FMDB *Transactions on Sustainable Techno Learning*

Implementation of Special Curricular Programs in Science for Elementary in the Schools Division of Antique

Mark Joseph F. Salinog[1,*], Runato A. Basañes[2]

[1]Department of Education, Schools Division of Antique, San Jose, Antique, Philippines.
[2]Department of Education, University of Antique, Sibalom, Antique, Philippines.
markjoseph.salinog@antiquespride.edu.ph[1], runato.basanes@antiquespride.edu.ph[2]

Abstract: This sequential-explanatory qualitative study examined the Antique Schools Division SCPS implementation for a development strategy. SCPS was used by 70 English, Science, and Math instructors from 10 public primary schools. The SCPS teachers' profile form, questionnaire–checklist on implementation evaluated by teacher-respondents, and survey checklist on compliance were used. The school's SCPS implementation, best practices, focus groups, and surveys offered qualitative data. Independent Samples T-tests, linear regression, and multinomial logistic regression inferred; frequency, percentage, meaning, and standard deviation described. Study: SCPS-implementing schools meet teacher credentials, curriculum, and educational resource standards. SCPS master's teachers taught SSES. Some taught SCPS for 6 years, attended 6 SCPS trainings, specialised in STEM, and taught maths and science. "Outstanding" teachers ruled the program. SCPS schools were "Very well implemented." Excellent academic success, with SPCS graduates enrolled in SPSTE secondary schools on average. EESM needs upgrading to provide instructional tools. Innovative teaching, differentiated education, instructional resource utilisation, financial aid and resource allocation, orientation, and effective communication are used in SCPS-implementing schools. SCPS types differ in instructional materials and managerial support but not in objective realisation, learning framework, or stakeholder participation. Subject taught, teaching position, highest education, years teaching SCPS, and training did not predict SCPS implementation across all dimensions. Teacher performance assessments show a learning framework, SCPS-type management assistance, and specialisation instructional resources. The development strategy, "Advancing Science Education," increased SCPS implementation in Antique based on this study.

Keywords: Instructional Resources; Learning Framework; Management Support; Objective Realization; Sequential-Explanatory Qualitative Research; Stakeholder Engagement; Special Curricular Programs in Science.

Received on: 27/01/2024, **Revised on:** 01/04/2024, **Accepted on:** 03/07/2024, **Published on:** 07/09/2024

Journal Homepage: https://www.fmdbpub.com/user/journals/details/FTSTL

DOI: https://doi.org/10.69888/FTSTL.2024.000337

Cite as: M. J. F. Salinog and R. A. Basañes, "Implementation of Special Curricular Programs in Science for Elementary in the Schools Division of Antique," *FMDB Transactions on Sustainable Techno Learning*., vol. 2, no. 3, pp. 102–124, 2024.

1. Introduction

The Philippines, like other countries, intends to prioritize the development of scientifically literate learners. Pawilen and Sumida [7] stated that learners well-versed in various scientific skills can make significant contributions to the country's economic development. The Philippines was once one of the best in Asia in terms of its educational system. Currently, it is perceived as

*Corresponding author.

lagging behind other countries, particularly in the Southeast Asian region, in terms of both quality and accessibility. The 2022 Program for International Student Assessment (PISA) results conducted by the Organization for Economic Cooperation and Development (OECD) revealed that students in the Philippines are five to six years behind in learning competencies. The country earned nearly 120 points more than the average score in Science, Mathematics, and English, placing it in the bottom ten of 81 countries in these three categories for the second time. To deliver quality, relevant, and globally competitive education, the Department of Education (DepEd) undertakes initiatives and innovations to improve the academic performance of learners and address existing challenges, particularly in English, Science, and Mathematics. One of these was the establishment of "Science High Schools" (DO No. 69 s. 1993). It was stated in this DepEd Order that a science high school has an enriched Science, Mathematics, and English Curriculum, in addition to the standard requirements of the New Secondary Education Curriculum (NSEC).

In the Schools Division of Antique, Special Curricular Programs in Science (SCPS) for Elementary, such as the Special Science in Elementary School (SSES) Project (DO No. 57 s. 2011; DO No. 73 s. 2008) and the Enhanced English, Science, and Mathematics (EESM) Programs (DM. No. 114, s. 2013) were implemented. These programs aim to enrich the curriculum for elementary learners in core areas such as English, Science, and mathematics, focusing on developing problem-solving skills in a scientific and technological context. They act as feeder schools for Science and Technology-oriented high schools nationwide. Through enhanced and enriched instruction, these special curricular programs also recognize learners' multiple intelligences. They are envisioned to develop research-oriented, innovative, and critical thinkers with positive values, becoming competitive citizens of the community and society in the 21st century. The study's central aim was to assess the level of implementation of Special Curricular Programs in Science for elementary schools in the Schools' Division of Antique, Philippines. The specific objectives were to:

- Determine the level of compliance with the Special Curricular Programs in Science requirements in terms of teachers' qualifications, curriculum and instruction, and educational resources and facilities.
- Determine the profile of teachers under the Special Curricular Programs in Science in terms of a teaching position, highest educational attainment, type of SCPS handled, number of years in teaching SCPS, number of training attended related to subject taught, subject/s taught in the program, area of specialization, and performance rating.
- Determine the level of implementation of the Special Curricular Programs in Science as to objective realization, learning framework, instructional resources, management support, and stakeholder engagement when taken as an entire group and when categorized according to the type of special curricular program in Science offered.
- Determine the performance of the implementing schools of the Special Curricular Programs in Science in terms of learners' academic achievement and percentage of graduates enrolled in secondary schools with Special Programs in Science, Technology, and Engineering (SPSTE) curriculum and Science High Schools.
- Find out the best practices of the schools implementing the Special Curricular Programs in Science for elementary school.
- Find out the significant difference in the level of implementation of the Special Curricular Programs in Science for elementary, considering the type of special curricular program in Science offered.
- Find out which of the profile variables predicts the level of Special Curricular Programs in Science implementation.
- Develop a plan to improve the implementation of the Special Curricular Programs in Science for elementary schools.

To realize the success of a specific program implementation, assessment and evaluation are important in driving continuous improvements in both educational quality and program implementation. Assessment of specialized programs implemented in schools serves various purposes, including administrative, pedagogical, and managerial improvements. Quality evaluation involves assessment of all aspects, including the implementation of special programs and their impact on students. It is the first step towards quality improvement and quality development. Although the Special Curricular Programs in Science for Elementary have been implemented in the Division of Antique for quite some time, there have been limited attempts to assess their level of implementation, particularly in the areas of objective realization, learning framework, availability of instructional resources, and support from school administrators. Stakeholders play a crucial role in further enhancing the program and its implementation.

1.1. Theoretical Background

This study was grounded in the Logic Model of program evaluation. This systematic and visual representation outlines the logical connections between the various components of a program, illustrating the relationships between inputs, activities, outputs, and outcomes. It serves as a planning and evaluation tool to understand the theoretical underpinnings of a program. By depicting the sequential flow of resources, activities, and anticipated outcomes, the Logic Model helps clarify the program's logic and objectives. It is valuable for assessing the effectiveness and efficiency of interventions, allowing for informed decision-making, and identifying potential areas for improvement in educational programs or other initiatives, such as Special

Programs in Science. This study was also conceptualized based on Daniel Stufflebeam's Context, Input, Process, and Product (CIPP) Model for evaluation, which provides a comprehensive approach to evaluating educational programs. It aimed to examine the multiple dimensions of an educational intervention, including its context, the inputs required for its implementation, the processes involved in delivering it, and the resulting products or outcomes.

The CIPP framework was developed as a means of linking evaluation with program decision-making. It aims to provide an analytic and rational basis for program decision-making based on a cycle of planning, structuring, implementing, reviewing, and revising decisions, each examined through a different aspect of evaluation – context, input, process, and product evaluation. Stufflebeam and Shinkfield [3] viewed evaluation in terms of the types of decisions it served and categorized it according to its functional role within a system of planned social change. The CIPP Model is an attempt to make evaluation directly relevant to the needs of decision-makers during the different phases and activities of a program. The CIPP model for evaluation encompasses the following components: context evaluation, input evaluation, process evaluation, and product evaluation. The context evaluation provides a rationale for determining objectives, defines relevant and actual environments, and identifies unmet needs and unused opportunities. On the other hand, the input evaluation determines the most effective use of resources, assesses the capabilities of the responsible agency, identifies strategies for achieving objectives, and designs for implementing a selected approach. The process evaluation detects or predicts the design or implementation of procedures, provides information for programming decisions, and maintains a record of the procedure as it occurs. The final dimension is product, which refers to the outcomes or results of the program. Product evaluation involves assessing changes in student achievement, attitudes, or behaviors, as well as other indicators of program effectiveness. By evaluating the products, evaluators can determine if the program is achieving its intended goals and making a positive impact on students.

2. Literature Review

2.1. Special Curricular Programs in Science for Elementary (SCPS)

According to DepEd Order No. 56 s. The 2012 DepEd Policy Guidelines on the Implementation of Special Curricular Programs serve as a support system for strengthening the goals of the K to 12 programs, particularly in achieving research-oriented and scientifically inclined learners. The establishment of Special Curricular Programs in Science for Elementary Schools, including Special Science in Elementary Schools (SSES) Project and Enhanced English Science and Mathematics (EESM) Programs, offers a promising approach to improving early science education. These programs, as noted by Bunch [6], focus on core subjects such as English language skills, Science, and Mathematics education. They cater to diverse student populations, addressing both language acquisition and STEM proficiency, thereby contributing to the narrowing of achievement gaps in education. The program encompasses early science exposure, the necessity of qualified educators and suitable resources, and the potential to bridge educational gaps [9]. By adhering to best practices, aligning with educational policies, and actively involving parents and communities, these programs can make a substantial impact on the academic and personal development of young learners, setting them on a path to success in STEM fields and beyond.

To accommodate those who choose or wish to enroll in a Special Science School, the Philippine government, in its pursuit of providing an appropriate education for all gifted children, introduced the Special Science Elementary School Project (SSES Pro) under the Department of Education's Special Education Division in 2007. The goal of this project is to produce scientifically literate children from the primary level onwards. Graduates from these schools are expected to continue their secondary education in Science high schools all over the country. Although SSES is part of the public-school system, the project provides physical infrastructure and methodology different from those of other science classes being held at the primary level. As mentioned, this study's analysis primarily focuses on the processes of selecting students, the science curriculum, and the qualifications of teachers for the SSES project, spanning grades one to six.

2.2. Importance of Enrichment Programs for English, Science, and Mathematics Subjects

Enriched English, Science, and Mathematics subjects play a crucial role in the development of learners' academic skills and overall cognitive abilities. Enriched English subjects contribute to the development of language proficiency, critical thinking, and communication skills. Exploring the role of language used in classrooms is a focus of investigation worldwide, as it plays a significant role in the success or failure of educational systems [1]. Science subjects, on the other hand, foster curiosity, inquiry, and problem-solving skills among students. Enriched Science curriculum offers hands-on experiments, observations, and analysis, encouraging students to explore the natural world. It promotes scientific thinking, helping students understand the principles and processes underlying the physical, biological, and chemical sciences. Consequently, teachers must also consider contexts beyond the school science setting as a resource for science learning, as well as the appropriate use of technology in instruction as it becomes integrated into the education system through learning environments [5]. Enriched Mathematics subjects play a fundamental role in developing logical reasoning, quantitative analysis, and problem-solving abilities. According to Nelson and Sassi [2], using problem-based instruction has a positive impact on students' mathematical reasoning

and provides instruction that better prepares them for the 21st-century workplace. By focusing on logic algorithms and mathematical modeling, Mathematics subjects enhance students' critical thinking, numerical literacy, and computational skills, which are essential in many academic and professional contexts.

2.3. Factors Affecting the Successful Implementation of Special Programs in Science for Elementary

The successful implementation of the Special Programs in Science for Elementary relies on a comprehensive assessment that encompasses various aspects, including the objective realization, learning framework, availability of instructional resources, and administrative and stakeholder support. Each of these elements plays a crucial role in shaping the effectiveness and impact of the program and examining them collectively provides a holistic understanding of SSES and EESM implementation. Assessing program goals and objectives in the implementation of special programs involves evaluating whether learners achieve the intended learning outcomes. The need for a clear articulation of objectives extends beyond scientific knowledge to encompass critical thinking, problem-solving skills, and a genuine interest in scientific inquiry.

When implementing Special Programs in Science for Elementary, emphasis must be placed on aligning objectives with students' academic performance. Academic performance involves meeting goals, achievements, and objectives set in the program or course that a student attends. The learning methodologies are fundamental components of any educational program implementation. The curriculum must be designed to foster a deep understanding of scientific principles while being engaging and age-appropriate for elementary learners. A study by Talaue [4] explored the impact of curriculum design on students' motivation and interest in Science. A curricular program that extends Science learning through the engineered design of solutions is an innovative approach to foster both conceptual knowledge development and interest and motivation in Science and engineering. Instructional strategies employed by teachers in SSES and EESM also play a critical role in achieving program objectives. Research by Karacabey [10] highlighted the significance of differentiated instruction, including inquiry-based learning, research-based strategies, and student-centered approaches in enhancing scientific literacy and students' academic achievement. Teachers who facilitate interactive discussions, encourage curiosity, and provide opportunities for collaborative learning make significant contributions to achieving SSES objectives.

School administrators play a crucial role in the administrative management and instructional leadership in implementing Special Programs in Science for Elementary within the school. They form the culture and team spirit within the school [10]. Stakeholder engagement, on the other hand, is equally vital, and parents, in particular, play a crucial role in reinforcing the importance of science education at home. Insufficient stakeholder engagement can lead to a lack of support for the project and its outputs, which can quickly diminish the likelihood of success in implementing special programs. Open communication channels between schools and stakeholders facilitate a collaborative approach to support students' learning both inside and outside the classroom.

2.4. Assessment of Special Curricular Program Implementation

Assessment and evaluation are vital components of every school program, as they convey to stakeholders whether the program is successful or not. According to Nelson and Sassi [2], evaluation is a process of determining the quality or worth of achievement in terms of certain standards. Thus, it becomes a systematic procedure for determining the quality of measurement results, intending to improve and maximize the acquisition of educational outcomes, including knowledge, skills, attitudes, and habits. On the other hand, assessment indicates a wide selection of methods that educators use to evaluate, measure, and document the academic development of students in several aspects. Assessment of students is directed toward measuring their competence. Specifically, this process measures their progress toward attaining those competencies from their schools or parents who want them to master. High-quality assessment procedures take into consideration the fact that the student's performance on any task is influenced by the demands of the task itself, by the history and characteristics they bring to the task, and by the factors inherent in the context in which assessment is carried out. A crucial educational endeavor is evaluating a teacher’s performance. Its relevance in the context of school accountability for student learning cannot be underestimated. Accountability is a top priority in any educational program, and assessments are used to measure the effectiveness of teachers and their impact on student learning.

3. Research Methodology

This study employed a sequential-explanatory research design with 70 purposively selected SCPS teachers who handle English, Science, or Mathematics subjects from the 10 implementing schools of Special Curricular Programs in Science for Elementary in the Schools Division of Antique. Five schools were part of the Special Science in Elementary Schools (SSES) Project, while another five were part of the Enhanced English, Science, and Mathematics (EESM) Program. Nine (9) of the 10 schools implementing SCPS are central schools, while one (1) is a non-central school. For the qualitative part of the study, eighteen (18) SCPS teachers were selected through a simple random sampling method from a pool of seventy (70) teachers to participate

in survey interviews and focus group discussions. These participants were chosen to provide diverse insights and perspectives. Each of these teachers is anonymized and coded as P1, P2, P3, and so on, up to P18, to maintain confidentiality and unbiased representation. The data-gathering instrument used in this study was a duly validated researcher-made questionnaire checklist on the implementation of the SCPS. This instrument is composed of the following parts:

Part I showed the profile of the SCPS teachers that are handling English, Science, or Mathematics subjects under the SCPS in terms of teaching position, highest educational attainment, type of curricular program handled, number of years in teaching classes for SCPS, number of SCPS-related training attended, subject/s taught, area of specialization, and performance rating based on the Individual Performance and Commitment Review Form (IPCRF) ratings for the past 3 years. The researcher personally obtained the SCPS teacher's average rating from the school records confidentially, with permission from both the Teacher and the school principal. Part II was composed of a four-point Likert-type scale items survey questionnaire checklist focusing on the level of compliance of SCPS implementing schools as to teachers' qualification, curriculum and instruction, and educational learning resources and facilities using the following response categories: 4 – Always, 3 – Often, 2 – Sometimes, 1 – Never. The SCPS coordinator accomplished this. The questionnaire checklist was anchored in the Policy Guidelines for the Implementation of the Special Science in Elementary Schools Project and the Enhanced English, Science, and Mathematics Program, as well as the Monitoring and Evaluation Tool for Special Science in Elementary Schools, Science, Technology, Engineering, and Mathematics High Schools Programs. Part III included the survey questionnaire checklist, which consisted of four-point Likert-type scale items focusing on the level of implementation of SCPS, considering dimensions on objective realization, learning framework, instructional resources, management support, and stakeholder engagement using the following response categories:

4 – Always, 3 – Often, 2 – Sometimes, 1 – Never. The questionnaire checklist was anchored on DepEd Order No. 57 s. 2011 (DepEd Policy Guidelines on the Implementation of Special Curricular Programs), DepEd Order No. 20, s. 2015 (Guidelines on the Utilization of Financial Assistance to Schools Implementing Special Curricular Programs), DepEd Order No. 18. 2020 (Policy Guidelines for the Provision of Learning Resources in the Implementation of the Basic Education Learning Continuity Plan), and the Monitoring and Evaluation Tool for Special Science in Elementary Schools, Science, Technology, Engineering, and Regional Science High Schools Programs. Part IV involved the General Weighted Average from Grade I to Grade V of the currently enrolled Grade VI SCPS learners. The researcher personally obtained the learner's general weighted average from their permanent record (School Form 10), with permission from the principal and the class adviser, to ensure confidentiality. Part V focused on the Tracer Report for SCPS graduates, examining the percentage of graduates currently enrolled in secondary schools implementing the Special Program in Science, Technology, and Engineering (SPSTE) curriculum and Science High Schools over the past three years. These tracer reports are sourced from the school files of SCPS graduates and are included as part of the year-end accomplishment report submitted to the Division office.

Finally, Part VI solicited the school's best practices in SCPS implementation, focusing on objective realization, learning framework, instructional resources, management support, and stakeholder engagement. This approach was employed to gather qualitative data through survey interviews (both written and audio-recorded) and focus group discussions, utilizing open-ended questions that followed a content and thematic data analysis method to describe the results. Appropriate instructions were indicated in each part of the questionnaire to guide the respondents in answering the research instruments.

4. Results and Discussions

4.1. Level of Compliance of the Special Curricular Programs in Science

The level of compliance of the Special Curricular Programs in Science (SCPS) regarding teachers' qualifications, curriculum and instruction, and educational resources and facilities was determined by computing the mean scores and standard deviation.

Teacher's qualifications: As revealed by the data presented in Table 1, the level of compliance of Special Curricular Programs in Science as to teachers' qualifications was "Very Highly Complied," with an obtained overall mean score of 3.60 (SD=0.24). This result implies that the SCPS adhered closely to established standards for teachers' qualifications, ensuring that teachers possess the necessary skills and expertise to deliver the curriculum effectively. This high level of compliance also shows a strong framework for educational quality, emphasizing that SCPS teachers are equipped to provide learners with comprehensive and engaging learning experiences.

The result also revealed that the SCPS implementing schools in the Division of Antique strongly comply with the provisions in DepEd Order No. 57 s. 2011 or Policy Guidelines in the Implementation of the Special Science in Elementary Schools and Enhanced English, Science, and Mathematics Program, specifically in terms of teachers' eligibility for the program. Table 1 reveals the data.

Table 1: Level of compliance of the special curricular programs in science as to teachers' qualifications

Items	Mean	SD	Desc.
1. Consists of Highly Proficient (Master Teacher) and Proficient Educators. (Teachers 1 to 3)	3.90	0.36	VHC
2. Have a minimum of three years of teaching experience in relevant subjects.	4.00	0.37	VHC
3. Have rendered four years or more of dedicated service to the SSES/EESM program.	4.00	0.37	VHC
4. Demonstrate Very Satisfactory or Outstanding Proficiency based on IPCRF.	4.00	0.37	VHC
5. Have at least a master's degree/postgraduate unit or certification in a relevant field.	3.70	0.34	VHC
6. Have specialized or relevant training in STEM, SSES-related, English, Science, and Mathematics.	3.30	0.36	VHC
7. Taught the subjects aligned with their areas of specialization.	3.30	0.40	VHC
8. Have undertaken school or district-based action research or science investigatory projects.	2.90	0.44	HC
9. Have relevant training and coaching experience for academic and co-curricular activities in different subject areas, specifically in Science, Mathematics, and English.	3.70	0.13	VHC
10. Have a clear professional and personal development plan, as detailed in their Individual Plan for Professional Development (IPPD), formulated annually.	3.90	0.16	VHC
Overall Mean	3.60	0.24	VHC

Legend:

3.26 – 4.00 - Very Highly Complied (VHC)
2.51 – 3.25 - Highly Complied (HC)
1.76 – 2.50 - Slightly Complied (SC)
1.00 – 1.75 - Not Complied (NC)

Curriculum and Instruction: The results showed that the level of compliance of Special Curricular Programs in Science concerning curriculum and instruction was "Very Highly Complied," with an overall mean score of 3.56 (SD = 0.37). This suggests that the implementing schools under the SCPS are rigorously following the program's standards and guidelines for curriculum design and instructional methods. The compliance level indicates an excellent approach to delivering science education for learners to receive comprehensive and effective instruction aligned with educational objectives. It can also be deduced from the results regarding curriculum and instruction that the SCPS implementing schools in the Division of Antique strongly adhere to the requirements stipulated by DepEd in the monitoring and evaluation tool for Special Science in Elementary Schools, Science, Technology, Engineering, and Regional Science High Schools Programs. Table 2 presents the data.

Table 2: Level of compliance of the special curricular programs as to curriculum and instruction

Items	Mean	SD	Desc.
1. The school utilizes a prescribed Region/Division-based SSES/EESM Curriculum or MELC	3.50	0.09	VHC
2. Every Teacher has CG, TG, LM, PSSLC, PELC/SSES/EESM Manual	3.60	0.09	VHC
3. The management, delivery, and implementation of instruction are regularly monitored and evaluated.	3.40	0.10	VHC
4. Issues, concerns, and problems arising from conducted classroom observations are addressed with proper solutions, interventions, and recommendations to improve mastery of required learning competencies through LAC Sessions or Focus Group Discussions.	3.50	0.08	VHC
5. Education Program Supervisors, School Heads (SHs), and Deputy Heads of Schools (DHs) provide coaching, mentoring, and training to enhance the pedagogical skills of teachers.	3.60	0.08	VHC
6. Enhancement/enrichment/culminating activities in different learning areas are conducted for at least 1 per grading period.	3.50	0.09	VHC
7. Teachers are experts in their field of specialization and continually upgrade their skills by attending webinars, seminars, training, and workshops to enhance their professional expertise.	3.70	0.09	VHC

8. Checking, validating, and analyzing assessment tests on a per-grading-period basis is practiced.	3.50	0.08	VHC
Remediations and Interventions based on the results of summative analyses are carried out to address the identified learning gaps or to enhance instruction. 9. Remediations and Interventions based on the results of summative analyses are carried out to address the identified learning gaps or to enhance instruction.	3.60	0.07	VHC
10. Localization and indigenization of the curriculum receive management support and are developed to make learning more relevant and culturally responsive to learners' needs.	3.60	0.07	VHC
Overall Mean	3.56	0.37	VHC

Legend:

3.26 – 4.00 - Very Highly Complied (VHC)
2.51 – 3.25 - Highly Complied (HC)
1.76 – 2.50 - Slightly Complied (SC)
1.00 – 1.75 - Not Complied (NC)

Educational resources and facilities: Based on the data presented in Table 3, the level of compliance of SCPS to educational resources and facilities was "Very Highly Complied," with an overall mean score of 3.50 (SD=0.27). It can be gleaned from the result that the implementing schools under the SCPS adequately meet the standards set for resources and facilities required for effective teaching and learning. It can also be inferred that their commitment to providing a conducive environment for SCPS learners likely resulted in improved learning outcomes and increased engagement. As stated in DepEd Order No. 57 s. In 2011, the availability of resources, including facilities, equipment, and teachers, shall conform to the standards as the basis for determining whether the school has adequate infrastructure and faculty to deliver the program, both at the core curriculum and career pathways levels. This supports Lazar's (2020) claim that adequate learning materials are essential for effective teaching and learning. The integration of technology, including audio-visual educational materials and blended learning, is also essential as it enhances student engagement and supports self-paced learning.

Table 3: Level of compliance of the special curricular programs as to educational resources and facilities

Items	Mean	SD	Desc
1. Science classrooms, computer facilities, and laboratory spaces are well-structured and organized and are conducive and safe for learning.	3.10	0.34	HC
2. 1:1 student–chair/ 1:2 pupil-desk ratio	3.90	0.32	VHC
3. Clean & orderly classrooms	4.00	0.32	VHC
4. Evident utilization and inventory of the laboratory and its equipment, apparatus, and chemicals	3.00	0.27	HC
5. 30-35 learners: teacher ratio	3.70	0.22	VHC
6. 1 Learner's Material: Student/Subject area	3.40	0.23	VHC
7. Utilization of additional reference materials	3.40	0.25	VHC
8. Appraisal of computer lab facility (programs, ICT-based resources, Wi-Fi connectivity)	3.30	0.28	VHC
9. Availability of other ancillary services such as Clinic, Canteen, Speech Lab	3.30	0.31	VHC
10. Appropriate lighting and ventilation	3.90	0.28	VHC
Overall Mean	3.50	0.27	VHC

Legend:

3.26 – 4.00 - Very Highly Complied (VHC)
2.51 – 3.25 - Highly Complied (HC)
1.76 – 2.50 - Slightly Complied (SC)
1.00 – 1.75 - Not Complied (NC)

4.2. Profile of Teachers in Special Curricular Programs in Science

This study aimed to determine the profile of teachers in the Division of Antique, Philippines, who are involved in special curricular programs in Science, specifically those handling English, Science, and Mathematics subjects. Specifically, teaching position, highest educational attainment, type of SCPS handled, number of years in teaching SCPS, number of training courses

attended related to the subject area taught, subject taught, area of specialization, and performance rating were considered in this study.

Teaching Position: Data revealed that out of 70 teachers under the SCPS, 30, or 43%, are proficient teachers, and 40, or 57%, are highly proficient teachers. This data underscores a notable presence of skilled educators, with a majority falling into the highly proficient or master teacher category. The result shows the prevalence of advanced pedagogical skills among SCPS teachers. As instructional leaders, master teachers seek ways to support and encourage their colleagues as they fulfill their responsibilities to facilitate learners' learning through coaching and mentoring.

Highest Educational Attainment: In terms of highest educational attainment, the results revealed that 31 or 44% of the SCPS teachers hold bachelor's degrees, 38 or 54% of them hold master's degrees, and 1 or 1% of the SCPS teachers hold a doctoral degree. This result highlights a considerable emphasis on postgraduate education, with a majority holding master's degrees. These findings were aligned with the guidelines stated in DepEd Order No. 57 s. 2011 or Policy Guidelines in the Implementation of the Special Science in Elementary Schools that the delivery of instruction under this program shall be handled by proficient teachers (Teachers 1 to 3) and highly proficient teachers (master teachers) whose qualifications include a degree/certification and who are guided by appropriate educational pedagogies and principles involving current trends and strategies in teaching and learning. However, encouraging teachers to pursue master's or doctoral courses is necessary, as it reflects a commitment to ongoing professional development and the enhancement of pedagogical skills.

Type of SCPS Handled: In terms of the type of SCPS handled, data showed that 36 or 51% of the teachers are handling classes under the Special Science in Elementary Schools (SSES) Program. SSES Program is a regionally accredited program that meets certain quality standards and recognition requirements set by the accrediting body, as stated in Division Memorandum No. 091 s. 2017 or the Recognition Requirements for Special Curricular Programs in Science. On the other hand, 34 or 49% of the teachers are handling classes under the Enhanced English, Science, and Mathematics (EESM) Program, a division-initiated specialized program that adheres to Division Memorandum No. 114, s. 2013. The result revealed a significant presence of both types of programs within the educational landscape.

Number of years in teaching Special Curricular Programs in Science: The data revealed that 20 or 29% of the teachers had been teaching for five years or less under SCPS, while 50 or 71% of them had been teaching for six years or more. This result indicates a higher proportion of experienced teachers, with the majority having six or more years of teaching experience under the SCPS. Such findings suggested a stable group of educators within the program, potentially contributing to its continuity, effectiveness, and the accumulation of pedagogical expertise over time [8]. These results were consistent with the directives outlined in DepEd Order No. 57 s. 2011, or the Policy Guidelines in the Implementation of the Special Science in Elementary Schools, which emphasized that teachers must be committed to maximizing the implementation of their Individual Plan for Professional Development (IPPD) and dedicating at least four years of service to the program without transferring during any school year.

Several training sessions related to the Subject Area were conducted: The results showed that 32 or 46% of the teachers had attended five or fewer. In comparison, 38 or 54% had attended six or more trainings. This highlights the strong enthusiasm among the majority of teachers for professional development and acquiring new knowledge, skills, and expertise through diverse training sessions related to their subject areas. These sessions aim to enhance their understanding of various teaching strategies, methods, approaches, and techniques, ultimately improving student achievement. As stated in DepEd Order No. 57 s. In 2011, teachers and school heads participating in the Special Curricular Programs in Science shall be provided with training as support for the implementation of IPPD. Training shall focus on Science, Math, and English, covering content, processes, strategies, approaches, instrumentation, and Management and Supervision.

Subject Taught: In terms of the subjects taught by SCPS teachers, the data revealed that 14 (or 20%) of the teachers teach English, 24 (or 34%) teach Science, 20 (or 29%) teach Mathematics, and 12 (or 17%) teach combined subjects. The distribution shows a wide range of subjects within SCPS, which reflects how teaching nowadays involves blending different areas of knowledge. English teaching connects language with Science, Mathematics, and other learning areas, stressing the value of Science, Technology, Engineering, and Mathematics education [6]. A significant number of teachers handling multiple subjects indicates that they are taking an all-around approach, helping learners to understand things fully and develop various skills. The result also highlighted that educators possess various roles in creating complete learning experiences.

Area of Specialization: In terms of area of specialization, the results showed that 49% (or 70%) of the teachers specialize in STEM subjects, and 21% (or 30%) specialize in non-STEM subjects. This strong focus on STEM subjects in the presented distribution reflects the program's emphasis on building critical thinking, analytical skills, and scientific disciplines. The result also implies that the subjects handled by the SCPS teachers are "Aligned" with their area of specialization. These findings demonstrate compliance with the policy guidelines, which stipulate that teachers under the SCPS should possess expertise in

Science and Mathematics or undergo relevant training, provided they have at least three years of teaching experience in the respective subject areas (DO No. 57, s. 2011). On the other hand, a smaller percentage of teachers who specialize in non-STEM subjects have a crucial role in providing a well-rounded education. This distribution indicates a comprehensive approach to elementary science education for SCPS learners, providing a balanced curriculum that prepares them for future academic endeavors.

Performance Rating: In terms of the performance rating of teachers under the SCPS based on their Individual Performance Commitment and Review Form (IPCRF), the results revealed that 67 or 96% of the teachers obtained an "Outstanding" performance rating. In comparison, 3 or 4% of them received a "Very Satisfactory" performance rating. None of them obtained a descriptive rating of Satisfactory or Poor. This result indicates a notably high level of performance among teachers in Special Curricular Programs in Science, with a majority achieving an Outstanding descriptive rating. This also demonstrates a commendable proficiency and effectiveness in delivering instruction within the specialized science program. Table 4 presents the data.

Table 4: Profile of teachers in special curricular programs in science

Variables	f	%
Teaching Position		
Proficient Teachers (T1 – T3)	30	43
Highly Proficient Teachers (Master Teachers)	40	57
Highest Educational Attainment		
Bachelor's Degree	31	44
Master's Degree	38	54
Doctoral Degree	1	1
Type of SCPS Handled		
Special Science in Elementary Schools	36	51
Enhanced English, Science, and Mathematics	34	49
Number of years in teaching SCPS		
5 years and below	20	29
6 and above	50	71
Several training sessions related to the Subject Area were conducted.		
5 and below	32	46
6 and above	38	54
Subject Taught		
English	14	20
Science	24	34
Mathematics	20	29
Combination of Subjects	12	17
Area of Specialization		
STEM Subjects	49	70
Non-STEM Subjects	21	30
Performance Rating		
Outstanding (4.500 – 5.000)	67	96
Very satisfactory (3.500 – 4.499)	3	4
Satisfactory (2.500 – 3.499)	0	0
Poor (below 1.499)	0	0

4.3. Level of Implementation of Special Curricular Programs in Science

Entire group: As revealed by the data in Table 5, the level of implementation of Special Curricular Programs in Science when taken as an entire group was "Very well implemented" (M=3.56, SD=0.27). This result demonstrates the widespread adoption and implementation of SCPS in the Division of Antique, following DepEd Order No. 57, s. 2011. This finding underscores a strong commitment to enhancing science education through specialized curriculum initiatives, demonstrating a collective dedication among teachers, school administrators, and stakeholders to enriching learning experiences for SCPS learners. Considering the values of the mean for each dimension, objective realization obtained the highest mean value of 3.79 (SD=0.21), described as "Very well implemented." This shows an effective implementation and alignment of the programs' intended goals and objectives. The result affirms the finding of Stufflebeam and Shinkfield [3] that the quality of program implementation plays a significant part in bringing about outcomes. If a program is implemented poorly or even moderately

well, its goals are unlikely to be achieved, or the results will be less significant. With high-quality implementation, success is more likely to occur. Effectively implemented programs have a better chance of achieving their intended outcomes and producing positive results for learners.

Further scrutiny of the mean scores, a description of the "Very well implemented" level of implementation was also attained by other program dimensions such as learning framework (M=3.76, SD=0.19), instructional resources (M=3.30, SD=0.40), management support (M=3.47, SD=0.38), and stakeholder's engagement (M=3.57, SD=0.35). It can be inferred that the implementation of SCPS, when considered as a whole, is consistent across its dimensions and has been executed with a high degree of success.

Table 5: Level of implementation of special curricular programs in science

Variables	Mean	SD	Description
Objective Realisation	3.79	0.21	VW1
Learning Framework	3.76	0.19	VW1
Instructional Resources	3.30	0.40	VW1
Management Support	3.47	0.38	VW1
Stakeholder Engagement	3.57	0.35	VW1
Overall Mean	3.58	0.26	VW1

Legend:

3.26 – 4.00 - Very Well Implemented (VWI)
2.51 – 3.25 - Well Implemented (WI)
1.76 – 2.50 - Slightly Implemented (SI)
1.00 – 1.75 - Not Implemented (NI)

Type of curricular programs in Science offered: As revealed by the data in Table 6, the level of implementation of SCPS when classified as a Special Science in Elementary Schools (SSES) Program was "Very well implemented," with an overall mean of 3.63 (SD=0.35). Taking into consideration the values of mean, each dimension attained a "Very well implemented" level of implementation as to objective realization (M=3.82, SD=0.23), learning framework (M=3.79, SD=0.19), instructional resources (M=3.39, SD=0.40), management support (M=3.57, SD=0.36), and stakeholder's engagement (M=3.60, SD=0.35). This suggests a comprehensive implementation process supported by adherence to recognized standards and quality assurance measures associated with accreditation, as the program achieves a very high level of implementation across all dimensions.

On the other hand, data showed that the level of implementation of SCPS, when classified as an Enhanced English, Science, and Mathematics (EESM) Program, was also "Very well implemented," with an overall mean of 3.51 (SD=0.34). Considering the values of the mean for each dimension, objective realization (M=3.76, SD=0.19), learning framework (M=3.72, SD=0.19), management support (M=3.36, SD=0.38), and stakeholder's engagement (M=3.50, SD=0.37) had "Very highly implemented" level of implementation, while instructional resources (M=3.20, SD=0.34) had "Well implemented" level of implementation. This suggests that the EESM Program may require additional improvement in ensuring adequate instructional resources despite its overall effectiveness in achieving program objectives, implementing the curriculum, and garnering support from management and stakeholders. Taking into account the values of the overall mean of both programs, the SSES program obtained a higher overall mean value (3.63, SD=0.35) than the EESM program (3.51, SD=0.34). These results highlight the potential benefits of regional accreditation in enhancing program implementation.

The SSES program, with its regionally accredited status, appears to benefit from a more comprehensive and uniform implementation process, leading to consistently high ratings across all dimensions. Regional accreditation of the SSES program implies that the implementing schools have achieved certain quality standards and recognition requirements set by the accrediting body, as stated in Division Memorandum No. 091 s. 2017 or the Recognition Requirements for Special Curricular Programs in Science, which may contribute to the perceived credibility and adherence to established educational guidelines (DO No. 56 s. 2012). On the other hand, while the EESM Program, a division-initiated specialized program (DM No. 114, s. 2013), also demonstrates effectiveness, the absence of regional accreditation may result in some variability in resource provision, which could potentially impact instructional quality. This also suggests a need for further evaluation or improvement to meet the regional accreditation criteria, which may influence stakeholders' perceptions and decisions regarding program effectiveness and quality.

Table 6: Level of implementation of special curricular programs in science when categorized according to the type of curricular program in science offered

Variables	SSES			EESM		
	Mean	**SD**	**Description**	**Mean**	**SD**	**Description**
Objective Realisation	3.82	0.23	VW1	3.76	0.19	VW1
Learning Framework	3.79	0.19	VW1	3.72	0.19	VW1
Instructional Resources	3.40	0.40	VW1	3.20	0.38	W1
Management Support	3.57	0.36	VW1	3.36	0.37	VW1
Stakeholder Engagement	3.60	0.35	VW1	3.50	0.34	VW1
Overall Mean	3.63	0.35	VW1	3.51	0.34	VW1

Legend:

3.26 – 4.00 - Very Well Implemented (VWI)
2.51 – 3.25 - Well Implemented (WI)
1.76 – 2.50 - Slightly Implemented (SI)
1.00 – 1.75 - Not Implemented (NI)

4.4. Performance of Implementing Schools in Special Curricular Programs in Science

The performance of the implementing schools of Special Curricular Programs in Science, as to the learners' academic achievement and the percentage of graduates enrolled in schools with Special Programs in Science, Technology, and Engineering curriculum and Science High Schools, was determined by computing the overall mean. In terms of academic achievement, of the 310 currently enrolled Grade VI learners under the Special Curricular Programs in Science in the Division of Antique based on their general weighted average from Grades I to V indicated on their permanent record (SF 10), the result revealed that 284 or 92% were Outstanding, 26 or 8% were Very Satisfactory, and none of these learners obtained a descriptive rating of Satisfactory and Fairly Satisfactory. The overall obtained mean was 92.246, described as "Outstanding." Based on the data, it can be gleaned that there was a notably high standard of academic excellence among the Grade VI learners under the SCPS. These findings emphasized the effectiveness of the program in nurturing and cultivating learners' academic abilities, as evidenced by the remarkable percentage of learners achieving outstanding results.

In this regard, it may be inferred that the successful implementation of SCPS depends on aligning objectives with learners' academic performance. This supports Caballero's (2017) notion that academic success hinges on meeting goals and program objectives, which are shaped by factors such as intelligence, motivation, and study habits. Teachers' instructional expertise is also important. Bull et al. [5] emphasize the importance of inquiry-based learning, research-based strategies, and student-centered approaches in promoting scientific literacy and enhancing learners' academic achievement. Teachers who facilitate interactive discussions, encourage curiosity, and provide opportunities for collaborative learning. Furthermore, administrators' ability to execute programs and parental involvement significantly impact learners' achievement. Therefore, school managers should possess sufficient experience, as it can influence program implementation and learners' academic performance. Additionally, the home environment, particularly with educated parents, has a significant influence on learners' academic success through supportive environments and active involvement in their activities. Table 7 reveals the data.

Table 7: Performance of implementing schools in special curricular programs in science in terms of students' academic achievement

Variable	f	%
Academic achievement		
Outstanding (90 – 100)	284	92
Very Satisfactory (85 – 89)	26	8
Satisfactory (80 – 89)	0	0
Fairly Satisfactory (79 and below)	0	0
Total	310	100
Mean	92.246	
Description	Outstanding	

As to the percentage of SCPS graduates enrolled in secondary schools with Special Programs in Science, Technology, and Engineering (SPSTE) curriculum and Science High Schools (SHS), Table 8 shows that for three consecutive years, the

implementing schools of the SCPS in the Division of Antique has an overall percentage of 43.66% described as “Average.” This data suggests a moderate level of performance among SCPS graduates who continue their studies in secondary schools with Special Programs in Science, Technology, Engineering, and Math (STEM) High Schools. While the percentage is not exceptionally high, it still indicates a considerable number of learners who are opting for secondary schools with special science programs, reflecting a significant interest in STEM fields among learners.

Further scrutiny of Table 8 reveals that Schools A, B, C, H, and J are all categorized as "Average," indicating that their graduates' performance falls within expected norms compared to the overall mean. These schools likely demonstrate a consistent level of support and resources for learners preparing for the secondary special science curriculum, resulting in relatively stable enrollment rates over the three consecutive years. A commonality among these schools is their access to secondary schools in their respective districts that offer special science programs. Additionally, these schools conduct school-based review sessions for the entrance exams of special science programs, helping students prepare for the challenging admission tests. Furthermore, most of these schools are SSES schools, which means they are designed to provide a strong foundation in Science and math, further supporting students' readiness for secondary special science education.

Schools D, F, G, and I, however, were categorized as "Low," suggesting that their performance in terms of the percentage of graduates enrolled in secondary schools with SPSTE and SHS was below the overall mean. These schools may face challenges that need to be addressed, such as limited resources, inadequate support for high school entrance exam preparation, and lower motivation among learners to pursue further education in STEM fields. A significant commonality among these schools is their limited access to secondary schools in their respective districts that offer special science programs. This restricted access may hinder students' opportunities to continue their education in specialized science and technology environments, contributing to the lower enrollment rates in secondary schools with SPSTE and SHS programs. On the other hand, School E was categorized as "High," indicating that the school’s performance exceeds the average level. This school may serve as a model for successful practices in supporting SCPS graduates in their transition to secondary SPSTE or SHS education. Considering these results, it can be inferred that one of the primary factors impacting this outcome is the motivation of SCPS graduates to continue their education within a special science curriculum at the secondary level. The introduction of specialized science curricula at the elementary level not only harnesses the curiosity of highly motivated learners but also establishes the groundwork for subsequent academic achievements and career paths within STEM fields. On the other hand, those lacking motivation may be less inclined to pursue further studies in specialized science programs, which can impact enrollment rates.

Additionally, the experience learners gain in preparing for SPSTE and SHS entrance exams can significantly impact their performance. Adequate review and preparation can enhance learners' confidence and competence, increasing their likelihood of success. Factors such as access to quality review materials, guidance from teachers, and parental support can all contribute to a positive exam experience. Conversely, learners who lack access to such resources may face greater challenges in preparing for entrance exams, which could potentially impact their ability to gain admission to secondary Special Science Schools. Moreover, access to secondary schools offering SPSTE curriculum and SHS also directly impacts enrollment rates. Limited access to such schools can restrict opportunities for learners interested in pursuing STEM-focused education. Factors such as geographic location, school capacity, and admission criteria can all influence the accessibility of SPSTE and SHS. In areas where these schools are scarce or oversubscribed, learners may face greater competition for admission, potentially impacting their chances of qualifying for the SPSTE and SHS [4].

Table 8: Performance of implementing schools of special curricular programs in science in terms of percentage of graduates enrolled in secondary schools with spste curriculum and science high schools

School	School Year			Mean	Description
	2020-2021	2021-2022	2022-2023		
School A	31.82%	46.43%	53.57%	43.94%	Average
School B	66.67%	68.97%	60.71%	65.45%	Average
School C	44.12%	39.39%	44.83%	42.78%	Average
School D	35.00%	23.81%	31.58%	30.13%	Low
School E	61.76%	66.67%	78.79%	69.07%	High
School F	16.13%	23.08%	18.75%	19.32%	Low
School G	18.75%	22.22%	12.90%	17.96%	Low
School H	63.64%	71.88%	62.86%	66.12%	Average
School I	12.90%	18.18%	21.88%	17.65%	Low
School J	61.29%	65.63%	65.63%	64.18	Average
		Overall Mean		43.66%	Average

Legend:
68% - 100% - High
34% - 67% - Average
0% - 33% - Low

4.5. Best Practices of the Schools Implementing Special Curricular Programs in Science for Elementary

The implementation of Special Curricular Programs in Science for Elementary students in the Division of Antique, in terms of objective realization, learning framework, instructional materials, management support, and stakeholder engagement, was further elaborated. The results of the content and thematic qualitative research, which included survey interviews (both written and audio recorded) and focus group discussions (FGDs), emphasized the importance of this aspect. Participants were asked to respond to open-ended questions. Qualitative research question 1 focuses on the implementation of SCPS in terms of objective realization, which inquired about "the best practices in terms of attaining the goals and objectives of SCPS being implemented in their school." The themes that emerged from the analysis conducted to answer Research Question 1 are presented in Table 9, along with their descriptions and frequencies.

Table 9 shows that the most frequently occurring theme is "innovative teaching practices." In response to the open-ended question, "As a teacher, what are your best practices in terms of attaining the goals and objectives of the SCPS implemented in your school?" the majority of the participants pointed out that innovative teaching practices are being applied. This is in response to the SCPS goal of producing research-oriented and scientifically inclined learners. These include practices focusing on classroom-based enhancement activities in Science, literacy, and numeracy, experiential learning, the application of differentiated instruction, hands-on activities for learners, real-world examples, technology integration in lessons, game-based instruction, dynamic activities, and conducting science investigatory projects and experiments. This result was supported by the study conducted by Eshach and Fried [9], who elaborated that an innovative approach fosters both conceptual knowledge development and interest and motivation in Science and engineering. The findings also emphasized the importance of a dynamic curriculum that integrates real-world applications, hands-on activities, and interdisciplinary connections to make learning more meaningful.

Table 9: Open-ended responses regarding best practices of schools implementing special curricular programs in science as to objective realization

Theme	Description	Frequency
Innovative Teaching Practices	classroom-based enhancement activities on Science, literacy, and numeracy, experiential learning, application of differentiated instruction, hands-on activities for learners, real-world examples, technology integration in lessons, game-based instruction, dynamic activities, conducting science investigatory projects and experiments.	(14) P1, P2, P3, P4, P5, P6, P7, P12, P13, P14, P15, P16, P17, P18
Interdisciplinary Approach	Practical experiments, integration of real-world examples, integration, cross-subject integration, scope and sequence, subject alignment, research integration, project-based learning, the conduct of culminating activities (ReSciMath Fair), application of Contextualization, Localization, and Indigenization (CLI).	(8) P2, P4, P5, P8, P10, P14, P15, P18
Collaborative and Supportive Environment	Collaboration between the school and the educational sector, a support system, teamwork, open communication, involvement of teachers, learners, and parents, regular meetings, seminars, workshops, a community of practice, strong community involvement, parental involvement, and practical, hands-on learning.	(8) R1, R6, R7, R11, R12, R13, R17, R18
Assessment and Review Strategies	qualified instructors, application of assessment methods, technical assistance and mentoring for teachers, evaluating and mentoring learners for science high school application, modification of budget of work, mastery learning, alignment of learning competencies, formative and summative assessment, constructive feedback mechanism, conduct of monitoring and evaluation.	(11) P3, P7, P9, P11, P12, P13, P14, P15, P16, P17, P18

Qualitative research question 2 focuses on the implementation of SCPS in terms of the learning framework, which probed about "the best practices in terms of curriculum and instructions and the unique teaching strategies applied in teaching SCPS learners." The results present the themes that emerged from the analysis conducted to answer Research Question 2, along with descriptions and frequencies for each theme. Based on the data, the most frequently occurring theme is "differentiated instructions." In response to the open-ended question, "As a teacher, what are the best practices in terms of curriculum and instruction and the unique teaching strategies that you apply in teaching SCPS learners?" most of the participants responded that differentiated instruction was practiced in the classroom instructions. Their responses focused on how differentiated instruction was applied,

unique learning experiences, modified modules and activity sheets, classroom-based competitions, individualized learning, talent-based grouping, modification and enrichment, individual differences, scaffolding, culturally related activities, hands-on learning, utilization of educational resources, integration of real-life situation, and blended learning application. This study was further supported by Bunch [6], who highlighted the significance of differentiated instruction, including inquiry-based learning, research-based strategies, and student-centered approaches in enhancing scientific literacy and students' academic achievement. Teachers who facilitate interactive discussions, encourage curiosity, and provide opportunities for collaborative learning make significant contributions to achieving the objectives of the Special Science program. Table 10 depicts the result.

Table 10: Open-ended responses regarding best practices of schools implementing special curricular programs in science as to the learning framework

Theme	Description	Frequency
Differentiated Instruction	Application of differentiated instruction, unique learning experiences, modified modules, and activity sheets, classroom-based competitions (Mathlympics, Scilympics, English Fest), individualized learning, talent-based grouping, modification and enrichment, individual differences, scaffolding, culturally related activities, hands-on learning, utilization of educational resources, integration of real-life situation, blended learning application.	(16) P1, P2, P4, P5, P6, P8, P9, P10, P11, P12, P13, P14, P15, P16, P17, P18
Curriculum Integration	Integration of learning areas, inquiry-based learning, project-based learning, use of interdisciplinary activities, collaborative learning, application of the 5Es instructional model, integration of cultural elements, integration of technology into lessons, conduct of culminating activities, and alignment with learning frameworks and standards.	(14) P2, P3, P5, P6, P7, P8, P9, P11, P12, P13, P15, P16, P17, P18
Active Learning Strategies	Engagement in active learning, gamification incorporation, application of inquiry-based learning, project-based learning, interactive games, practice peer teaching, application of speech exercises, crafting engaging lesson plans, hands-on activities, utilizing vlogging and blogging for educational purposes, and integration of technology.	(11) P3, P4, P6, P7, P10, P13, P14, P15, P16, P17, P18
Assessment and Feedback	evaluating and mentoring learners for science high school application, employing formative and summative assessments, requiring performance task-related outputs, conducting culminating activities, assessment-aligned modifications, implementing constructive feedback, evaluation of learning progress, utilization of rubrics, continuous improvement application, assessment of learning styles and abilities, evaluation of teaching effectiveness.	(12) P1, P3, P5, P6, P7, P8, P9, P11, P13, P15, P17, P18

Qualitative research question 3 focuses on the implementation of SCPS in terms of instructional resources, which inquired on "the best practices in terms of utilizing SCPS-related learning materials, equipment, and facilities?". As presented in Table 11, the most frequently occurring theme is the "utilization of instructional resources." In response to the open-ended question, "As a teacher, what are the best practices in terms of utilizing SCPS-related learning materials, equipment, and facilities in your school?" majority of the responses focus on instructional resources utilization which include handling tangible instructional tools, using manipulative learning materials, operating laboratory equipment, demonstrating with models, utilizing modified modules and activity sheets, using laboratory apparatuses, integrating educational games into lessons, accessing multimedia resources, application on real-world situations, engaging in tangible learning experiences, community resources, and integrating audio-visual resources. The most frequently occurring theme in this study was further supported by Perez and Alieto [1]. They asserted that there is a significant relationship between the utilization of instructional materials and learners' performance. Using these materials produces greater achievement than not using them. They also note that the long-term use of instructional materials by teachers improves learners' achievement and attitudes.

Table 11: Open-ended responses regarding best practices of schools implementing special curricular programs in science as to instructional resources

Theme	Description	Frequency
Utilization of Instructional Resources	Handling tangible instructional tools, using manipulative learning materials, operating laboratory equipment, demonstrating with models, utilizing modified modules and activity sheets, using laboratory apparatuses, integrating educational games into lessons, accessing multimedia resources, applying real-world situations, engaging in tangible learning experiences, community resources, and integrating audio-visual resources.	(16) P1, P2, P3, P4, P5, P6, P7, P9, P11, P12, P13, P14, P15, P16, P17, P18

Integration of Technology	Accessing online platforms (Google Classroom, Google Meet, Zoom, etc.), utilizing computer-assisted instruction, exploring multimedia resources (laptops, desktops, tablets, etc.), developing digital literacy skills, ensuring internet connection, exploring educational apps and games, creating presentations through PowerPoint and instructional videos.	(14) P2, P4, P5, P6, P7, P8, P10, P11, P12, P13, P15, P16, P17, P18
Enrichment and Supplemental Materials	Utilization of supplementary materials, improvisation of instructional resources, conducting enrichment activities, using private textbooks as an additional reference, audio-visual materials enhancements, and using models and research journals.	(13) P1, P3, P4, P5, P8, P9, P11, P12, P13, P14, P15, P17, P18
Safety and Maintenance Considerations	Adequate supervision and guidance in utilizing instructional resources, maintenance of scientific equipment, safety protocols, proper care and handling of equipment and resources, repair and rehabilitation of facilities, usability, and safety training on the proper use of resources.	(5) 1, 7, 11, 13, 16

Qualitative research question 4 deals with the implementation of SCPS in terms of management support, which inquired about "the support and guidance provided by the school administrator on SCPS implementation." The themes that emerged from the analysis conducted to answer research question 4 were presented in Table 12 with the descriptions and frequencies of each theme. Data revealed that the most frequently occurring theme is "financial support and resource allocation." In response to the open-ended question, "What are the best practices in terms of providing support and guidance by your school administrator with SCPS implementation?" most of the participants pointed out that financial support and resource allocation are being prioritized. These include separate fund allocation for the Special Science program, budget allocation for activities and competitions, a school counterpart for review, funding support from school income-generating projects, allocation of funds for instructional materials and equipment, provision of equipment (such as Smart TVs and printers), and infrastructure development. The most frequently occurring theme in this study was further supported by Pawilen and Sumida [7], who indicated that school administrators should possess sufficient experience and proficiency, as they significantly impact program execution, including allocating and ensuring the prudent use of funds intended for a specialized program to achieve its purpose.

Table 12: Open-ended responses regarding best practices of schools implementing special curricular programs in science as to management support

Theme	Description	Frequency
Financial Support and Resource Allocation	Allotted separate funds for the Special Science program, budget allocation for activities and competitions, school counterpart for review, fund support from school income-generating project, allocation of funds for instructional materials and equipment, equipment provision (Smart TV, printers, etc), and infrastructure development.	(16) P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P13, P14, P15, P16, P17, P18
Recognition and Incentives	Acknowledgment of outstanding achievements of learners and teachers, commendation for exceptional performance, positive and motivating atmosphere, establishment of awards and recognition mechanisms, provision of rewards, certificates, medals, and other incentives.	(13) P1, P2, P3, P4, P8, P9, P11, P12, P13, P14, P15, P17, P18
Professional Development and Training	Organizing training sessions and seminars, supporting teachers' continuous professional development, capacity-building initiatives, continuous improvement, pedagogical skills enhancement, promotion collaboration and teamwork among educators, organizing learning action cell sessions, conducting mentoring and instructional supervision.	(12) P2, P3, P4, P6, P7, P9, P10, P12, P13, P16, P17, P18
Community Collaboration and Support	Engaging stakeholders in collaborative initiatives, building partnerships for educational support, encouraging community involvement in school initiatives, facilitating stakeholder involvement in the decision-making process, encouraging fund support from stakeholders for special science activities, and transparent communication about program initiatives.	(6) 3, 9, 11, 14, 17, 18

Qualitative research question 5 deals with the implementation of SCPS in terms of stakeholder engagement, which probed about "the best practices in terms of stakeholders' active involvement and collaboration with the SCPS implementation?" Table 13 presents the themes that emerged from the analysis conducted to answer Research Question 5, along with descriptions and frequencies of each theme. Based on the result, the most frequently occurring theme is "orientation and communication channels." In response to the open-ended question, "What are your school's best practices in terms of stakeholders' active involvement and collaboration with the SCPS implementation?" most of the participants' responses focused on orientation and communication. These include attending parent-teacher symposia, disseminating announcements through online platforms,

leaflets, or tarpaulins, utilizing communication channels, providing consistent updates on program implementation, maintaining transparent communication, and offering continuous guidance on the eligibility criteria for special science programs. In this study, the most frequently occurring theme was further supported by Hill et al. [8], who mentioned that open communication channels between schools and stakeholders facilitate a collaborative approach to support students' learning both inside and outside the school.

Table 13: Open-ended responses regarding best practices of schools implementing special curricular programs in science as to stakeholder engagement

Theme	Description	Frequency
Orientation and Communication Channels	Attending parent-teacher symposiums, dissemination of announcements through online platforms, leaflets, or tarpaulins, communication channels, consistent updates on program implementation, transparent communication, and continuous guidance on the eligibility criteria for special science programs.	(17) P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P12, P13, P14, P15, P16, P17, P18
Community Engagement	Conducting house-to-house visits, consistent parental involvement in learners' needs, supportive community organizations, support advocacy campaigns, strong collaboration with local officials (barangay), engagement with school alums, and participation in community activities (tree planting, coastal clean-up, etc.).	(6) 3, 6, 7, 11, 12, 17
Stakeholder Collaboration	Functional board of directors for special science programs, resource mobilization, fundraising projects to support special program activities, participation in decision-making teamwork, regular meetings with parent associations, projects, and parental involvement in planning activities	(10) P3, P6, P7, P8, P9, P10, P11, P12, P13, P17
Feedback Mechanisms and Agreement	Engaging stakeholders in collaborative initiatives, building partnerships for educational support, encouraging community involvement in school initiatives, facilitating stakeholder involvement in the decision-making process, and encouraging fund support from stakeholders in science	(8) P1, P2, P4, P5, P9, P12, P13, P18

4.6. Difference in the Implementation of Special Programs in Science for Elementary

To ascertain the significance of the differences in the level of implementation of the Special Curricular Programs in Science for Elementary in terms of objective realization, learning framework, instructional resources, management support, and stakeholder engagement, considering the type of curricular program offered, a t-test was used. The results revealed that a significant difference exists in the level of SCPS implementation in the areas of instructional resources ($t = 2.153$, $p > 0.05$) and management support ($t = 2.450$, $p > 0.05$). This implies that the implementing schools in the Division of Antique may benefit from better resource allocation and administrative support, potentially leading to more effective SCPS implementation and improved outcomes.

In light of these findings, educational resources play a crucial role in the delivery and effectiveness of SCPS. The significant difference in this area suggests that schools participating in the Special Science in Elementary Schools (SSES) program likely have more abundant and tailored resources compared to schools in the Enhanced English, Science, and Mathematics (EESM) program. These resources may include specialized science equipment, textbooks, laboratory facilities, and educational materials curated specifically for the special science curriculum. Such resources are essential for engaging students effectively and enhancing deeper understanding and interest in scientific subjects from an early age. The SSES program has additional funding aside from the school's MOOE and its stakeholders. In fact, in 2015, DepEd issued DepEd Order No. 20 or Guidelines on the Utilization of Financial Support to Schools Implementing Special Curricular Programs, wherein a special emphasis was placed on budget allocation to schools implementing Special Science in Elementary Schools (SSES), with a portion of this budget intended for learner development activities, the conduct of investigatory projects and student research, and the maintenance of facilities and devices such as science model apparatuses, scientific tools, and equipment.

However, schools under the Enhanced English, Science, and Mathematics (EESM) program were not eligible for inclusion in the list of recipient schools due to the absence of regional accreditation status. EESM schools may receive funding from their school's MOOE and other stakeholders to augment their educational learning resources or to pursue innovations as reflected in their approved School Improvement Plans (SIP) and also to guarantee the provision of quality education through flexible learning options indicated in schools' Basic Education Learning Continuity Plan (DepEd Order No. 18 s. 2020). Similarly, the importance of management support implies the importance of administrative assistance in implementing successful specialized programs, as they form the culture and team spirit within the school [10]. It means that the SSES program likely receives more comprehensive support from school administration, policymakers, and other stakeholders compared to the EESM program in

terms of SCPS implementation in the Division of Antique. As Talaue [4] averred, the school administrator serves as the organizer, leader, and sponsor of quality instructional operations. Thus, all those charged with the responsibility of managing schools should have enough experience, which may adversely affect program implementation and learners' academic performance.

In addition, the regional accredited status of schools under SSES could have a significant impact on program implementation through extensive administrative assistance, as accreditation often requires schools to meet rigorous standards, qualifications, and criteria, necessitating robust administrative support systems. This comprehensive support may include financial resources, professional development opportunities for teachers, access to instructional materials, and ongoing guidance from educational leaders. As a result, SSES schools may benefit from a more conducive environment for program implementation, leading to better outcomes for learners. On the other hand, there were no significant differences in the areas of objective realization, learning framework, and stakeholder engagement. The finding implies that regardless of the type of curricular programs offered, schools generally maintained consistency in achieving objectives, establishing a learning framework, and engaging stakeholders in implementing SCPS in the Division of Antique. This indicates a level of uniformity in these areas across both the SSES and the EESM programs. Table 14 depicts the data.

Table 14: T-test Results of the difference in the implementation of special curricular programs in science for elementary

Areas of Implementation	Mean		t value	df	Sig Level
	SSES	EESM			
Objective Realization	3.82	3.76	1.182	68	0.241
Learning Framework	3.79	3.72	1.437	68	0.155
Instructional Resources	3.39	3.20	2.153*	68	0.035
Management Support	3.57	3.36	2.450*	68	0.017
Stakeholder Engagement	3.60	3.50	0.723	68	0.472

4.7. Predictors of the Implementation of Special Curricular Programs in Science as to the Profile Variables

To determine the predictors of implementing Special Curricular Programs in Science in the Division of Antique, a linear regression analysis was employed to examine the factors of objective realization, learning framework, instructional resources, management support, and stakeholder engagement. Data revealed that, in terms of objective realization, variables such as teaching position, type of SCPS handled, number of years in teaching SCPS, number of training sessions attended, area of specialization, and performance rating were not predictors of the implementation of Special Curricular Programs in Science. This indicates that these variables do not significantly predict the effective implementation of SCPS in the Division of Antique. In terms of the learning framework, the data showed that teaching position, type of SCPS handled, number of years in teaching SCPS, number of training sessions attended, and area of specialization were not predictors of the implementation of Special Curricular Programs in Science. This indicates that these variables do not significantly predict the effective implementation of SCPS in the Division of Antique.

However, the results revealed that, in this dimension, teachers' performance ratings ($p < 0.011$) predict the implementation of SCPS in the Division of Antique. This finding suggests that the design and delivery of the curriculum, along with the instructional strategies and competencies employed by teachers who receive outstanding performance evaluations, have a significant influence on the implementation of SCPS in elementary schools. Proficient teachers adeptly navigate curriculum complexity and instructional methodologies, allowing them to incorporate their expertise into their teaching practices better and personalize instruction to diverse learner needs. Through continuous professional development, they refine their skills and stay abreast with educational innovations. The results of the study support the findings of Hill et al. [8], which states that teaching competence, mathematical and scientific knowledge, and well-structured curriculum design are significantly related to student achievement gains. This result was obtained through a measure that focused on specialized knowledge and skills. A well-designed curriculum tailored to the needs of elementary learners, combined with effective instructional techniques, enhances the implementation of SCPS and improves learners' engagement and learning outcomes.

As to instructional resources, teaching position, type of SCPS handled, number of years in teaching SCPS, number of training attended, and performance rating were not found to be predictors of Special Curricular Programs in Science implementation. On the other hand, data revealed that the area of specialization ($p < 0.049$) significantly predicts the implementation of SCPS in the Division of Antique in terms of instructional resources. This finding emphasized that the availability of instructional resources plays a crucial role in predicting the successful implementation of SCPS within the Division of Antique. This highlighted the importance of subject expertise in guiding pedagogical decisions and resource allocation. Teachers well-versed in a specific learning area possess a deeper understanding of content, instructional strategies, and resource requirements

essential for effective curriculum delivery. Their specialized knowledge likely enables them to identify the most suitable instructional resources and instructional approaches tailored to the unique demands of SCPS.

Appropriate instructional resources not only support educators in delivering engaging lessons in a specific learning area but also improve learners' learning experiences and academic achievement. For instance, when teachers are tasked with handling subjects like Science, Mathematics, and English, access to appropriate and relevant materials, such as textbooks, models, laboratory equipment, and digital resources, becomes vital. The long-term use of appropriate instructional materials for a specific learning area enhances learners' achievement and attitudes. These instructional resources not only support teachers in planning and conducting engaging lessons but also enable them to provide learners with hands-on learning experiences that reinforce scientific concepts.

In terms of management support, the results revealed that variables such as teaching position, number of years in teaching SCPS, number of training sessions attended, area of specialization, and performance rating were not predictors of the implementation of Special Curricular Programs in Science. This indicates that these variables do not significantly predict the effective implementation of SCPS in the Division of Antique. However, the data showed that the type of SCPS handled ($p > 0.045$) significantly predicts the implementation of SCPS in the Division of Antique, particularly in terms of management support. This implies that the type of SCPS that teachers handle strongly influences how well these programs are supported and implemented by school management. This also shows that for teachers, the success and smooth integration of these specialized science programs into the curriculum rely heavily on the backing and resources provided by school management. Therefore, management's support is crucial for the effective implementation of these science programs.

This finding holds validity based on the results revealed in Table 15, which shows that there is a substantial variation in the degree of SCPC implementation in terms of management support, considering the type of curricular programs in science offered (EESM or SSES). Hence, strong management support is essential as it facilitates smoother program execution, addresses challenges promptly, and sustains long-term sustainability. Finally, the data revealed that variables such as teaching position, type of SCPS handled, number of years in teaching SCPS, number of training sessions attended, area of specialization, and performance rating were not found to be predictors of the implementation of Special Curricular Programs in Science. This indicates that these variables do not significantly predict the effective implementation of SCPS in the Division of Antique. Table 15 reflects the data.

Table 15: Linear regression analysis on predictors of the implementation of special curricular programs in science as to profile variables

Variables	Objective Realization			Learning Framework			Instructional Resources			Management Support			Stakeholder Engagement		
	B-value	R^2	Sig (2-tailed)	B-value	R^2	Sig(2-tailed)	B-value	R^2	Sig(2-tailed)	B-value	R^2	Sig(2-tailed)	B-value	R^2	Sig(2-tailed)
Teaching Position	0.085	0.036	0.819	0.374	0.144	0.462	0.284	0.228	0.200	-0.219	-0.165	0.447	-0.126	-0.088	0.655
Type of SCPS Handled	-0.127	-0.054	0.722	0.031	0.012	0.949	-0.171	-0.136	0.422	-0.542	-0.406	0.045	0.455	0.314	0.097
No. of Years in Teaching SCPS	0.377	0.178	0.259	0.305	0.128	0.503	0.261	0.229	0.189	-0.288	-0.239	0.265	-0.190	-0.145	0.450
No. of Training Attended	0.184	0.079	0.624	0.229	0.087	0.656	0.184	0.146	0.412	-0.154	-0.116	0.596	-0.016	-0.011	0.954

Area of Specialisation	0.058	-0.010	0.947	1.417	0.227	0.238	-1.038	-0.347	0.049	0.265	0.084	0.695	0.265	0.077	0.689
Performance Rating	0.071	0.062	0.699	-0.060	0.047	0.011	0.139	0.225	0.206	-0.088	-0.134	0.539	-0.143	-0.201	0.308

To determine the predictors of the implementation of Special Curricular Programs in Science in the Division of Antique, focusing on objective realization, learning framework, instructional resources, management support, and stakeholder engagement, multinomial logistic regression analysis was employed. As presented in Table 16, variables such as teachers' highest educational attainment and the subject taught were not found to be predictors of the implementation of Special Curricular Programs in Science in terms of objective realization, learning framework, instructional resources, management support, and stakeholder engagement. This indicates that these variables do not significantly predict the effective implementation of SCPS in the Division of Antique.

Table 16: Multinomial logistic regression analysis on the predictors of the implementation of special curricular programs in science, as to subject taught and educational attainment

SCPS Implementation	Highest Educational Attainment		Subject Taught	
	Chi-Square	Sig.	Chi-Square	Sig.
Objective Realization	5.434	0.860	5.545	0.986
Learning Framework	3.378	0.760	3.819	0.923
Instructional Resources	1.065	0.291	17.682	0.996
Management Support	13.968	0.973	2.773	1.000
Stakeholder Engagement	8.531	0.931	0.000	1.000

4.8. Proposed Development Plan for the Implementation of Special Curricular Science for Elementary in the Division of Antique

This proposed development plan is designed to address the identified areas based on the findings of this study, focusing on enhancing compliance with the requirements of the Special Curricular Programs in Science (SCPS) for Elementary in the Division of Antique, as well as the academic readiness of SCPS learners in special science programs at the secondary level. It aims to elevate the standards of teaching, curriculum implementation, and resource management within the educational institution. It will also guide the implementation process and ensure alignment with the overall program goals. The proposed development plan is structured based on research findings to cater to the development needs of school administrators, SCPS coordinators, SCPS teachers, and learners. It includes specific objectives, corresponding programs, activities, expected outcomes, a time frame, persons involved, and a proposed budget to guide its implementation.

For school administrators, this development plan emphasizes the importance of providing technical assistance and mentoring to SCPS teachers for the effective implementation of the SCPS through exemplary instructional delivery. This involves guiding teachers in employing effective instructional strategies, selecting appropriate instructional materials, crafting comprehensive lesson plans, and utilizing appropriate assessment tools proficiently. By emphasizing these aspects, administrators aim to enhance instructional delivery within the SCPS, thereby nurturing well-rounded learners who excel in scientific knowledge and skills. For SCPS coordinators, this development plan aims to enhance their proficiency in utilizing and managing laboratory equipment by increasing awareness of safety protocols and regulatory compliance in handling, storage, and inventory management of laboratory equipment and chemicals. Additionally, it aims to implement standardized procedures for tracking laboratory equipment inventory (both manually and online) and maintenance. For SCPS teachers, this development plan prioritizes enhancing their competencies in areas such as action research, science investigatory projects, and laboratory management. Through targeted seminars, workshops, mentoring sessions, and hands-on training, teachers will acquire the knowledge, skills, and expertise necessary to implement SCPS effectively.

For SCPS learners, this development plan aims to create a conducive learning environment by ensuring the availability and proper utilization of educational resources and facilities, particularly laboratory equipment and apparatuses. By providing teachers with the necessary training and support, learners will benefit from enhanced learning experiences and opportunities for hands-on exploration and experimentation, including science investigatory projects. Additionally, this proposed development plan aims to enhance the level of performance of SCPS-implementing schools in terms of the percentage of

graduates enrolled in secondary schools with SPSTE and Science High Schools through intensive review sessions in preparation for qualifying examinations. This effort is geared toward guaranteeing the continued Science educational advancement and future success of SCPS learners. Overall, this development plan seeks to develop continuous improvement and excellence in the delivery of the SCPS, ultimately enhancing the quality of education and learning outcomes. By addressing the identified areas of improvement and implementing targeted interventions, the proposed development plan aims to create a dynamic environment that fosters student success and lifelong learning, thereby playing a pivotal role in advancing Science education in the Division of Antique. To ensure implementation and sustainability, the proposed development plan incorporates ongoing professional development for teachers, continuous assessment and feedback mechanisms, and regular updates to curriculum and resources based on evolving educational standards and technological advancements. By fostering a culture of continuous improvement and adaptability, the plan aims to maintain high standards of science education and support long-term success for SCPS students and educators. Additionally, securing partnerships with local and national organizations will provide sustained financial and technical support, ensuring the program's longevity and impact.

5. Conclusions

The implementation of Special Curricular Programs in Science for Elementary in the Division of Antique has achieved an outstanding level of compliance. The implementing schools demonstrated a notable commitment to comply with the specified requirements of the special science program in the areas of teacher qualifications, curriculum and instruction, and educational resources and facilities. The profile of teachers within the Special Curricular Programs in Science (SCPS) in the Division of Antique is generally favorable. This result reflects adherence to the guidelines and requirements outlined in DepEd Order No. 57 s—2011 or Policy Guidelines in the Implementation of the Special Science in Elementary Schools. Furthermore, a significant portion of SCPS teachers specialize in science-related learning areas (STEM) and consistently demonstrate outstanding performance ratings, affirming their potential as valuable assets for implementing special science programs. The “Very Well Implemented” overall level of implementation among schools under the Special Curricular Programs in Science (SCPS) shows a widespread adoption and execution of Special Curricular Programs in Science in the Division of Antique in adherence to DepEd Order No. 57 s. 2011. As to the type of curricular programs in science offered, the SSES program, with its regionally accredited status, appears to benefit from a more comprehensive and uniform implementation process, leading to a consistently “Very well implemented” level of implementation across all dimensions, than the EESM program that may need further improvement in maintaining adequate instructional resources despite its overall effectiveness in achieving program objectives, curriculum implementation, and garnering support from management and stakeholders.

The exemplary academic performance of Grade 6 learners under the SCPS indicates the effectiveness of the special science program in the Division of Antique. This is evidenced by the significant proportion of Grade 6 SCPS learners achieving "Outstanding" academic performance, showcasing the program's success in enhancing their academic knowledge, skills, and abilities. The SCPS graduates exhibit an "Average" performance level in terms of enrollment in secondary schools with Special Programs in Science, Technology, Engineering, and Science High Schools based on the tracer report. While the percentage is not exceptionally high, it still indicates a considerable number of SCPS graduates opting for secondary schools with Special Science Programs, reflecting their interest in STEM fields. Possible factors that may influence their decisions include their motivation to pursue education within a specialized science curriculum at the secondary level, the availability of review materials and preparation for the SPSTE and SHS exams, and access to secondary schools offering SPSTE and SHS programs.

Schools' best practices across the dimensions of objective realization, learning framework, instructional resources, management support, and stakeholder engagement have a significant effect on SCPS implementation in the Division of Antique. The application of innovative teaching practices creates a learning environment where pupils can develop their scientific and research skills, leading to the attainment of special science program goals and objectives. The practice of differentiated instruction within the learning framework is important as it supports learners with various learning styles and attitudes. Effective utilization of instructional resources provides learners with substantial practical experiences that equip them with scientific concepts and enable them to apply these concepts in various ways. Budgeting and fund allocation practices are crucial aspects of management support, as they ensure the sufficiency of necessary resources for the Special Science program’s implementation, which can positively impact learners' academic performance. Effective orientation practices and clear communication channels strengthen stakeholder engagement.

A notable difference in the extent to which instructional resources and management support were utilized when categorized as to the type of curricular programs in science offered implies that schools under the SSES program, with regional accreditation status, were better equipped with adequate instructional resources and received more effective management assistance compared to those school under the EESM program. Consequently, this resulted in a more efficient execution of the program. Furthermore, SCPS schools, regardless of the type of curricular programs in science offered, were generally consistent in achieving objectives, setting up a learning framework, and engaging stakeholders in implementing SCPS in the Division of Antique. The profile variables such as teaching position, highest educational attainment, number of years in teaching SCPS,

number of training attended, and subject taught which are not predictors of SCPS implementation on program dimensions such as objective realization, learning framework, instructional resources, management support, and stakeholder engagement suggest that these variables do not directly influence the implementation of SCPS in the Division of Antique.

However, performance ratings as a predictor of SCPS implementation in terms of the learning framework suggest that the design and delivery of the curriculum, along with the instructional strategies and competencies employed by teachers who have outstanding performance evaluations, significantly influence the implementation of SCPS in elementary schools. Furthermore, the area of specialization as a predictor of SCPS implementation in terms of instructional resources suggests that teachers well-versed in a specific learning area possess a deeper understanding of content, instructional strategies, and resource requirements essential for effective curriculum delivery. Additionally, the type of SCPS handled by teachers as a predictor of SCPC implementation in terms of management support implies that considering the type of SCPS (SSES and EESM) handled by the teachers, the degree of support provided by school management directly influences the implementation of SCPS. The proposed development plan, "Advancing Science Education," is relevant for enhancing program implementation and compliance with the requirements for Special Curricular Programs in Science for Elementary, as well as the academic readiness and performance level of SCPS-implementing schools on special science programs at the secondary level.

5.1. Recommendations

Based on the conclusions presented by the researcher, it is recommended that key officials of the Department of Education in the Schools Division of Antique, through the Education Program Supervisor in Science, consistently provide SCPS implementing schools with timely updates on program requirements to maintain high compliance in program implementation. The EPS in Science should also initiate programs aimed at capacitating SCPS teachers and learners in conducting action research and science investigatory projects, as well as in the effective utilization and inventory of laboratory facilities and equipment, using a unified monitoring and inventory tool. DepEd Schools Division of Antique, through the Education Program Supervisor in Science, is recommended to design advanced training sessions for SCPS teachers that address specialized pedagogical approaches related to their subject areas taught, innovative teaching methodologies, and effective integration of technology in science education that could further enhance their abilities to align with the unique demands of teaching science-related subjects in elementary schools and to guarantee their ongoing eligibility in meeting program requirements. It is also recommended that DepEd key officials in the Division of Antique implement recognition programs for outstanding SCPS teachers and SCPS coordinators who consistently demonstrate high performance through teacher evaluation and program monitoring. This recognition may include career advancement opportunities or special commendations.

The DepEd Regional Office and the Schools Division of Antique are recommended to consistently conduct monitoring and evaluation of SCPS implementing schools and provide technical assistance to school administrators, SCPS coordinators, and SCPS teachers to maintain its high level of implementation. Through consistent program assessment, school administrators will gain valuable insights into optimizing instructional resources, providing effective management support, enhancing stakeholder engagement, and strategically aligning curriculum with educational goals. Schools under the EESM program may seek assistance from external stakeholders and the local government unit through the Special Education Fund (SEF) to provide additional learning resources. In addition, DepEd is advised to actively encourage and assist these EESM schools in complying with the requirements stated in Division Memorandum No. 091 s. 2017 or Recognition Requirements for Special Curricular Programs in Science are necessary to attain their regional accreditation status to upgrade the quality of SCPS implementation in the Schools Division of Antique.

It is highly recommended that SCPS learners be provided with appropriate enrichment learning resources, such as reference books, audio-visual equipment, models, laboratory facilities and apparatus, and other supplementary learning materials that will further enhance their learning experiences and help them maintain their outstanding academic performance. Parents are also encouraged to maintain a collaborative partnership with SCPS teachers and other stakeholders as their engagement positively impacts learners' achievement, recognizing the value of their involvement and support. SCPS coordinators and teachers are encouraged to initiate school development programs that aim to motivate learners to pursue secondary education in schools offering Special Programs in Science, Technology, and Engineering. School-based review sessions for the SPSTE qualifying exam should also be conducted with the provision of comprehensive review materials. DepEd should also encourage and assist secondary schools that are not currently implementing SCPS to adopt the program and to have a systematic approach that would enable a smooth progression from elementary to secondary years, providing SCPS learners with a solid foundation in core learning areas and preparing them for advanced studies and to guarantee that elementary learners still have access to SCPS when they transition to secondary level.

The DepEd Schools Division of Antique is recommended to initiate a development plan designed to further enrich the application of innovative teaching practices by SCPS teachers. Teachers should also be equipped with the skills to apply differentiated instruction and effectively utilize instructional resources in teaching through mentoring and supervision from

learning area supervisors, school heads, and master teachers. Administrators of the SCPS implementation schools should consider revisiting the school improvement plan to ensure proper allocation and disbursement of budget and funds specifically for SCPS. Organizing informative orientations and establishing transparent communication channels for stakeholders should also be consistently practiced by the schools implementing the program. It is highly recommended that school administrators, SCPS coordinators, and teachers from EESM schools consider conducting benchmarking activities with SSES schools regarding SCPS implementation, particularly focusing on the schools' best practices in instructional resources and management support. DepEd should also ensure and strengthen the consistent adherence of SCPS-implementing schools to the provisions of DepEd Order No. 57 s. 2011 (Policy Guidelines in the Implementation of the Special Science in Elementary Schools) and DepEd Order No. 18. 2020 (Policy Guidelines for the Provision of Learning Resources in the Implementation of the Basic Education Learning Continuity Plan) to uphold the standard and excellence of the program.

The key officials of the Department of Education in the Schools Division of Antique are suggested to continue creating initiatives aimed at maintaining teachers' outstanding performance ratings. This can be achieved through sustained technical assistance, mentorship programs, and the provision of relevant training seminars and workshops. Continuous professional development opportunities will not only upgrade teachers' pedagogical skills but also ensure alignment with evolving educational learning frameworks and best practices. SCPS teachers, considering their area of specialization, should continue to enhance their knowledge, skills, and expertise in the effective utilization of appropriate instructional resources, thereby enhancing the quality and consistency of SCPS implementation. Furthermore, school administrators should also be equipped to provide management assistance to SCPS teachers, considering the type of SCPS they handle. For EESM-implementing schools, administrators, with the support of teachers, learners, and stakeholders, should ensure compliance with the requirements necessary for regional accreditation to enhance the quality and standard of the SCPS being implemented. To widen the information and concepts derived from this study, researchers may conduct parallel or relevant studies with other respondents in different settings. This will help validate the study's findings and provide in-depth knowledge for formulating other factors that could significantly influence the implementation of Special Curricular Programs in Science for elementary students.

Acknowledgement: The accomplishment of this research is made possible through the concerted effort of the teacher-advisers, school heads, and district supervisors from the Department of Education implementing special programs in Elementary Science and the University of Antique - College of Teacher Education. The researchers would also like to give their frankest appreciations to all those involved in this investigation.

Data Availability Statement: The researchers uphold that all the information supporting the results of this study is accessible in this article and including its secondary materials. Raw data that support the findings are available from the corresponding author upon request.

Funding Statement: No funding has been obtained to help prepare this manuscript and research work.

Conflicts of Interest Statement: No conflicts of interest have been declared by the researchers. Citations and references are mentioned as per the used information.

Ethics and Consent Statement: The consent has been obtained from the Department of Education and the concerned college during data collection and has received ethical approval and participant consent.

References

1. A. L. Perez and E. Alieto, “Change of ‘Tongue’ from English to a local language: A correlation of Mother Tongue proficiency and Mathematics achievement,” The Asian ESP Journal, vol. 14, no. 2, pp. 136–150, 2018.
2. B. S. Nelson and A. Sassi, “What math teachers need most?,” Education Digest, vol. 72, no. 6, pp. 54–56, 2017.
3. D. L. Stufflebeam and A. J. Shinkfield, “Evaluation theory, models, & applications,” Jossey-Bass, San Francisco, United States of America, 2015.
4. F. T. Talaue, “Social equity and access to a Philippine STEM school,” Theory Pract., vol. 53, no. 1, pp. 33–40, 2014.
5. G. Bull, J. Park, M. Searson, A. Thompson, P. Mishra, M. J. Koehler, and G. Knezek, “Developing technology policies for effective classroom practice,” Contemp. Issues Technol. Teach. Educ., vol. 7, no. 3, pp. 129–139, 2007.
6. G. C. Bunch, “Pedagogical language knowledge: Preparing mainstream teachers for English learners in the new standards era,” Review of Research in Education, vol. 37, no. 1, pp. 298–341, 2013.
7. G. Pawilen and M. Sumida, “A Comparative Analysis of the Elementary Science Curriculum of Philippines and Japan,” Bulletin of the Faculty of Education Ehime University, vol. 52, no. 1, pp. 167–180, 2018.

8. H. C. Hill, B. Rowan, and D. L. Ball, “Effects of teachers’ mathematical knowledge for teaching on student achievement,” Am. Educ. Res. J., vol. 42, no. 2, pp. 371–406, 2005.
9. H. Eshach and M. N. Fried, “Should Science be Taught in Early Childhood?,” J. Sci. Educ. Technol., vol. 14, no. 3, pp. 315–336, 2005.
10. M. F. Karacabey, “Perceptions of school administrators on their contributions to teacher professional development. Kuramsal Eğitimbilim Dergisi,” Journal of Theoretical Educational Science, vol. 13, no. 1, pp. 78–90, 2020.