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RESEARCH ARTICLE

Strengthening Science Instruction in Bilaran National High School: Input to a Proposed Development Plan

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CONTEXT AND RATIONALE

Science teachers are optimistic that every student can learn so much with high hopes and dreams. They plan their lessons and work hard to engage their students. However, despite good intentions and best laid plans, not all students perform well in Science classes.

Student's performance is very alarming on the part of the teachers. Students are unable to understand scientific issues that affect their lives in today's fast changing world.

Several studies in the past reflected that Science lessons were recorded as of low quality. (American Association for the Advancement of Science, 1989).

Many Science students sit passively, never being asked to make sense of the content that teachers deliver. There are many concepts and activities in Science that students ignore and fail to develop.

With the Enhanced Basic Education Curriculum or the K12 curriculum, students record in periodical tests and in the National Achievement Test and National Career Assessment Test are very low and elicited poor performance.

Relative to this, Bilaran Science Teachers are alarmed with the situation. Improved performance of students must be worked hand in hand by Science Teachers. Intervention programs in classes must be applied too in daily teaching engagement, thus, there is a need to strengthen the Science instruction. This study primarily focuses on the status of Science instruction and to propose a development plan in Science.

SYNTHESIS

The studies of Cunningham and Alonzo are similar in the sense that their studies suggest that in effective Science instruction, teachers are well-equipped in knowledge so that learners can easily acquire knowledge for them to apply in daily living and can easily understand scientific concepts. Meanwhile, they are differrent in some perspective views., as Cunnigham focuses on the content knowledge student's mind acquire information as active processors of information while Alonzo gives emphasis on the content knowledge of teachers that affects the learners construction of knowledge.

RESEARCH QUESTIONS

This study aims to answer the following:
1. What is the academic performance of Bilaran National High School students in Science for the past two years in terms of:
    1. Periodic Test Results

2. What is the level of performance of the teacher's instructions in terms of:
    a. Lecture (K12 Analysis/ Processing Activity)
    b. Laboratory Activities (K12 Activity and Application)
3. What are the problems encountered in Science instruction?
4.. What developmental plan/ action plan be proposed to strengthen the Science instruction in Bilaran National High School?

SCOPE AND LIMITATION

The general focus of the study is to find the causes of Math anxiety and implications to alleviate this problem experienced by the students. The respondents of the study will be the three sections of Grade 8 of Bilaran National High School of school year 2017-2018.

RESEARCH DESIGN AND METHODOLOGY

In this study, the descriptive research will be used. The questionnaire will be the main instrument to be used to generate the needed information in assessing Science instruction carried out by Bilaran Science teachers in the Lecture (K12 Analysis/ Processing Activity) and Laboratory Activities (K12 Activity and Application), academic performance of Bilaran National High School in Science for the past two years and the problems encountered in Science instruction.

FINDINGS

Table 1. Academic performance of Bilaran National High School in Science for the pas two years.

Quarter	School Year 2015-2016	School Year 2016-2017
First	74.02	75.64
Second	80.57	74.03
Third	82.29	74.81
Fourth	85.70	78.69
Mean	**80.65**	**75.79**

Table 2. Level of Performance of Teachers Instruction in terms of Lecture (K12) Analysis/ Processing Activity.

In Lecture (K12 Analysis/ Processing Activity, the teacher.....	Weighted Mean	Rank
1. Provides activities that stimulate learners interest	4.62	9
2. Explains the scientific principles and concepts	4.87	3
3. Gives examples of how the scientific principle and concepts is applied	4.5	12.5
4. Solicits learners prior knowledge	4.62	9
5. Makes misconceptions into facts	4.5	12.5
6. Broadens learners scientific knowledge	4.62	9
7. Respects students views on the given topic	5	1.5
8. Develops communications skills of learners	4.5	12.5
9. Creates environment that allow students to participate in the discussion	4.75	5.5
10. Promotes respect on each learners outlook	5	1.5
11. Strengthens collaboration among students	4.75	5.5
12. Develops learners self- confidence in expressing his/ her views	4.75	5.5
13. Relates previous topic to the current topic	4.75	5.5
14. Uses creative skills in asking questions	4.5	12.5

 Table 2 shows that in terms of lecture, Teachers respect students views on the given topic and they promote respect on each learners outlook with a weighted mean value of 5.00. Last in the ranking are teachers give examples of how the scientific principle and concepts are applied, make misconception into facts, develops communication skills of learners and use creative skills in asking questions with a mean value of 4.5.

Table 3. Level of Performance of Teacher's Instruction in terms of Laboratory (K12 Activity and Application).

In Laboratory (K12 Activity/ Application, the teacher…..	Weighted Mean	Rank
1. Explains the precautionary measures to be observe before, during and after	4.75	4
2.Discusses the procedures to be followed	4.75	4
3. Develop cooperation among learners	4.87	1.5
4. Uses appropriate materials, equipment and tools	4.25	10
5.Ensures that students followed the correct procedure	4.62	8
6. Maintains an accident free environment	4.87	1.5
7. Reacts properly on different laboratory accidents	4.63	6.5
8.Shows skills in demonstrating the activity	4.63	6.5
9. Encourages learners to relate laboratory activities to scientific concepts	4.75	4
10.Establishes an environment that motivates learners to do laboratory works	4.5	9
11. Explains how to make an experiment report	4.12	11

Table 3 reveals that in terms of laboratory activities, teachers develop cooperation among learners and maintains an accident free environment with 4.87 mean value. Meanwhile, last in the rank are teachers explain how to make an experiment report with 4,12 mean value.

Table 4. Problems Encountered by Science Teachers in Science Instruction.

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Poor study habits	3.63	Agree	8
2. Poor comprehension in analyzing Science problems	4.13	Agree	4
3. Student's participation	4.25	Agree	3
4. Internet Connection	4.50	Strongly Agree	1
5. Lack of TV/ Muti-Media in Classroom	3.75	Agree	6
6. Habitual absences of students	3.13	Moderately Agree	10
7. Lack of laboratory apparatuses	3.75	Agree	6
8. Insufficient supply of Learning Materials	4.13	Agree	4
9. Student's difficulty of using English Language in expressing ideas	4.38	Agree	2
10. Classroom environment	3.25	Agree	9
Average Weighted Mean	**3.96**	**Agree**	

Table 4 reveals that the respondents encounter the ten (10) difficulties/ problems in teaching Science. First in the rank is the internet connection problem with 4.50 mean value followed by student's difficulty of using English language in expressing ideas with 4.38 mean value.

Program/ Project	Objectives	Strategies	Target Date	Resources Needed	Persons Involved	Success Indicator
SUPER-IDOOC (Supervising Direct Instruction of Classes)	To assess toward achieving goals established for students and teachers	Classroom Observation with RPMS Sheets	Year Round	Learning materials, Powerpoint Presentation	Dept. Head, Teachers, students	Increased proficiency level of NAT performance and teachers effectiveness in teaching
PRO-SIM/SIP Program on Science Intervention Materials and Science Investigatory Project	To encourage to conduct investigatory project and produce intervention materials	LAC Session on SIP/SIM	Year Round	Learning materials, Powerpoint Presentation	Dept. Head, Teachers	Science teachers can participate in the Science Quest and with prepared SIM can increase performance of students at Risk
TTS Teaching Techniques and Strategies	To implement teaching techniques and strategies in teaching	Demo Teaching LAC Session	Year Round	Powerpoint Presentations	Dept. Head, Teachers, Students	Active classes with well-motivated and participative classes

CONCLUSION
Based on the findings, the following conclusions were drawn:
1. Bilaran National High School student's performance in Science decreased for the past two years.
2. The teachers respect student's views on the given topic and promotes respect on each learners outlook
3. Among the responses of Science teachers in carrying out instruction particularly in Lecture and Laboratory, most useful to a very great extent was obtained.
4. The common problems encountered by Science teachers in Science instruction were the internet connection problem and the difficulty of using English language in expressing student's ideas.
5. The proposed development plan shall focus on the enhancement of Science Instruction in Bilaran National High School for improved performance of students.

RECOMMENDATION
Based from the findings and conclusions of the study, the following recommendations are hereby suggested:
1. Teachers and Department Head must look ways on how to increase academic performance in Science Instruction of Bilaran National High School students.
2. Teachers must continue to give respect to student's view and ideas.
3. The school must provide internet acess and students must practice English communication most of the time.
4. The proposed developmental plan may be reviewed by the concerned authorities for the immediate implementation for the improve performance of students in Science subject.