

Enhancing Teachers Capabilities for Science Instruction in the District of Sta. Teresita, Division of Batangas

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Abstract: This study aimed to ascertain the capabilities demonstrated by the teachers for science instruction with the end in view of proposing an action plan to enhance their capabilities for science instruction. The respondents involved in this study were 45 science teachers from grades three to six and nine school heads in the district under study. The survey questionnaire was utilized as the main research instrument in gathering the data. Data were tallied and interpreted with the use of percentage, weighted mean and T-test. There were five demonstrated capabilities in the job of the teachers considered namely planning and programming Science as a subject, utilizing instructional materials in carrying out different teaching strategies, encouraging learners' involvement in experimental work, evaluating pupils' performance and giving feedback. There were significant differences between the assessment of the school heads and teachers on the manifestation of capabilities in enhancing science instruction. It could have emanated from the variations on the job position, function, and personal and professional experiences of the two groups of respondents. The problems encountered by the teachers significantly affected the capabilities of teachers in enhancing science instruction

Keywords: Teacher's Capabilities, Science Instruction

1. Introduction

Science and technology are essential for the national development and programs as stated in the 1987 Constitution of the Republic of the Philippines. Research and development, interventions and their utilization and science technology education training and service must be given priority. The improvement in these areas shall be beneficial to the country's productive system.

Consequently, educational authorities implemented some educational reforms in the science instructions. The science curriculum had been revised to fit and suit the needs and demands of the pupils of the present generation. Science teachers, school administrators and even supervisors were required to attend trainings and seminars in the attempt to improve the quality of supervision, instruction and planning system of elementary science instructions through the introduction of the varied innovations and best practices that would address the wants and the demands of the times. Science education has become an integral part of school education. So the quality of science teaching is to be developed considerably

so as to achieve its purpose and objectives, to understand basic principles, to develop problem solving, analytical skills and ability to apply them to the problems of materials, environments and social living besides promoting the spirit of inquiry and experimentation. Such situation obviously demands every man's acquaintance with Science, both as a product as well as process within or outside the classroom situation. Teachers serve as the manager who has the great responsibility in carrying the classroom situations. A quality teacher promotes quality learner by contributing to the improvement of their achievements. A teacher of the 21st century learner must always strive for innovations. Pupils shall never feel uninterested with their teachings. If a teacher has different strategies, learning will not be a burden to them but rather a joy that will bring out the best in them unnoticeably. Moreover, improved science teaching depends upon educators who can move every hand to connect with each other, making things happen by volition with blends of love and dedication. It really calls for teachers to have a wide range or means of assisting everyone who is interested to go with the changing world achieving optimal learning.

The teaching of science especially in the elementary schools as a preliminary scientific explanation is indeed vital. Having a definite place in the school program, the teaching of science should be guided by some psychological principles of teaching. One primary goal of the school is to ensure teacher's competency in the classroom particularly understanding of the content and methodology to be utilized. In the classroom, it is no longer the problem of teaching science but teaching science to each and every learner by teachers, most of whom may not be experts. The need today is actually to achieve larger-scale teaching of science through average teachers. The need is continuous updating of oneself in terms of methods, strategies, as well as current issues fitting to the fast changing world.

It is a common observation, however, among administrators and teachers that some science teachers do not perform as efficiently as expected and their performance are below expectations resulting to average performance. These foregoing concepts about education motivated the researcher to conduct a study on enhancing teachers' capabilities for science instruction in Sta. Teresita District, Division of Batangas.

2. Statement of the problem

This study aimed to ascertain the capabilities demonstrated by the teachers for science instruction in public elementary schools of Sta. Teresita District, Division of Batangas as assessed by the school heads and the teachers themselves during the school year 2018-2019, with the end in view of proposing an action plan to enhance their capabilities for science instruction.

Specifically, this study sought to answer the following questions:

- 1) To what extent did the teachers demonstrate the capabilities in enhancing science instruction in terms of;
 - planning and programming Science as a subject;
 - utilizing instructional materials in carrying out different teaching strategies;
 - encouraging pupils’ involvement in experimental work;
 - evaluating pupils’ performance; and giving feedback? Was there a significant difference in the assessment of the two groups of respondents on the demonstration of the above mentioned capabilities?
- 2) Was the teachers’ demonstration of the foregoing capabilities significantly affected by the problems encountered by the teachers?
- 3) What plan of action may be proposed to enhance the demonstration of teachers’ capabilities for the improvement of science instruction?

3. Literature review

Rojos (2004) stated that capabilities of teachers are essential in the learning process. Through this, the education enterprise is transformed into a challenge as manifested in the characteristics and qualities of a teacher. First of all, he must have mastery of the subject. He must know more than the students do. Secondly, he must be proficient in the proper approaches and techniques which are essential to teaching and thirdly, a capable teacher wishes to overlook the need and problems of his students. The classroom teacher and the attainment of competence must finally need that kind of classroom management and discipline skills that well processes would lead him to effective teaching and learning. In view of Obanya (2005) the quantity and quality of teacher’s knowledge will give the teacher enough material and confidence to teach

effectively. Through this he can be able to impart enough knowledge to his students by preparing accurate instructional materials and strategies.

Dimayuga (2014) stated that planning covers not only formulating ideas and plans but also getting them done and seeing how well they are done. The issues about curriculum development and curriculum change directly affect management practices. Curriculum can be define and analyzed in many ways, although most would probably agree that it is at the heart of education, a broader view. Learners are expected to learn and should be able to do. Bunga, et al (2016) stated that with an array of available teaching materials the decision is primarily based on the nature of the learners. The selection of appropriate teaching and learning resources (TLRs) plays an important role in curriculum delivery.

Moreover, activity-based learning or ABL are meaningful and fun-filled. It describes a range of pedagogical approaches to teaching. Its core premises include the requirement that learning should be based on doing some hands-on experiments and activities. The idea of activity based learning is rooted in the common notion that children are active learners rather than passive recipients of information. If a child is provided with the opportunity to explore and an optimum learning environment, learning becomes joyful and long-lasting. (United Nations Relief and Works Agency, 2018).

According to Safer, N. & Fleischman, S. (2005) monitoring and evaluating learners’ performance regularly and consistently should be done. A day without monitoring and evaluating may cause us to miss serious problems in the learners’ learning. If left unchecked, this would certainly hamper the learners’ academic success. Monitoring and evaluating learners’ performance religiously according to plan is the best way to avoid potential problems in the process.

Assessment at the classroom level that should be conducted throughout the learning process, rather than after it. Information generated from assessment for learning was used to diagnose learner needs, plan instruction and provide students with feedback they can use immediately to improve their work (Stiggins, Arter, Chappuis & Chappuis, 2005)

4. Results and discussions

- 1) Teachers’ Demonstration of Capabilities in Enhancing Science Instruction.

The capabilities of teachers in teaching Science was assessed by the two groups of respondent to a great extent as divulged

Table 1
Assessment of school heads and teachers on the demonstration of capabilities

Variables	School Heads			Teachers			Composite		
	AWM	VI	R	AWM	VI	R	M	V	R
1. Planning and Programming Science as a Subject	4.18	GE	5	4.02	GE	5	4.10	GE	5
2. Utilizing Instructional Materials in Carrying Out Different Teaching Strategies	4.34	GE	4	4.16	GE	3	4.25	GE	3
3. Encouraging Learner’s Involvement in Experimental work	4.37	GE	3	4.21	GE	2	4.29	GE	2
4. Monitoring and Evaluating Pupils’ Performance	4.61	VGE	1	4.31	GE	1	4.46	GE	1
5. Giving Feedback	4.41	GE	2	4.07	GE	4	4.24	GE	4
Overall Composite Mean	4.38	GE		4.14	GE		4.27	GE	

by the overall composite mean of 4.27. It was also revealed that evaluating pupils' performance ranked first as supported by the composite mean of 4.46. This indicated that the school heads and teachers were result oriented.

Encouraging learners' involvement in experimental work was ranked second and was assessed to a great extent disclosed by the composite mean of 4.29. The finding implied that the focus of science education for students in basic education should be on engaging students in scientific processes and phenomenon, and that this focus seemed to be best achieved through activities that involved extended investigative work, actual experiments, and other forms of inquiry-oriented science activities. Planning and programming Science as a subject was assessed to a great extent by both groups of respondents obtaining the lowest composite mean of 4.10. This implied that this should be given preferential attention by the school heads and teachers. They should design a program based on the previous pupils' achievement so that they could prepare activities and utilize varied strategies to enhance Science instruction. This is because the attainment of enhancing Science instruction starts with creative, realistic and attainable plans and programs.

- 2) Test on Significant Effect on the Capabilities of Teachers in Enhancing Science Instruction of the Problems Encountered by the Teachers Themselves. The problems encountered by teachers in enhancing science instruction were serious as revealed by the overall weighted mean of 3.54.

Table 2

Test results on significant effect on the capabilities of teachers in enhancing science instruction of the problems encountered by the teachers themselves

Variables	AWM	df	Ct	TV	Level	Decision on Ho
Capabilities of Teachers	4.27	4	7.87	2.13	Significant	Rejected
Problems Encountered by the Teachers	3.54					

Test Results on Significant Effect on the Capabilities of Teachers in Enhancing Science Instruction of the Problems Encountered by the Teachers Themselves. The data indicated that the capabilities of teachers in enhancing science instruction were affected by the problems encountered by the teachers themselves. This was sustained by computed t-value of 7.87 which was much greater than the tabular value of 2.13 at the .05 level of significance using 4 degrees of freedom. Therefore, the null hypothesis was rejected. The findings implied that the problems encountered by the teachers stalled the capabilities of the teachers in enhancing Science instruction.

5. Conclusion

Based on the findings revealed in this study, the researcher

came up with the following conclusions.

- 1) Teachers demonstrated capabilities in enhancing science instruction to a great extent as assessed by the school heads and the teachers themselves.
- 2) The two groups of respondents performed different functions hence, significant differences in the assessments on the instructional capabilities of science teachers were noted.
- 3) The problems encountered in the manifestation of capabilities were considered serious especially in planning and programming Science as a subject, encouraging learner's involvement in experimental work, utilizing instructional materials in carrying out different teaching strategies and giving feedback.
- 4) The problems encountered by the teachers' significantly affected capabilities of teachers in enhancing science instruction.
- 5) An action plan was proposed to enhance the teachers' demonstration of the different capabilities in teaching Science.

6. Recommendations

Based on the conclusions drawn, the following recommendations were forwarded by the researcher. Science teachers should be encouraged to exert extra effort so that their capabilities in enhancing the teaching of Science be demonstrated to a higher level.

- 1) There should be constant monitoring and evaluating on the utilization of approaches, strategies and evaluation instruments which could be of great help in enhancing teachers' capabilities.
- 2) Teachers and school heads should join hands to address the problems that were seriously felt by the teachers.
- 3) Careful study and review of the plan should be done by teachers with the support of the school heads before its implementation of the plan.

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