LEARNED SKILLS AND COGNITION IN SCIENCE SUBJECT OF GRADE 8 STUDENTS: INPUT TO SKILLS ENHANCEMENT STRATEGIES AND PROGRAMS

Author's Name: [1]Jeny D. Elesan , [2] Enrique E. Biñas Jr.

Affiliation*: [1]Tuburan National High School, Tuburan, Ma-ayon, Capiz* Philippines

[2]*College of Agriculture and Forestry, Jose Rizal Memorial State University-Tampilisan Campus, ZNAC,*

Tampilisan, Zamboanga del Nort, Philippines

E-Mail: enriquebinas@jrmsu.edu.ph

Abstract

Science Education aims to develop scientific literacy among students. This may mold them to be active and participative citizens. This study was conducted to determine the learned skills and cognition in Science subject of Grade 8 students for the school year 2018-2019. The data needed for the study were gathered using Science skills and cognition questionnaires. The Science skills questionnaire comprised of five (5) components such as acquisitive, creative, manipulative, communicative, and organizational. The cognition questionnaire also comprised of five (5) components such as attention, memory, perception, problem-solving, and organization. The independent and dependent variables in this study were the learned skills and the cognition in Science subject, respectively. Generally, the findings revealed that the level of learned skills, as well as the level of cognition in Science subject of the Grade 8 students, were "moderate". However, there was a highly significant relationship between the learned skills and cognition in Science subject of Grade 8 students. Skill enhancement strategies and programs were formulated to address the problems encountered among Grade 8 students in their Science subject.

Keywords: Cognition, Grade 8 Students, Learned Skills, Science Subject, Enhancement Program

INTRODUCTION

Science Education aims to develop scientific literacy among students (Sadler and Zeidler, 2019).This may mold them to be active and participative citizens. Theycan make verdicts and conclusions concerning applications of scientific knowledge that could give an impact on society, health, and the environment. This may also incorporate science and technology in the community, economics, and even in the values and ethical aspects of life. This is premeditated around the three realms of learning science: (1) understanding and applying scientific knowledge, (2) performing the scientific process, and skills, and (3) demonstrating scientific attitudes and values (Bybee*et al*, 2008).

Science skills are necessary for scientists in their investigation (Beveredge, 2017). Students should also have scientific skills to be applied to whatever activities they do during Science classes (Kolodner, 2002). The types of skills that they must have are the following: (1) acquisitive, (2) organizational, (3) creative, (4) manipulative, and (5) communicative. These skills will help them to develop and enhance their understanding of Science and all mechanisms about it (Bybee*et al*, 2008). All of these can be acquired by attending the Science classes. This may make them succeed and also productive in other fields like agriculture.

Recognizing the importance of developing science skills and carefully defining and organizing

skills are necessary (Valentino, 2000). However, most of the students are still unable to apply different skills in understanding science concepts. This resulted in the low grades of students in a Science subject. Most of them complain about the difficulty of Science lessons.

Based on the spiral progression under the K to 12 curriculums, Junior High School has nearly mastered the basic skills in Science (Gotfried, 1985). This is very important for them to execute the activities required by the curriculum and learn effectively the competencies behind it. However, outcomes are poor, hence, faculty need to construct approaches through the students' participation in cognition (Blumenfeld*et al*., 2006). In constructing the approaches, it is imperative to consider the following components of cognitive processes: (1) learning, (2) attention, (3) memory, (4) language, (5) reasoning, and (6) decision-making (McCabe *et al*., 2010). These are also parts of students' intellectual development and experience. Moreover, cognitive processes are to integrate new knowledge and make decisions based on observation. Different cognitive functionsplay a role in the said cognitive processes. They work together in the integration of new knowledge and create an interpretation of the world around us (Shatil, 2013).

The development of thinking and reasoning should be associated with cognitive theories in understanding the students' growth (Stein and Lane, 1996). Understanding how students think is crucial to realize their development because students' perceptions of Science lessons often determine how these lessons affect them (Brickhouse, 1990).

Since this study focused on determining the learned skills and cognition in the Science subject of Grade 8 students, this was anchored on the Cognitivism Theory of Piaget (1960), as cited by David (2015) that mental processes such as thinking, memory, knowing, and problem-solving need to be explored by the help of the learning theories that focus on the mental activities. This is appreciated and important in understanding how people learn. Knowledge obtained can be seen as a representation or symbolic mental constructions, and learning is a change in a learner's schemata or the redefining of prior knowledge (Schnort and Bannert, 2003). It was also anchoredon Novak's Theory of Human Constructivism that evocative learning motivates the constructive integration of thinking, feeling, acting, leading to human, enablement for commitment, and responsibility. Significant learning will only occur when education affords experiences that require students to associate knowledge across the three spheres cognitive, affective, and psychomotor (Holem*et al*., 2010).

People understand things from experiences. Faculty will have an idea of what they can do to address problems among their students.Quality education must be maintained, hence the Department of Education (DepEd) implements innovations, particularly in Science to mold them toward achievement. (Preito*et al*., 2018). The researchers chose to conduct this study because they found out that the Grade 8 students of Tuburan National High School have low grades in Science subjects. The researchers want to evaluate the ability of students in different skills and cognition. Hence, this study was conducted to determine in which category students differ.

CONCEPTUAL FRAMEWORK
Figure 1 shows the conceptual framework of the study where the independent variable is the

learned skills in science and the dependent variable is the cognition and the intervention measuresare the skills enhancement program.
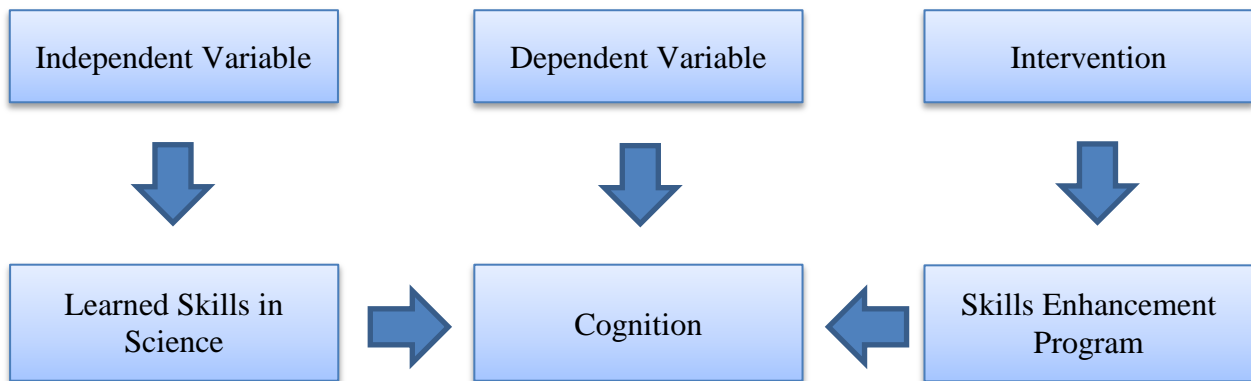

Figure 1.A Schematic Diagram showing the relationship of dependent variables (cognition) and independent variables (learned skills in science)

STATEMENT OF THE PROBLEM AND THE HYPOTHESES

This study was conducted to determine the learned skills and cognition in the Science subject of Grade 8 students, input to skills enhancement program.

Specifically, this study sought answers to the following questions:

1. What is the level of learned skills in Science as a whole in terms of acquisitive, creative, manipulative, communicative, and organizational of Grade 8 students?
2. What is the level of Cognition in Science in terms of attention, memory, perception, problem-solving, and organization of Grade 8 Students?
3. Is there a relationship between learned skills and cognition in Science of Grade 8 students?
4. What skills enhancement program could be crafted for the Grade 8 students in science based on the result of the study?

Based on the aforementioned problems the hypothesis was advanced: There is no significant relationship between learned skills and cognition in Science of Grade 8 Students.

METHODOLOGY

Purpose of the study and Research Design

1. The purpose of this study was to determine the learned skills and cognition in the science of Grade 8 students in Tuburan National High School Year 2018-2019.
2. This study utilized the survey-correlational type of research. According to Campbell and Stanley (2015), a one-shot survey design is used if the data are collected only once.
3. The independent variable was the learned skills in science while the dependent variable was cognition.
4. The statistical tools used in the analysis of data were the frequency counts, percentages, means, and standard deviation, and Pearson r. The alpha level of significance was set at 0.05.

METHODS

A. Participants

The participants of the study were one hundred fifty-nine (159) out of two hundred sixty-six (266) Grade 8 students of Tuburan National High School during the school year 2018-2019.

The stratified proportional random sampling was used to determine the number of participants from each section, using the formula of Slovin. However, the participants from each section were picked out using the fishbowl method. Names written on slips of paper were rolled and placed inside the bowl. The names were drawn from the bowl and made as participants of the study. The stratified distribution of participants is presented in Table 1.

Table 1. Stratified Distribution of Participants

Section	Population Size (N)	Sample Size (n)
Lauan	52	31
Narra	54	32
Molave	54	32
Acacia	53	32
Mahogany	53	32
Total	**266**	**159**

DATA GATHERING INSTRUMENTS
The instruments used to gather the needed data were the Science Skills Questionnaire and the Cognition Questionnaire. In this questionnaire, the students' profile is attached to gather the data on age, sex, and parents' educational attainment.

SCIENCE SKILLS QUESTIONNAIRE
The researchers-made questionnaire contains thirty-five (35) items. The items were divided into five parts which include Acquisitive skills, Organizational Skills, Creative Skills, Manipulative Skills, and Communicative Skills. It was answerable with any of the following responses:

Score	Verbal Responses
5	Strongly Agree
4	Agree
3	Uncertain
2	Disagree
1	Strongly Disagree

To describe the skills in science, the scale below was used:

Scale	Verbal Interpretation
4.21-5.00	Very High
3.41-4.20	High
2.61-3.40	Moderate
1.81-2.60	Low
1.00-1.80	Very Low

This instrument was undergone with pilot testing to thirty (30) students who are not part of the study. The result of the pilot testing was used in determining the computer-processed, reliability testing of the research instrument using the Statistical Package Social Science (SPSS) software. Nei*et al* (1975) contends that an instrument with a reliability index of .70 and above is considered reliable. The result of the computer-processed factor analysis showed that all items will be included.

COGNITION QUESTIONNAIRE
The questionnaire contained thirty-five (35) items. The items were divided into five parts which include Attention, Perception, Memory and Learning, Organization, and Reasoning, and Problem-Solving. It was answerable with any of the following responses:

Score	Verbal Responses
5	Always
4	Frequently
3	Sometimes
2	Rarely
1	Never

To describe the cognition, the scale below was used.

Scale	Verbal Interpretation
4.21-5.00	Very High
3.41-4.20	High
2.61-3.40	Moderate
1.81-2.60	Low
1.00-1.80	Very Low

The instrument used to gather the needed data underwent face content validation. Once the instrument faced and content validated, then it was pilot tested on thirty (30) students who are not part of the study. The result of the pilot testing was used in determining the computer-processed factor analysis, construct validation, and reliability testing of the research instrument using the statistical Package Social Science (SPSS) software. Items with a factor analysis of .50 and above were included in the instrument while those below .50 were discarded. Nie*et al.*(1975) contends that an instrument with a reliability index of .70 and above is considered reliable. And thus, all items were included in the final copy of the instrument.

DATA GATHERING PROCEDURE
Frequency count and percentage
This was used to determine the Grade 8 Students' profile in terms of sex, age, and parents' higher educational attainment.
Mean. This was employed to determine the learned skills and cognition in the Science subject of Grade 8 students.
Standard Deviation
Standard deviation was used to determine the extent of dispersion of scores from the means obtained from the research instrument.
Pearson r
This was used to determine the significant relationships between learned skills and cognition in the Science subject of Grade 8 students.
All statistical computations were computer-processed using the statistical package for the social sciences (SPSS) software. Inferential statistics are set at a 0.05 level of significance.
Data gathered were tabulated, analysed, and interpreted using appropriate statistical tools. The results were treated with the utmost confidentiality. After the conduct of this study, an intervention program was constructed (training workshop or remediation) to enhance the skills and cognition of students especially on the learned skills and cognition in science. The type of workshop or remediation facilitated depends on what categories the majority of the students got the least learned skills and cognition scores after the assessment.

STATISTICAL DATA ANALYSIS PROCEDURE
The data gathered from the study were analysed using computer-processed statistics (SPSS).

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RESULTS AND DISCUSSION

LEARNED SKILLS IN SCIENCE SUBJECT OF GRADE 8 STUDENTS

Table 2 presents the mean, standard deviation, and verbal interpretation of learned skills in Science of Grade 8 students.

Data revealed that the level of learned skills in Science of Grade 8 students, in general, is "moderate" (M=2.98, SD=0.56) as well as in its components namely; Acquisitive (M=3.17, SD=0.59), Creative (M=3.07, SD=0.65), Manipulative (M=2.82, SD=0.69, Communicative (M=2.93, SD=0.65), and Organizational (M=2.89, SD=0.64).

Table 2 Mean and standard deviation of learned skills in the science of grade 8 students

Variable	Mean	Description	SD
Learned Skills in Science	2.98	Moderate	0.56
Acquisitive	3.17	Moderate	0.59
Creative	3.07	Moderate	0.65
Manipulative	2.82	Moderate	0.69
Communicative	2.93	Moderate	0.65
Organizational	2.89	Moderate	0.64

Scale	Description
4.21-5.00	Very High
3.41-4.20	High
2.61-3.40	Moderate
1.81-2.60	Low
1.00-1.80	Very Low

This implies that students are moderate in acquisitive skills due to insufficiency of learning resources in school, functional library, no internet connectivity available in school, financially unstable to gather data and information from the internet, no available learning resources in the community. The students are just only dependent on the knowledge imparted by their teachers. Unfortunately, the students are complaining that some of their teachers have not introduced and presented to them the needed skills and learning's that they are supposed to acquire at their level.

The students are moderate in creative skills due to inadequate learning's of the previous lessons, thus, the students are not prepared to plan. The main reason for this was the frequent absences of the students. They cannot explore in designing and inventing new materials because they are idle and only settle to their simple means and ways in inventing and designing their projects/outputs. Some of them were busy at home, have an extra job, thus, they cannot give ample time to work on their projects and outputs.

Furthermore, the researchers observed that various activities that could enhance students' manipulative skills are not often performed due to the lack of laboratory rooms that are fully equipped with different laboratory equipment and apparatus that would have helped develop their manipulative and problem-solving skills. The students are moderate in communicative skills maybe due to the teachers' method which is the traditional way of teaching (teacher-centered). Wherein the teacher focuses on the discussion or lecture method and less on motivating the students to participate in class discussion and the teacher may not create an activity that all students could join and perform. Besides, other factors that have implicated to this result are students' weak confidence, for they fear that they might express irrelevant

answers or ideas to the questions. Also, they fear the natural reaction of their classmates that is bullying them if their answer is wrong. The result implies that students are moderate in organizational skills because they cannot master the important details in a topic/lesson, thus, they struggle to complete the task in time. Also, they have no study routine. Furthermore, the result of the study implies that the students who learned skills in Science were moderate because they were still in the lower grades and could learn only basic Science skills.

To address the result of the study, adoption of what Dougan (2011) says that the learning process is seen as a process of growth. Learners supplement to their store of knowledge those items that are required for them to achieve their current goal. Teaching, therefore, starts with the analysis of what is to be learned, so that it can be broken down into parts which can be taught stage by stage. Each part is taught in a predetermined order and tested before the next part is learned so that the desired behavior builds up incrementally.

Furthermore, it conforms to the study of Coronado (2016) that Science skills should not be presented as a separate stand-alone lesson. These skills need to be connected with important concepts. Thus, Science knowledge serves as a background for lessons but should understanding of Science concepts and improve Science skills. This implies that Science skills work hard with scientific knowledge and scientific attitudes to help students to think systematically.

COGNITION IN SCIENCE SUBJECT OF GRADE 8 STUDENTS

Table 3 presents the mean and standard deviation of cognition in Science subject of Grade 8 students. Data revealed that the level of cognition in Science of Grade 8 students, in general, is "moderate" (M=3.14, SD= 0.59) as well as in its components namely; Memory (M=3.09, SD=0.67), Perception (M=3.33, SD=0.68), Problem Solving (M=2.95, SD=0.67), and Organization (M=2.84, SD=0.73).

Furthermore, the data revealed that the level of attention is "high" (M=3.48, SD=0.66)

Table 3 Mean and standard deviation of cognition in Science

Variable	Mean	Description	SD
Cognition	3.14	Moderate	0.59
Attention	3.48	High	0.66
Memory	3.09	Moderate	0.67
Perception	3.33	Moderate	0.68
Problem Solving	2.95	Moderate	0.67
Organization	2.84	Moderate	0.73

Scale	Description
4.21-5.00	Very High
3.41-4.20	High
2.61-3.40	Moderate
1.81-2.60	Low
1.00-1.80	Very Low

This implies that the students were moderate in terms of their memory in Science. Students find it difficult to process and comprehend Science concepts and theories due to a lack of practice in reviewing their notes thus, making it difficult for them to retrieve important topics in Science. Teachers may not be able to relate past topics to the present topics and to what students

already know by contextualizing their topics, show real objects and pictures. This also implied that students are moderate in memory because the researchers had observed that some of the students are complaining that they are hungry and cannot focus on and comprehend the lesson.

Students are moderate in perception because they perceived that Science subject is difficult for it is combined with mathematical operations. Also, the teaching approaches used by the Science teachers contributed to the dissipating interest of students in Science, for there is an overemphasis on memorizing rather than conceptual understanding.

Furthermore, the result implies that students are moderate in problem-solving in Science due to the lack of practice on problem-solving activities during class discussion, poor mathematical skills of students, inadequate exercises on specific problems because some of the teachers are teaching different Science areas which are not aligned in their specialization due to the spiral program/approach in the K to 12 curriculum. Also, the lack of motivation from the Science teachers may deteriorate the students' skills in this aspect of cognition.

This also implies that students' cognition is greatly affected by modernization. Students have less focus on their studies because they were addicted to gadgets. Students would rather play with their gadgets rather than review their lessons at home. Students have more time playing and using social media like Facebook rather than reading notes and books. Thus, leads to students' low retention.

Furthermore, the result of the study implies that the student's high attention is due to their interest in Science subject. The teachers' use of a variety of instructional materials like video presentations, movies, PowerPoint presentations, and colorful pictures may have awakened the students' curiosity, thus, make them attentive during class.

Therefore, this result conforms to the study of McNiff (2013) which concluded that the learners should have meant to be alert, attentive, considerate, thoughtful, enthusiastic, vigilant, and observable. Learners should participate in every teacher's activities to provide themselves the learning to be utilized in facing realities of the world.

Furthermore, it conforms to the study of Shatil (2013), that attention as cognitive processes allows us to concentrate on stimuli or activity to process it more thoroughly later. Attention is a fundamental cognitive function for the development of daily situations, and it is used in the majority of the task that we carry out. It has been considered a mechanism that controls and regulates the rest of the cognitive processes: from perception to learning and complex reasoning.

MEASURE OF THE RELATIONSHIP BETWEEN LEARNED SKILLS AND COGNITION IN SCIENCE SUBJECTS OF GRADE 8 STUDENTS

The relationship between learned skills in Science and Cognition in Science is reflected in Table 4. The result of the Pearson product-moment correlation reveals a highly significant relationship, r= 0.785 with p=0.000 between learned skills and cognition in Science.

Table 4 Pearson r between learned skills and cognition in Science subject of grade 8 students

Variables	r	Sig
Learned Skills in Science and Cognition	.785*	.000
* p<0.05 significant @ 5% Alpha Level.		

The result implies that learned skills in science are significantly related to cognition. This result indicates that the students learned skills affect their cognition. Students' learned skills contributed to the acquisition of knowledge.

Furthermore, the result also implies that the students learned skills can contribute to learning Science. Learning Science theories need scientific results through discovery and experiment. To learn better, students need to perform science activities or actual and hands-on activities. The correct methods and skills used in inactivity will lead to a correct scientific result and leads to students to understand the scientific theories. Thus, makes the students more knowledgeable in the subject. Science skills are basic skills of facilitating learning in science, allowing the students to be active, increasing the performance of learning, and providing problem-solving skills.

The result of the study, affirms what Stanovich (2008) stated that the learners' cognition has an impact on their learning style. Furthermore, it conforms to the study of Greak(2008), which states that learning is what happens after a child goes through several cognitive processes. For example, children learn how to read through several cognitive processes such as problem-solving, remembering, and memorizing. Thus, the null hypothesis which states that there is no significant relationship between learned skills in science and cognition is hereby rejected.

CONCLUSIONS
Given the foregoing findings, the following conclusions were formulated:

1. The moderate level of learned skills in Science of Grade 8 students means that students may not be able to explore their skills in gathering data and information using different sources/references which can be useful in their learning's, they may not be able to think creatively or generate new ideas. Students may find difficulty in enhancing their skills in manipulating, utilizing different equipment/apparatuses in the laboratory. Students' ability in communicative skills can be weakened and will make them fearful, they may not be able to communicate with one another and there will be a possibility that their ideas may differ with one another that an individual idea will not agree with others. With these results, students will find it difficult to perform a task that requires complex skills and they may not be able to have an excellent performance in Science, thus, they will only learn and acquire basic skills. Students who are incapacitated to enhance their skills in the secondary level will encounter difficulty in learning science and they will possibly bring the same problem to their next level of learning which is in their Grade 9. Teachers may find it difficult to make science activity that requires only basic skills suited to the students' ability or level of learning skills.

2. The moderate level of cognition in the Science subject of Grade 8 students may be attributed to the fact that their acquired knowledge is based on how they have exerted effort and focus on their studies. Students may not be able to acquire vast knowledge in Science subjects and they may not retrieve important details from their lessons. Students will lose their focus and interest in the subject because for them science is difficult. They may not be able to easily find a solution to Science problems. They find it difficult to make an organized project and output with a scientific basis or relations. Their knowledge in Science may not be enhanced if there is no evident interest and love

in them on the subject, this cannot result in effective learning. Through these reasons, the students may not be able to comprehend complex lessons and answer complex activities thus, these will lead them to learn little in science and find it difficult for them to cope up with Grade 9 lessons. This moderate cognition requires teachers to prepare only simple lessons and contextualize the discussion and activities. Teachers may teach students in a step by step or a gradual process. It requires teachers to teach slowly and render more time to discuss the lesson. This may result in a lack of time in finishing and achieving all the competencies in the curriculum.

3. The highly significant relationship in the learned skills and cognition in Science subject of Grade 8 students may be attributed to the fact that the learned skills affect the cognition of the students. The cognition of the students is determined by their learned skills. Developing students Science learned skills will develop students' cognition. Teachers need to know what to teach and how to teach to develop students' skills as well as cognition. Learning requires skills. Teachers need to develop these aspects of science skills and cognition, not neglecting either of the two.

RECOMMENDATIONS

In light of the findings and conclusions, the following recommendations are suggested:

1. Since the level of the learned skills was moderate, the researcher recommends that the school administrator may provide continuous training, tutorials, remediation, and workshops to improve students learned skills to a higher level. School administrators need to support in the areas of building more rooms for Science-related activities like laboratories. They may also provide more textbooks and reading materials in the library which are useful to the needs of the students. Also, provide internet connectivity in the computer laboratory for the students to have easy access to the internet sources and references and it will become easy for them to research relevant topics for their assignments. The teachers may contextualize the activity that could enhance the creativity and acquisition of the students. Science enhancing and student-centered strategies may be applied by science teachers to improve the performance of the students by emphasizing basic skills and by giving them group activities that need collaborative effort. Teachers may encourage students and motivate them to elevate the level of their performance in Science, from moderate to a higher level through a skills enhancement program. Students may participate in class discussions to develop their acquisitive skills. They may motivate themselves not to be hesitant to express their ideas about the topics/lessons discussed by the teachers and cultivate in their mind to never be afraid to try sharing their insights whenever they give a wrong answer to the question. Speak up in the group activity to develop their communicative skills and for them to comprehend better and also they can freely express their answers with their group mates. Students may gather multiple sources/references after a lecture that is incomprehensible and confusing; it is enlightening to seek out further information through the internet or reading books in the library. Students need to be familiar with the laboratory equipment and their uses to enhance their manipulative skills; these can benefit them to acquire higher learning. They may devote enough time to be creative to work and design their outputs and projects in Science. Parents may monitor their students' progress and performance by attending the school's card day and PTA program because Science is a way of understanding the world, a perspective, and a

pattern of thinking that begins in the very early years. That is why parent involvement is so important in a child's science education. They may also give time for their children to study their lessons at home and will not overtire them doing household chores and an extra job. There may be a willingness from the parents to spend their time reviewing their children's lessons, reinforce their students to be inspired and motivated to strive for academic excellence.

2. Since the level of cognition in Science of Grade 8 students was moderate, the researcher recommends that the school administrators may provide a budget for the materials that will be used during workshops and remedial for the students. The administrators may provide funds that will give opportunities to teachers to attend Science related seminars and training for them to improve their teaching strategies and reinforce Science-related activities to students. Teachers need to contextualize the topics for the students to relate the lesson and apply it to real-life situations. Provide clues for problem-solving activate the student's previous knowledge and relate it to the present topics; do frequent reviews and quizzes, if the students have a difficulty in remembering the science topics. Teach students critical thinking skills rather than just teaching them to memorize facts. Students who learn critical thinking can improve in other areas as well when their mental abilities have been exercised effectively. Students may foster a willingness to be challenged mentally answering science problems, exercises, and activities for them to enhance and improve their cognition. They can also attend training workshops and remedial sessions to awaken their interest and change their unjust perception about science. They may have the desire to grow the spirit of initiative in them to jot down important notes or lectures about the topic for them to aid their difficulty in remembering their science lessons. Parents may encourage their children to participate in school science programs/activities to enhance the interest and perception of their children in a Science subject. Parents may impose discipline on their children to have constant practice at home to develop their memory. To make this possible and attainable, the parents may also provide vitamins and nutritious food for their children because the students can think better when they are healthy and not hungry, there is a great factor on students inattentiveness to listen and participate when they have their grouchy stomach, they will lose focus and will make undesirable reaction on the subject.

3. Since there is a significant relationship between learned skills and cognition in Science, the researcher recommends that school administrators need to provide funds for the activities that will strengthen the interest of students in Science. There is a need to further improve the teaching strategies of the teachers to enhance the science skills and cognition of Grade 8 students to fully achieve the best quality of teaching styles for the students thus making them more equipped, knowledgeable, and skillful in Science-related topics. It is also recommended to use the researcher proposed skills enhancement program during cooperative learning once a week, session guide to develop the learned skills and cognition in the Science subject of Grade 8 students.

4. It is recommended to use the researcher proposed skills enhancement program during Independent Cooperative learning (ICL) once a week, and use the proposed Learning Action Cell (LAC) session guide to develop students' skills and cognition in Science.

INTERVENTION MEASURES

Proposed Skills Enhancement Program

The study covered one hundred fifty-nine (159) Grade 8 Students in Tuburan National High School. Looking at the results and findings of the study, there is still much to be done to improve the learning skills and cognition of students in Science subjects. Although most of them are responded "moderate" that they display the skills needed for a student, they need to explore more on the other facets of learning programs, training, and seminars until it becomes a way to make them highly knowledgeable and skillful, students.

Learned skills and cognition in Science with the lowest mean score like, manipulative in terms of learned skills and organization in terms of cognition in Science should be given attention to bring out the best in individuals who can serve as models for the future generation in terms of being the hope of the nation.

Adopting the Department of Education Independent Cooperative Learning (ICL) program is a continuously systematic method of updating the delivery of the educational system in school. It involves comparing and analyzing the students' knowledge regarding the topic they are studying.

This process is being done once every week so the students may share or give their ideas and understanding about the subject concern. It is a great help towards the students' performance in the classroom because they are free to discuss the things they want to share with their group about their skills, abilities, and talents.

The researchers prepared an Action Plan intended for the skills enhancement program of the students and output of this research study. Through this output, the researcher believes that the students could learn better and becomes Science oriented which could help them become the best in everything more specifically being a Science lover and will help them adjust to the fast-changing world and could prepare themselves in the realities of life.

A. GENERAL INFORMATION

Program Title: Skills Enhancement Program (Whole year Enhancement Program during Integrative and Cooperative Learning)

Learning Area: Science

Program Description: This is a 1-hour session for the whole school year to strengthen students' skills and cognition in Science.

Management Level
of Program: School Based Program or Division Wide program

Delivery Model: Lecture Method
Power Point Presentation
Science Activities
Workshop

Target Personnel: Science Teachers and Students

B. E*xpected Final Outcomes/Success Indicators*

After the Training and Workshop, students are expected to apply the strong Science learned skills, as well as the knowledge on the subject matter. They will adopt strategies and different learning styles to increase their skills, understanding, and values towards learning progress. Moreover, it is envisioned that after the independent cooperative learning, students are expected to improve performance and promote their total well-being.

ADDITIONAL SKILLS ENHANCEMENT STRATEGIES AND PROGRAMS

Table 4. Skills enhancement strategies and program

Areas/Concerns	Objectives	Ways and Means	Persons Involved	Time Frame	Remarks
Science Skills Development Program	To produce and develop Science oriented or skillful students	Allocate funds for the regular conduct of the Program	Science Teachers and students	Whole year-round	Discovering hidden talents and skills of students.
Conduct of training, remediation, and workshops related to science approaches	To develop and produce highly skillful and knowledgeable students to new Science approaches and new ways of thinking	Seek funds from private organizations Solicitations	Science Teachers and Students	Whole year-round	Equipping students to a more challenging and technologically oriented world.
Hands-on activities in the Science Laboratory	To provide students the opportunity to used laboratory apparatus, to demonstrate the proper setting of apparatus, describing parts and their functions.	Allocate funds for the regular conduct of the activity.	Science Teachers and Students	Whole year-round	Strengthening the interest and collaborations of one another.
Science camp	To engage students in realities involving science and to strengthen students perception of science	Allocate funds for the continuous conduct of training and seminars	Science Teachers and students	Whole year-round	Strengthening the love and interest of students in the world of Science.
Symposium on Science Related Activities	To develop students skills, attention, perception, and knowledge about Science	Allocate funds for the continuous conduct of the activity	Science Teachers and student	Whole year-round	Equipping students to have more knowledge and skills about related science activities or experiments and will change the perception of students about Science.

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