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Extent of Implementation of Special Science Curriculum in Public Secondary Schools in the Division of Rizal

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ABSTRACT The study determined the extent of the special science curriculum implementation in public secondary schools in the Division of Rizal for the school year 2022-2023. This research employed a descriptive survey design to determine the assessment of the teachers and school heads on the program's implementation. The findings revealed a commendable adherence to guidelines in admission and retention processes, garnering high ratings from respondents. However, the lower rating for student transfers from regular to SSC classes signals a need for enhancement. Regarding Curriculum and Instruction, there is a solid commitment to critical thinking and 21st-century skills; however, a lower rating for scientific research suggests a targeted need for improvement. For Learning Resources and Facilities, concerns arise regarding the science laboratory's functionality and the library's overall state. Regarding Faculty Development, the mean is lower for providing opportunities for training and seminars on research and advanced subjects, suggesting a need for improvement. There is no significant difference between the perceptions of the two groups of respondents regarding the extent of implementation of the Special Science Curriculum in terms of the different aspects. In general, teachers and school heads perceive the overall implementation of the Special Science Curriculum as a High Extent.

Keywords: Science curriculum, Special curricular programs, Public secondary schools, Curriculum implementation, Philippines

1. INTRODUCTION

Science education is at the forefront of improving the scientific literacy of individuals within a nation. To encourage learners to engage in scientific inquiry, science education in schools must prioritize developing scientific literacy. Additionally, science will help children cultivate a sense of curiosity, objectivity, honesty, and critical thinking (De La Cruz, 2022). Students' access to advanced science, technology, engineering, and mathematics (STEM) courses and careers and their ability to be critical thinkers and engaged citizens all depend on their participation in science education (Nofzinger, 2022). Advancements in science and technology have helped improve society, making scientists and inventors national treasures (Ugulu, 2021). In this regard, the government should prioritize science education, notably upgrading the curriculum to be applied in schools (Bodur et al., 2022). A good curriculum contributes to developing thinking skills and acquiring relevant and acceptable global competencies that learners need in daily life and careers (Makoba & Odhiambo, 2022). Anchored in a global context, the science curriculum in the Philippines for K–12 equips students with skills that are useful in both the workplace and a society founded on knowledge. The Philippine science curriculum also seeks to instill in students the abilities to (1) analyze problems critically, (2) be good stewards of the environment, (3) be innovators, (4) make informed decisions, and 5) be A good communicator.

The Special Science Curriculum (SSC) was initiated to strengthen science education in the province of Rizal. This curriculum offers additional subjects such as Advanced Sciences, Advanced Mathematics, and Research in addition to the regular K to 12 subjects. The SSC aims to equip the students with the necessary skills and attitudes for the STEM strand in SHS and a career related to STEM. However, no study has been conducted on the extent to which the Special Science Curriculum has been implemented in Rizal since its inception in 2014.

Research on the extent to which the curriculum is implemented as intended enables a clearer understanding of the learners' outcomes, which guides curricular and

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teacher professional development reforms and future directions (Gale et al., 2020).

This study focused on determining the extent to which SSC is being implemented in selected secondary schools in Rizal province regarding curriculum and instruction, admission, faculty development, and learning resources/facilities concerning existing guidelines.

1.1 Literature Review

The government views science and technology as crucial to propelling the Philippine economy toward global competitiveness and collaboration. Considering these advancements, it is timely and pertinent to re-evaluate the implementation of the special science curriculum (Atchuela, 2019).

Curriculum implementation carries out the plans and recommendations that curriculum specialists and topic experts have developed in a classroom or school context. The preparation, delivery, and evaluation of curriculum materials to affect specific behavioral changes in students' actions are called curriculum implementation. Students, parents, and school administrators may participate directly or indirectly in the implementation process, while teachers are the primary implementers of the curriculum. The curriculum implementers must consider the learner's age, learning domains, topic area, class, interest, and general characteristics while implementing the curriculum (Obi & Okekeokosisi, 2018).

Teachers frequently rely on curriculum resources and expertise regarding curriculum goals and organizational principles to plan lessons and promote student learning. It is essential to Carefully examine teachers' curricular implementation and the decision-making that guides it (Penuel et al., 2014).

As cited in Gauchat (2010), science curricula should have activities that would encourage collaboration between students in solving real-world problems along with learning scientific knowledge and skills. Coll and Taylor (2012) suggested that the construction of science curricula in industrialized nations should be needs-based, based on an assessment of prior local experiences, and preserve consistency between curriculum objectives and the assessment framework. Such a procedure needs much time and in-depth professional development.

Several essential processes have been identified as crucial in successful curriculum implementation, fostering a sense of ownership and shared understanding among individuals. These encompass effective communication strategies, clear guidelines aligning new teaching practices with established ones, and inclusive approaches like national consultations, feedback mechanisms, design-based implementation research, and collaborative capacity building within teacher teams. Moreover, adapting teaching methods to students' interests is highlighted as pivotal. The crucial roles of teachers and school leaders are emphasized, underscoring that meaningful and sustainable curriculum implementation heavily relies on their active involvement and commitment (Gouëdard et al., 2020).

1.2 Research Question

This study explored the perceptions of teachers and school heads on the extent of implementation of Special Science Curriculum in Public Secondary Schools in the Division of Rizal, specifically to answer the following questions:

1. What is the extent of implementation of the Special Science Curriculum as perceived by the two groups of respondents in terms of:
   - Admission and Retention;
   - Curriculum and Instruction;
   - Faculty Development; and
   - Learning Resources and facilities?
2. Is there a significant difference between the perceptions of the two groups of respondents on the extent of implementation of the Special Science Curriculum concerning the different aspects?
3. Based on the research findings, what Technical Intervention Plan may be proposed to enhance the implementation of the Special Science Curriculum in the Division of Rizal?

1.3 Scope and Limitation

The study examined the implementation of the Special Science Curriculum (SSC) in public secondary schools in the Division of Rizal, Philippines. Two groups of participants were selected: teachers and school heads from SSC-implementing schools. These individuals were chosen because of their direct involvement in the program's planning and implementation.

The research employed the descriptive method, specifically the survey design, to gather information about the current state of SSC implementation. According to Calmorin (2016), the descriptive method helps understand the causes of a phenomenon and provides a foundation for hypothesis testing or answering research questions related to the study's focus.

A researcher-made survey questionnaire serves as the primary data collection tool. This instrument allows for an in-depth analysis of the implementation of the SSC in four key areas: admission and retention, curriculum and instruction, faculty development, and learning resources and facilities. Utilizing this tool provides valuable insights into the effectiveness of the SSC implementation in public secondary schools within the division.

2. METHOD

2.1 Sampling

The study's respondents are 108 teachers and 13 school administrators of SSC-implementing schools in the division. These respondents were selected using purposive sampling since they are the implementers of the special science curriculum in Rizal province and are in the best position to assess the extent of its implementation.

2.2 Data Collection

This study used the researcher-made survey questionnaire as the main instrument for gathering data. The questionnaire is divided into three parts: i. institutional profile, ii. the extent of implementation of the special science curriculum, and iii. challenges encountered.

The survey questionnaire contains four aspects: admission and retention, curriculum and instruction, faculty development, and learning resources and facilities. The respondents were directed to evaluate the Extent of SSC implementation following the given scale in Table 1.

Table 1 Scale to evaluate the Extent of SSC

Scale/Range	Verbal Interpretation
4.20 – 5.0	Very High Extent
3.41 – 4.20	High Extent
2.61 – 3.40	Moderate Extent
1.81 – 2.60	Low Extent
1.00 – 1.80	Very Low Extent

This instrument was content validated by experts such as Public School District Supervisors, master teachers, and college instructors. The experts rated the instrument using an adopted tool, which received a rating of 4.62, which was verbally interpreted as highly valid. The experts' comments, suggestions, and recommendations were incorporated into the survey questionnaire.

This research followed a Gantt Chart of Activities, which entailed creating the research proposal and title. After the experts approved the survey questionnaire created by the researcher, it was sent to the respondents using a Google form. The retrieved data were encoded in the SPSS statistical software.

2.3 Ethical Issues

The researcher requested authorization from the Schools Division Superintendent before conducting the study. Every respondent was assured that their comments would be kept confidential, and the purpose of the study was stated in detail. No participant information was used to reveal the results. The respondents' participation was entirely voluntary. No one was forced or paid for their participation in this study.

2.4 Data Analysis

The following relevant statistical tools were used for the analysis and interpretation of the data gathered:

Weighted mean was used to determine the extent of implementation of the special science curriculum in public secondary schools in the Division of Rizal concerning the different aspects.

An independent t-test was employed to determine whether there was a significant difference in the perceptions of the two groups of respondents regarding the extent to which the Special Science Curriculum was implemented in the different aspects.

3. RESULT AND DISCUSSION

The data in this part was organized according to the order of the problem statement and presented in tabular form. Furthermore, the identified statistical tools were utilized to analyze results and discuss data in this investigation to determine the teachers' and school heads' perceptions on the extent of implementation of the Special Science Curriculum in public secondary schools in the Division of Rizal.

Table 2 shows the extent of implementation of the Special Science Curriculum regarding admission and retention. It can be seen in the table that the respondents think that "The school carries out the admission processes following the implementing guidelines, with the highest overall mean of 4.63, whereas "The school transfers a student from the regular class to SSC class about the implementing guidelines." got the lowest at 3.83. The results suggest that while the implementation of admission processes aligns well with implementing guidelines, there are potential areas for improvement in transferring

Table 2 Extent of implementation of the special science curriculum as perceived by the teachers and school heads terms of admission and retention

	Teachers		School Heads		Overall	
	mean	VI	mean	VI	mean	VI
1. The school has an overall selection committee composed of the school head, guidance counselor, science class adviser, and Science, Mathematics, and English teachers.	4.45	Very High Extent	4.25	Very High Extent	4.43	Very High Extent
2. The school carries out the admission processes (admission examination, reading comprehension test) in accordance with the implementing guidelines	4.68	Very High Extent	4.25	Very High Extent	4.63	Very High Extent
3. The school conducts evaluations and examinations to ensure the retention of all grade levels (7-9) students enrolled in the program based on implementing guidelines.	4.35	Very High Extent	4.00	High Extent	4.31	Very High Extent
4. The school transfers a student from the regular class to the SSC class according to the implementing guidelines.	3.81	High Extent	4.00	High Extent	3.83	High Extent
Mean	4.32	Very High Extent	4.13	High Extent	4.30	Very High Extent

students from regular classes to the Special Science Curriculum (SSC).

Furthermore, the respondents highly commend the implementation of schools' admissions and retention processes, with a mean of 4.32 and 4.13, respectively, resulting in an overall mean of 4.30. This implies that there is adequate adherence to the guidelines. However, a slightly lower rating of 3.83 for student transfers to SSC classes suggests potential areas for improvement in the implementation guidelines, especially in terms of retention and transfer. Notably, Kimbark et al. (2017) advocates for the significance of students' involvement in SSC, highlighting its positive impact on outcomes. Administrators are urged to prioritize SSC classes to enhance student outcomes further and address any potential issues with the transfer process.

Table 3 shows the extent of implementation of the Special Science Curriculum in terms of Curriculum and Instruction as assessed by Teachers and School heads. It can be seen on the table that "The school ensures all academic areas encourage the development of critical thinking and 21st-century abilities through written exams and performance tasks" received the highest overall mean of 4.46, thus highlighting a strong focus on fostering well-needed skills. On the other hand, "The school has produced scientific research for publication or entries in research conferences" received a mean of 3.74, suggesting a need for more emphasis on research-related activities. This highlights the need for training and professional development programs for teachers on scientific research to help them handle the research projects by the students from conceptualization to publication. An overall mean of 4.21 collectively indicates a very high extent regarding curriculum and instruction. This further suggests that the implementing schools are committed to providing quality science education by providing opportunities for students to learn in science. However, the identified areas of regular laboratory activities and student participation in external activities highlight specific areas where focused improvements could further enhance the educational experience. According to Kapilan and Vidhya (2021) and Amolins et al. (2015), laboratory training and exercises provide hands-on experience to the students, making it essential for the school administration to focus on these areas, whether virtual or in-person.

Table 4 shows the extent to which the Special Science Curriculum has been implemented regarding Faculty and Development assessments by Teachers and School heads. The results revealed that Teachers scored a mean of 4.13, while School heads scored a mean of 3.50, with the same interpretation as High Extent. Faculty and development received a mean of 4.06, indicating a commendable score.

Specifically, it can be seen on the table that the items "The school implements LAC sessions on content and pedagogy to improve instruction." "The school utilizes the results of the Individual Plan for Professional Development (IPPD) of teachers as a basis for LAC sessions and INSET." and "The school encourages the teachers to pursue graduate studies in Science and Mathematics. (In line with their specializations)" received the highest means of 4.20. On the other hand, "The school provides opportunity to teachers for training and seminars on research and advanced subjects" received a mean of 3.71. The results revealed that the school provides

Table 3 Extent of implementation of the special science curriculum as perceived by the teachers and school heads terms of curriculum and instruction

	Teachers		School heads		Overall	
	Mean	VI	Mean	VI	Mean	VI
1. The school implements various teaching approaches in Science and Math (SSC core courses).	4.45	Very High Extent	4.00	High Extent	4.40	Very High Extent
2. The school implements constructivism and inquiry-based instruction in teaching Science and Math (SSC core courses).	4.35	Very High Extent	3.75	High Extent	4.29	Very High Extent
3. The school includes regular laboratory activities as performance tasks in Science and Math (or SSC core courses).	4.00	High Extent	3.25	Moderate Extent	3.91	High Extent
4. The school ensures that all academic areas encourage the development of critical thinking and 21st-century abilities through written exams and performance tasks.	4.52	Very High Extent	4.00	High Extent	4.46	Very High Extent
5. The school allows the participation of students in workshops, seminars, and conferences.	4.32	Very High Extent	3.75	High Extent	4.26	Very High Extent
6. The school has produced scientific research for publication or entries in research conferences.	3.77	High Extent	3.50	High Extent	3.74	High Extent
7. The school implements the class program following the prescribed instructional time in Advanced Mathematics (240 minutes per week) and Advanced Sciences (120 minutes per week).	4.45	Very High Extent	4.00	High Extent	4.40	Very High Extent
Mean	4.27	Very High Extent	3.75	High Extent	4.21	Very High Extent

professional development opportunities within school premises to the best of its ability and encourages teachers to pursue post-graduate studies. However, the results also revealed that these opportunities were local and did not outright open the opportunity for the teachers to attend quality seminars and training than the INSET and LAC, especially when it comes to research and advanced subjects. This also implies that the Division office should provide training relevant to the enhancement of content knowledge and pedagogies of teachers on research and advanced subjects.

Thus, Boudersa (2016) argues that higher-quality training and seminars available to teachers increase their teaching proficiency and performance. Therefore, better opportunities for training in specializations and research and development are needed.

Table 5 shows the extent to which the Special Science Curriculum has been implemented in terms of Learning Resources and Facilities, as assessed by Teachers and School heads.

It can be seen on the table that "The school has available projectors/LCD TV and other ICT related materials in the classrooms" received an overall mean of 3.83, which is interpreted as High Extent. On the other

Table 4 Extent of implementation of the special science curriculum as perceived by the teachers and school heads terms of faculty development

	Teachers			School heads			Overall		
	mean	SD	VI	mean	SD	VI	Mean	SD	VI
1. The school provides opportunities to teachers for training and seminars on research and advanced subjects.	3.74	1.03	High Extent	3.50	0.58	High Extent	3.71	0.99	High Extent
2. The school implements LAC sessions on content and pedagogy to improve instruction.	4.26	0.96	Very High Extent	3.75	0.96	High Extent	4.20	0.96	High Extent
3. The school utilizes the results of teachers' Individual Plan for Professional Development (IPPD) as the basis for LAC sessions and INSET.	4.29	0.94	Very High Extent	3.50	0.58	High Extent	4.20	0.93	High Extent
4. The school encourages the teachers to pursue graduate studies in Science and Mathematics. (In line with their specializations)	4.29	0.82	Very High Extent	3.50	0.58	High Extent	4.20	0.83	High Extent
5. The school establishes partnerships with stakeholders for the training and development of teachers.	4.06	0.96	High Extent	3.25	0.50	Moderate Extent	3.97	0.95	High Extent
Mean	4.13	0.81	High Extent	3.50	0.48	High Extent	4.06	0.80	High Extent

Table 5 Extent of implementation of the special science curriculum as perceived by the teachers and school heads terms of learning resources and facilities

	Teachers		School heads		Overall	
	mean	VI	mean	VI	mean	VI
1. The school has a functional Science laboratory	3.74	High Extent	2.75	Moderate Extent	3.63	High Extent
2. The school implements LAC sessions on content and pedagogy to improve instruction.	3.61	High Extent	2.75	Moderate Extent	3.51	High Extent
3. The school has a functional library with enough resources for research and reference purposes.	3.65	High Extent	2.75	Moderate Extent	3.54	High Extent
4. The school has a science laboratory equipped with laboratory tools and equipment (equipped with laboratory resources (instruments/equipment/chemicals/reagents) that complement the curriculum)	3.87	High Extent	2.75	Moderate Extent	3.74	High Extent
5. The school has available projectors/LCD TVs and other ICT-related materials in the classrooms	3.87	High Extent	3.50	High Extent	3.83	High Extent
Mean	3.75	High Extent	2.90	Moderate Extent	3.65	High Extent

hand, "The school implements LAC sessions on content and pedagogy to improve instruction" received the lowest mean of 3.51, which is interpreted as a High Extent.

Furthermore, teachers have a mean of 3.75, interpreted as a great extent, whereas school heads have a mean of 2.90, interpreted as a moderate extent. The respondents received a mean of 3.65, indicating a High Extent of implementation.

While the school demonstrates great effectiveness in implementing infrastructure and providing instructional resources, teachers and especially school heads have noted areas like the science laboratory and the overall library functionality where improvements could be considered. The library needs to be revived by building a more modern system and providing excellent service (Apendi, 2020).

Table 6 provides an overview of the school's performance in key areas, as assessed by Teachers and School heads. The criteria include Admission and Retention, Curriculum and Instruction, Faculty Development, Learning Resources, and the Overall Assessment. Teachers provide an overall mean of 4.12, interpreted as a High Extent. School heads share a similar perception with an overall mean of 3.56, also falling into the High Extent range. The school's overall mean is 4.06.

In terms of Admission and Retention, both Teachers and School heads indicate a high level of effectiveness. Teachers give a mean rating of 4.32, indicating a Very High Extent, while School heads provide a slightly lower but still commendable mean of 4.13, signifying a High Extent. The overall mean for this criterion is 4.30. This emphasizes the school's success in implementing specified guidelines.

In line with the Curriculum and Instruction, Teachers demonstrate a good perception with a mean of 4.27, which is verbally interpreted as a Very High Extent. In contrast, School heads offer a lower mean of 3.75, interpreted as a High Extent. Overall, the mean for this criterion is 4.21. This highlights the school's overall strength in curriculum and instruction.

Regarding Faculty Development, both Teachers and School heads acknowledge the school's commitment with mean ratings of 4.13 and 3.50, respectively, falling in the High Extent range. The overall mean for this criterion is 4.06. This signifies a good focus on faculty development with room for further improvement.

Lastly, in line with Learning Resources, this is an area where the school demonstrates a High Extent of effectiveness, as indicated by Teachers with a mean of 3.75. However, School heads perceive room for improvement, offering a mean of 2.90 in the Moderate Extent range. The overall mean for this criterion is 3.65, with High Extent. This suggests the need for enhancements in providing conducive facilities and adequate learning resources.

In totality, there is an indication of critical areas that require attention and improvement to achieve a more balanced level of effectiveness across various aspects.

Table 7 presents a comparative analysis of Teachers and School heads in various key criteria, including Admission and Retention, Curriculum and Instruction, Faculty

Table 6 Composite table on the extent of implementation of the special science curriculum as perceived by the teachers and school heads

	Teachers		School heads		Overall	
	mean	VI	mean	VI	mean	VI
Admission and retention	4.32	Very High Extent	4.13	High Extent	4.30	Very High Extent
Curriculum and Instruction	4.27	Very High Extent	3.75	High Extent	4.21	Very High Extent
Faculty Development	4.13	High Extent	3.50	High Extent	4.06	High Extent
Learning Resources	3.75	High Extent	2.90	Moderate Extent	3.65	High Extent
Overall	4.12	High Extent	3.56	High Extent	4.06	High Extent

Table 7 The perceptions of the two groups of respondents regarding the extent of implementation of the Special Science Curriculum in the different aspects

Variable	Group	Mean	Df	Mean Difference	t	p-value	VI
Admission and retention	Teacher	4.32	33	0.20	0.59	0.563	NS
	School head	4.13					
Curriculum and Instruction	Teacher	4.27	33	0.52	1.90	0.066	NS
	School head	3.75					
Faculty Development	Teacher	4.13	33	0.63	1.51	0.142	NS
	School head	3.50					
Learning Resources	Teacher	3.75	33	0.85	1.97	0.057	NS
	School head	2.90					
Overall	Teacher	4.12	33	0.56	1.92	0.063	NS
	School head	3.56					

Development, Learning Resources, and Overall Assessment.

In terms of Admission and Retention, Teachers exhibit a mean of 4.32, while School heads show a mean of 4.13. The t-test does not reveal a statistically significant difference, with a p-value of 0.563, suggesting that both groups align in their assessment, with Teachers leaning slightly towards a higher extent.

Moving on to Curriculum and Instruction, Teachers score a mean of 4.27. Meanwhile, School heads score 3.75. The t-test indicates a p-value of 0.066, suggesting a marginally significant difference. Teachers tend to rate higher due to their direct involvement in implementing the special science curriculum. This implies that school heads are focused more on administrative goals than instructional perspectives, where teachers are more involved. This implies that school heads can also be capacitated regarding the Special Science Curriculum and instruction.

In terms of Faculty Development, Teachers have a mean of 4.13, while School heads have a mean of 3.50. This exhibits a moderate discrepancy. The t-test yields a p-value of 0.142, indicating no statistical significance. Both groups recognize the importance of faculty development, but Teachers perceive it to a greater extent.

In Learning Resources and Facilities, Teachers have a mean of 3.75. They express a higher extent compared to School heads, who have a mean of 2.90. The t-test shows a p-value of 0.057, indicating a near-significant difference. This implies a potential need for increased engagement of stakeholders who are willing to allot funds or initiate projects to help the implementing schools allocate resources.

Lastly, in the Overall Assessment, Teachers have a mean of 4.12, and School heads have a mean of 3.56. This presents a discernible contrast. The t-test p-value is 0.063, significance.

4. CONCLUSION

Based on the results of the study, specific conclusions were found. On the extent of implementation of the Special Science Curriculum, it was revealed that there is a commendable adherence to guidelines in admission and retention processes, garnering high ratings from respondents. However, the slightly lower rating for student transfers to SSC classes signals a need for focused attention and improvement, particularly considering research emphasizing the positive impact of student involvement in SSC, as Kimbark et al. (2017) advocates. Administrators are encouraged to prioritize and refine the transfer process to optimize student outcomes in SSC classes.

Regarding Curriculum and Instruction, there is a solid commitment to critical thinking and 21st-century skills. However, a lower rating for scientific research activities suggests a targeted need for improvement. Following the advice of Kapilan and Vidhya (2021) and Amolins et al. (2015), emphasizing regular laboratory activities and student participation in external initiatives can enhance the overall educational experience, urging administrators to focus on these areas for continuous improvement in curriculum quality.

Regarding Faculty Development, certain aspects, such as LAC sessions on content and pedagogy, receive high praise. However, the lower mean for providing opportunities for training and seminars on research and advanced subjects suggests a need for improvement. Aligning with Boudersa's (2016) perspective, addressing this gap by enhancing opportunities for high-quality, specialized training and research-focused seminars is crucial to further elevate teaching proficiency and overall performance among educators within the curriculum.

Regarding Learning Resources and Facilities, the presence of projectors/LCD TVs in classrooms is notably effective; however, concerns arise regarding the science laboratory's functionality and the library's overall state. Furthermore, both Teachers and School heads emphasize the need for improvements, with particular emphasis from School heads on reviving the library through modernization and enhanced services, aligning with the recommendations of Apendi (2020). Addressing these specific areas will contribute to a more comprehensive and modernized learning environment within the Special Science Curriculum.

In totality, the overall effectiveness of the implementing schools, as perceived by both teachers and school heads, admission and retention, and curriculum and instruction, received high ratings. This suggests the successful implementation of the guideline and the strength of the curriculum. However, areas such as Faculty Development and Learning Resources highlight opportunities for improvement, emphasizing the need for enhanced faculty development initiatives and the provision of conducive facilities and adequate learning resources. The Overall Assessment points to critical areas requiring attention and improvement for more balanced effectiveness across various aspects of the implementing schools' performance.

Lastly, the perceptions of teachers and school heads are not too different.

Based on the findings and conclusions of this research, the subsequent recommendations are therefore offered:

1. Provide clear implementing guidelines and communication to parents, students, and teachers regarding the admission process, class schedule, retention in the program, and transfer of students from regular classes to SSC.

2. Intensify instructional supervision for teachers in specialized subjects and provide adequate support through training, workload management, and preparation for hands-on lab activities.

3. Allot funds for specialized training in conducting science investigatory projects, content and pedagogy in

advanced Math and Science subjects, and Robotics for teachers and school heads in the division.

4. Invest in upgrading the science laboratory facilities by providing enough laboratory tools and equipment to make it functional for effective teaching and learning in STEM.

5. A fund should be allocated to improving internet connectivity among schools implementing special science curricula to enable research and collaboration, support STEM education, and promote digital literacy.

6. Encourage teachers and school heads to collaborate closely in identifying areas for improvement and implementing changes that will enhance the effectiveness of the SSC program. This may involve regular meetings, peer mentoring, and coaching to share best practices and search for external stakeholders for partnership.

Parallel studies may be conducted to assess the extent to which other special curricular programs are implemented.

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APPENDIX
Proposed Technical Intervention Plan

TECHNICAL INTERVENTION PLAN IN SPECIAL SCIENCE CURRICULUM IMPLEMENTATION
Objectives: To address specific technical issues or challenges hindering the effective implementation of the special science curriculum.

Target Date: A.Y. 2023 - 2026

Activities	Timeline	Persons Involved	Materials Needed	Expected Output
Conduct a write shop on revising the implementing guidelines of the Special Science Program.	April – May (2023).	SSC Consultants	Laptop, legal bases	Revised Implementing Guidelines to be issued through a Division Memorandum
Conduct teachers' training on Scientific Research and the use of laboratory tools and equipment	July 2023 – July 2026	Science Teachers Resource Speakers	Bond paper Printer Laptop	Activity Documentation Report Research proposal
Conduct teachers' training on SSC Advanced Subjects	2023 - 2026	Science Teachers Resource Speakers	Bond paper Printer Laptop	Activity Documentation Report
Propose a program for the construction/rehabilitation of science laboratories	2024 - 2026	School head Public Schools District Supervisors Education Program Supervisor in Science	Bond paper Printer Laptop	Project Proposal Constructed/Renovated science laboratory

Timetable/Gantt Chart

ACTIVITIES	June 2022	July 2022	Aug 2022	Sept 2022	Oct 2022	Nov 2022
Conceptualization of the study based on consultations.						
Literature Review						
Development and Validation of Survey Questionnaire						
Asked permission to conduct the study from the Schools Division Superintendent						
Administered the instrument to the respondents						

ACTIVITIES	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023
Make quantitative/qualitative analysis of data						
Report and discuss research findings						
Utilize results in the preparation of the Technical Intervention Plan						
Develop a Technical Intervention Plan						

QUESTIONNAIRE VALIDATION REPORT

Scale	Interpretation	Description
5	Very high valid	The questionnaire is valid and can provide unbiased data for the investigation, allowing 0-5% error
4	High valid	The questionnaire is valid and can provide unbiased data for the investigation, allowing 8-10% error
3	Valid	The questionnaire is valid and can provide unbiased data for the investigation, allowing 11-15% error
2	Less valid	The questionnaire is valid and can provide unbiased data for the investigation, allowing 16-20% error
1	Not valid at all	The questionnaire is valid and can provide unbiased data for the investigation, allowing 21-25% error

- 4.5 - 5.0: Very high valid (0-5% error)
- 3.5 - 4.4: High valid (8-10% error)
- 2.5 - 3.4: Valid (11-15% error)
- 1.5 - 2.4: Less valid (16-20% error)
- 1.0 - 1.4: Not valid at all (21-25% error)

Indicators	Mean	Verbal Interpretation
1. The indicators in the questionnaire consistently and accurately measure each of the research variables.	4.56	Very High Valid
2. The questionnaire fits the variables under research, thus measuring what it intends to measure.	4.56	Very High Valid
3. The questionnaire can measure items of variables within a given time frame.	4.78	Very High Valid
4. The questionnaire can distinguish the characteristics or properties of the differing attributes of the study subjects.	4.66	Very High Valid
5. The questionnaire can gather data, eliminating biases and subjectivity.	4.44	High Valid
6. The questionnaire is framed concisely to avoid the risk of error.	4.44	High Valid
7. The questionnaire can generate data that will be valuable and practical for the sectors concerned in this research.	4.89	Very High Valid
OVERALL	4.62	Very High Valid

Comments from the Validators

1. What is the rationale for determining the number of teachers handling SSC Classes and their positions? --- Unless these variables are correlated with other variables, they can be used in the research. If not, the researcher may consider finding other variables, such as training attended, etc. 2. Check the qualitative descriptions to see if they match the research problem. You may consider "highly implemented, implemented, least implemented, not implemented."."
Please include documentary analysis to lessen biases and strengthen the respondents' evaluation if possible.
Congratulations on developing good and valid questionnaires for implementing the Special Science Curriculum in Public Secondary Schools in Rizal.
A. Please make clear the goal of the study (implementation? [no baseline information] or improvement [with existing data]); B. Part 1. Item #4. May be rephrased; C. Part 2. II. Extent of Implementation .... Qualitative description [least extent; less extent; moderate extent; high extent; and very high extent] ; D. Part 3. What are the challenges .... in terms of a) ... b) .... c)... to obtain rich information.
Include the word "Extent" in the title. Variable 2.2 must be Admission and Retention as indicated in your instrument. Also, kindly indicate the word Educational in your instrument as stated in variable 2.4 Learning Resources and Educational Facilities. Create a checklist for Variable 1.4 on the different Science Activities
Items are scaled to generate sufficient variance among the intended respondents. Properly constructed statements/ simple and short sentences that require only one piece of information. Indicators cum questions are precise and brief. Items do not contain content that may be perceived as offensive or biased. However, proper capitalization must be observed. The link between the theoretical construct that the researcher would like to assess and the questionnaire items is evident. CONGRATULATIONS and GOODLUCK!
The questionnaire covers the expected data and information to be gathered.