SD = 1.1036), indicating another "moderate extent" condition. The overall weighted mean of 3.26 suggests that, collectively, the support for innovative practices within the selected schools in four divisions of Cavite was highly challenging during the survey period. This was studied by Kamis (2018) when he explored the green skills of secondary school students in the Philippines and the role of school leaders in implementing a green curriculum. The study found that the school leaders faced various challenges, such as lack of resources, training, and support in the proper implementation of environmental education in the curriculum. An instructional leader is one who is significant in assisting teachers to develop pedagogical strategies and establishing the school as an environmental agent within the community (Kadji-Beltran et al., 2012).

Regarding the integration of the green curriculum, respondents identified significant challenges related to curriculum congestion and the number of green activities, as evidenced by mean ratings of 3.29 (SD = 1.0532) and 3.26 (SD = 1.0477), respectively, both categorized as "great extent." Additionally, respondents perceived involvement in curriculum changes as "great extent," with a mean rating of 3.25 (SD = 1.0812). The overall weighted mean of 3.27 indicates that, collectively, integrating the green curriculum within the selected schools in four divisions of Cavite posed considerable challenges during the survey period. The data showed the growth of green curriculum is also limited by a shortage of time and space within another curriculum. McKeown & Nolet (2013). Curriculum congestion happens when there are many subjects that are enfolded within a short span of time.

Within the context of undervalued environmental education, respondents perceived substantial challenges in their' willingness to undergo green transformation, as reflected in a mean rating of 3.37 (SD = 0.9733), denoting a "great extent" condition. Furthermore, engaging learners to prioritize environmental education was also deemed "moderate extent," with a mean rating of 3.23 (SD = 1.0523). Additionally, uplifting the value of environmental education was also perceived as "moderate extent," as demonstrated by a mean rating of 3.21 (SD = 1.0877). The overall weighted mean of 3.27 suggests that the implementation of environmental education within the selected schools in four divisions of Cavite, as part of the green curriculum, presents a moderate level of challenge during the survey period. The "green attitude" movement has not been adopted by school administrations as an initiative (Dayue, 2016). Educators themselves do not view going green as a crucial subject for their pupils.

The assessment and evaluation needs were deemed significantly challenging by respondents, as evidenced by the ratings assigned to key components. The assessment mechanism to gauge student learning received a mean rating of 3.42 (SD = 0.9427), indicating a "great extent" interpretation. Following closely, the evaluation tool for program effectiveness scored a mean rating of 3.29 (SD = 0.9769), also categorized as "great extent." Additionally, maintaining a consistent and ongoing curriculum evaluation process was perceived as "great extent," with a mean rating of 3.25 (SD = 1.0118). The overall weighted mean of 3.32 underscores the significant challenges posed by assessment and evaluation needs in alignment with efforts to implement a green curriculum within the selected schools in four divisions of Cavite during the survey period.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

A research study reported that the teachers believe that
no means are available at the institutional level for certifying environmental skills in existing qualification standards, no assessment mechanisms, and no proper curriculum is present (Dayue, 2016).

5.2. Community Engagement. Table 25 illustrates the mean distribution of community engagement challenges across various facets.

Table 25
Assessment of Community Engagement Challenges

Indicators	Mean	SD	Interpretation
I. Disengaged Community Leadership			
Lack of community leaders	3.30	1.0043	Great Extent
Lack interest in or appreciation for green curriculum initiatives	3.17	1.0584	Moderate Extent
Lack of time and skills	3.15	1.0703	Moderate Extent
Overall Weighted Mean	**3.20**		**Moderate Extent**
II. Resource Constraints for Community Engagement			
Limited resources for engagement	3.30	0.9927	Great Extent
Limited community outreach programs	3.33	0.9778	Great Extent
Adjusting green activities to community's available resources	3.37	0.9445	Great Extent
Overall Weighted Mean	**3.34**		**Great Extent**
III. Overcoming Cultural and Communication Gaps			
Cultural differences	3.43	0.9083	Great Extent
Communication style	3.34	0.9317	Great Extent
Language barriers	3.39	0.9122	Great Extent
Overall Weighted Mean	**3.38**		**Great Extent**
IV. Addressing Community Disenfranchisement			
Community perception of being undervalued	3.35	0.9418	Great Extent
Fostering ownership in green activities	3.12	1.1149	Moderate Extent
Lack of appreciation and recognition	3.14	1.0742	Moderate Extent
Creating opportunities to foster trust	3.14	1.0742	Moderate Extent
Overall Weighted Mean	**3.19**		**Moderate Extent**
V. Building Strong School-Community Partnership			
Establishing partnership by proactive leadership	3.05	1.1175	Moderate Extent
Visibility of school leaders within the community	3.03	1.1033	Moderate Extent
Active engagement with community members	3.17	1.0725	Moderate Extent
Overall Weighted Mean	**3.09**		**Moderate Extent**
VI. Addressing Resistance to Collaboration			

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Need for strategies to address resistance concerns	3.30	1.0786	Great Extent
Identifying commonality to foster collaboration	3.32	1.0641	Great Extent
Overall Weighted Mean	**3.31**		**Great Extent**

Scale: 1.00-1.74 Low Extent, 1.75-2.49 Slight Extent, 2.50-3.24; Moderate Extent, 3.25-4.00 Great Extent

Regarding community leadership engagement, respondents noted significant challenges such as the lack of community leaders and lack of interest in or appreciation for green curriculum, reflected in mean ratings of 3.30 (SD = 1.0043) categorized as “great extent” and 3.17 (SD = 1.0584) categorized as “moderate extent." Similarly, there was a notable insufficient time and skills, as indicated by a mean rating of 3.15 (SD = 1.0703), also interpreted as "moderate extent." The overall weighted mean of 3.20 underscores the substantial challenge posed by community leadership engagement in alignment with the implementation of the green curriculum within the selected schools in four divisions of Cavite during the survey period. This involves building relationships, developing communications, and managing interactions in order to achieve specific outcomes for the organization and the community itself (Villar et al., 2016).

In terms of resources for community engagement, the respondents have observed that adapting green activities to the community's available resources posed significant challenges, with a mean rating of 3.37 (SD = 0.9445), also interpreted as “great extent," the limited resources and outreach programs within the community, as indicated by a mean rating of 3.33 (SD = 0.9778). Similarly, limited resources for engagement is interpreted also as “great extent,” with a mean rating of 3.30 (SD = 0.9947). The overall weighted mean of 3.34 suggests that significant resource constraints exist for community engagement within the selected school in four divisions of Cavite during the survey period. A study that explored Taiwanese teachers who implemented the green concept that integrated physical activity and academic learning was done by Chang and Etnier (2018). They found that the teachers faced various challenges, such as lack of time, resources, support, and training, as well as conflicts with parents and students.

In terms of overcoming cultural and communication gaps, the respondent noted significant challenges stemming from cultural differences and language barriers among faculty members, with high mean ratings of 3.43 (SD = 0.9083) and 3.39 (SD = 0.9122), respectively, which were interpreted as “great extent.” Additionally, respondents also found communication styles to be of “great extent,” with a mean rating of 3.34 (SD = 0.9317). The overall weighted mean of 3.38 suggests that efforts have been made to address cultural communication gaps within the selected school in the divisions of Cavite, but the survey indicates that the situation remains very challenging during the survey period. Community members feel the decision-making and accountability are not shared with them and that their voices and opinions are not heard. They also do not see the incentives or rewards of engaging in the school and may not have clear and realistic goals and outcomes for their involvement (Sowell, 2018).

In tackling community disenfranchisement, respondents have identified significant hurdles in the community’s perception of being undervalued, with a mean rating of 3.35 (SD = 0.9418), rated with “great extent," while lack of appreciation and recognition and creating trust-building opportunities were both rated with "moderate extent," having the same mean ratings of 3.14 (SD = 1.0742). Additionally, they have observed that fostering ownership in green activities is also interpreted as “moderate extent," a sentiment reflected in the mean rating of 3.12 (SD = 1.1149).

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Despite evident efforts to address community disenfranchisement within Cavite's selected schools, the overall weighted mean of 3.19 indicates that the situation remains highly challenging, as per the survey findings. Educators themselves do not view going green as a crucial subject for their pupils. Cole-Foppe (2016) investigated how teachers viewed principals as leaders of the green curriculum. The study's conclusions showed that instructors thought principals had not committed enough time.

In fostering strong school-community partnerships, respondents have identified significant obstacles in the active engagement with community members and in proactively establishing partnerships, both rated as "moderate extent," with mean ratings of 3.17 (SD = 1.0725) and 3.05 (SD = 1.1175), respectively. Additionally, visibility of school leaders within the community is perceived as "moderate extent," with a mean rating of 3.03 (SD = 1.1033). The overall weighted mean of 3.09 indicates that efforts to build strong school-community partnerships within Cavite's selected schools in the four divisions faced considerable challenges during the survey period. Trust is defined as a willingness to make oneself vulnerable to someone else in the belief that one's interests will not be negatively affected (Tschannen-Moran & Gareis, 2015). When high levels of trust and commitment are demonstrated by the team, it results in both student and school success.

When it comes to addressing resistance to collaboration, identifying commonalities was deemed "great extent," with a mean rating of 3.32 (SD = 1.0641). Similarly, the need for strategies to address resistance concerns was also considered "to a great extent," with a mean rating of 3.30 (SD = 1.0786). The overall weighted mean of 3.31 suggests that efforts to address resistance to collaboration in selected schools in the four divisions of Cavite faced significant challenges during the survey period. The study conducted by Donoghue (2014) reported that school organizations develop negative perceptions towards poor communities, which seem to pose a wall for less affluent families than those who are more affluent. The outcome of resistance is that it could delay the change process, increase its costs, or obstruct its implementation (El-Taliawi, 2018).

6. Comparison of Instructional Leadership and Community Engagement Challenges across Respondent's Age, Length of Service, and Educational Attainment.

As shown in Table 26, the F-value of 0.529 for "Instructional Leadership" suggests that there is no significant difference in instructional leadership across different age groups.

Table 26

Comparison of the Instructional Leadership and Community Engagement Challenges across Ages, Length of Service and Educational Attainment

Variables	Dependent Variable	Df	Mean Square	F	Sig.
Age	**Instructional Leadership**	6	0.391	0.529	0.785
	Community Engagement	6	0.158	0.200	0.976
Length of Service	**Instructional Leadership**	3	1.061	1.437	0.237
	Community Engagement	3	0.444	0.562	0.461
Educational Attainment	**Instructional Leadership**	4	0.232	0.315	0.868

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Community Engagement	4	0.193	0.244	0.913

This indicates that the variance in instructional leadership explained by age is not significantly different from what would be expected by chance alone. Besides, the p-value of 0.785 is much greater than the typical significance level of 0.05, indicating that there is no significant relationship between instructional leadership and age. Based on the ANOVA results, there is no significant relationship between instructional leadership, community engagement, and age. This suggests that age does not have a significant impact on either instructional leadership or community engagement in the context of this study. Different studies have shown different results on how age influences teacher performance. Some studies have found that younger and less experienced teachers are more effective in teaching Higher Order Thinking Skills (HOTS) than older and more experienced teachers (Mohd Ismail et al., 2018). However, a study by Usop et al. (2013) stated that pupils tend to rate older and more experienced teachers higher because they believe that these professors are more authoritative and deserving of respect. Their knowledge of green curriculum may come from personal experiences and therefore be more practical in a sense.

Meanwhile, it can be gleaned from Table 26 that the f-value of 1.437 for “instructional leadership” indicates no significant difference in instructional leadership across different lengths of service. This suggests that the variance in instructional leadership explained by length of service is not significantly different from what would be expected by chance alone. Furthermore, the p-value of 0.237 is greater than the typical significance level of 0.05, implying that there is no significant relationship between instructional leadership and length of service.

Similarly, the f-value of 0.562 indicates that there is no significant difference in community engagement across different lengths of service. Also, the p-value of 0.461 is greater than 0.05, indicating that there is no significant relationship between community engagement and length of service. Based on the ANOVA results, there is no significant relationship between instructional leadership, community engagement, and length of service. This suggests that length of service does not have a significant impact on instructional leadership or community engagement in the context of this study. In the study of Ünal (2012), length of service is not the only factor that affects a performance. There are also other factors, such as academic ability, educational attainment, subject matter and knowledge, certification status, and behaviors. Therefore, length of service should not be used as the sole criterion for assessing the performance but rather as one of the indicators that can provide useful information and insights.

Moreover, the f-value of 0.315 for “instructional leadership” suggests that there is no significant difference in instructional leadership across different levels of educational attainment. This indicates that the variance in instructional leadership explained by educational attainment is not significantly different from what would be expected by chance alone. Additionally, the p-value of 0.868 is much greater than the typical significance level of 0.05, suggesting that there is no significant relationship between instructional leadership and educational attainment.

For “community engagement,” the F-value of 0.244 suggests that there is no significant difference in community engagement across different levels of educational attainment. The p-value of 0.913 is also much greater than 0.05, indicating that there is no significant relationship between community engagement and educational attainment. Based on the ANOVA results, there is no significant relationship between instructional leadership, community engagement, and educational attainment. This suggests that educational attainment does not have a significant impact on either instructional leadership or community engagement in the context of this study. In

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

DO no. 19, s. 2020, possessing a higher educational background and teaching experience of school leaders are needed to intellectually assess and monitor the performance of the teachers in teaching green concepts. It is also acknowledged as one criterion for employment and promotion and in the smooth transition when implementing a progression, such as in this study, the green curriculum implementation.

7. Relationship Between Challenges in Instructional Leadership and Community Engagement.

As depicted in Table 27, the Pearson correlation coefficient (r) of 0.861 and a significance value of 0.000 (2-tailed) support the alternative hypothesis, which suggests that there is a significant relationship between challenges in instructional leadership and community engagement in the implementation of green curriculum.

Table 27

Relationship between Instructional Leadership and Community Engagement

		Community Engagement
Instructional Leadership	Pearson Correlation	.861**
	Sig. (2-tailed)	0.000
	N	155

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient of 0.861 denotes a substantial positive correlation between instructional leadership and community engagement. This implies that as instructional leadership increases or decreases, community engagement tends to follow suit in a consistent manner. In other words, higher levels of instructional leadership are associated with increased levels of community engagement in the implementation of green curriculum, and vice versa.

The significance value of 0.000 (2-tailed) indicates that this observed correlation is highly unlikely to have occurred by chance alone. Thus, there is strong statistical evidence supporting the assertion that instructional leadership and community engagement in the implementation of green curriculum are significantly related.

From a practical standpoint, this suggests that effective instructional leadership practices positively influence community engagement in the context of green curriculum implementation. It implies that when instructional leaders demonstrate strong leadership qualities and engage effectively with stakeholders, they foster greater community involvement and participation in educational endeavors. These statistical findings underscore the importance of instructional leadership in promoting community engagement and suggest that investing in enhancing instructional leadership capabilities may yield benefits for fostering stronger connections between educational institutions and the communities they serve. The application of a principle-based approach is essential to fostering consistency in the practice of community engagement. In addition to offering guidance on how to start an engagement process, principals can assist in resolving

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

difficult problems that may arise. In this sense, principals could serve as a useful instrument for evaluation at the end of an engagement process. The strategy for productive community interaction is based on the following principles: timeliness, information and feedback, mutual respect, action learning, and foresight (Cambridge Community Engagement Guide).

8. Proposed Enhanced Collaborative Practices for Green Curriculum Implementation in Secondary Schools in Cavite.

This study has revealed valuable challenges in the implementation of green curriculum in selected secondary schools in Cavite. Among the challenges in instructional leadership that emerged are within the dimensions of teacher preparedness gap, support for innovative practices, curriculum integration challenges, undervalued environmental education and assessment and evaluation needs. In the scope of community engagement challenges, the following was revealed: disengaged community leadership, resource constraints for community engagement, overcoming cultural and communication gaps, addressing community disenfranchisement, building strong school-community partnership and addressing resistance to collaboration. To address these challenges, enhanced collaborative practices among stakeholders are hereby proposed.

Table 28

Strategy Recommendations for an Enhanced Collaborative Practices in the Implementation of Green Curriculum

STRATEGY	OBJECTIVES	DESCRIPTION	PERSONS INVOLVED	RESOURCES NEEDED	EXPECTED OUTCOME
Continuous Professional Develop-ment	Encourage teachers' involvement in trainings and seminars. Provide in-depth training programs specifically focused on the green curriculum content, pedagogy, and assessment methods. Offer ongoing workshops, professional development opportunities, and mentorship programs to keep teachers updated	To address teacher preparedness gap, trainings and seminars will equip the teachers with appropriate pedagogical methods like inquiry-based learning, project-based learning, and collaboration within the academic community. By implementing these solutions, schools can bridge the teacher preparedness gap and empower educators to effectively	Teachers, School Administrators, and Facilitators	Financial Support for Teachers, Curriculum Materials/Modules	Improved teachers' capabilities to deliver green curriculum. Enhanced collaboration among teachers, school administrators, and facilitators.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	and address emerging challenges.	implement the green curriculum.			
Curriculum mapping tool	Develop a teacher-friendly green curriculum that integrates seamlessly with existing subject areas. Create a tool that maps green concepts to specific learning objectives across subjects. Aid teachers in identifying integration points.	There are difficulties integrating green curriculum into existing subjects due to congestion and potentially limited involvement of leaders in curriculum changes. The green curriculum might be complex for teachers or overloaded with content. To address integration challenges, a curriculum map will guide the integration process and ensure alignment with learning objectives. A well-integrated green curriculum that is effective, time-efficient, and accurately assessed will be achieved. This will ensure students gain a comprehensive understanding of environmental issues.	Curriculum developers, Teachers, Community leaders , and members	Financial support, Meeting facilities	Teacher-friendly green curriculum that is well integrated.
Reframing teachers' and students' perception of green curriculum	Demonstrate the relevance of environmental education to students' future careers. Promote environmental professions	There is a perception among some educators and students that environmental education is not a crucial subject. To address undervaluing environmental	School administrators, Teachers, Parents, Students, Community leaders,	Financial support for students' activities	Increased community engagement. Shifted teachers, students, and administrators' perception of education for

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

		education, demonstrating the connection between environmental education and core academic skills can convince students, teachers and community of its importance. By highlighting the practical applications and career opportunities tied to environmental education, students will be more likely to view it as relevant and valuable to their future aspirations. Showcase how understanding environmental issues fosters critical thinking, problem-solving, and collaboration skills – all essential for academic success in any field.	and members		sustainable development.
Continuous improvement through monitoring and evaluation	Improve student learning outcomes related to sustainability. Adapt environmental consciousness and responsible behavior. Enhance overall curriculum quality.	There is a lack of established assessment mechanisms to gauge student learning and program effectiveness in green curriculum. To address the need for assessment and evaluation, involve the students, parents, teachers, and community	School administrators, Teachers, Parents, Students, Community leaders, and members	Precise evaluation tool containing rubrics and checklists, Time for assessment activities, Comput-	Identified areas of success and areas that need improvement. Refinements and adjustments on content, methods, and activities. Community awareness and practices are measured.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

		members to monitor and evaluate the curriculum and the programs attached to it. Their inputs ensure relevance and ownership.		ers for online assessment and data entries, Classroom or space facilities	
Educate and Engage	Organize community forums or workshops to educate community leaders on the benefits of a green curriculum. Identify potential community members with a demonstrated interest in environmental issues, local businesses focused on sustainability, or parent groups passionate about education.	Absence of community leaders or lack of interest in green curriculum initiatives hinder potential community-wide support. To address this challenge, instructional leaders and teachers should build relationships and look within the community for people to advocate for the green curriculum. Sharing success stories from other schools and highlighting how such programs can benefit the community as a whole. Emphasize how the green curriculum can benefit the community beyond the school environment. This could include promoting environmental awareness and stewardship among younger	School administrators, Teachers, Parents, Students, Community leaders and members	Information materials, Communication tools, Classroom or space facilities, Time for planning, forums, and workshops	Generate support and resource allocation by educating and engaging with the community. The program is more likely to secure long-term support and resources, ensuring its sustainability beyond individual teachers or administrators.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

		generations, creating a more sustainable community.			
Collaborative resource mobilization	Collaborate with environmental NGOs, community organizations, and other institutions for resource mobilization. Invest in low-cost but high-impact community engagement techniques.	Despite resource constraints for community engagement, create realistic and practical opportunities for community participation. Be creative and innovative without spending too much money and time. Online media platform coverage of the green curriculum activities and community engagement efforts can be a powerful tool to initiate funding from stakeholders. Build trust through transparency and open communication.	School Administrators, Teachers, Parents, Students, Community organizations and members, NGOs	Online media platform, Communication tools	This approach can cultivate a sense of shared responsibility and build a network of supporters to ensure the program's long-term success.
Culturally sensitive outreach and communication practices	Bridge the gap and adhere to meaningful engagement. Develop a deeper understanding of the cultural backgrounds, values, and communication styles within the community. Build trust and rapport with community members through culturally	Cultural differences, communication styles, or language barriers can hinder effective engagement with the community. By addressing cultural and communication barriers, you can create a more inclusive environment where community members from diverse backgrounds	School administrators, Teachers, Parents, Students, Community leaders and members	Profile of community members, Communication tools	Enhanced inclusivity and collaboration

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

	appropriate communication methods.	feel welcome to participate and contribute to discussions about the green curriculum. Develop informative materials and conduct outreach efforts in multiple languages relevant to the community. This ensures everyone has access to information and can participate meaningfully. This can lead to a more comprehensive and culturally relevant program that resonates with a broader segment of the community. This strategy can also address community perceptions of disenfranchisement or marginalization.			

SUMMARY

Based on the data treatment in relation to the topic under investigation, the following are the salient findings of the study:

1. ***The challenges encountered by the instructional leaders in the implementation of green curriculum.*** The Delphi experts identified teachers' preparedness gap, limited support for innovative practices, curriculum integration challenges, undervalued environmental education challenges, and assessment and evaluation needs as the instructional leaders' challenges in the implementation of green curriculum in selected secondary schools in the four divisions in Cavite.

2. ***Community Engagement Challenges Encountered by Instructional Leaders in the Implementation of the Green Curriculum***. Delphi experts identified disengaged community leadership, resource constraints for community engagement, overcoming

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

cultural and communication gaps, addressing
community disenfranchisement, building strong school-community partnerships, and addressing resistance to collaboration as the challenges in community engagement in the implementation of green curriculum in selected secondary schools in the four divisions in Cavite.

3. ***Practices of the Schools in the Implementation of Green Curriculum***. Delphi experts identified practices that support the curriculum, address greening challenges, outline desired and current practices, and highlight teachers' roles and community engagement practices in the implementation of green curriculum in their schools.

4. ***Strategies for Addressing the Challenges Pertaining to Instructional Leadership and Community Engagement in Green Curriculum Implementation***. To address the challenges pertaining to instructional leadership and community engagement in green curriculum implementation, the Delphi experts agreed on demonstrating the positive impacts of a Green Curriculum, including environmental awareness, fostering sustainable practices, and equipping students with skills to address environmental challenges. Examples and success stories from other schools can be powerful tools in building trust and rapport with all stakeholders. Actively listen to their concerns, address their doubts, and involve them in the planning process. This fosters a sense of ownership and increases the likelihood of success, Develop a clear proposal outlining the Green Curriculum's rationale, objectives, activities, and expected outcomes, and a proposed budget, timeline, and indicators for measuring success. Form a strong and diverse team with representatives from different stakeholder groups. Leverage their expertise and perspectives and assign clear responsibilities for effective implementation, designing engaging and effective curriculum materials relevant to students.

Utilize a participatory and iterative approach, incorporating feedback throughout the process. Provide teachers with the necessary knowledge, skills, resources, and support to deliver and assess the Green Curriculum. Equip them with appropriate pedagogical methods like inquiry-based or project-based learning and sharing the best practices, challenges faced, and solutions found with other schools to promote wider adoption of successful Green Curriculum initiatives.

5.1 Assessment of the Respondents on the Challenges Encountered in the Implementation of Green Curriculum.

The findings indicate that while teachers had access to training (mean 3.45) and professional development opportunities (mean 3.42) and felt the teaching resources were adequate (mean 3.34), they still faced significant challenges in being fully prepared. Developing suitable methods for these practices was seen with great extent (mean 3.35). Additionally, teacher commitment to using innovative approaches (mean 3.23) and the long-term usability of innovative

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

learning materials (mean 3.20) were identified as areas of moderate difficulty. Regarding the integration of the green curriculum, respondents identified significant challenges related to curriculum congestion and the number of green activities, reflected in mean ratings of 3.29 (SD = 1.0532) and 3.26 (SD = 1.0477), respectively, both categorized as "great extent." Within the context of environmental education, respondents perceived substantial challenges in the respondents' willingness to undergo green transformation, as reflected in a mean rating of 3.37 (SD = 0.9733), denoting a "great extent" condition. The assessment and evaluation needs were deemed significantly challenging by respondents, as evidenced by the ratings assigned to key components. The assessment mechanism to gauge student learning received a mean rating of 3.42 (SD = 0.9427), indicating a "great extent" interpretation. The overall weighted mean indicates that, collectively, integrating the green curriculum within the selected schools in four divisions of Cavite posed considerable challenges during the survey period.

5.2. Assessment of the Respondents on Community Engagement Challenges.

In community leaders' engagement, respondents noted significant challenges such as the lack of community leaders and lack of interest in or appreciation for green curriculum, reflected in mean ratings of 3.30 (SD = 1.0043) categorized as "great extent." In terms of resource for community engagement, the respondents have observed that adapting green activities to the community's available resources posed significant challenges, with a mean rating of 3.37 (SD = 0.9445), also interpreted as "great extent" is the limited resources and outreach programs within the community, as indicated by a mean rating of 3.33 (SD = 0.9778). In terms of overcoming cultural and communication gaps, the respondent noted significant challenges stemming from cultural differences and language barriers among faculty members, with high mean ratings of 3.43 (SD = 0.9083) and 3.39 (SD = 0.9122), respectively, both interpreted as "great extent." In tackling community disenfranchisement, respondents have identified significant hurdles in the community's perception of being undervalued, with a mean rating of 3.35 (SD = 0.9418), rated with "great extent." In fostering strong school-community partnerships, respondents have identified significant obstacles in the active engagement with community members and in proactively establishing partnering, both rated as "moderate extent" with mean ratings of 3.17 (SD = 1.0725) and 3.05 (SD = 1.1175), respectively. When it comes to addressing resistance to collaboration, identifying commonalities was deemed "great extent," with a mean rating of 3.32 (SD = 1.0641). The overall weighted mean suggests that efforts to address resistance to collaboration in selected schools in the four divisions of Cavite faced significant challenges during the survey period.

6. ***Comparison of the Challenges Encountered by the Participants when Grouped According to Their Profile***. There is no significant difference in instructional leadership across different age groups. Based on the ANOVA results, there is no significant relationship between instructional leadership, community engagement, and age. This suggests that age does not have a significant impact on either instructional leadership or

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

community engagement in the context of this
study. There is no significant difference in instructional leadership across different lengths of service. Based on the ANOVA results, there is no significant relationship between instructional leadership, community engagement, and length of service. This suggests that length of service does not have a significant impact on instructional leadership or community engagement in the context of this study.

There is no significant difference in instructional leadership across different levels of educational attainment. Based on the ANOVA results, there is no significant relationship between instructional leadership, community engagement, and educational attainment. This suggests that educational attainment does not have a significant impact on either instructional leadership or community engagement in the context of this study.

7. ***Relationship between Instructional Leadership and Community Engagement Experienced by the Respondents in the Implementation of Green Curriculum***. There is strong statistical evidence supporting the assertion that instructional leadership and community engagement in the implementation of green curriculum are significantly related. Effective instructional leadership practices have a positive impact on community engagement, specifically when implementing a green curriculum. Strong leadership qualities and effective stakeholder engagement by instructional leaders lead to increased community involvement and participation in educational initiatives like a green curriculum.
8. ***Recommendations to Enhance the Collaborative Practices for Green Curriculum Implementation in Selected Secondary Schools in Cavite***. The proposed "Enhanced Collaborative Practices" include demonstrating the positive impacts of the green curriculum, building trust and rapport with all stakeholders, developing a clear proposal, forming a strong and diverse team, designing engaging and effective learning materials, providing teachers with the necessary knowledge, skills, resources, and support, and sharing best practices, challenges faced, and solutions.

Implementing the green curriculum requires a well-defined plan with strong stakeholder engagement. By showcasing the environmental benefits and equipping teachers with the necessary resources, schools can create a curriculum that fosters environmental awareness, sustainable practices, and critical skills for students to address environmental challenges. Sharing successful strategies and overcoming challenges collaboratively with other schools can further promote widespread adoption of green curriculums, paving the way for a more environmentally conscious future. The proposed practices integrate the vital qualitative and quantitative findings from the study.

CONCLUSIONS

Based on the findings, the following conclusions were drawn:.

- Concerning the challenges of instructional leadership in the implementation of green curriculum in selected secondary schools in Cavite, the experts strongly agreed that schools face preparedness gaps, limited innovative practices, curriculum congestion, limited

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

involvement in curriculum changes, and undervalued environmental education, and there is a need for assessment and evaluation of implementation practices.

- In terms of the challenges in community engagement in the implementation of green curriculum in selected secondary schools in Cavite, the experts strongly agreed that there exist disengaged community leadership, resource constraints, overcoming cultural and communication gaps, addressing community disenfranchisement, building strong school-community partnerships, and addressing resistance to collaboration.
- The practices of the schools in the implementation of green curriculum in selected secondary schools in Cavite range from showcasing green initiatives, integrating environmental concepts across subject areas, sustaining the promotion of environmental awareness, inclusion of practical activities to develop relevant skills, to working with community members to ensure consistent and effective implementation.
- Instructional leaders may address the challenges by demonstrating the benefits of green curriculum, building support from the community, having a clear implementation plan, putting on a diverse team, providing engaging materials, supporting the teachers' needs, and sharing success with other schools and communities.
- The assessment of challenges in the implementation of green curriculum indicates that collectively, the implementation of green curriculum within the selected schools in four divisions of Cavite posed considerable challenges during the survey period.
- There is no significant difference in instructional leadership across different age groups, length of service, and educational attainment. There is no significant relationship between instructional leadership, community engagement, and age; no significant relationship exists between instructional leadership, community engagement, and length of service.
- There is no significant relationship between instructional leadership, community engagement, and educational attainment. There is a significant relationship between challenges in instructional leadership and community engagement in green curriculum implementation.
- Considering the findings, the study has revealed practices that may enhance collaboration between instructional leaders, teachers, and community members as they implement the green curriculum.

RECOMMENDATIONS

The following recommendations are put forward:

1. Further studies be conducted on other factors that may have an effect on green curriculum implementation, such as the capacity of teachers and other stakeholders.
2. Further studies be conducted to include other categories and dimensions such as student engagement and learning styles.
3. This study should be replicated considering a larger population to increase the generalizability of the study.
4. Similar studies be conducted on higher education institutions.
5. Secondary schools, public and private, be encouraged to implement the enhanced collaborative practices and address the challenges encountered.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

ACKNOWLEDGMENTS

The completion of this dissertation signifies the culmination of a collaborative effort. I would like to extend my earnest gratitude to Dr. Cherrypyn B. Barbacena, whose invaluable guidance, love, encouragement, and expertise were instrumental in shaping this study.

Sincere appreciation for the insightful feedback and thoughtful questions provided by Dr. Neil Andrew F. Calayag and Dr. Ronaldo A. Juanatas.

The shared knowledge and motivation given by Dr. Apollo P. Portez and Dr. Romeo S. Ebonite have been the driving force for the completion of this study.

The patience and guidance given by Dr. Silpa C. Bahian and Dr. Werson R. De Asis have been instrumental in the improvement of this study.

The camaraderie and support by my school head Ms. Maria Lalaine M. Barrameda, and colleagues at Dr. Jose P. Rizal Senior High School have been a source of joy and inspiration throughout this journey.

The unwavering support, late-night collaborations, and shared laughter with Doc Lei, Doc Reinze, Doc Nerissa, Doc Alan, Doc Bryan, Mam Noralyn, Mam Rose, and Sir Lhoi have made this academic journey memorable. Thank you, Mam Faye, Mam Joni, and Sir Ivan, for being an integral part of my doctoral journey.

Sincere thanks are extended to the participants in this study. Their willing,ness to share their experiences and perspectives provided the foundation upon which the study was built.

The unwavering love and support of my family—Rhoel, Enzo, and Dos — are acknowledged with deep appreciation. Their encouragement was a constant source of strength during challenging times.

Praises and glory to God Almighty for His constant provision of mercy, love, strength, and wisdom. This is Your response to my silent prayers.

REFERENCES

Abarro, Juan O. 2018. Factors Affecting the Performance of Public School Teachers in the Division of Antipolo City, Philippines. International Research Journal of Engineering and Technology (IRJET). Volume: 05 Issue: 11 | Nov 2018 www.irjet.net.

Abdurahman, N. A., & Jul-Aspi K. Omar. (2021). School Heads' Educational Leadership Practice and Teachers' Performance: The Case of Omar District, Division of Sulu, Philippines. Open Access Indonesia Journal of Social Sciences, 4(4), 432-444. https://doi.org/10.37275/oaijss.v4i2.61.

Abidin, Zainul, Nurzafira & Abdullah, Mohamad & Basrah, Noraliza & Alias, Muhammad. (2019). Residential Satisfaction: Literature Review and A Conceptual Framework. IOP Conference Series: Earth and Environmental Science. 385. 012040. 10.1088/1755-1315/385/1/012040.

Abuhassna, Hassan & Yahaya, Noraffandy & Megat zakaria, Megat Aman Zahiri & abu samah, Norazrena & Zaid, Norasykin & Awae, Fareed & Chee, Ken Nee & Alsharif, Ahmad. (2023). Trends on Using the Technology Acceptance Model (TAM) for Online Learning: A Bibliometric and Content Analysis. International Journal of Information and Education Technology. 13. 131-142. 10.18178/ijiet.2023.13.1.1788.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Ali Al-Harthi, Aisha Salim & Hendawy Al-Mahdy, Yasser. 2017. Distributed leadership and school effectiveness in Egypt and Oman: an exploratory study". Published in the International Journal of Educational Management in 2017.

Alrawashdeh, H.M., Al-Tammemi, A.B., Alzawahreh, M.K. et al. Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. BMC Public Health 21, 811 (2021). https://doi.org/10.1186/s12889-021-10897-4.

Azuka-Obieke, U. (2013). Single-Parenting, Psychological Well-Being and Academic Performance of Adolescents in Lagos, Nigeria. Journal of Emerging Trends in Educational Research and Policy Studies, 4, 112-117.

Bandy, J. (2011). Challenges and Opportunities of Community Engaged Teaching. Vanderbilt University Center for Teaching. Retrieved December 8, 2023, from https://cft.vanderbilt.edu/guides-sub-pages/challenges-and-opportunities-of-community-engaged-teaching/.

Barro, Robert J. and Jong-Wha Lee. 1993. "International comparisons of educational attainment," Journal of Monetary Economics 32: 363–394.

Beatty, C. (2022). Interindividual differences in perception. Available in https://Interindividual differences in perception.

Benoliel, P., & Berkovich, I. (2021). Ideal teachers according to TALIS: Societal orientations of education and the global diagnosis of teacher self-efficacy. European Educational Research Journal, 20(2), 143-158. https://doi.org/10.1177/1474904120964309.

Blazar, David. 2016. Teacher and Teaching Effects on Students' Academic Performance, Attitudes, and Behaviors. Doctoral dissertation, Harvard Graduate School of Education.

Boudersa, Nassira. (2016). The Importance of Teachers' Training Programs and Professional Development in the Algerian Educational Context: Toward Informed and Effective Teaching Practices. Expériences Pédagogiques.

Briones, L. 2019. Addressing the Challenge of Quality in Basic Education. Speech at the Launch of Sulong Edukalidad, Bulwagan ng Karunungan, Department of Education, Q.C.

Brolund, LiIsa. 2016. BU Journal of Graduate Studies in Education, Volume 8, Issue 2.

Brooks, J., Reed, D., & Savage, B. (2016). Taking off with a pilot: the importance of testing research instruments. In V. Benson, & G. Filippaios (Eds.), Proceedings of the 15th European Conference on Research Methodology for Business and Management Studies (ECRM 2016) (pp. 51-59). Academic Conferences and Publishing International Limited. http://www.academic-bookshop.com/ourshop/prod_4937625-ECRM-2016-15th-European-Conference-on-Research-Methodology-for-Business-and-Management-Studies-London-UK-Print-ISSN-20490968-Print-ISBN.html.

Brundtland, Gro Harlem, 1987. Brundtland Commission Report, United Nations through Oxfod University Press, October 1987

Bulanadi, 2015. The relationships of age and length of service with job .... https://www.researchgate.net/publication/233508346_The_relationships_of_age_and_length_of_service_with_job_satisfaction_An_examination_of_hotel_employees_in_Thailand.

Chan, Tak, Ridley, Andrea & Morris, Robert, 2022. Educational Research and Development Journal 82. Summer 2022, Vol. 25, No. 1, pp. 82–98. Principals' Perception of Their Roles as Curriculum Leaders: A Comparison of High, Middle and Elementary Schools.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Chang YK, Labban JD, Gapin JI, Etnier JL. 2018.
The effects of acute exercise on cognitive performance: a meta-analysis. Brain Res. 2012;1453:87–101.

Cogling Hannah Regine Diane. (2017). TEACHER TRAINING AND DEVELOPMENT. 10.13140/RG.2.2.33433.65126.ResearchGate.https://www.researchgate.net/publication/344015030_TEACHER_TRAINING_AND_DEVELOPMENT.

Cole-Foppe, L. A. (2016). Principals as instruction leaders, determiners of school climate, and facilitators of student achievement. Doctoral Dissertation, McKendree University.

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). Thousand Oaks, CA: Sage Publications, Inc.

Creswell, J.W., & Creswell, J.D. (2018). Mixed methods procedures. In, Research design: Qualitative, quantitative, and mixed methods approach (5th ed., pp. 213-246). Los Angeles, CA: SAGE Publications, Inc.

Day, C., Gu, Q., & Sammons, P. (2016). The impact of leadership on student outcomes: How successful school leaders use transformational and instructional strategies to make a difference. Educational Administration Quarterly, 52(2), 221-258.doi:http://dx.doi.org.libez.lib.georgiasouthern.edu/10.1177/0013161X15616863.

Dayue, Fan. A survey report on Greening in Higher TVET in China Jan 29, 2016 | Issue 6. Shenzhen Polytechnic (SZPT) Fleming College, 2017-2018 Annual Report https://flemingcollege.ca/PDF/Sustainability/2017-18-Fleming-College-Annual-Sustainability-Report.

Desfandi Mirza & Enok Maryani,Disman 2016. The Role of School Principal Leadership in Implementation of Eco School Program as the Effort to Support Sustainable Development, Advances in Economics, Business and Management Research, volume 14, 6th International Conference on Educational, Management, Administration and Leadership (ICEMAL2016)

Desimone, L. M., Stornaiuolo, A., Flores, N., Pak, K., Edgerton, A.K., Nichols, T. P., Plummer, E., & Porter, A. (2019). Successes and challenges of the “new” college- and career-ready standards: Seven implementation trends. Educational Researcher, 48(3), 167–178. https://doi.org/10.3102/0013189X19837239.

Essien, E.E., Akpan and Obot, I.M., 2016. The Influence of In-service Training, Seminar and Workshop Attendance of Social Studies Teachers on Academic Performance of Students in Junior Secondary Schools In cross River State, Nigeria. Journal of Education and Practice, Volume 7, Issue 22, 2016, 31-35. Retrieved from https://eric.ed.gov/?id=EJ111294.

El-Taliawi, Ola. (2018). Resistance to Organizational Change. 10.1007/978-3-319-31816-5_3450-1.

Fewster-Thuente, L. (2015). Working together toward a common goal: A grounded theory of nurse-physician collaboration. Research for Practice, 24, 356–362.

Frow, Penelope. (2007). The Meaning of Commitment in Professional Service Relationships: Issues in Relating Theory to Practice. Cranfield University, England.

Generalao, Ian Nicole, Ducanes, Jeoffrey, Yee, Karol Mark & David, Clarissa. 2021. Article: Teacher Education in the Philippines: Are We Meeting the Demand for Quality? Center for Integrative and Development Studies, University of the Philippines.

Griffiths, A.-J., Alsip, J., Hart, S. R., Round, R. L., & Brady, J. (2021). Together We Can Do So Much: A Systematic Review and Conceptual Framework of Collaboration in Schools. Canadian Journal of School Psychology, 36(1), 59-85. https://doi.org/10.1177/0829573520915368.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Gross, Judith M. S., Haines, Shana J., Cokethea Hill, Grace L. Francis, Martha Blue-Banning, and Ann P. Turnbull. 2015. Strong School–Community Partnerships in Inclusive Schools Are "Part of the Fabric of the School.…We Count on Them". School Community Journal, 2015, Vol. 25, No. 2 9. Available at http://www.schoolcommunitynetwork.org/SCJ.aspx.

Hallam, P. R., Smith, H. R., Hite, J. M., Hite, S. J., & Wilcox, B. R. (2015). Trust and collaboration in PLC teams: Teacher relationships, principal support, and collaborative benefits. NASSP Bulletin, 99, 193–216.

Hallinger, Philip and Murphy, Joseph, 1986. Instructional Leadership in Effective Schools. Available in https://files.eric.ed.gov/fulltext/ED309535.pdf.

Hanushek, Eric A., Ludger Woessmann, and Lei Zhang. 2015. Education, Economics of., Hoover Institution, Stanford University, Stanford, CA, USA. 2015 Elsevier Ltd. All rights reserved.

Hargreaves, A.; Fink, D. Sustainable Leadership. Jossey-Bass: San Francisco, USA, 2006.

Hou, Y., Cui, Y. & Zhang, D. Impact of instructional leadership on high school student academic achievement in China. Asia Pacific Educ. Rev. 20, 543–558 (2019). https://doi.org/10.1007/s12564-019-09574-4.

Kadji-Beltran, C.; Zachariou, A.; Stevenson, R. Leading sustainable schools: Exploring the role of primary school principals. Environ Educ Res 2012, 19(3), pp. 303-321.

Kamis, A. (2018). Exploring Green Skills: A Study on the Implementation of Green Skills among Secondary School Students. International Journal of Academic Research in Business and Social Sciences.

Kardoyo, A. 2020. Influence of Green Leadership Toward Environmental Policies Support, The Journal of Asian Finance, Economics and Business.

Kaur, R., & Singh, B. (2018). CEOs' Characteristics and Firm Performance: A Study of Indian Firms. Indian Journal of Corporate Governance, 11(2), 185-200. https://doi.org/10.1177/0974686218806714.

Kleidon, G. W. (2018). Principals' instructional leadership in Title I schools: A closer look. Doctoral Dissertation, San Jose State University.

Lancaster, G., Kolakowsky-Hayner, S., Kovacich, J., & Greer-Williams, N. (2015). Interdisciplinary communication and collaboration among physicians, nurses, and unlicensed assistive personnel. Journal of Nursing Scholarship, 47, 275–284.

Lauwo, Haika & Mkulu, Demetria Gerold. 2021, Challenges Facing Community Involvement in Ensuring Quality Education in Public Secondary Schools in Meru District, Arusha Region-Tanzania, International Journal of English Literature and Social SciencesVol-6, Issue-1; Jan-Feb, 2021

Lazar, Jonathan; Feng, Jinjuan Heidi; Hochheiser, Harry. 2017. Research Methods in Human-Computer Interaction. Published by Morgan Kaufmann (2017).ISBN 10: 0128053909 ISBN 13: 9780128053904

Lee, J., & Dimmock, C. (1999). Curriculum leadership and management in secondary schools: A Hong Kong case study. School Leadership and Management, 19(4), 455–482.

Leo, U.; Wickenberg, P. Professional norms in school leadership: Change efforts in implementation of education for sustainable development. J Educ Change 2013, 14(4), pp. 403-422.

Llego, Mark Anthony. 2023. PPSSH Domains and Strands. https://ppssh.teacherph.com/deped-ppssh-domains-and-strands/#domain-1.

Lomba-Portela L, Domínguez-Lloria S, Pino-Juste MR. Resistances to Educational Change: Teachers' Perceptions. Education Sciences. 2022; 12(5):359. https://doi.org/10.3390/educsci12050359.

Louw, Willa. 2013. Green Curriculum : Sustainable Learning at a Higher Education Institution. UNESCO.

Mäki, J., & Crosier, D. (2019). How can education contribute to awareness and action on climate change? Eurydice Network (Focus on Articles). Retrieved 03 February2022,from https://eacea.ec.europa.eu/nationalpolicies/eurydice/content/how-can-educationcontribute-awareness-and-action-climate-change_en.

Mangubos, Paulo. 2019. Bridging the Gaps in Misaligned Teachers with Mismatched Teaching Loads through Project TOPS (Tethering and Optimizing Professional Skills) Vol. 3 No. 2M (2019): Ascendens Asia Journal of Multidisciplinary Research Abstracts.

McAlister, Sara. 2013. Why Community Engagement Matters is School Turnaround. Annenberg Institute for School Reform. VUE Winter/Spring 2013

McBrayer, Juliann Sergi, Carter Akins, Carter, Gutierrez de Blume, Antonio, Cleveland, Richard & Pannell, Summer. 2020. Instructional Leadership Practices and School Leaders' Self-Efficacy. Volume 15 Issue 1 Fall/Winter 2020 .Article 13.

McCombes, S. 2023. Descriptive Research | Definition, Types, Methods & Examples. Available at https://www.scribbr.com.

McKeown, R.; Nolet; V., Eds. Schooling for sustainable development in Canada and the United States (Vol. 4.Springer Science & Business Media: Dordrecht, Netherlands, 2013.

Memon, M.A., Salleh, R. and Baharom, M.N.R. (2016), "The link between training satisfaction, work engagement and turnover intention", European Journal of Training and Development, Vol. 40 No. 6, pp. 407-429. https://doi.org/10.1108/EJTD-10-2015-0077.

Mogren, A.; Gericke, N; Sherp, H. Whole school approaches to education for sustainable development: Amodel that links to school improvement. Environ Educ Res 2018, 25(4), pp. 508-531.DOI: 10.1080/13504622.2018.1455074.

Mohd Ismail, Rahida & Arshad, Rozita & Abas, Zakaria. (2018). Can Teachers' Age and Experience influence Teacher Effectiveness in HOTS?. International Journal of Advanced Studies in Social Science & Innovation. 2. 144-158. 10.30690/ijassi.21.1

Moosung Lee, Allan Walker, Yuk Ling Chui. 2012. Contrasting effects of instructional leadership practices on student learning in a high accountability context. Journal of Educational Administration. ISSN: 0957-8234. Article publication date: 10 August 2012.

Mulford, Bill. 2003. OECD Commissioned Paper School Leaders: Challenging Roles and Impact on Teacher and School Effectiveness.

Müller, U., Lude, A., & Hancock, D.R. (2019). Leading Schools towards Sustainability. Fields of Action and Management Strategies for Principals. Sustainability.

Muthoni, C.K. (2015). The impact of community involvement in the public secondary in schools management, (Master's thesis), Kenyatta University. Machakos, Kenya.

Naidoo, P., & Petersen, N. (2015). Towards a leadership program for primary school principals as instructional leaders. South African Journal of Childhood Education, 5(3), Article 371. (EJ1187278). ERIC. https://files.eric.ed.gov/fulltext/EJ1187278.pdf.

National Association of School Psychologists. (NASP). (2012). Position statement: School-family partnering to enhance learning. https://www.nasponline.org/x26822.xml.

Nevenglosky, Erica A., Cale, Chris & Aguilar, Sunddip Panesar. 2018. Barriers to effective curriculum implementation. Research in Higher Education Journal Volume 36.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Ng, David. 2019. Instructional Leadership. March 2019.DOI: 10.1007/978-3-319-74746-0_2 In book: Setting Sail into the Age of Digital Local Government.

Nwosu, N. C., Ugwoke, S. C., Ololo, K. O., Oforka, T. O., & Oboegbulem, A. I. Ezenwaji, I. O., Eseadi, C., Okide, C. C., (2019). Work-related stress, burnout, and related sociodemographic factors among nurses: Implications for administrators, research, and policy. Medicine, 98(3), e13889. https://doi.org/10.1097/MD.0000000000013889.

Odell, V., Molthan-Hill, P., Martin, S., Sterling, S. (2020). Transformative Education to Address All Sustainable Development Goals. In: Leal Filho, W., Azul, A.M.

Oyinloye, O.D., Akinola, O.O., Akande, Y.O., Akinyele, A.A. and Mosimabale, M.M. (2018), "Foodinsecurity in Africa",Journal of Humanities and Social Science, Vol. 23 No. 9, pp. 68-75

Pa-alisbo, Mark Anthony C. 2017. The 21 st Century Skills and Job Performance of Teachers - ed. Journal of Education and Practice www.iiste.org .ISSN 2222-1735 (Paper) ISSN 2222-288X (Online). Vol.8, No.32, 2017 https://files.eric.ed.gov/fulltext/ED578609.pdf.

Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. Adm Policy Ment Health. 2015 Sep;42(5):533-44. doi: 10.1007/s10488-013-0528-y. PMID: 24193818; PMCID: PMC4012002

Pardo-del-Val, Manuela & Martinez-Fuentes, Clara. (2003). Resistance to change: A literature review and empirical study. Management Decision. 41. 148-155. 10.1108/00251740310457597.

Peniero Tupas, Fernan Peniero & Noderama, Rosario P. (2020). Looking into In-Service Training for Teachers in the Philippines: Are They Gearing towards Education 4.0?. Universal Journal of Educational Research, 8(10), 4651-4660. DOI: 10.13189/ujer.2020.081034.

Perez, R., & Bua, B. (2019). Greening the Curriculum for Sustainable Development. Bulacan State University.

Picciotto, R. (2021). Evaluation as a social practice: Disenchantment, rationalities and ethics, evaluation and program planning, Volume 87. https://doi.org/10.1016/j.evalprogplan.2021.101927.

Pranoto, Yuli & Utami, Dyah & Latiana, Lita & Ahmadi, Farid. (2021). Do Teachers' Experiences and Ages Contribute to Their Teaching Performance?. 10.46254/AN11.20210629.

Principles of Community Engagement. Framework Guide. Challenges in Community Engagement | Town of Cambridge. /communityengagement/pce_challenges_intro.html.

Psacharopoulos, George & Patrinos, Harry. (2018). Returns to investment in education: a decennial review of the global literature. Education Economics. 26. 1-14. 10.1080/09645292.2018.1484426.

Pullon, S. (2008). Competence, respect, and trust: Key features of successful interprofessional nurse-doctor relationships. Journal of Interprofessional Care, 22, 133–147.

Rasheed, Athar & Shahzad, Khuram & Conroy, Christopher & Nadeem, Sajid & Siddqiue, Muhammad. (2017). Exploring the role of employee voice between high-performance work system and organizational innovation in small and medium enterprises. Journal of Small Business and Enterprise Development. 24. 10.1108/JSBED-11-2016-0185.

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Rogers, Patricia, (2014). Theory of Change, Methodological Briefs—Impact Evaluation No. 2, UNICEF Office of Research, Florence.

Ross, Elizabeth M. 2023 March. The Case for Strong Family and Community Engagement in Schools. A roundup of the latest K–12 research reveals persuasive evidence. Harvard Graduate School of Education.

Sammalisto, Kaisu (2019). Environmental Management System: A WayTowards Sustainable Development in the University

Sasson, D. G. (2016). Principals' perceptions of their instructional leadership behaviors in Jewish day schools: A quantitative and qualitative study. Doctoral dissertation, Yeshiva University.

Shaked, H. (2019). Perceptual inhibitors of instructional leadership in Israeli principals. School Leadership & Management, 39(5), 519–536.

Shimin, C. (2022). Action Research on ESD Pedagogy: Enhancing TVET's Rolein Equipping Students with Generic Green Skills.https://www.lib.eduhk.hk>pedagogy

Slater, Lorraine. n.d., University of Calgary Collaboration: A Framework for School Improvement.

Sowell, M. (2018). It's what principals do: Influencing teachers to support students. Current Issues in Middle Level Education, 23(1), 1–21. (EJ1191666). ERIC. https://files.eric.ed.gov/fulltext/ EJ1191666.pdf.

Sutherland, Ian & Brooks, Jeffrey. (2013). School leadership in the Philippines: Historical, cultural, and policy dynamics. Advances in Educational Administration. 20. 199-213. 10.1108/S1479-3660(2013)0000020011.

Taze D, Hartley C, Morgan AW, Chakrabarty A, Mackie SL, Griffin KJ. Developing consensus in Histopathology: the role of the Delphi method. Histopathology. 2022 Aug;81(2):159-167. doi: 10.1111/his.14650. Epub 2022 Apr 24. PMID: 35322456; PMCID: PMC9541891.

Tschannen-Moran, M., & Gareis, C. R. (2015). Faculty trust in the principal: An essential ingredient in high-performing schools. Journal of Educational Administration, 53, 66–92.

Tucker, V., & Schwartz, I. (2013). Parents' perspectives of collaboration with school professionals: Barriers and facilitators to successful partnerships in planning for students with ASD. School Mental Health, 5, 3–14.

Tupas, F.P., & Noderama, R.P. (2020). Looking into In-Service Training for Teachers in the Philippines: Are They Gearing towards Education 4.0? Universal Journal of Educational Research, 8, 4651-4660.

Unal, Z., & Unal, A. (2012). The Impact of Years of Teaching Experience on the Classroom Management Approaches of Elementary School Teachers. Inernational Journal of Instruction, 5, 41-60.

UNESCO. Framework for the implementation of Education for Sustainable Development (ESD) beyond 2019. 40C/23. UNESCO General Conference, 40th, 2019. UNESCO. Available online: https://unesdoc.unesco.org/ark:/48223/pf0000370215.locale.

UNESCO. Greening Every Curriculum. Updated Nov 23, 2023 https://www.unesco.org/en/education-sustainable-development/greening future/curriculum.

Usop, Annierah M.,Kadtong, Maeda L., & Usop, Datu Amir Kadtong. 2013. School of Social Sciences, Universiti Sains Malaysia, Pulau Pinang, Malaysia International Journal of Human Resource Management and Research (IJHRMR). ISSN 2249-6874.Vol. 3, Issue 2, Jun 2013, 9-16.© TJPRC Pvt. Ltd

Asian Research Journal of Education, 2024
E-ISSN: 3028-0842
P-ISSN: 3028-0834
Vol. 1 No. 2

Verdon, S., Wong, S., & McLeod, S. (2016). Shared knowledge and mutual respect: Enhancing culturally competent practice through collaboration with families and communities. Child Language Teaching and Therapy, 32, 205–221.

Villar, Pauline Marie S. (2021). WORKING PAPER Better Leaders, Better Schools? Public School Heads' Leadership Styles and School Climate in Quezon City. University of the Philippines National College of Public Administration and Governance, NCPAG Working Paper 2021-01.

Wallace Foundation (2013). The school principal as leader: Guiding schools to better teaching and learning. https://www.wallacefoundation.org/knowledge-center/pages/key-responsibilities-the-school-principal-as-leader.aspx.

Weiss, C.H. (1997). Theory-based Evaluation: Past, present, and future: New Directions for Evaluation, 1997(76), 41-50.

Yılmaz, Derya & Kılıçoğlu, Gökhan. (2013). Resistance to change and ways of reducing resistance in educational organizations. European Journal of Research on Education. 2013. 14-21.

Zafer Ünal, Aslihan Ünal, July 2012 ● Vol.5, No.2 THE IMPACT OF YEARS OF TEACHING EXPERIENCE ON THE CLASSROOM ... - ed. International Journal of Instruction https://files.eric.ed.gov/fulltext/ED533783.pdf.

Zainal Abidin, M., Mokhtar, M., & Arsat, M.B. (2023). Education for sustainable development from the lenses of Malaysian school leaders: a preliminary study. Asian Education and Development Studies.

Electronic Sources

https://www.prc.gov.ph
https://meriam-webster.com
https://dictionary.cambridge.org
https://languages.oup.com
https://www.csc.gov.ph
https://www.psa.gov.ph
https://www.wallacefoundation.org
https://www.unsdg.un.org>resources
https://www.unesco.un.org
https://www.atsdr.cdc.gov
https://www.deped.gov.ph

DepEd Memorandum No. 24, s. 2019
DepEd Order No. 42, s. 2007
DepEd Order No. 19, s.2022
DepEd Order No. 52, s. 2011
DepEd Order No. 13, s. 2022
DepEd Order No. 242, s. 2020
DECS Manual 2002 Section IV
RA 4670 Magna Carta for Public School Teachers
RPMS Manual 2015