

A Study on the Impact of SSES Curriculum on Grade 7 Students Academic Performance in the New Normal

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Abstract:

Special Science Classes in both elementary and secondary in the Department of Education enhance the skills of our learners with higher aptitude in Science and Mathematics.

The project's objectives are to: (1) give gifted and talented students access to a learning environment through specialized science and math curricula that recognize multiple intelligences; (2) give these students avenues, opportunities, and exposures to develop the necessary skills and aptitudes; (3) equip teachers and school administrators to implement and manage SSES schools; and (4) create SSES program models for both regular schools and SPED centers (DO 57, s. 2011).

Keywords – Special Science Class, Students Academic Performance

I. Introduction

Science. From anational perspective, it is useful because of its links to technology and industryareas of high priority for development. Italso provides ways ofmaking sense of the world systematically for it develops learners’ scientific inquiry skills,values, and attitudes, such as objectivity, curiosity, honesty, and habits of mind includingcritical thinking.

All these are useful to the individual learner for his personaldevelopment, future career, and life in general. These skills, values, attitudes, anddispositions are likewise useful to the community that an individual student belongs to, andare further useful to the country that he lives in.The learning of science is also important for the nation’s cultural development andpreservation of its cultural identity. Science is most useful to a nation when it is utilized tosolve its own problems and challenges, keeping a nation's cultural uniqueness andpeculiarities intact. Thus, in many countries, science teaching and learning is linked withculture(Faustino & Hiwatig 2012).

In addition, likemost countries, that integratewestern theoriesintotheireducational system, giftednesshasbeen acknowledged in the Philippinesformore thanfourdecades.Specifically, in the Philippines,aside fromtheregular school program,a special projectforchildrenwith exceptional skills and abilities or giftedchildren

isalso officially offered. As mentioned, the projectprovidesa special science curriculum forgiftedchildren starting inGrades 1 and 2;thisprojectwill continue untilschoolsacross thenation havetheirown SSES classes(Faustino & Hiwatig 2012).

As per DO 57, s. 2011 – Policy Guidelinesin the implementation of the Special Science Elementary Schools (SSES) Project, it is a research and development project intended to cultivate learners with higher aptitude for science and mathematics through the application of an enhanced science and mathematics curriculum at the elementary level.

The project aims to (1) provide a learning environment to the gifted and talented through special Mathematics and Science curricula which recognize multiple intelligences geared towards the development of God- loving, globally competitive, nationalistic, creative, ecologically aware, scientifically and technologically-oriented and skilled individuals who are empowered through lifelong learning skills; (2) provide the gifted and talented learners with avenues, opportunities and exposures for developing necessary skills and aptitudes; (3) capacitate school heads and teachers in implementing and managing SSES schools; and (4) develop SSES program models for both the regular schools and SPED centers (DO 57, s. 2011).

In compliance to the increasing need for scientific knowledge, theories, and skills to be applied in this modern era of robotics and state of the art gadgets, the Department of Education is envisioning to produce more scientifically gifted and equipped learners who will have adept technological and scientific skills and are globally competitive. To adhere with this vision, the department has been implementing the Special Science Curriculum. This is a special curriculum specifically designed and formulated to enrich the competencies of advanced and scientifically inclined learners.

To ensure that all scholars or beneficiaries of the Special Science class are truly qualified and deserving to be benefitted by the Special Science Class, the Department of Science and Technology prescribes and provides the selection test for applicants who are willing to undergo rigid screening. To qualify as examinees, the learners must reach a particular grade requirement in major subjects like English, Science and Mathematics, and must cope with the required general average. Once qualified to be a beneficiary of the Special Science Class, the learner is required to maintain a target grade not lower than 85% and must maintain with an 85% required general average (Bugtong 2017).

In response to the growing importance of science and gifted children in the Philippines, the Special Science Elementary School Project (SSES Project) was implemented in 2007. This project is intended for gifted children in public elementary schools and aims to produce scientifically literate students who will opt to be educated in special science high schools (Faustino & Hiwatig 2012).

It is crucial to know whether the goals of SSES are achieved or not; if it is so, to what extent they are achieved, to develop the activities, compensate drawbacks and improve them more effectively. These implementations of SSES are conducted by experts through appropriate evaluation approaches and models, systematically. To define students' readiness levels, which is an important aspect of evaluation, is of great significance to achieve the goals of SSES.

Learners bring their previous learning experience at the beginning of teaching process. These experiences or their entrance behaviors could

either be related or unrelated with new teaching. Thus, to determine such experience is important to facilitate their learning process gained in SSES.

Furthermore, it will also be a question as to how SSES curriculum affects the performance of its students in the secondary level since it is considered as the preparation for its challenges and advance lessons. Thus, it is important to gauge how they will achieve in the high school.

Moreover, for Lamas (2015), school performance is an issue that deeply concerns students, parents, teachers and authorities not only in our country, but also in many other nations and continents. The complexity of the academic performance starts from its conceptualization. Sometimes it is known as school readiness, academic achievement, and school performance, but generally the differences in concepts are only explained by semantics as they are used as synonyms. Conventionally, it has been agreed that academic performance should be used in university populations and school performance in regular and alternative basic education populations. We will point out just a few because there is a diversity of definitions.

Academic performance involves meeting goals, achievements and objectives set in the program or course that a student attends. These are expressed through grades which are the result of an assessment that involves passing or not certain tests, subjects, or courses. On their part, Willcox (2011) defines academic performance as the level of knowledge shown in an area or subject compared to the norm, and it is generally measured using the grade point average (Lamas 2015).

In this light, therefore, the researchers pursued to conduct a study as to how schools in the Philippines enhance the operations of SSES in order to reach the standards and demands of functionality in the Secondary Special Science Class. Specifically, the researchers will study the Readiness of SSES Learners for Secondary Special Science Classes in the New Normal Setting in Selected DepEd DepEd-registered schools in the Bulacan.

Significance of the Study

The findings of this study redounded to the benefit of the following individuals:

Science Class Coordinator. This study will help science class coordinators to continue polishing and improving their curriculum for a better effective curriculum.

School Administrators. This study will let the school administrators be commendable for their effort in putting science classes in their schools and providing equipment and needed papers for this curriculum.

Multi-Level Stakeholders. It will include the teachers, parents, students, and policy-makers who would be aware about this special class program in elementary and secondary.

Future Researchers. This study will let them serve as basis for their future study about special class program for our differentiated learners that were catered by the Department of Education.

performances of SSES learners during the pre/post-test in Science, Mathematics, and English as requirements in the curriculum of STE Class, and the significance of the SSES curriculum in the new normal setting. In the process, distribution, and collection of data through questionnaires sent via Google form, analysis and interpretation of data, and formulation of the study on the impact of the SSES curriculum on Grade 7 academic performance in the new normal is shown. Upon the completion of data, the result and discussion of the study were presented in the output or result of the study.

Statement of the Problem

This study intends to determine the effect of the New Normal Learning set-up among the students in the Special Science Elementary School (SSES) program who are now in the Science, Technology, and Engineering (STE) program in selected DepEd Registered Schools in Bulacan.

Specifically, this study aims to answer the following statements:

1. What is the demographic profile of the respondents in terms of *sex, age, school, and economic status (family annual income)*?
2. What is the academic performance of the respondents in terms of their average grade in Science, English, and Mathematics in the Special Science Elementary School (SSES) program and their grade in the 1st grading period in the Secondary Special Science Class?
3. What is the New Normal Learning setting of the respondents in terms of their *preference in mode of learning, and the limitations encountered*?
4. Is there a significant difference between the respondents' SSES academic performance and academic performance as SSES Learners?
5. Is there a significant relationship between the New Normal Learning and their academic performance as SSES learners and Secondary Special Science Class Learners?

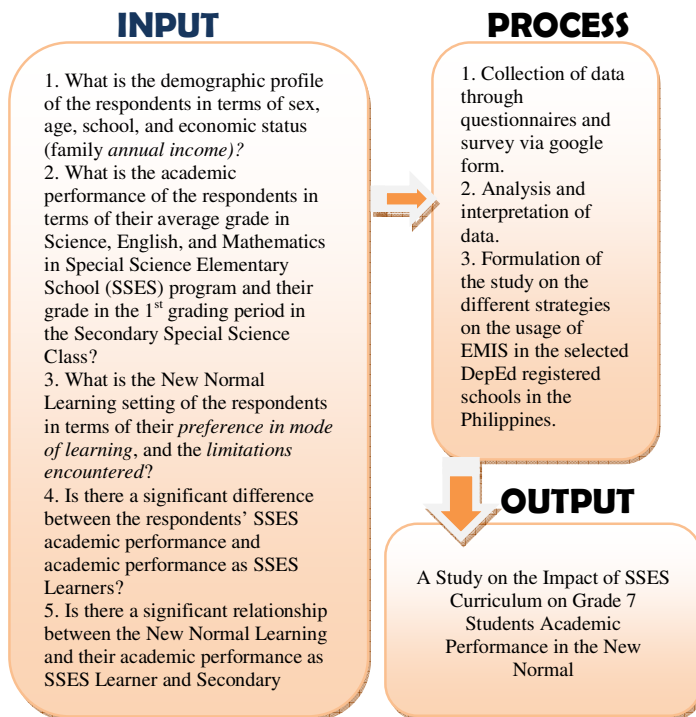


Fig. 1. Conceptual Framework

The study explained the impact of being a Special Science class student during elementary and continuing to be a special science class student at the secondary level. Figure 1 shows the process of the research. Listed in the input section are the final grades of each learner, the different academic

Scope and Delimitation of the Study

This study focused on the impact of the SSES Curriculum on Grade 7 Students' Academic Performance in the new normal. Specifically, this

study covered the impact of being a learner of Science Class Curriculum and continues the curriculum in their secondary education. It is limited to the learners under the curriculum from elementary until secondary level in select DepEd registered school in Bulacan.

The respondents of the study were the fifty (50) Science Class students from the Select DepEd Registered Schools in the Bulacan.

Therefore, the study focused only on the impact of science class on the learners' performance as they passed the science and technology curriculum in secondary level. Science, Mathematics and English grades are included in the study only. However, the study was permitted by the adviser and the school heads and students were asked to answer the survey with utmost honesty and limited time to secure correct and trustworthy responses.

Definition of Terms

The following terms are defined conceptually and operationally for this study.

Special Science Class. Curriculum allotted for students as preparation for Science track and Science related job.

DepEd Bulacan Registered Schools. Department of Education Public or Private schools which were permitted to operate Special Science Class.

IV. Methodology

This study employed a survey research method which used a sample size of 50 Grade 7 students in selected DepEd Registered schools which implements Science, Technology, and Engineering (STE) program in the province of Bulacan. This survey research used a quantitative research strategy using questionnaires with Likert scale. For this study, the researchers have considered using the variables on the new normal learning set-up which includes the preference for the mode of learning, and limitations encountered by the students. Also, the academic performance of the student in STE and SSES were considered which covers the SSES final grades of the respondents in English, Mathematics, and Science and the same set of subjects in the first grading period of the respondents as STE learners. The

researchers have also collected the demographic profile of the students just to describe the sample used for this study.

After the collection of the data, the researchers have used descriptive and inferential statistics to analyze the data. Descriptive statistics includes generating the frequency distribution table while for the inferential part, the researchers have employed the t-test and the multiple linear regression.

V. Results and Discussion

This section presents the results of the study conducted among the Grade 7 students in selected DepEd Registered Schools.

Table 1 shows the demographic profile of the respondents wherein the majority are female students (62.0%) and a least number of male students (38.0%). A large proportion of the respondents were 12 years old (76.0%) and came from School A composed of seven in ten (70.0%) of the respondents. The family annual income of the respondents also shows that more than half (66.0%) were earning from Php 200,001 to Php 300,000, whereas only one (2.0%) indicated that they generate below Php 100,000 annually. Other details are shown in Table 1.

Table 1. Demographic Profiles of the Respondents

Demographic Profile	Frequency	Percentage
Sex		
Male	19	38.0%
Female	31	62.0%
Age		
11 years old	8	16.0%
12 years old	38	76.0%
13 years old	4	8.0%
STE School		
School A	35	70.0%
School B	4	8.0%
School C	4	8.0%
School D	4	8.0%
School E	3	6.0%
Family Annual Income		
Below Php 100,000	1	2.0%
Php 100,001 – Php 200,000	4	8.0%
Php 200,001 – Php 300,000	33	66.0%
Php 300,001 – Php 400,000	7	14.0%
Php 400,000 and above	5	10.0%

The academic performances of the respondents in terms of their final grade in English, Mathematics, and Science as SSES students were collected, as well as their grade in the first grading

period in the same set of subjects as STE students. Table 2 shows that the generally, the English, Mathematics, and Science subjects of the respondents in SSES was higher than the grades earned as STE learner. In particular, it was shown that from the sample of 50, the lowest grade for the English subject in SSES was 85 while the highest grade earned was 99 and the mean was 92.78. On the other hand, for the same subject in STE, the lowest grade was 82 while the highest was 94 and the mean was 88.72. Moreover, the Mathematics subject in SSES among the respondents has lowest grade of 86 while the highest was 99 and the mean was 92.88. In STE for the same subject, the lowest grade earned was 85 while the highest was 96 and the mean was 89.68. Lastly, the Science subject in SSES obtained a lowest grade of 87 while the highest was 99 and the mean was 92.70, whereas for the STE, the respondents received the lowest grade of 87 while the highest was 97 and the mean was 91.57.

Table 2. Academic Performance of the Respondents

Academic Performance	Minimum	Median	Mean	Maximum
English				
SSES (Final Grade)	85.00	93.00	92.78	99.00
STE (1 st Grading Grade)	82.00	89.00	88.72	94.00
Mathematics				
SSES (Final Grade)	86.00	93.00	92.88	99.00
STE (1 st Grading Grade)	85.00	89.00	89.68	96.00
Science				
SSES (Final Grade)	87.00	93.00	92.70	99.00
STE (1 st Grading Grade)	87.00	91.50	91.57	97.00

It can be noted that the academic performance of the respondents might be affected by the new normal learning setting during the pandemic. Because of this, the researchers were able to come up with indicators that might be a possible reason for this.

Table 3 shows the indicators for a new normal learning set-up preferred by the respondents. For the preference of the mode of learning, the majority has positive feedback (*i.e.* highly preferred and moderately preferred) regarding the given statements specially on those who preferred printed modules and actual face to face session or with online class session. With all

the combination of scenarios given for the learning delivery modalities, it can be observed that most of the students wanted an actual face-to-face class session as well as a printed copy of the module rather than only having an online class session and online materials. As observed, there more students who indicate that they least preferred (30.0%) only online class material and online class session as compared to other combinations of Learning Delivery Modalities.

As to the degree of limitation encountered by the respondents during the new normal learning setting, majority of the students sees it as least to not serious cases or events. Say, the majority of the students do not take the statement, *I do not have a cellphone to communicate with my teacher* as something critical in limiting their learning during the pandemic. The same as with the statement, *I do not have enough skills and knowledge in using computers in online learning*, most of the respondents do not consider this as a challenge in their learning during this time of pandemic. However, there are instances where the respondents tend to consider the following as something crucial in the new normal learning setup. One of these is the WiFi connection (46%) and the allowance to buy or avail mobile data or the payment for WiFi (30%). The respondents also indicate that learning on their own without the assistance of their teachers is a disadvantage in the new normal learning set-up (34%) as well as they cannot grasp the lecture through printed material without the actual lecture and demonstration of the teacher in the lesson (40%). Other details are given in Table 3.

Table 3. New Normal Learning Set-up of the Respondents in SSES

Preference of the Mode of Learning	Highly Preferred	Moderately Preferred	Least Preferred	Not Preferred	No response
I preferred printed modules and actual face to face session.	33 (66.0%)	13 (26.0%)	2 (4.0%)	-	2 (4.0%)
I preferred printed modules and online class session.	20 (40.0%)	18 (36.0%)	10 (20.0%)	1 (2.0%)	1 (2.0%)
I prefer online materials and schedules	22 (44.0%)	20 (40.0%)	5 (10.0%)	1 (2.0%)	2 (4.0%)

actual face to face class session.	17 (34.0%)	13 (26.0%)	15 (30.0%)	1 (2.0%)	4 (8.0%)
I prefer online materials and online class session.	21 (42.0%)	18 (36.0%)	10 (20.0%)	-	1 (2.0%)
I prefer a blend of online materials, printed materials, and face to face class session.	21 (42.0%)	17 (34.0%)	9 (18.0%)	1 (2.0%)	2 (4.0%)
I prefer a blend of online materials, printed materials, and actual face to face class session.	17 (34.0%)	20 (40.0%)	9 (18.0%)	1 (2.0%)	3 (6.0%)
I prefer a blend of printed and online materials, as well as online and actual face to face class session.	11 (22.0%)	12 (24.0%)	14 (28.0%)	13 (26.0%)	-
I have encountered problems in WiFi connection.	6 (12.0%)	7 (14.0%)	18 (36.0%)	19 (38.0%)	-
I have encountered problems in transportation from our house to our school.	4 (8.0%)	6 (12.0%)	17 (34.0%)	22 (44.0%)	1 (2.0%)
I do not have cellphone to communicate with my teacher.	5 (10.0%)	9 (18.0%)	21 (42.0%)	15 (30.0%)	-
I do not have computer to do my homework and requirements.	4 (8.0%)	11 (22.0%)	14 (28.0%)	21 (42.0%)	-
I do not have enough allowance to avail mobile data or WiFi payment.	2 (4.0%)	9 (18.0%)	20 (40.0%)	19 (38.0%)	-
I do not have enough skills					

and knowledge in using computer in online learning.	7 (14.0%)	7 (14.0%)	15 (30.0%)	19 (38.0%)	2 (4.0%)
I am not comfortable in online learning.	8 (16.0%)	9 (18.0%)	14 (28.0%)	18 (36.0%)	1 (2.0%)
I am not used to learning on my own without the assistance of my teacher.	6 (12.0%)	9 (18.0%)	19 (38.0%)	16 (32.0%)	-
I cannot concentrate in learning when I am not with my classmates.	9 (18.0%)	11 (22.0%)	19 (38.0%)	10 (20.0%)	1 (2.0%)
I cannot grasp the lecture through printed materials without actual lectures and demonstration.					

Given the preferences and the limitations experienced by the respondents in the new normal learning set-up, the researchers were interested to see if there was a significant difference between the respondents' academic performance as SSES learners previously and as current STE learners. To test this, the researchers used the *t-test* to see the significant difference in their academic performance. Table 4 shows that the mean grade of the respondents for SSES is 92.79 is higher than the STE average grade of 89.99. Further results show that the t-test value is 6.7058 and df = 86.246 with a p-value less than 0.0001 which is highly significant at 0.05. The result suggests that the academic performance of the respondents as SSES and STE learners during the pandemic is statistically different, that is, the academic performance of the respondents as SSES was higher as compared to being an STE learner.

Table 4. A Significant Difference Between the Respondents' SSES Academic Performance and Academic Performance as STE Learners

Academic Performance	Mean	t-test value	df	p-value
SSES	92.79	6.7058*	86.246	<0.0001
STE	89.99			1

*Highly significant at 0.05

To verify the variables that might affect the academic performance of the respondents as STE learners, the researchers used the variables of the new normal learning set-up (*i.e., Preference for the Mode of Learning, and Limitation Encountered*) and the academic performance as SSES learner. To generate this result, the researchers used multiple linear regression with the results given in Table 5.

The results show that only the intercept with an estimate coefficient of 81.1129 is highly significant at 0.05. The rest of the coefficients – which indicates relationship with the predictor which is the STE academic performance – are not significant suggesting that the variables on the new normal learning set-up experienced by the respondents have nothing to do with the academic performance of the students as STE learner. This is also the same with the academic performance of the respondent as SSES learner with a coefficient of 0.0977 with p-value 0.372 which is not significant at 0.05. This also implies that the academic performance of the respondents in SSES has nothing to do or does not contribute to their academic performance in STE.

Table 5. Significant Relationship Between the New Normal Learning Indicators, their Academic Performance as SSES Learners Against Secondary Special Science Class Learners

Variables	Estimate	t-value	p-value
(Intercept)	81.1129*	8.100	<0.00
SSES academic performance	0.0977	0.903	01
Preference of the Mode of Learning (Least Preferred)	-0.0287	-0.036	0.372
Preference of the Mode of Learning (Moderately Preferred)	0.0094	0.016	0.971
Limitations Encountered (Least Serious)	-0.7108	-0.615	0.987
Limitations Encountered (Moderately Serious)	0.6428	0.551	0.542
Limitations Encountered (Not Serious)	-0.3326	-0.291	0.585

*Highly significant at 0.05

VI. Summary, Conclusion, and Recommendation

This study focuses on the impact of the SSES Program in the academic performance of the Grade 7 students in the new normal setting. Particularly, this study explored the variables relating to the new normal setting which includes the preference of the mode of learning and the limitations encountered by the respondents. The results show that majority of the respondents moderately to highly preferred face to face class sessions and printed modules or any

blended set-up which covers these two major scenarios. On the other hand, most of the respondents do not prefer online class and online materials only. Moreover, the respondents have considered the given indicators in the study as least to not serious at all in the limitations encountered in learning during the pandemic. And with respect to the academic performance of the students, it can be noted that on average, their SSES academic performance were higher than that of the STE. To verify the significant difference between these two, the researchers have statistically confirmed through t-test that both SSES and STE academic performance of the students are significantly different. Moreover, when the SSES academic performance was incorporated in the multiple linear regressions together with the variables in the new normal setting, the results indicate that all three variables were not statistically significant in this sample collected from selected schools in Bulacan. This implied that the preference of the mode of learning, limitations encountered by the students during the pandemic, and their SSES academic performance were not related or do not contribute to the academic performance of the Grade 7 students in STE program.

With this scenario, the researchers conclude that there might be other contributing factors which can assess the impact of the SSES program in the academic performance of the Grade 7 students in STE. Also, considering that STE academic performance was based on the first grading period, this is perhaps a limitation in the conduct of the study in determining the impact of the SSES program among the respondents. In relation to this, the researchers suggest that other contributing factors can be considered such as the structure of the modules used, learning style of the students, as well as the factors related to teachers be considered. The researchers also suggests that other pandemic-related academic factors might be considered to test if this could affect the students' academic performance. In addition, the number of respondents may also be increased so that more subjects could contribute to the validity and reliability of the study.

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