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Implementation of Special Science Elementary School (SSES) Curriculum in Division of Camarines Norte

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Abstract

The study aimed to assess the extent of implementation of the Special Science Elementary School (SSES) Curriculum within the Schools Division of Camarines Norte, focusing on respondent profiles, including age, years of service, specialization, educational attainment, relevant training, and the number of research and innovations conducted. It investigated the learning resources, facilities, materials, and technology utilized by SSES-implementing schools and examined curriculum implementation in terms of the screening process, curriculum instruction, capability building, and monitoring and evaluation. Additionally, the study explored whether there was a significant difference in the extent of implementation across respondent schools, identified challenges encountered, examined the level of agreement among schools on these challenges, and proposed interventions to enhance curriculum implementation. Grounded in General System Theory, Diffusion of Innovations Theory, and Stakeholder Theory, the study employed a quantitative approach using descriptive and inferential designs. Survey questionnaires, based on DepEd Order no. 57 s. 2011 and a Regional Memorandum, served as the primary data collection tool, encompassing responses from 49 teachers and 3 school heads across Vinzons Pilot Elementary School, Daet Elementary School, and Labo Elementary School. A total enumeration sampling technique ensured a representative dataset, enhancing the study's validity.

The study revealed key findings, such as the demographic makeup of the respondents, with a significant proportion being senior teachers lacking specialization in core subjects like English, Science, and Mathematics, though many hold master's degree units and relevant training. A critical analysis of learning resources exposed disparities, with notable gaps in STEM facilities, including the absence of robotics labs and creative learning technology across all schools. The curriculum implementation was generally effective, with School C excelling in most areas, especially in monitoring and evaluation, while significant differences in implementation were observed among schools, particularly in the admission process. Challenges such as inadequate technology and funding limitations were systemic, as reflected in the strong consensus among schools. The study concluded that while the SSES curriculum in Camarines Norte was effectively implemented, there is a pressing need for professional development, resource enhancement, and standardization across schools. To address these issues, the study proposed "Project WE LEARN" as a comprehensive intervention, alongside recommendations for professional development programs, investment in STEM facilities, and targeted curriculum improvements, urging future research to conduct longitudinal studies to assess long-term impacts.

Keywords: Special Science Elementary School (SSES) Curriculum, Curriculum Implementation, STEM Resources, Professional Development, Educational Interventions

1. Introduction

Despite multiple efforts to enhance educational results, the Philippines has devolved into an educational backwater, earning the disgraceful distinction of receiving low scores in various international assessments that evaluated students' proficiency in Science, Technology, Engineering, and Mathematics (STEM) (Sison and Devraj, 2022).

One of the global evaluations conducted to measure the student's performance in STEM is the Functional Literacy, Education, and Mass Media Survey (FLEMMS), a nationwide household-based survey and one of the designated statistical activities of the Philippine Statistics Authority (PSA) by Executive Order No. 352. In 2019 FLEMMS, it was reported that 91.6 percent of the population has functional literacy – higher than the 90.3 percent functional literacy rate in 2013 which received low rankings in three different evaluations that scored students' performance in STEM within the past five years. The Survey revealed that Ninety-three (93) of every 100 Filipinos in Central Visayas aged five (5) years old and over are basic literate (Philippine Statistics Authority, 2020).

Another global evaluation conducted to measure the student's performance in STEM was the conduct of the 2018 Program for International Student Assessment (PISA), which evaluated the performance of 15-year-old students in reading, mathematics, and science. The Philippines took the second-lowest spot in science and mathematics, with the Dominican Republic being the only country that ranked lower than the Southeast Asian country and took the lowest spot in reading (OECD, 2019).

The Philippines has also landed among the lowest 10 out of 81 countries in reading comprehension, mathematics, and science, displaying marginal progress, as indicated by the 2022 Program for International Student Assessment (PISA) results (Bautista, 2023). Conversely, the Philippines did not fare well in the performance evaluation conducted for elementary school students. In the 2019 Trends in International Mathematics and Science Study (TIMSS), the Philippines did not fare better in the said evaluation, which evaluated the performance of Grade Four students in math and science proficiency. It ranked the lowest among the 58 countries that were included in the study (TIMSS and PIRLS International Study Center,2019).

Meanwhile, the Philippines also did not do well in the 2019 Southeast Asia Primary Learning Metrics (SEA-PLM), which measured the capacity of Grade 5 students in Reading, Writing, and Mathematics. The country performed below the regional average in all three areas. Only ten percent of Filipino students were able to meet the minimum required proficiency level for reading at the end of lower primary education. More alarmingly, nearly half of them belonged to the lowest proficiency band in writing literacy, and only six percent were able to demonstrate proficiency expected of Grade Five students. Meanwhile, 41 percent failed to meet the minimum proficiency level in mathematics expected at the end of lower primary education (SEA-PLM, 2019).

Moreover, the 2022 edition of the Global Innovation Index (GII) tracks the most recent global innovation trends against the background of an ongoing COVID-19 pandemic, slowing productivity growth and other evolving challenges. The country fell eight slots lower in the 2022 Global Innovation Index and is now in the 59th spot among 132 economies (WIPO, 2022).

This decline in education global scale is partly associated with students' insufficient foundational knowledge, among other contributing factors highlighting the need to nurture STEM talent in young learners and suggesting strategies that include the systematic integration of STEM curriculum at the primary school level (Taber, et al., 2017). Hence, education reforms have been introduced to improve the quality of basic education and to address issues on the poor performance of Filipino students.

One of the government's initiatives to address the issue is making the curriculum relevant to address the literacy problem in the country (Office of the Vice President, 2023). With this mandate, revisiting the implementation of the Special Science Elementary School (SSES) Curriculum specifically in SDO Camarines Norte is timely and relevant in light of these developments.

This Special Science Elementary School (SSES) Curriculum is one of the country's special programs for students with giftedness that promotes inclusive education. It is a research and development project designed to develop Filipino children to become productive partners in the development of the community and society. The SSES curriculum envisions developing Filipino children who are equipped with scientific and technological knowledge, skills, and attitudes; creative and positive values; and lifelong learning skills to become productive partners in the development of the community and society.

There are several factors to contemplate in executing the SSES initiative stated in DepEd Order No. 57, s. 2011 (Policy Guidelines in the Implementation of the Special Science Elementary School (SSES) project that includes the involvement of learners, teachers, school head, school's physical facilities and equipment as its component. Additionally, screening processes, the curriculum, instructional methods, assessment and grading system, capability building, and monitoring/evaluation mechanisms are crucial considerations. However, while the policy guidelines in the implementation of this Program were clear and executory, gaps in the implementation were observed. A study by Muaoz (2019), revealed that although the implementation of the Special Science Elementary Schools Curriculum was outstanding, there is still a need to maintain and sustain the status of such curriculum, especially in each component.

The study emphasizes the importance of improving science education by providing well-equipped laboratories, modern tools, and specialized instructional materials for hands-on learning and experimentation. It also highlights the need for continuous professional development for teachers to effectively utilize these resources and stay updated with the latest advancements in science education.

Furthermore, in the research conducted by Moran (2022), the study revealed that although Science is currently considered an important subject, there is a gap in knowledge involving the level at which Science is incorporated in elementary education and how teachers view the subject. Due to a lack of time, resources, and prioritization, science instruction is limited in most classrooms. While teachers recognize its significance and enjoy teaching and engaging students with the subject, it remains an inconsistently taught subject, especially after the recent pandemic.

Hence, the researcher revisited the implementation of the Special Science Elementary School in SDO-Camarines Norte to find out how extent is the implementation of the program. The study focused on the profiling of teachers according to their age, years in service, specialization, educational attainment, relevant training, and number of research and innovation conducted. Moreover, it also focused on the availability and utilization of facilities, equipment, ICT-based materials, and other learning resources. Also, the study aimed to identify the extent of the implementation of the project along with the screening process, curriculum instruction, capability building, and monitoring and evaluation. Furthermore, the study also aimed to find out the varying challenges met by the implementing schools in the implementation of the specialized curriculum and figure out if the respondent schools significantly agreed on the challenges they met.

The study's findings were used to develop a support program or intervention aimed at improving the implementation of the project in SDO-Camarines Norte. This program is intended to enhance the services offered by the school through the SSES Program, ultimately improving the school and students' academic achievements. Additionally, the study's results can serve as a foundation for the Department of Education to further enhance the program and ensure the delivery of high-quality basic education. This, in turn, will address current issues related to STEM education in the country.

1.1. Objective of the Study

This study aimed to evaluate the implementation of the Special Science Elementary School (SSES) Curriculum in the Schools Division of Camarines Norte. The research sought to provide a comprehensive

assessment of the curriculum's execution, focusing on various aspects that contribute to its effectiveness and the challenges faced during implementation.

To achieve this objective, the study explored several key areas. It examined the profiles of respondents, including their demographics, professional experience, and academic qualifications. The research also investigated the learning resources and facilities available in SSES-implementing schools. Furthermore, it assessed the extent of curriculum implementation across four crucial domains: the screening process, curriculum instruction, capability building, and monitoring and evaluation. The study aimed to identify any significant differences in implementation among the respondent schools and to uncover the challenges encountered. Additionally, it sought to determine if there was consensus among schools regarding these challenges. Ultimately, the research aimed to propose interventions to enhance the implementation of the SSES curriculum, based on the findings and insights gathered throughout the study.

2. Methodology

This research study on the implementation of the Special Science Elementary School (SSES) Curriculum in the Schools Division of Camarines Norte utilized a quantitative method combining descriptive and inferential research designs to address multiple aspects of the problem. Descriptive design elucidated respondent profiles and available learning resources, while inferential design gauged the extent of curriculum implementation, compared implementation across schools, and investigated agreement on challenges encountered. This comprehensive approach enabled both a detailed exploration of specific aspects and a broader generalization of findings, providing a nuanced understanding of the SSES curriculum implementation. The study examined variables such as respondent characteristics, available resources, implementation extent, inter-school differences, and implementation challenges, employing statistical methods to draw conclusions about the broader population based on sampled data. This multifaceted approach ensured a thorough analysis of the SSES curriculum implementation in Camarines Norte, offering valuable insights for educational stakeholders and policymakers.

2.1. Population, Sample Size, and Sampling Technique

In this comprehensive study, a total of 52 educators, including both teachers and school heads from Vinzons Pilot Elementary School, Daet Elementary School, and Labo Elementary School, were meticulously selected to represent the diverse experiences of implementing the Special Science Elementary School (SSES) Curriculum over the past three years. Employing total enumeration to ensure no perspective was overlooked, every individual within the defined population was surveyed, providing a holistic view of the curriculum's application. This approach not only facilitated an inclusive analysis of the curriculum's effectiveness, challenges, and successes but also offered a well-rounded understanding of the dynamics at play within these institutions. The selection of respondents from various schools aimed to capture a broad spectrum of insights, contributing to a nuanced understanding of the SSES curriculum's impact across the Schools Division of Camarines Norte.

2.2. Data Gathering Procedures

To commence the data-gathering process, a comprehensive literature review informed the development of survey questions aligned with research objectives. The survey questionnaires were designed to balance clarity and depth, structured logically to capture a holistic view of the phenomena. Distribution channels were strategically chosen, and ethical standards were upheld throughout the process. Respondents were fully

informed about the research, given clear instructions, and assured of confidentiality. Informed consent was obtained, emphasizing voluntary participation and the right to withdraw. Respondents' identities were coded, data was securely stored, and access was restricted to maintain confidentiality. The research team was committed to transparency, encouraging questions, and providing clear responses. Upon completion of data collection, a comprehensive analysis plan was implemented, incorporating both quantitative and qualitative techniques.

The primary research instrument was a modified survey questionnaire anchored in DepEd Order no. 57 s. 2011 and a Regional Memorandum dated September 9, 2022. The questionnaire comprised four parts: respondent profiles, learning resources availability and utilization, project implementation assessment (including screening process, curriculum instruction, capability building, and monitoring and evaluation), and challenges faced by implementing schools. The study's goal was communicated through an enclosed letter, and questionnaires were manually distributed. Statistical tools were employed to summarize and analyze the responses, ensuring a comprehensive evaluation of the Special Science Elementary School (SSES) Curriculum implementation in the Schools Division of Camarines Norte.

2.3. Statistical Treatment of Data

The study's analytical phase was marked by the strategic application of statistical tools, each chosen for its relevance to the research objectives. For the initial segment of the problem (SOP1), frequency and percentage analyses were pivotal in distilling the demographic essence of the respondents, encompassing age, years in service, specialization, educational attainment, relevant trainings, and research and innovations. This approach provided a demographic panorama of the participants. In SOP2, a checklist method was instrumental in cataloging the schools' physical resources, followed by percentage and ranking techniques to elucidate the utilization of educational resources.

For SOP3, the Likert scale was the chosen instrument, with the weighted mean serving as the barometer for the SSES curriculum's implementation depth, spanning the screening process to monitoring and evaluation. SOP4 harnessed the power of Analysis of Variance (ANOVA), with the formula

$$F = \frac{MS_{Between}}{MS_{Within}}$$

to discern significant disparities in the curriculum's application across schools. SOP5 utilized a checklist to pinpoint the challenges faced in the project's execution. Meanwhile, SOP6 deployed the Kendall Coefficient of Concordance, represented by

$$W = \frac{12S}{m^2(k^3 - k)}$$

to quantify the consensus among schools on the encountered challenges. The use of 'Simplified Statistics for Beginners' facilitated the data's computation and analysis, ensuring a comprehensive and insightful exploration of the SSES program's implementation nuances in the selected schools. Through these methodologies, the research aimed to yield a robust and meaningful synthesis of data, enhancing the understanding of the SSES program's practical realities and challenges.

3. Results and Discussion

3.1. Profile of the Respondents

The profile of respondents involved in the SSES Curriculum implementation in Camarines Norte presents a seasoned cohort, with a significant number aged 51-60 years, suggesting a depth of experience that contrasts with Alday's (2019) findings of a younger teaching demographic. This mature profile, coupled with over half of the respondents boasting 26 or more years of service, indicates a stable educational environment ripe for the integration of contemporary pedagogical innovations as suggested by Hayes (2021). However, a notable 43 out of 52 teachers lack specialization in English, Science, and Mathematics, highlighting a potential gap in subject-specific expertise that could impact curriculum execution, resonating with Pacala's (2023) observations.

Table 1. Respondent-Schools' Profile

Profile	School A		School B		School C	
	f	%	f	%	f	%
1.1 AGE						
21-30	2	8.0	1	4.8	0	0
31-40	7	28.0	3	14.3	3	50.0
41-50	6	24.0	5	23.8	1	16.7
51-60	10	40.0	8	38.1	2	33.3
61 and above	0	0	4	19.1	0	0
Total	25	100.0	21	100.1	6	100.0
1.2 YEARS IN SERVICE						
1-5	2	8.0	2	9.5	0	0
6-10	3	12.0	1	4.8	0	0
11-15	3	12.0	2	9.5	3	50.0
16-20	4	16.0	2	9.5	0	0
21-25	0	0	4	19.1	1	16,7
26 and above	13	52.0	10	47.6	2	33.3
Total	25	100.0	21	100.0	6	100.0
1.3 SPECIALIZATION						
With Specialization	6	24.0	2	9.5	1	16.7
Without Specialization	19	76.0	19	90.5	5	83.3
Total	**25**	**100.0**	**21**	**100.0**	**6**	**100.0**
1.4 EDUCATIONAL ATTAINMENT						
Bachelor's Degree	4	16	2	9.5	0	0
With MA Units	17	68	15	71.4	6	100.0
Master's Degree	1	4	2	9.5	0	0
With Doctoral Units	2	8	2	9.5	0	0
Doctoral Degree	1	4	0	0	0	0
Total	25	100	21	99.9	6	100.0
1.5 RELEVANT TRAINING						
With Training	18	72	14	66.7	6	100.0
Without Training	7	28	7	33.3	0	0
Total	25	100	21	100.0	6	100.0
1.6 RESEARCH AND INNOVATION						
With	5	20	2	9.5	1	16.7
Without	20	80	19	90.5	5	83.3
Total	25	100	21	100.0	6	100.0

In terms of educational attainment, a substantial 38 out of 52 respondents have pursued Master's Degree units, demonstrating a commitment to advanced education, aligning with the broader educational context noted by Alday (2019). Yet, the scarcity of Doctoral degrees points to opportunities for further academic

progression, which could enhance student outcomes as supported by Podolsky et al.'s (2019) meta-analysis. Moreover, the majority of educators have undergone relevant training, indicating a proactive approach to professional development, crucial for the curriculum's effectiveness and supported by Huang et al. (2022) and Cheng et al. (2023). Despite this, a considerable majority, 44 out of 52, have not engaged in research and innovation, suggesting an area for growth. Encouraging research and innovation among teachers, as highlighted by Paudel and Rajbhandary (2022) and Bolyard et al. (2023), could significantly enhance the SSES curriculum's implementation, fostering a culture of continuous learning and adaptation to evolving educational technologies and methodologies.

3.2. Learning Resources

The study's findings on the learning resources in SSES-implementing schools in Camarines Norte reveal a mixed landscape of availability and utilization. Facilities like computer labs with internet connections are prevalent, with School B leading in availability, suggesting a focus on digital literacy. However, specialized STEM facilities such as robotics and innovation labs are notably absent across all schools, indicating a significant gap in resources necessary for a comprehensive STEM education. The presence of life science/biology labs in Schools A and C, but not in School B, and the limited availability of chemistry labs, particularly in School A, point to an uneven distribution of resources. This calls for strategic interventions to address these resource gaps and ensure equitable implementation of the SSES curriculum, as supported by studies from Chen et al. (2020), Taylor (2023), and Wan et al. (2023), which emphasize the importance of laboratory utilization and innovative learning environments.

Table 2. Learning Resources Utilized by the SSES Implementing Schools

	Resources	School A		School B		School C	
		Present	Not Present	Present	Not Present	Present	Not Present
A.	**FACILITIES**						
1.	Separate STEM Laboratories: (not used as classrooms for lectures)						
	a. Life science/Biology Lab	9	16	0	21	6	0
	b. Chemistry Lab	5	20	0	21	0	6
	c. Mathematics Lab	0	25	1	20	0	6
	d. Robotics Lab with Robotics kit e.g. Programmable Microcontroller Kit (microcontroller boar; power supply for MCU; sensors-temperature; light, sound, humidity)	0	25	0	21	0	6
	e. Computer Lab with Internet Connection	7	18	10	11	6	0
	f. Speech Laboratory with at least 35 units of speech cubicles that have speaking gadgets and equipment like media player, TV/ multi-media projector, and whiteboard	0	25	0	21	0	6
	g. Innovation laboratory with at least 5 computer laptops, 3D printers, Robotics Kits, and electronic equipment	0	25	0	21	0	6
2.	Presence of a functional Research Center	0	25	0	21	0	6
3.	Laboratories are regularly utilized for Science and Mathematics activities	2	23	1	20	5	1
4.	With materials recovery/hazardous waste disposal facility following DENR guidelines and standards on the disposal of hazardous waste	11	14	5	16	6	0
B.	**MATERIALS**						
5.	The school has a functional library with sufficient print resources for all subjects	25	0	7	14	6	0
6.	The STEM laboratory is equipped with Science and mathematics apparatuses and equipment	7	18	2	19	5	0
C.	**TECHNOLOGY**						

7.	Presence of Creative Technology equipment e.g. consumables fabric, rigid and tools, machines, 3D printers, laser cutter machine, hand drill, heat press, rotary cutting tool, shredder, soldering iron station, drill press; robotics kit, etc.	0	25	0	21	0	6

In terms of materials, School A stands out with a functional library with sufficient print resources for all subjects, while STEM laboratory equipment is less available across all schools. The absence of creative learning technology equipment in all surveyed schools points to a significant gap in educational resources necessary for modern teaching and learning. This lack of technology could impede the curriculum's ability to foster creativity and critical thinking, as highlighted by studies from Katyara et al. (2022) and Tarman et al. (2019), which suggest that technology integration is essential for improving students' scientific understanding and inquiry skills. To bridge these gaps, investments in STEM resources and technology are crucial for the successful implementation of the SSES curriculum and for preparing students for a future where technology plays a pivotal role. Additionally, proper waste disposal facilities following DENR guidelines, as discussed by Ardoin et al. (2020), are essential for promoting environmental education and sustainable practices in schools.

3.3. Implementation Status of the SSES Curriculum

The implementation of the Special Science Elementary School (SSES) Curriculum in Camarines Norte is examined through a comprehensive lens, with 30 indicators spanning the admission process, curriculum instruction, capability building, and monitoring and evaluation. The weighted mean scores from the Likert scale assessments provide a quantitative measure of the curriculum's implementation level, with higher scores indicating more effective execution.

Table 3. Implementation Status of the SSES Curriculum

	Implementation Status	School A		School B		School C	
		WM	I	WM	I	WM	I
3.1	**ADMISSION PROCESS**						
1.	The school widely disseminates information on SSES Admission.	4.92	VWI	4.81	VWI	5.00	VWI
2.	The school annually conducts pre-screening and shortlisting of learner aspirants through document evaluation and interviews.	4.92	VWI	4.81	VWI	5.00	VWI
3.	The school annually conducts admission exams, reading comprehension tests, and admission procedures as prescribed by the regional office.	4.92	VWI	4.71	VWI	5.00	VWI
	Average Mean	4.92	VWI	4.76	VWI	5.00	VWI
3.2	**CURRICULUM INSTRUCTION**						
1.	The school has a maximum of 35 pupils per SSES class/section.	4.84	VWI	4.90	VWI	5.00	VWI
2.	The class schedule provides longer instruction time for English, Mathematics, and Science.	4.84	VWI	4.90	VWI	5.00	VWI
3.	Used inquiry-based approach in science teaching.	4.56	VWI	4.43	VWI	4.17	WI
4.	Offers additional topics in Mathematics-Simple statistics, Simple Algebra, Equations, and Inequalities	3.92	WI	3.67	WI	3.83	WI
5.	Introduces investigatory project starting Grade 4 and showcases research outputs of pupils from Grades 4 to 6 at the end of the school year.	4.36	VWI	2.95	I	3.00	I
6.	The system of grading is based on the Recent DepEd Order on Assessment (DepEd Order No. 8 s. 2015 and DepEd Order No. 36 s. 2016)	4.96	VWI	4.62	VWI	5.00	VWI
7.	Performance tasks in Science include regular laboratory activities distributed across all quarters	3.36	I	3.90	WI	5.00	VWI
8.	Written Tests and performance tasks across all subjects promote the development of critical thinking and 21st-century skills	4.84	VWI	4.76	VWI	5.00	VWI
9.	Written Tests (Summative Tests) and Periodical Tests are constructed using a Table of specifications	4.80	VWI	4.90	VWI	5.00	VWI
10.	Designs special programs to enhance the talents and expertise of pupils including those in other learning areas	4.12	WI	3.71	WI	4.33	VWI

11.	Students participate in development activities such as leadership training workshops, seminars, and conferences for the past three (3) years related to the program	4.64	VWI	4.05	WI	3.50	WI
12.	The school has student interest and academic clubs and organizations like Campus Journalism, Science Club, Robotics Club, Mathematics Club, research Clubs, etc.	4.88	VWI	4.76	VWI	5.00	VWI
13.	All students across all grade levels have maintained a very satisfactory rating of at least 88% for any grading period.	3.8	WI	3.71	WI	4.17	WI
14.	The school conducts intervention activities for students who need special attention to be able to cope with the program requirements.	4.36	VWI	4.48	VWI	5.00	VWI
15.	The school transfers students based on the prescribed guidelines enforced by a Memorandum from the Regional Office or Central Office	4.92	VWI	3.62	WI	5.00	VWI
	Average Mean	4.48	VWI	4.22	VWI	4.53	VWI
3.3	**CAPABILITY BUILDING**						
1.	The teachers teaching Science and Mathematics have specialization in either Science and Math and/or relevant training.	4.12	WI	4.05	WI	4.00	WI
2.	Teachers have clear professional and personal plans as reflected in their individual Plan for Professional Development (IPPD) formulated annually.	4.60	VWI	4.48	VWI	5.00	VWI
3.	Teachers have participated in program-related seminars, conferences, and workshops.	4.56	VWI	4.43	VWI	5.00	VWI
4.	The school has a Scientific Review Committee.	3.88	WI	3.38	I	4.33	VWI
5.	The school head created a committee for the SSES Admission Process	4.88	VWI	4.76	VWI	5.00	VWI
6.	The school head monitored and guided teachers in formulating their Individual Program for Professional Development (IPPD)	4.64	VWI	4.19	WI	5.00	VWI
7.	The school head allocates enough MOOE budget for the implementation of SCP-Science	3.36	I	2.24	FI	4.67	VWI
8.	The school head maintains active partnerships with GOPs and NGOs for the continuous Implementation of the project.	4.08	WI	2.71	I	5.00	VWI
	Average Mean	4.27	VWI	3.78	WI	4.75	VWI
3.4	**MONITORING/EVALUATION**						
1.	Teachers regularly monitored and evaluated pupils' performance.	4.84	VWI	4.57	VWI	5.00	VWI
2.	The school head regularly observes classes.	4.68	VWI	3.57	WI	4.83	VWI
3.	The school head evaluated the teachers' performance regularly.	4.68	VWI	4.14	WI	5.00	VWI
4.	The school head provided mentoring and coaching to teachers on a regular basis.	4.64	VWI	3.76	WI	5.00	VWI
	Average Mean	4.70	VWI	4.01	WI	4.96	VWI

Rating Scale:	***Descriptive Interpretation:***
4.2 - 5.00	*Very Well Implemented (VWI)*
3.4 - 4.19	*Well Implemented (WI)*
2.6 - 3.39	*Implemented (I)*
1.8 - 2.59	*Fairly Implemented (FI)*
1.0 - 1.79	*Poorly Implemented (PI)*

Admission Process: The admission process across the three schools exhibits a high level of implementation, with School C achieving a perfect score of 5.00 in all aspects, indicating exemplary adherence to the regional office's guidelines for SSES admissions. Schools A and B also demonstrate strong implementation, with average mean scores of 4.92 and 4.76 respectively. These scores reflect a robust commitment to a transparent and rigorous admission process, essential for the success of specialized educational programs. The findings align with Bernardo et al. (2023), who noted the SSES Project's distinct selection process for students, highlighting its effectiveness for gifted children.

Curriculum Instruction: The curriculum instruction is very well implemented across the schools, with School C leading at an average mean of 4.53, followed by School A at 4.48, and School B at 4.22. Despite high overall scores, areas such as investigatory projects and advanced mathematics topics indicate room for improvement. The study suggests that enhancing content enrichment and practical science applications through investigatory projects could bolster student engagement and mastery of critical concepts. This is supported by research from Kim et al. (2023) and Ong et al. (2022), which emphasize the benefits of inquiry-based instruction and active student involvement in science education.

Capability Building: Capability building within the SSES curriculum shows effectiveness, particularly in professional development and curriculum implementation, with School C scoring an average mean of 4.75. However, disparities in budget allocation and community partnerships, especially in School B, highlight areas for growth. Effective professional development, as linked to improved teaching practices and student outcomes, is crucial for the curriculum's success. Active school partnerships with GOPs and NGOs are also vital for providing support and resources beyond what schools typically offer.

Monitoring and Evaluation: Monitoring and evaluation practices are commendable, with School C exhibiting the highest level of implementation with a perfect weighted mean of 5.00. School A follows closely with an average mean of 4.70, while School B shows effectiveness but with room for improvement at 4.01. Regular classroom observations and mentoring are identified as areas needing enhancement, particularly in School B. Consistent and supportive observation and mentoring practices are essential for achieving consistent instructional practices and improved educational outcomes.

In summary, the SSES curriculum in Camarines Norte is effectively implemented, with strong adherence to guidelines and a commitment to high-quality education. However, the data suggests that targeted improvements in content enrichment, practical science applications, professional development, and monitoring practices could further enhance the curriculum's implementation and student learning outcomes. The study underscores the importance of continuous improvement and adaptation to meet current educational demands and prepare students effectively for the future.

3.4. Differences in the Implementation of the Project Among Respondent-Schools

The assessment of the SSES curriculum implementation in the Division of Camarines Norte revealed significant disparities across all key variables examined. ANOVA analysis highlighted substantial differences among schools in the Admission Process (F-value: 37.96), Curriculum Instruction (F-value: 4.965), Capability Building (F-value: 4.959), and Monitoring/Evaluation (F-value: 14.045). These findings, significant at the 1% or 5% level, indicate considerable variations in how schools manage admissions, deliver curriculum, enhance staff capabilities, and evaluate the program. The results align with existing literature, including studies by Prado and Sabas (2023), McMillan et al. (2019), Darling-Hammond et al. (2020), Ventista and Brown (2023), and Adarkwah (2021), which emphasize the importance of standardized processes, rigorous admission criteria, inquiry-based teaching, clear professional development plans, and regular assessment in educational settings.

Table 4. Test of Difference in the Implementation of the Project Among Respondent-Schools

Variables	F	Critical Values		Decision
		5%	1%	
Admission Process	37.96**	5.14	10.92	Reject Ho
Curriculum Instruction	4.965*	3.15		Reject Ho
Capability Building	4.959*	3.47	5.78	Reject Ho
Monitoring/Evaluation	14.045**	4.26	8.02	Reject Ho

*** Significant at α = 1%*

** Significant at α = 5%3.25 – 4.00 Fully Implemented (FI)*

The observed disparities underscore the need for a more standardized approach to SSES curriculum implementation across the division. While some schools may excel in certain areas, others may require additional support to achieve the same level of effectiveness. The findings suggest room for improvement in terms of consistency and uniformity, necessitating targeted interventions and policies aimed at aligning practices more closely across all SSES-implementing schools. This could involve sharing best practices, reallocating resources, or providing targeted training and support. By addressing these disparities, the division

can work towards ensuring that all students have access to equally high-quality science education, regardless of the school they attend, ultimately enhancing the overall effectiveness of the SSES curriculum and contributing to more equitable student outcomes.

3.5. Challenges Experienced in the Implementation of the Project

The implementation of the SSES curriculum in Camarines Norte revealed diverse challenges across schools, with resource-related issues being prevalent. School A reported the highest frequency of challenges, with 22 respondents citing inadequate technology or laboratory equipment, 20 noting a lack of suitable facilities, and 19 identifying limited funds for specialized materials. School B's main challenges included limited funds (18 respondents), lack of facilities and inadequate technology (both 17 respondents), and absence of curriculum guides and Research as an elective (15 respondents each). School C reported fewer challenges overall, with only 6 respondents identifying each of its top four issues. These findings align with research by Willis et al. (2019) on resource allocation strategies and Chan et al. (2022) on the role of principals in curriculum leadership, highlighting the need for strategic resource management and strong leadership support in implementing specialized curricula.

Table 5. Challenges Experienced in the Implementation of the Project

	Challenges	School A		School B		School C	
		f	Rank	f	Rank	f	Rank
1.	Absence of standardized assessment and Interview guide for admission to SSES.	11	7.5	6	12	2	12
2.	Heterogeneous type of learners in a class	8	11.5	8	10	3	7
3.	Presence of learners who are not scientifically and mathematically inclined	14	5.5	8	10	3	7
4.	Learners' behavior in class	18	4	10	7	6	2.5
5.	Lack of teachers with specialization in Science and Math and/or relevant training	11	7.5	8	10	3	7
6.	Lack of teachers who are scientifically and technologically oriented or proficient	14	5.5	9	8	2	12
7.	Limited opportunities for teachers to attend trainings in conducting research and innovations	10	9.5	11	6	2	12
8.	Absence of teachers' Individual Professional and Personal development plan	7	13.5	3	13	2	12
9.	Insufficient fund/salary to finance the maximum implementation of teacher's IPPD	8	11.5	13	5	3	7
10.	Lack of school heads' support in the implementation of the project	7	13.5	1	14	2	12
11.	Limited funds for specialized materials, equipment, and resources.	19	3	18	1	6	2.5
12.	Lack of suitable facilities and infrastructure to support the specialized curriculum	20	2	17	2.5	6	2.5
13.	Inadequate technology or laboratory equipment for hands-on learning Experiences	22	1	17	2.5	6	2.5
14.	Absence of curriculum guides in teaching mathematics for SSES learners and Research as an elective subject for Grades 4-6	10	9.5	15	4	3	7

The varying nature and frequency of challenges across schools underscore the need for tailored interventions to address specific implementation hurdles. Addressing resource and infrastructure deficits is crucial for effective scientific learning, while enhancing support from school heads and standardizing admission processes could lead to more consistent practices. The implications of these findings are significant for the success of the SSES curriculum, suggesting that strategic planning and investment in key areas could greatly enhance its effectiveness in the Division of Camarines Norte. Overall, the study's findings align with existing literature and emphasize the importance of targeted improvements in resource allocation, leadership support, and standardized processes to optimize the SSES curriculum's implementation across schools.

3.6. Test of Agreement in the Challenges Encountered in the Implementation of the Project

The implementation of the SSES curriculum in Camarines Norte has been met with a unified front of challenges, as evidenced by the high degree of consensus among schools. The Kendall Coefficient of

Concordance reveals a strong agreement with a value of 0.761, and the Chi-square value of 29.675 significantly exceeds the critical value, underscoring that the challenges are not isolated but shared across the division. The common issues, such as learners' behavior, limited funds, inadequate facilities, and lack of technology, point to systemic hurdles that demand a division-wide strategy for resolution.

Table 6. Test of Agreement in the Challenges Encountered in the Implementation of the Project

n	df	W	Computed X^2 Value	Critical Value	Conclusion	Decision
14	13	0.761	29.675	22.36	Significant	Reject Ho

This collective acknowledgment of challenges suggests that solutions should be broadly applicable, benefiting all schools within the division. The necessity for a coordinated approach is clear, with collaborative problem-solving and resource-sharing poised as effective strategies. The significance of these findings is bolstered by research from Meng et al. (2023) and Hussein (2021), which advocate for collective efforts in overcoming educational obstacles. In essence, the data from Table 6 calls for a cohesive and strategic response to ensure that the SSES curriculum is implemented effectively and equitably across all schools in the division.

3.7. Proposed Intervention Material for Effective Implementation of the SSES Curriculum

The researcher developed an intervention titled *Project WE LEARN: Ways on Elevating Learners' Excellence through Acquiring Facilities Relevant to their Needs* in response to the most pressing challenge identified in the study— the inadequacy of technology and laboratory equipment in schools implementing the Special Science Elementary School (SSES) curriculum. This deficiency ranked highest in School A and second in Schools B and C, significantly hindering the hands-on, experiential learning that is essential to the SSES curriculum. Without access to the necessary Information and Communication Technology (ICT) resources, students, particularly those who are gifted and talented, are unable to fully engage in scientific inquiry and advanced exploration, limiting their ability to develop critical thinking and problem-solving skills.

Project WE LEARN is designed to address this gap by providing ICT facilities, such as advanced computer systems, interactive whiteboards, and specialized software, which are foundational to experiential learning in the SSES curriculum. These resources will allow students to actively participate in simulations, interactive experiments, and digital research, making science education more dynamic and immersive. For gifted and talented students, access to these technologies is particularly vital, as it enables them to delve deeper into complex scientific concepts, fostering independent learning and innovation. By equipping students with these tools, the project ensures that the SSES curriculum's objectives are fully realized, transforming classrooms into environments where students can thrive academically.

In addition to addressing technological deficiencies, Project WE LEARN also focuses on reducing disparities in curriculum implementation across schools by providing equitable access to learning resources. The project emphasizes community engagement by involving local stakeholders, businesses, and families in fundraising efforts, thus fostering a culture of collective responsibility for educational development. This collaborative approach ensures that the project will have a sustainable, long-term impact, as continued community support will help maintain and expand ICT resources, preventing future resource shortages. Ultimately, the intervention positions itself as a proactive solution that not only resolves the immediate challenges but also creates a lasting framework for educational excellence in science and technology.

4. Conclusion and Recommendations

The study on the implementation of the Special Science Elementary School (SSES) Curriculum in Camarines Norte reveals a complex landscape of strengths and challenges. While the majority of teachers

possess extensive experience, with half having over 26 years of service, there's a notable lack of specialization among 43 teachers and low research involvement reported by 44 teachers, indicating areas for professional development. Resource enhancement is crucial, particularly in STEM facilities and technology, with significant gaps in specialized labs and equipment across schools. Despite these challenges, the SSES curriculum implementation is deemed highly effective, especially in admission processes and monitoring. However, ANOVA analysis reveals significant variations among schools in key areas, with the Admission Process showing the greatest disparity (F-value 37.96). Schools face varying challenges, predominantly in technology, facilities, and funding, with a strong consensus on these issues (Kendall's W value 0.761). To address these challenges, Project WE LEARN is proposed as a comprehensive intervention, aiming to enhance funding, technology, and personalized instruction. This study underscores the need for targeted improvements, resource allocation, and standardized practices to optimize the SSES curriculum's implementation and ensure equitable, high-quality science education across the division.

Based on the study's findings, the Schools Division of Camarines Norte is recommended to develop a comprehensive professional development program that leverages senior teachers' experience while addressing subject-specific expertise needs in English, Science, and Mathematics, and fostering research and innovation. A strategic investment plan should be implemented to address critical shortages in STEM facilities and technology across all schools, prioritizing the establishment of life science/biology labs, chemistry labs, and innovative learning spaces. Targeted interventions should be developed to strengthen areas needing improvement, such as investigatory projects and advanced mathematics topics. A standardization committee should be established to address variations in SSES curriculum implementation, focusing on developing uniform guidelines for admission processes, curriculum instruction, capability building, and monitoring/evaluation. A tailored resource allocation strategy should be developed to address specific challenges faced by each school, with a division-wide initiative to secure additional funding. A collaborative task force comprising representatives from all SSES-implementing schools should be established to develop and implement division-wide strategies addressing common issues. Future researchers are encouraged to conduct longitudinal studies to track the long-term impacts of the SSES curriculum and interventions like Project WE LEARN, investigating areas such as the effectiveness of assistive technologies, the impact of enhanced STEM facilities on student performance and career choices, and the long-term effects of increased teacher specialization and research engagement on curriculum implementation and student achievement.

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