Students and Teacher's Perception on the Effectiveness of Using Strategic Intervention Material in Science

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***Abstract*-- This study aimed to determine the perceptions of the selected students who have learning difficulties in science, and their teachers regarding the effectiveness of using Strategic Intervention Material (SIM) in science. To explore and describe the perceptions of the teacher and students, a qualitative-phenomenological approach was employed. There were six (6) participants of the study composed of teachers and students which were purposely selected. The participants of the study are from one of the public schools in Island Garden City of Samal that has teachers utilizing SIM (Strategic Intervention Material) in aiding students' least learned topics or competencies in science. The researchers used researcher-made questionnaires which were validated by a panel of experts. The researchers also utilized the focus group dicussion employing an open-ended semi-structured interview to the key informants. The researchers interviewed each of the participants and obtained some perceptions correlated to the research questions prepared by the researchers. After gathering the needed data, the researchers used thematic analysis or thematic coding as a tool for analyzing the data and drawing of the conclusion. Based on the gathered data from the participants, the researchers noticed three positive themes which were Strategic Intervention Material aids the least learned competencies, Strategic Intervention Material is simplified, and Strategic Intervention Material improves the performance of the students in class. In addition to this, there is a student, one of the participants, who stated that after Strategic Intervention Material was utilized to them, there had been an increase of her grades. Because of the positive results of the gathered data, it is possible that Strategic Intervention Material will prosper in the near future as a material that aids least the learned competencies of students. With these results also, it was recommended that the Science teachers should make their own SIM, school administrators should include the use of SIM in their planning, and similar study that has more participants and wider in scope should be conducted by future the researchers.**

***Keywords*-- teacher, students, Strategic Intervention Material, perceptions, Science**

I. INTRODUCTION

Science is the most interesting subject for elementary students because it gives answers to their curious minds. But even though this subject caters the questions of these students, understanding its concept is not as easy as what they think. A study entitled "Achieving Top Grades in science subjects more difficult, proves research" by Durham University, (2008) shows that children studying science found that in this subject, achieving top grades in exams is very hard compared to other subjects. The study also shows that there are significant differences in the results of the exams of different subjects with the same level of difficulty where science is among the hardest. Researchers are concerned with the alarming problem of students opt to choose to study easier subjects than choosing science subjects which are badly needed by companies in the knowledge economy.

These days, 20% of young Europeans didn't manage to reach the minimum level of basic skills in science. This was the estimated result of the survey conducted by the Programme for International Student Assessment (PISA) (2010-2013). This survey is being conducted in every three years since 2000. The most common reasons why these students are low achievers in science is because of their socioeconomic status or migrant status. Also, some of these low achievers have special educational needs.

The author of an article entitled Science Education Realities, Jalmasco (2014), published by "The Manila Times" stated that Filipino students have serious difficulties in science. After conducting the National Achievement Test (NAT), it shows that the passing rate of grade 6 students is only 69.21%. It showed a 24% improvement compared to previous National Achievement Test (NAT), but still, it is below to the passing rate which is 75%. According to the Department of Education (DepEd) Data, the main reason of why students struggle in this subject is because of the serious lack of science laboratories or facilities in elementary and high schools in the Philippines

In a public elementary school in Island Garden City of Samal, some students have failed in achieving the targeted competencies in science. A class adviser in the school has used strategic intervention material to aid the problem of the students. Since the school is one of the few schools in Island Garden City of Samal that has teachers who have been utilizing strategic intervention material as an intervention tool to their students, the researchers are convinced to conduct their study in this school.

After every presented lesson, there are always students who failed to meet the expected competencies in this subject. Factors might be; the lesson is too hard for them, the lesson is not presented well, lack of aids and the lesson is too boring

for them. These students, who didn't meet the competencies or who failed the final examination are sometimes ignored by the teacher and just given remedial examination instead of making sure that they fully understood the least learned topic. There are many ways to help these students. Modules are the most common of these, but students found it boring. They are more interested in materials that are attractive and contain more pictures. The reason why the researchers decided to conduct this study is that the researchers want to seek for answers if the strategic intervention material is effective in aiding this problem.

A. Research Questions

This study gathered the shared thoughts, opinions, and perceptions of respondents to the teacher's utilization of Strategic Intervention Material (SIM). Specifically, this sought to answer the following :

1) What are the perceptions of the students and teachers regarding the use of SIM in science?
2) How does SIM affect the learning of the students with the least learned competencies in science?

B. Significance of the Study

The study will add to the literature of knowledge on the implementation of Strategic Intervention Material (SIM) in making sure that the students will achieve the needed competencies in science. It will also enables those who are interested in using this material to maximize its benefits and utilizes the material to its best. The following are the beneficiaries of the the sudy:

1) *School Administration and Faculty*--The study will give awareness to the administration of UM Peñaplata College about the effects of this intervention material in increasing the productivity of the teacher in the teaching process and as a way of achieving the least learned competencies in Science of their students.
2) *Teacher*--The study will allow the teacher to ensure that all students succeed in acquiring core competencies in science that is expected to manifest in them at the end of every lesson.
3) *Students*--The result of this study will be a big help especially for education students who are aspiring to become a teacher someday. For them to learn the difficulties of what it's like to be in the field facing different problems especially the problem of least learned competencies in science, as one of the hardest subject to master, at the end of instruction.

C. Theoretical Lens

This study is anchored on the Intervention Theory of Argyris (1970) which stated that analysis of the decision-making problems of intervening effectively in a situation to secure desired outcomes. Intervention theory addresses the question of when it is desirable not to intervene and when it is appropriate to do so. It also examines the effectiveness of different types of intervention.

The study is also supported by the work of Piaget (1972) in developmental psychology into a broad approach of constructivism which blended the constructivist theory of Dewey and Vygotsky. According to his work, a learner needs to construct knowledge by his\her own needs to have full control over the learning process. A learner learns better by doing rather than observing. The teacher's role in this learning process is just a facilitator. A perspective of two constructivists suggests that learners can assimilate new knowledge based on his/ her existing understanding. Learners that are engaged in a constructivist-oriented instruction tends to develop comprehensive and cognitive structure and enables them to use their strategies on information processing effectively (Wu & Tsai, 2005).

Further, Dweck (1986) cited that motivational processes affecting learning describe how motivation affects the way how a child acquires and uses knowledge and skills. Researches show how motivation shapes and influences their reactions or performances towards learning something.

II. LITERATURE REVIEW

As cited by Bunagan's (2012) study, Strategic Intervention Material (SIM) is an instructional material designed to re-teach the least learned concepts and skills. It is given to students who didn't meet the expected competencies during a regular classroom teaching. Bunagan also differentiated SIM from modules. This material (SIM) gives emphasis on the skills that students did not mastered during their regular class, while a module only contains topics that are intended for regular classroom teaching.

The conducted research of Soberano (2009) proved that strategic intervention materials (SIM) are effective in mastering the skills that were the least learned competencies before based from the scores after the posttest was conducted .The experimental group achieved higher mean than before after the Strategic Intervention Material (SIM) was presented to them. On the other hand, a convincing change of the mean score from the controlled group was not observed. Therefore the study concludes that there was a significant difference between the two groups in their mean scores after the posttest which favors to the experimental group.

In addition, the study that Espinosa (2014) furtherly explored the adopted learning approach that is based from SIM which also attempted to investigate the effects of this intervention material on the performance of high school students in science. The strategic intervention material-based instruction covered the least mastered skill of the students in science which is chemical bonding. By utilizing the pretest-posttest pre-experimental design, the study aimed to know if there is an improvement in the student's performance. After the study was conducted, the study shows that there is an

improvement in the learners performance and it concluded that the SIM is an effective intervention material.

Salviejo, Aranes, & Espinosa (2014) cited that SIM was found effective in enhancing the teaching-learning process. Their study concluded that majority of the students that was implemented with SIM-BI has adopted the deep learners' approach. There are surface learners adopted the deep learners' approach and there are also few deep learners who adopted the surface learners' approach. Both type of learners performed equally after the exposure of SIM-BI. Deep and Surface Learners have a positive insights about SIM, they found SIM as enjoyable and it catches the interest of the students in learning chemistry.

Likewise, Alboruto (2017), cited that Strategic Intervention Material is effective in enhancing students' science process skills and mastering the concepts of the subject. Teaching science concepts is quite a challenge for a teacher. Some students have difficulties in understanding it especially to those who have first encountered the concepts. Through the use of strategic intervention material, the results of their study proved that the material helped the students to master these concepts.

Additionally, Gultiano (2012) concluded that Strategic Intervention Material (SIM) are effective in mastering chemistry. Both the experimental and controlled group has the same level of mental ability before the Strategic Intervention Material (SIM) was given. After the implementation of SIM to the experimental group,the posttest results showed that the experimental group performed better compared to the controlled group. The significant difference between the mean scores of the controlled and experimental group after the posttest proves that Strategic Intervention Material (SIM) is effective in reteaching and mastering concepts in chemistry.

Also, the study of Dacumos (2016) indicates that there is an Increase in the Learning Proficiency of Students in Science Education". After the use of strategic intervention material, the students' proficiency or knowledge acquisition skills in science have improved or developed. The study also suggests that secondary teachers may use this material in order to cater their students who have difficulties in science.

In the research of Dy (2007), she found out that the achievement of the students that were utilized with the SIM which is the experimental group has a better result to the other group of students which is the controlled group. The Division of Albay's Mean Percentage Score (MPS) in science in the National Achievement in school year (2004-2005) is below the proficiency level which is 75 percent. After conducting the experiment, the students in the experimental group has reached the 75 percent proficiency grade. Therefore, She concluded that there is a significant difference between the experimental and controlled group and the study suggests that the Strategic Intervention Material (SIM) is an effective tool for improving the student's performance in science.

The study of Togonon (2011), focuses on developing and evaluating project- based strategic intervention materials (PB-SIMs). The research showed a significant difference between student's mean scores after the Project-based Strategic Intervention Material (PB-SIM) was presented to them .The group of students that are presented with PB-SIM achieved a better mean score in the posttest compared to their prettest.

A study by Escoreal (2012) on Strategic Intervention Material (SIM) aimed to reduce the least learned competencies of Grade 4 pupils in science. Based from the results of her study, she concluded that there is a significant difference between the mean score of the students before and after the Strategic Intervention Material (SIM) was implemented. Castaneda (2017) also pointed out in his study that the knowledge of the students who were given Strategic Intervention Material has improved. With the utilization of the material, the students had greater understanding of the lesson in science compared before. The results of this study affirmed and supported the other articles which state that the strategic intervention material shows effectivity in catering the needs of students who have not met the expected competencies of a subject matter.

Likewise, the study of Barredo (2014) noticed a development in the academic performance in science of the students of Tunasan Elementary School. The study concluded that over a longer period after using SIM, the students are finally able to remember the lessons that were least learned before. Saclao (2015) affirmed that the intervention material made them understand the lesson better. Subject matter contents or concepts that the students have difficulties with are made easy to understand through the use of strategic intervention material. The study proved, from the perspective of those who was given SIM, that the material is effective as an intervention tool.

According to Tipolo (2016), Strategic Intervention Material and the five basic parts of it, Strategic Intervention Material must be simple and easy to understand. His uploaded article gives steps and some advices in making an effective strategic intervention material. It also explains the different parts of the material. In an article by Rodrigo (2015), it is very identical to this by stating to keep the activities in a Strategic Intervention Material short and simple. The intervention material must be simplified and short enough for the students to understand and to be interested. The material being simplified is essential since the students need to understand it more easily compared to a regular class discussion of a subject matter.

Meanwhile, Roshensine (2009) mentioned that students are taught to generate questions to enhance their comprehension. After conducting the experiment in the study conducted, they concluded that the strategy of generating questions improves students' comprehension base on the results of the tests given after the intervention. Student's low

comprehension skills in science is one of the reasons why they cant understand the texts easily.This gives emphasis on giving focus on the comprehension skills of the students. It is needed that the implementation of a skill must be integrated to other content areas to make them interconnected. Such an approach can be useful in many aspects since it involves many skills. although these skills must be meaningful to a content area (Wolf & Bowers, 1999).

III. METHODS

A. Research Design

We used a qualitative approach in this study utilizing phenomenological method. The construction process largely took in the understanding and interpretation of individuals. Klenke (2008) defined phenomenology as the study and interpretation of phenomena as they appear in our experience, or the way we experienced things, and thus the meanings of things have in our experience. The researchers used individual interview as the process of gathering data for the study.

B. Research Participants

The key informants of our study "Students and Teacher's Perception on the Effectiveness of Using Strategic Intervention Material in Science were the six(6) participants from a public school in the Island Garden City of Samal in the school year 2018-2019. We have used separate researcher-made questionnaires for the students and teachers which were validated by the panel of experts. We used the focus group discussion employing an open-ended semi-structured interviews. The informants were purposely selected. Powell & Single (1996) mentioned that a focus group is composed of individuals with shared key characteristics pertinent to the study and can only compose of 6-10 participants. In addition, Kuzel (1992) cited that a semi-structured interviews/in-depth interviews require a minimum sample size of between 5 to 25.

C. Research Procedure

We interviewed the respondents individually which is according to (Valenzuela & Shrivastava, 2002), interviews are very useful in getting the participant's or the respondent's point of view of a certain matter and so as the story base from his/her experiences. The interviewer asked probe questions that got specific information as a response from the participant. We used a voice recorder during the interview. The recorded information served as the data for the study and analyzed by the researchers by using Thematic Analysis as a tool for analyzing the gathered data.

D. Role of the Researchers

We interviewed the selected participants individually. There was a moderator, and the other researchers had alternated as Encoders, Time manager and Recorder. The information that was gathered from the interview such as, the shared experiences of the study participants, opinions and suggestions were stored in a voice recorder and were kept in the computer document. After that, we studied and transcribed those statements for analysis and interpretation.

E. Data Collection

We asked permission from the school principal for the study to be conducted. By asking the list of the students who failed in attaining the target competencies in science who were also given strategic intervention materials based from the class record of their adviser, the researchers collected the findings from the perceptions of the selected students and also their adviser through one on one interview. These findings that are based on their perceptions that served as the data for the study.

F. Data Analysis

After gathering the needed data from the interview, we have scrutinized the findings for the drawing of the conclusion of the study. After gathering the needed data, we used Thematic Analysis or Thematic coding as a tool for analyzing the data and drawing of the conclusion. The drawing of meaning from the data in this kind of data analysis is based on the common theme or idea which is gathered from the interviewed respondents. The method of the study seeks to produce initial codes that will be examined for finding the theme. Themes are the patterns which are very important in describing and examining a phenomenon. A precise data analysis can ensure trustworthiness and insightful findings (Nowell, et.al, 2017).

G. Ethical Considerations

We ensured that the informed consent will be given by the research participants before they participate in the study. The researchers will follow the appropriate procedure in doing the interviews to protect the confidentiality and the privacy of the research participants. According to Mertens (2019), the researchers should acquire ethical guidelines that are based on development for cross-cultural research when dealing with other people.

H. Trustworthiness of the Study

The responsibility of the researchers is to look for ideas from different authors to ensure the trustworthiness of this study, a qualitative type of research. According to Johnson & Onwuegbuzie (2004)), a qualitative study will be credible if it will objectively interpret with human experience and the other person who shares that experience has the same interpretation on it. In addition, it is very important that the study contain the criteria of trustworthiness such as dependability, transferability, credibility, and confirmability (Korstjens & Moser, 2018).

IV. RESULTS AND DISCUSSION

A. The Perceptions of Students and the Teacher Regarding the Use of Strategic Intervention Material in Science

1) To aid the least learned competencies of the students

The most common theme from the perceptions of the participants regarding the use of Strategic Intervention Material in science, in which the researchers notice from the data gathered, is that SIM used to aid the least learned competencies of the students. The interviewed teacher stated that SIM is used for the students who have least learned topics and it should be aligned with the least learned competency. As what the teacher stated after being asked by the interviewer about what can she say regarding the use of SIM; "when we say intervention, it is used for students who have least learned topics. "The simpler, the better ".*When we say intervention, gamiton jud na siya sa mga bata nga naay least learned topic.* The interviewer then asked the teacher, as a follow-up question, if what she found about SIM that caught the interest of the kids. "SIM should be aligned with the competency. Scrutinize the targeted learning domains, and if in case it won't still work, you should conduct an assessment to the to the student and if he/she does not learn from that material, that will be again your basis and mean to lower the difficulty of the material" (*SIM should be aligned with the competency. Himay himayun atong mga learning domains na e target.Unya if in case dili to mugana, dapat naa kay assessment didto. Sa bata kay kung dili to niya matun-an, mao napud to imung basis, mu go lower pagyud ka)*, she answered.

The teacher's last answer that supports this theme is when she was asked of what are her thoughts about SIM necessary as an intervention material in achieving learning competencies in science. She said, "It is useful to those students who have learning difficulties. You can identify it after the examination because of the TOS, and it is also where you can find the least learned competencies of the students" (*Magamit gyud sya sa mga bata nga tagilid gyud. Makita mana nimu inig exam kay naa man toy TOS unya ang least learned competency sa bata didto pud to nimu makita.)* The statement of the teacher was reinforced by these two studies. Saclao (2010) recommended that chemistry teachers may utilize strategic intervention material to reteach skills and concepts and also help the students to be able to master the competency-based skill. In addition, study conducted by Gultiano (2012) proves, based from the results, that Strategic Intervention Material is effective in re-teaching and mastering concepts in Chemistry.

Furthermore, the rest of the respondents, which are all five students, stated their perceptions. Student A, in support for the teacher's statement, strongly affirmed that SIM is for the students who have difficulties in some topics in science. "SIM is given to students who have learning difficulties for them to learn," (*Gihatag ang SIM sa mga bata nga nay gikalisdan…. para naa mi matun an).* This was proven by the study of Dacumos (2016) that the strategic intervention used by the researchers covered the least mattered skill of their respondents in science which is chemical bonding. After the pre-test and post-test pre-experimental design were utilized, post-test shows improvements of the students from the experimental group compared to the result from the pre-test and this proves that the material helped the students master the least learned topic of the students which is chemical bonding.

The second respondent, which is Student B, also agreed to what Student A stated that SIM is used for students to meet the competencies of their least learned topic. In his statement, after being questioned if SIM is necessary for students who have difficulties, he answered, "to be able to learn the topics they found difficult" (*Para mahibaw an nila ang ilang gikalisdan nga topic).* Another statement from student B that contributes to this theme is when he said "SIM is made for students who have difficulties," as an answer to the question "For you, what is SIM?" This was confirmed by the results of the study conducted by Barredo (2014) which concluded that over a longer period after using SIM, the students are finally able to remember and understand the lessons that were least learned before.

Student C also shows confirmation of this by stating that SIM is utilized to them to understand topics in science that they found hard before. From the same questions that Student B answered, student C's response is "For us to be able to understand what we find difficult in science" (*Para makasabot mi sa mga gikalisdan namu sa science).* Student C's answer to the second question which is not far from Student B's answer is "SIM is made to be utilized to students who have learning difficulties" (*Gihimu ang SIM para ihatag sa mga bata nga naay gikalisdan).* It is supported by the Strategic Intervention Materials aimed to reduce least learned competencies of grade 4 pupils of Escoreal (2012) in science shows positive results after the post-test.

The next interviewed student also has the same perception as the previous respondents stated. Student D said that SIM helped them understand the topics that are hard for them. With the same questions again that are answered by Student B and C, student D responded that SIM is necessary "For them to be able to understand their difficulties*" (Para masabtan nila ilang gikalisdan).* In the second question, students D's response is also not different from Student B and C's answers. He stated, "SIM is made to be able for us to understand the topics that we found difficult and we didn't know" (*Gihimu ang SIM para masabtan namu amuang wala nahibaw an ug nasabtan).* Anderson (2012), which based his study in teaching of quantitative genetics, concluded the students show positive development in understanding concepts in Genetics and thus supporting the answer of Student D. There is also the study of Togonon (2011) which focuses on developing and evaluating project-based Strategic Intervention Material (PB-SIM), having the same positive results with the previous studies as well.

The last respondent's answer is also related and has no difference compared to the previous ones. Student E supported the answers of the previous participants that SIM helped them know their least learned topics by stating that SIM is necessary "in order for them to be able to know what they found difficult" (*Para makabalo sila sa ilang gikalisdan)*

from the question "why is it that SIM is necessary for students who have difficulties in science"? The last statement is well reinforced by the study of Bunagan (2012) which cited that Strategic Intervention Material (SIM) is an instructional material designed to re-teach the least learned concepts and skills. These materials are given to those students who failed to meet the expected competencies in science during the regular classroom discussion.

2) Simplified

The second most common theme that occurred from the answers of the teacher and all of the students interviewed, about their perceptions regarding the use of Strategic Intervention Material in science, is that SIM is simplified compared to daily classroom discussions of topics in science. According to the teacher, based from the SIM's that she made, it must be simplified, and the words must be simplified for the students to understand it well. When she was asked if what she can say regarding the use of SIM, she replied that "when we say intervention, it is used for students who have least learned topics. The simpler, the better" (*When we say intervention, gamiton jud na siya sa mga bata nga naay least learned topic; the simpler, the better).* Afterward, she was asked if what she found about SIM that catches the interest of the kids. Use the simplest words, she replied. The statement from the teacher's perspective is related to the study of Saclao (2015) in which the students' feedback from the qualitative findings of his study affirmed that the intervention material made them understand the lesson better.

To support this, the other participants, which are the students, also stated that the SIM given to them is simplified. First, Student A said that SIM is simple when she was asked if what she found about SIM interesting for students. Then, the remaining participants were asked by the same question. Student B also affirmed by answering "It is simpler" (*Mas sayon).* Student A and B's views are well supported by Tipolo (2016) citing that what is Strategic Intervention Material and the five basic parts of it; Strategic Intervention Material must be simple and easy to understand. Also, in an article by Rodrigo (2015) is very identical to this by stating to keep the activities in a Strategic Intervention Material short and simple.

In addition, Student C also agreed to the previous statements by saying "It is simpler to understand" (*Mas simple sabton).* Same as the other respondents, Student D also said that "It is easier" (*Mas sayon).* The last of the respondents, which is student E, like the rest, she stated simply just "simple." These statements made by Student C, D and E are substantiated by the findings of the study conducted by Dacumos (2016) which concluded that some teachers utilized Strategic Intervention Material as a re-teaching tool and some utilized it as an intervention for least learned topics of complex subjects and made it simpler and easier to understand.

B. The Effects of SIM in the learning of the students with the least learned competencies

1. Improves Performance in the Class

The most common answer of the respondents regarding to the effects of SIM in the learning of the students with the least learned topic is it improves the performance of the students in the class. The teacher said that "those who undergo SIM, they realized that the topics they found difficult before was actually easy. They just didn't get it at first" (*Those who undergo SIM, they realize na kato diayng tan aw nila na difficult topic unya lisud sabton, kay sayun raman diay wala lang dayun niya na gets).* This was supported by the action research conducted by Castaneda (2017) which well reinforced the teacher's answer, pointed out that the knowledge of the students who were given Strategic Intervention Material has improved. With the utilization of the material, the students had a greater understanding of the lesson in science compared before.

Supporting this statement of the teacher, all of the students who were participants, affirmed that after using the SIMs given to them, they became more participative in class than before. A pattern was noticed by the researchers from the answers of the remaining participants from the question "after SIM was given to you, what are the effects that you notice to yourself?" Student A after being asked by the interviewer, answered: "I was able to participate in class" (*Maka participate naku sa klase).* Student B, asked with the same question, answers confidently "I was able to participate in class and didn't have difficulties" (*Maka participate naku dili naku mag lisud).* These answers are corroborated by the study of Dacumos (2016) by stating that there is an improvement of the proficiency of students in science. Salvejo, Aranes, and Espinosa's (2014) joint study also found out that SIM is effective in enhancing the teaching-learning process in science. Based on the findings of their study, the intervention material, regardless of the learning approach adopted, shows development in the performance of the students in chemistry.

Student C also confirmed these statements by saying that "I was able to participate then I was also able to understand the questions" (*Maka participate naku unya makasabot naku sa pangutana).* Student D's statement was more likely similar to Student C. She affirmed student C's answer by stating I was able to answer the questions of the teacher (*Maka tubag naku sa pangutana sa maestra).* Same as what the rest of the previous respondent's answers, Student E's answer to the same question is "I was able to answer the questions" (*Makatubag sa mga pangutana).* The study that best supports the given statements of Students C, D, and E was by Alboruto (2017) which cited that Strategic Intervention Material is effective in enhancing students' science process skills and mastering the concepts of the subject.

However, Student E added something, which is different from the other student participants, to her answer. She added that there had been an increase in her grades after the SIM was given to her. When she was asked by the interviewer if what are the effects that she noticed to herself after SIM was given to her, she firmly stated that "I was able to answer the

questions and my grade has increased"(*Makatubag na sa mga pangutana unya nitaas akoang grado).* This statement of the student is supported by the research of Dy (2007), which in her experiment; she conducted a pre-test post-test experimental research design to the experimental and controlled group. The research shows a significant difference between the two groups which favors the experimental group. The Division of Albay's Mean Percentage Score in the National Achievement Test in the school year (2004-2005) is below the proficiency level which is 75 percent. After her experiment, the students who had been part of the experimental group have reached the 75 percent proficiency grade in the National Achievement Test. Therefore, the study of Dy's results shows that it is connected to this common theme, which is there is an increase of grades of the students who were utilized with Strategic Intervention Material, in a way that the overall increase of grades of the students from the National Achievement Test also means there is an improvement on the knowledge acquisition of the students as well as their grades.

V. CONCLUSIONS, IMPLICATIONS, FUTURE DIRECTIONS AND RECOMMENDATIONS

A. Conclusions

Based on the results of this study, the following conclusions were drawn by the researchers:

1) The results of the study showed that the participants have positive perceptions of the effectiveness of using strategic intervention material in science because it aids the least learned competencies, and it is simplified. Therefore since it garnered positive perception from the participants, this newly introduced material was accepted and was appreciated by the students and the teacher and it will be easier to conduct or apply SIM in schools.
2) The findings of the study showed or proved that SIM has positive effects on the student's learning in their least learned competencies in science thereby making it highly recommended.

B. Implications

Since this intervention material garnered positive feedbacks from the participants, which are the teacher and students, it is possible that this material (Strategic Intervention Material) will prosper in the future. School administrations, which are responsible in the development of schools, will implement and utilize this kind of intervention material. It will be beneficial for both the teacher and the students and thus developers of the material would work in enhancing these intervention materials considering the fact that it has positive perceptions from the participants. It will be an important step towards aiding the alarming problem of students having serious difficulties in learning science.

C. Future Directions

Based on the conclusions, the following are suggested by the researchers for future directions:

Science Teachers, as the implementer of this intervention material, the study may suggest the teachers to develop their own strategic intervention materials. The study shows significant results which can help the teacher to modify or develop effective intervention materials and techniques which help students for better understanding of the concepts and the mastery of the competencies in science. The teacher may also encourage some other science teachers to improve their strategies, approach, or methods in teaching science.

Knowing the findings of the conducted research, pupils may have benefits on this study. The results may help the pupils to motivate themselves when it comes to overcoming their difficulties and weaknesses in science. It can make them realize that there is an easier way to understand the concepts in science that seems very hard for them.

School administrations, having the responsibility of the development of the schools, may use the findings of this study which can help them to plan for the implementation and utilization of strategic intervention materials that will cater the needs of its students who have least learned competencies in all public schools. To make this possible, the school administration may require its teachers to make or develop their own strategic intervention materials for their students to meet the expected competencies and to lift the schools' overall quality education. This will be a big help to schools which suffer from poor education quality due to students having difficulties in mastering targeted competencies, especially in science. The good quality of education of all schools will lead to the production of competent and productive graduates across the country.

To curriculum developers, the study's findings may help or may give them ideas and insights in designing new curriculum which aim to aid the problems, gaps, and challenges that the current curriculum is facing. The findings may also help them to develop a curriculum which enhances the academic performance of the students and will ensure quality education.

The future researchers that may conduct a study similar to this one are suggested to concentrate more on the gaps of this study. They can use more respondents and focus on the overall effect of this intervention material in different subjects. As result of doing this, the future improvement, modifications, and upgrades for the Strategic Intervention Material will be possible which increases the effectiveness of the material, and this time, in all subjects and in all kind of distinguished learners. Furthermore, the researchers may use this study as a valuable source of data for the research that they are planning to conduct as well.

D. Recommendations

Based on the results of this study, the following recommendations were made by the researchers:

1) The Science teachers should develop their own Strategic Intervention Material as it develops a positive perception from the students which signify acceptance and appreciation of the material.
2) School adminstrators should include the use of Strategic Intervantion Material in their curriculum planning to address the least learned competencies of Science subjects in particular.
3) Future researchers should conduct a study similar to this one. It is recommended to include more participants and a wider scope to determine further the effectiveness of the Strategic Intervention Material.

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