

The implementation of Special Science Elementary School Project through the lens of implementers of the three divisions of Caraga Region

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ABSTRACT

This study examined the level of implementation of the Special Science Elementary School (SSES) Project in three divisions of the Caraga Region, employing a descriptive research design that integrated both quantitative and qualitative approaches. A total of 3 school heads and 27 teachers participated as respondents, providing data through survey questionnaires based on DepEd Caraga Regional Memorandum No. 0278, s. 2022, and validated interview guides. Quantitative findings were analyzed using mean scores, while thematic analysis was used to interpret qualitative responses. Results revealed that the overall implementation of the SSES Project was rated as “satisfactorily implemented” with an overall mean of 4.43. Among the five areas assessed, admission process ($M = 4.90$) and curriculum and instruction ($M = 4.77$) were highly implemented, while class management ($M = 3.86$), human resources ($M = 4.42$), and physical resources ($M = 4.22$) were satisfactorily implemented. Facilitating factors included the competence and resourcefulness of teachers, strong parental support, and active collaboration with stakeholders. Conversely, hindering factors involved the lack of specific learning resources, insufficient financial support due to integration of SSES funding into general MOOE, and limited opportunities for teacher professional growth and development. Based on these findings, an action plan was proposed to enhance the program, focusing on policy review, teacher training, learner development, resource allocation, and strengthened stakeholder partnerships. The study underscores the need for continuous improvement to sustain the quality of science and mathematics education in the elementary level and ensure that learners are adequately prepared for future academic and professional challenges.

Keywords: special science elementary school, program implementation, Caraga Region

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INTRODUCTION

Each child is born with unique gifts, making them distinct individuals with equally diverse needs and potentials. Despite these differences, every child has the right to education as enshrined in the 1987 Philippine Constitution. Article II, Section 17 mandates the State to prioritize education, science, and technology to foster patriotism, accelerate social progress, and promote total human development. Furthermore, Article XIV, Section 10 underscores that science and technology are vital for national development, invention, innovation, and practical application. This constitutional framework emphasizes the State's commitment to cultivating human potential, including the education of gifted and talented learners.

The recognition of children with special needs has long been a cornerstone of Philippine education policy, particularly regarding the nurturing of gifted students. Presidential Decree 603 of 1974 highlighted the importance of providing opportunities and encouragement for gifted children to develop their special talents. Building on this foundation, the Special Science Elementary School (SSES) Project was introduced in 2007 to provide enriched learning environments for gifted children in public schools. Its objective is to develop scientifically literate students who are prepared to continue their studies in specialized science high schools, thereby strengthening the country's future scientific and technological workforce (Faustino & Hiwatig, 2021).

Globally, science and technology are regarded as essential to national progress and competitiveness. Initiatives in science education, such as those in the United States and Malaysia, underscore the importance of fostering scientific literacy and promoting STEM education as pathways for holistic development. For example, Champagne emphasized that science literacy equips individuals with the capacity to make informed decisions, contribute to economic productivity, and participate meaningfully in public discourse. Similarly, Osman and Saat (2014) demonstrated how Malaysia's STEM programs strengthen students' competencies in science, technology, engineering, and mathematics, fostering critical and innovative thinking. Insights from such international practices provide valuable guidance for improving the Philippine SSES Project, ensuring that it incorporates a holistic STEM approach.

In the Philippine context, the Department of Education has institutionalized the SSES Project through policies such as DepEd Order No. 57, s. 2011, which aims to nurture Filipino children by enhancing their scientific and technological knowledge, creativity, and values. The project recognizes children with exceptional abilities, requiring a rigorous screening process to ensure admission of learners with advanced capabilities (DepEd Regional Memorandum No. 0188, s. 2022). Through its specialized curriculum in mathematics and science, supported by appropriate infrastructure, laboratories, and ICT-based resources, SSES seeks to produce learners who are globally competitive, ecologically aware, and lifelong learners.

Nevertheless, challenges in implementation persist. Teachers in SSES schools are expected to possess strong backgrounds in science and mathematics or undergo specialized training to meet the demands of the program. According to Babu (2016), teachers, as nation-builders, require continuous training to effectively implement specialized curricula. This expectation is compounded by administrative and financial concerns. DepEd Orders No. 13, s. 2016, and No. 73, s. 2008 outline the allocation of maintenance and operating funds to support teacher training, instructional materials, and student development activities, including

investigatory projects. However, sustaining such resources and capacities remains a pressing issue.

The implementation of the SSES program in the Caraga Region reflects both opportunities and challenges. The region's cultural and socioeconomic diversity provides fertile ground for nurturing scientifically literate individuals but also raises concerns about equitable access to quality science education (NEDA, 2017). Despite being recognized as SBM Level 3 schools, institutions such as Nasipit Central Elementary School, Ampayon Central Elementary School, and North Cabadbaran Central Elementary School face persistent challenges in sustaining the quality of their programs. National assessment results, such as the 2022 Program for International Student Assessment (PISA), underscore the urgency of addressing these issues, with Filipino students ranking among the lowest globally in mathematics, reading, and science (Bautista, 2023; Tort, 2023).

Given these circumstances, the study underscores the importance of evaluating the implementation of the SSES Project in selected schools in the Caraga Region. While these schools continue to produce competitive learners, there is a need to examine the factors that contribute to their successes and the obstacles they encounter. Insights from administrators, teachers, and learners will be instrumental in refining the program, ensuring its alignment with both national development goals and international standards of science education. This study seeks to provide such insights, offering a benchmark for improving SSES implementation not only within the region but also across the country.

Statement of the problem

The study aimed to look into the implementation of Special Science Elementary School Project in the three division of DepEd-Caraga Region. Specifically, it seeks to answer the following questions:

1. What is the level of implementation of SSES in the three divisions in terms of admission process, class management, curriculum and instruction, human resources, and physical resources?
2. What are the facilitating and hindering factors in the implementation of the SSES Project in each implementing school?
3. Based on the findings of the study, what action plan can be proposed to improve the implementation of the SSES Project?

METHODOLOGY

This study adopted a descriptive research design that combined both quantitative and qualitative approaches to obtain a comprehensive understanding of the implementation of the Special Science Elementary School (SSES) Project in selected schools within the Caraga Region. Data collection was carried out using survey questionnaires and interviews with teachers and school heads. The survey questionnaire was based on the assessment form from DepEd Caraga Regional Memorandum No. 0278, s. 2023, which has been used for monitoring and evaluating SSES-implementing schools in the region since its release in 2023. This tool gathered

quantitative data on the level of implementation of the project across various domains. To complement this, in-depth interviews were conducted with the teachers and school heads to capture qualitative data regarding their experiences and perspectives on the facilitating and hindering factors in the implementation of the program. The quantitative data were analyzed through descriptive statistical methods, while the qualitative data were subjected to content and thematic analysis to identify recurring patterns and themes.

The research was conducted in three SSES-implementing schools located in the Caraga Region: Nasipit Central Elementary School in Agusan del Norte, Ampayon Central Elementary School in Butuan City, and North Cabadbaran Central Elementary School in Cabadbaran City. These schools are among the pioneering SSES pilot schools in the Philippines, having begun implementation in 2007 under DepEd Order No. 57, s. 2011. Nasipit Central Elementary School, situated in Barangay 4, Nasipit, Agusan del Norte, is recognized as a top-performing central elementary school in its division. It served around 1,098 pupils during the school year 2023–2024 and was identified as part of Batch 3 of selected schools in the Philippines representing Caraga Region for the SSES pilot project. North Cabadbaran Central Elementary School, located along A. Curato Street in Cabadbaran City, Agusan del Norte, was one of the first schools in the country chosen as a pilot for the SSES project and is considered a top-performing school in its division. Ampayon Central Elementary School in Butuan City Division, located along the national highway in Barangay Ampayon, has also consistently performed well academically and was included as part of Batch 3 of the SSES pilot schools in the Philippines.

The study participants consisted of three school heads and 27 teachers across the three implementing schools, all of whom were taken as respondents because of their direct involvement in the SSES Project. At Nasipit Central Elementary School, one school head and 14 teachers participated; at North Cabadbaran Central Elementary School, one school head and seven teachers took part; and at Ampayon Central Elementary School, one school head and six teachers were included. This gave a total of three school heads and 27 teachers as respondents. The instruments used in the study included the DepEd Caraga Regional Memorandum No. 0278, s. 2023 assessment form for quantitative data collection, and an interview guide validated by experts for the collection of qualitative data on facilitating and hindering factors in SSES implementation.

Ethical standards were strictly observed throughout the conduct of the research. A formal letter of request was sent to the Public Schools Division Superintendents of the three divisions in DepEd Caraga, and upon approval, the respective school heads were approached to inform them about the study. The purpose and extent of the interviews were explained to the participants, and informed consent forms were given and accomplished before participation. The participants were assured that all information collected would remain confidential and would only be accessed by the researcher for the sole purpose of the study. Under no circumstance were the responses shared with any other person, except when requested by the participant. The researcher also ensured that the analysis of the data was carried out objectively and without bias. APA referencing style was used in acknowledging sources that did not belong to the author of the study, and the researcher accepted full accountability for maintaining confidentiality and for taking all necessary measures to protect participants from harm during the conduct of the research.

The data gathering process involved scheduling interviews during the free time of the participants in a vacant room within the school premises to ensure convenience and minimal disruption of classes. The interviews were facilitated using a recorder to capture the responses accurately for later analysis. The combination of survey responses and interview transcripts provided a comprehensive dataset for triangulation of results.

For the analysis, the mean was used to determine the level of implementation of the SSES Project in the three divisions, particularly in relation to admission process, class management, curriculum and instruction, human resources, and physical resources. Thematic analysis was employed to analyze the qualitative responses from the interviews, which focused on identifying facilitating and hindering factors in the implementation of the project. These methods provided both a numerical assessment of implementation levels and a nuanced understanding of the contextual factors that affect the program.

RESULTS AND DISCUSSION

The study involved three school heads and twenty-seven teachers from three Special Science Elementary Schools (SSES) in the Caraga Region, namely Nasipit Central Elementary School in Agusan del Norte, Ampayon Central Elementary School in Butuan City, and North Cabadbaran Central Elementary School in Cabadbaran City. These respondents were purposively selected due to their direct involvement in the implementation of the SSES Project, and data were gathered using validated survey instruments and in-depth interviews. Quantitative findings were analyzed using descriptive statistics, while qualitative data were subjected to thematic analysis. The results highlight both the extent of implementation of the project across five core dimensions—admission process, class management, curriculum and instruction, human resources, and physical resources—as well as the facilitating and hindering factors influencing the program's effectiveness.

In terms of the admission process, the findings show that the implementation level across the three schools is highly effective, with an overall mean of 4.9. Key indicators such as information dissemination about SSES admissions, pre-screening and shortlisting of learner-aspirants, and the conduct of entrance examinations and reading comprehension tests prescribed by the Regional Office all scored 5.0, which is interpreted as highly implemented. Teachers and school heads affirmed that these procedures were strictly observed annually. For instance, Teacher 1 emphasized that Grade 1 learners undergo multiple screening stages, while Teacher 8 described the conduct of mental ability tests, though noted that such tests are no longer regularly administered due to changes in regional directives. Teacher 2 supported this, adding that although mental ability tests were facilitated before, their discontinuation was due to the absence of prescribed materials from the Regional Office. Despite this, the mental ability test indicator still received a mean of 4.63, remaining in the highly implemented range. These results confirm that admission processes in the SSES schools are systematic, transparent, and rigorously applied, aligning with Johnson and Green's (2022) assertion that well-designed admission systems significantly contribute to the selection of capable learners and to improved academic performance in specialized programs.

When it comes to class management, the implementation is less consistent, with an overall mean of 3.86, interpreted as satisfactorily implemented. Maintaining class sizes of no more than 35 pupils per section is highly implemented, reflected by a mean of 4.69. Teachers explained that this policy is closely observed to ensure optimal classroom interaction and individualized instruction, with Teacher 27 highlighting the ability of the schools to sustain such ratios due to the quality of the program attracting high-performing learners. However, the indicator on limiting the number of SSES sections to a maximum of two per grade level received a lower mean of 2.82, which is only moderately implemented. Teacher 9 noted that opening additional sections was not possible due to financial limitations and learner distribution. This discrepancy points to resource constraints that hinder the full realization of program guidelines. The findings resonate with Blatchford et al. (2011) and Lee and Park (2021), who both emphasize the critical role of optimal class sizes in improving engagement and educational outcomes.

The curriculum and instruction domain, on the other hand, is an area of strength, with an overall mean of 4.77, interpreted as highly implemented. Indicators such as adherence to DepEd Order No. 8, s. 2015 on grading systems, the use of Table of Specifications in test construction, and compliance with regional guidelines for student transfers each received a perfect score of 5.0. Additionally, the provision of extended instructional time for English, Mathematics, and Science achieved a mean of 4.97, while regular laboratory activities in Science scored 4.66. Teacher 6 highlighted how the program fosters advanced skills in Science and Mathematics, and School Head 1 attested to national and international achievements by their learners as evidence of program effectiveness. However, the indicator on pupil participation in leadership and developmental activities scored lower, at 3.94, interpreted as satisfactorily implemented. Teachers pointed to financial challenges, overlapping schedules, and limited opportunities as reasons for the minimal involvement of students in these activities. This result aligns with the findings of Durlak et al. (2011), who argue that expanded leadership and extracurricular engagement enhance holistic development. Overall, the results affirm Smith and Brown's (2023) findings that well-structured curriculum and instruction foster 21st-century skills and critical thinking.

With regard to human resources, the overall mean was 4.42, interpreted as satisfactorily implemented. Several indicators scored highly, such as the creation of an admission committee (mean of 4.88) and the active monitoring of Individual Development Plans (mean of 4.52). Teachers acknowledged that structured systems ensured efficiency, particularly in admissions and professional planning. However, challenges were evident in indicators like professional development participation, which only scored 4.09, and the allocation of Maintenance and Other Operating Expenses (MOOE) for SSES implementation, which had a mean of 3.94. Teachers noted that while MOOE supports occasional contests and training, there is no dedicated budget line for SSES activities, unlike in earlier years when separate funding was provided. Many teachers lamented the lack of SSES-specific seminars or orientation programs in recent years, with Teacher 12 stating that in her three years as an SSES teacher, she had not attended any specialized training. The findings highlight the need for increased professional development opportunities, echoing Nguyen and Hunter's (2020) conclusion that ongoing teacher training significantly enhances teaching efficacy and student achievement.

In terms of physical resources, the schools achieved an overall mean of 4.22, also interpreted as satisfactorily implemented. While functional science and mathematics laboratories exist, their equipment and apparatus are often outdated or incomplete, as reflected in a mean of 4.43 for laboratory equipment. Teachers shared that some apparatuses are no longer functional, which affects hands-on experiments. Similarly, while computer laboratories are present, they are equipped with outdated devices, as noted by Teacher 23, who explained that the lack of functional technology has hindered research and ICT integration. To address these limitations, partnerships with local government units and stakeholders have been instrumental, with some schools receiving tablets for Grade 6 learners. Teacher 22 emphasized the importance of these contributions in enhancing higher-order thinking skills. These findings are consistent with Saleh and Aziz's (2020) assertion that functional laboratories significantly improve student outcomes in science and mathematics, but also highlight the importance of regular maintenance and upgrading of facilities.

A summary of results across the five domains indicates that admission processes are the strongest area, with a mean of 4.90, while class management is the weakest, with a mean of 3.86. Curriculum and instruction scored 4.77, human resources 4.42, and physical resources 4.22, leading to an overall mean of 4.43. This categorizes the SSES Project as "satisfactorily implemented" across the three divisions in Caraga Region. The findings indicate that while schools have been effective in admissions and curriculum delivery, there remain opportunities to strengthen human resource support, expand leadership activities for learners, and improve laboratory and ICT facilities. This reflects Davis and Turner's (2020) argument that sustained professional development and resource allocation are vital to maintaining program quality.

Beyond quantitative measures, the qualitative findings revealed several facilitating factors contributing to the success of the SSES program. Teachers were identified as highly competent and resourceful, often improvising and sourcing materials to meet the advanced requirements of the SSES curriculum. Teacher 24 stressed that catering to fast learners requires not only competence but also innovation, as many textbooks and resources designed for regular classes do not align with SSES competencies. Parents also emerged as key facilitators, providing strong support through constant communication, active monitoring of progress, and even financing classroom improvements such as air conditioning. Teacher 22 recounted how parents voluntarily paid electricity bills to sustain such facilities. Partnerships with stakeholders, including local government units and private organizations, further strengthened the program. For example, Therma Marine Inc. developed functional science laboratories and provided laboratory apparatus, while LGUs supplied tablets and books. These findings confirm the conclusions of Rodriguez et al. (2021) and Smith et al. (2020) that teacher resourcefulness, parental involvement, and community partnerships significantly contribute to program effectiveness and sustainability.

At the same time, several hindering factors were identified. Chief among them was the lack of specific learning resources tailored for the SSES curriculum. Teachers explained that while DepEd provides textbooks, these are the same as those used in regular classes and are often inadequate for the advanced learning competencies required in SSES. Teacher 5 emphasized the urgent need for specialized books and materials, while Teacher 24 noted that since the program's inception, no distinct textbooks had been provided for SSES learners.

Laboratories, though present, were described as under-equipped or outdated, with many devices no longer functional. Financial support was another pressing concern. Unlike in earlier years when a dedicated national budget supported the program, funding is now subsumed under general MOOE allocations, leaving limited resources for SSES-specific activities, trainings, or benchmarking trips. Teachers noted that professional development had suffered as a result, with many reporting that they had never attended SSES-focused seminars. School heads admitted that while professional growth was included in School Improvement Plans, priority was given to technology training rather than SSES specialization. These findings reflect the studies of Mensah et al. (2021), Tartavulea et al. (2020), and Gopinathan (2016), which emphasize the critical roles of adequate resources, financial support, and professional training in successful program implementation.

In light of these findings, an action plan was proposed to strengthen the SSES Project. This plan addresses key areas including policy review, admissions, teacher development, student leadership training, funding, research initiatives, learner activities, and stakeholder partnerships. Specific strategies include organizing orientation sessions on updated SSES policies, developing clear admission guidelines, conducting leadership and training seminars for teachers and students, and securing additional funding through partnerships and donations. Research initiatives are also encouraged to ensure evidence-based improvements in teaching and learning practices. Furthermore, stakeholder partnerships with local government units, private organizations, and NGOs are envisioned to provide sustained material and financial support. The proposed action plan serves as a roadmap for enhancing the SSES program, ensuring that it continues to develop competent, innovative, and globally competitive learners.

CONCLUSION

This study examined the level of implementation of the Special Science Elementary School (SSES) Project in three divisions of the Caraga Region, employing a descriptive research design that integrated both quantitative and qualitative approaches. Data were collected from teachers and school heads through survey questionnaires based on DepEd Caraga Regional Memorandum No. 0278, s. 2022, and validated interview guides. Quantitative findings were analyzed using means to measure the extent of implementation, while qualitative responses were examined through thematic analysis to determine the facilitating and hindering factors affecting the program.

The results indicated that the overall implementation of the SSES Project in the three divisions was rated as satisfactorily implemented, with an overall mean of 4.43. Among the five major areas assessed, the admission process (mean of 4.90) and curriculum and instruction (mean of 4.77) achieved high levels of implementation, reflecting strict adherence to standardized procedures and strong compliance with DepEd policies on instruction and assessment. In contrast, class management (mean of 3.86), human resources (mean of 4.42), and physical resources (mean of 4.22) were only satisfactorily implemented. The findings pointed to specific areas that require improvement, including the updating and full utilization of science and computer laboratories, greater engagement of teachers in sustained professional development activities, more explicit and adequate budget allocation for SSES under the school MOOE, and increased learner participation in leadership and development programs.

The qualitative findings further revealed that several factors facilitated the success of the SSES Project. Teachers emerged as the most significant resource, demonstrating competence, competitiveness, and resourcefulness in addressing the demands of the specialized curriculum. Parents also played a vital role by actively supporting their children's learning, maintaining constant communication with teachers, and contributing to classroom and school improvements. Stakeholder partnerships, particularly with local government units and private organizations, provided essential support such as functional laboratories, equipment, and digital devices. At the same time, the study also identified hindering factors that constrained program implementation. These included the lack of appropriate and specific learning resources tailored for the SSES curriculum, insufficient financial support due to the incorporation of SSES funding into general MOOE allocations, and limited opportunities for teachers' professional growth and development, particularly in attending seminars and trainings directly related to SSES.

The findings underscore that while the SSES Project in the Caraga Region has been effective in providing enriched educational opportunities for gifted learners, targeted interventions are necessary to address existing gaps. By systematically responding to the hindering factors and capitalizing on the facilitating ones, the program can further strengthen its delivery of high-quality science and mathematics education. This, in turn, will ensure that learners are better prepared for future academic challenges and professional opportunities, fulfilling the objectives of the SSES Project to produce scientifically literate, innovative, and globally competitive citizens.

In light of these conclusions, an enhancement program was proposed to address the key issues identified. The action plan outlines measures such as the review of SSES policies, improved admission processes, sustained teacher training and workshops, strengthened financial support, research initiatives, expanded student leadership development, and continued collaboration with stakeholders. The plan emphasizes that effective implementation depends on the active role of program focal persons, who must conduct thorough needs assessments, secure resources for learning materials, and provide professional development opportunities for teachers. Teachers, in turn, are encouraged to participate in regular trainings, collaborate with peers, and adopt innovative strategies to enhance classroom instruction. Learners should be motivated to actively participate in developmental activities, fostering higher-order thinking skills and innovation. Parents and stakeholders are called upon to continue their vital role in supporting the program, while future researchers are encouraged to build on this study by exploring further aspects of SSES implementation in other regions.

Overall, the study concludes that the SSES Project in the Caraga Region is satisfactorily implemented but holds significant potential for improvement. By addressing gaps in resources, funding, and professional development, and by leveraging the commitment of teachers, parents, and stakeholders, the program can be elevated to a higher standard of excellence. The proposed enhancement program thus serves as both a guide and a call to action for ensuring the sustainability and success of SSES, ultimately contributing to the advancement of quality science education in the Philippines.

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