

Implementation of the standard procedures in the delivery of science modular instruction (SMI) through home-based learning (HBL) approach in the schools division of Marinduque

DOI: 10.46932/sfjdv3n6-010

Received in: October 04th, 2022

Accepted in: November 01st, 2022

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ABSTRACT

This study was conducted to find out if the implementation of the standard procedures in the delivery of Science Modular Instruction (SMI) through Home-Based Learning (HBL) approach was followed. It made use of a mixed method of research, the qualitative and quantitative research design, One Sample T-Test and Paired T-Test as statistical tools and a researcher-made questionnaire as an instrument. Results revealed that, majority of the Teachers performed the roles and functions in nine phases within the standards set by DepEd, while majority of them performed the roles and functions in three phases below the standards. Majority of the teachers performed well on their functions focusing on the preparation of learning resources, while majority of them performed not so well on their functions focusing on learning and student-centered and communication focus. With this result, gaps were identified in all phases of implementation, however, bigger gaps were noted in the three phases. In the light of this findings, the researcher proposes a model on the standard procedures in the delivery of Modular Instruction through HBL approach to effectively implement the same approach even after the pandemic for this approach could be used on inclement weather days and other unexpected natural calamities.

Keywords: science modular instruction, home-based learning.

1 INTRODUCTION

All over the world, the COVID-19 pandemic becomes the biggest challenge to education system. Many governments in different countries which are severely affected by this pandemic have switched from face-to-face instruction to online teaching and virtual education (Daniel, 2020). Different schools all over the world struggled to cope with repeated closures and re-openings and the transition to other learning modalities.

Philippines was not excluded from this dilemma especially in basic education in the Department of Education which caters the very young children starting from the Kindergarten to the Senior High School learners. Unlike in higher education in the country, transition from face-to-face to online teaching and virtual education can be done easily. But in basic education, the biggest challenge was felt on how to manage effectively the transition from face-to-face to other learning modalities such as modular

instruction through home-based learning considering the different factors relative to the transition of learning.

Based on the consolidated reports submitted from the nine Districts to the School Division Office on the type of learning delivery modality to be implemented in the Division, the Schools Division of Marinduque came up with the decision of employing the distance learning modality using printed module which was done in the respective houses of the learners, . thus, employing a Home-Based Learning (HBL) approach as an alternative mode to face-to-face learning in the classroom.

In this difficult time in the education system, teachers and parents/guardians each has significant roles and responsibilities to effectively implement the standard procedures on the use of the Self-Learning Modules and allow flexibility in the modular learning. Alone, the school and the teacher cannot implement the current learning delivery modality without the help of the parents. It is then a shared responsibility between the school and parents. The school needs to set up mechanism to monitor and record progress remotely and to give timely, constructive and relevant feedback to the learners and parents, as well. It is by giving timely feedback to the learners that will facilitate remediation for learners who need further guidance and assistance for them to move forward. One of school's mandate is to help learners acquire knowledge and skills, to monitor and assess them for the improvement of their learning (Department of Education, 2020a).

If the students failed to acquire the required knowledge and skills intended for the particular grade level and quarter, it is the educator's failure and not the learners. Most often, teachers failed to consider the three fundamental components of education such as curriculum, instruction and assessment (Jimaa, 2011). These are considered the three legs of the classroom stool that without the other leg, the classroom stool will not function. These three legs should be equally strong and be given equal attention and prioritization to make it balance and supportive. These three legs of education should be given equal importance especially the assessment which seems the weakest of the three and least implemented by the teachers. The role of teachers is vital being the lead person in the implementation of these three legs of the classroom stool. If teachers failed to perform their roles and functions, the academic performance of the learners will be sacrificed.

In as much as distance learning is being employed in this pandemic time, the role of teachers to effectively implement the delivery of Science Modular Instruction (SMI) through Home-Based Learning (HBL) approach is the focus of attention of the researcher being the In-Charge of Science Education from the Elementary to the Senior High School Level. Thus, in this study, the actual roles and functions performed by teachers were compared against the standard procedures performed by teachers in the delivery of science modular instruction to identify gaps and propose a model to address the identified gaps

and therefore improve the implementation of Science Modular Instruction (SMI) through Home-Based Learning (HBL) approach.

2 RELATED LITERATURE AND STUDIES

2.1 LEARNING OF SCIENCE IN PANDEMIC TIME

Science is one of the major components in education subject which aims to develop scientific literacy among learners that will prepare them to be informed and participative citizens who can make their own judgment and decision applying the scientific knowledge acquired (Department of Education, 2016).

Its design is anchored on the three domains of learning Science such as understanding and applying scientific knowledge in local setting as well as global context whenever possible, performing scientific processes and skills, and developing and demonstrating scientific attitudes and values which are also anchored on the taxonomy of learning outcomes such as cognitive, affective and psychomotor domains (Department of Education, 2016; Hsiung, 2013).

In learning during this pandemic time, the acquisition of the three domains of learning Science is facilitated using contextual learning theory. In this theory, instruction is embedded in familiar context in which students can relate well. If they can relate well with the context, learning will surely occur because they understand the context of the lesson (Andriotis, 2017). Supplementary materials in addition to the module used by the learners are being supplemented to enhance learning in Science. They are contextualized for the learners to understand the lesson better.

Contextual learning theory applied in the development of instructional materials in learning is also grounded on cognitive constructivism by Jean Piaget and social constructivism by Lev Vygotsky which serve as bases of this study. These are the sets of principles that explain how best a student can acquire, retain and recall information in a home-based learning. Rather than teaching for the abstract or using examples which are not in their contexts, a real application that they are familiar with should be used. This strategy is important for connection of actual learning experiences to what is being introduced to them as a source of new knowledge or information (Andriotis, 2017).

In cognitivism, learning focuses on the idea that students process information they received from reading the module. From the information they received, they reorganize it either by finding new explanations or adapting old one (Fulbrook, 2019). To process the information received, students link the concepts learned in the module to real life examples. Thinking skills and dispositions among learners are being developed with the guidance from the teacher that will help them construct, interpret and evaluate knowledge from different perspectives. From this, they learn to monitor, assess and improve their learning (Ministry of Education, 2017).

In constructivism, learners construct their own knowledge and that reality is determined by the experiences of the learner (Al-Huneidi & Schreurs, 2013; Rufii, 2015). It holds that children learn best when encouraged to construct meaning and relevance between the instructions they receive and interpretations of those instructions within the context of their own environment. Grounded on the theory of constructivism, the role of teachers has changed from the person imparting information to a person facilitating the construction of knowledge (Agarkar, 2019).

The use of learning module supports learning and is grounded on the constructivist's approach. It is a self-contained, formally structured learning experience (Rufii, 2015). Modular learning emphasizes on student-centered learning and by actually doing it themselves, they learn more because they are experiencing it (Hsiung, 2013). In addition to the constructivism theory, conversation theory supports the said theory which is about the discussion of the topic between the students and the teacher. Still, the interaction between the teacher and the students is vital for effective learning even if they are in distant. In this case, conversation theory fits with the constructivism theory in making the students active maker of knowledge (Al-Huneidi & Schreurs, 2013).

A leading proponent of the constructivism theory stated that "True learning is based on discovery, rather than the transmission of knowledge". Learners should experience doing things to learn it by heart and not to forget it. Benjamin Franklin's famous quote – "Tell me and I forget, teach me and I may remember, involve me and I learn" really applies in the learning process. In the same perspective, Dewey believed that every person learns through a hands-on approach. Based on the pyramid of learning, the average retention rates in using lecture method in teaching is only 5% unlike in practicing by doing which is 75% (Masters, 2013).

Home-based learning is also supported by behaviorist approach. Learners are expected to be active by responding to stimulus in order for learning to occur. In the modular learning or in blended learning, the teacher may require the learners to answer questions or do the activities in the module. Teachers may send clarification or instruction through text or social media aside from the instruction written on the module. For the teacher to know if they followed the instruction and learn from what they accomplished, learners will be required to share their work in a collaborative workspace for others to collaborate.

2.2 SUCCESS FACTORS IN HOME-BASED LEARNING

Interaction either with the content, with the teacher and with the learner plays a critical role in the learning process. (Zimmerman, 2012). Successful implementation of the program will not be achieved if there is no interaction with the other components. In the present learning modality in the Department of Education, different types of interaction are needed to ensure effective learning. These types of interaction such as teacher-learner, learner-learner, and learner-content integration contribute to the successful

learning outcomes and course completion of the module in home-based learning approach (Xiao, 2017; Qadir et al., 2019).

In teacher-learner interaction, the context for learning has most often been one-to-one interaction between teacher and learner rather than the whole class teaching. In this type of interaction, learners are encouraged to talk and they talk to learn. In the study made by Dague (2015), results showed that student perceived a healthy teacher-student relationship in using a discussion pedagogy. Results of a healthy teacher-student relationship will be manifested in their academic performance. A Three-fold focus such as linguistic, interactive and social have been developed and these supports the scaffolding techniques to understand the lesson especially in home-based learning approach (Hawkes, 2012).

In the study conducted by Hawkes (2012), learner responses show a positive orientation to the opportunities afforded to them, as well as the appropriate emergent interactive capabilities. The teacher-learner interactions are seen as the building blocks of relationships which are useful when implementing the use of assessment for learning or doing a formative assessment (Schut et al., 2019). Teachers need to provide facilitative feedback to help develop the metacognition and social learning aspect (Van Den Bergh et al., 2012).

In learner content interaction as cited by Špilka, (2015) is the process of interacting with the content in the learning materials that results in changes in the learner's understanding, the learners' perspective as well as the cognitive structures of the mind of the learners.

In the study of Zimmerman (2012), it was found out that learners who interact with the content more frequently achieve higher success in online courses. Learners who spend more time studying their module required less time to complete the quiz given by the teacher. In addition, learners who spent less time in answering the quiz scored higher than those who spent more time answering the quiz. This is based on the assumption that learners learned from their frequent interaction with the content of the module. With the result, learners should be encouraged to spend more time learning the module (Malinovski et al., 2012).

In the independent use of the module, learners should be engaged more in reading before they understand the lesson and do the required task like answering of the questions in the activities and creation of learning outputs. In the study of Fletcher (2016), results showed that learners view reading as unimportant and has little value in their lives, thus engagement becomes truly a challenge. Unlike in the classroom setting, where teachers are present to discuss the lesson and to let every learner read a particular portion of the topic.

In addition, in the study conducted from the University of Waterloo (2017), results show that students have mixed attitudes and experiences toward blended course. In addition, results do not show any enhancement in student learning as measured by grades. Other insights gotten from the study is that

many students are unprepared for the independent learning aspect of the course. (Špilka, 2015; University of Waterloo, 2017).

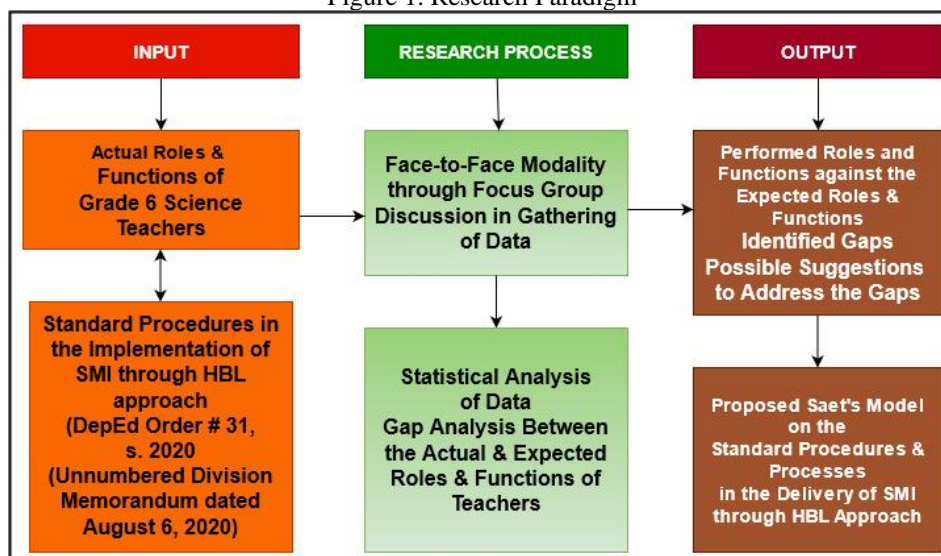
On the other hand, learner-learner interaction is similar to peer assessment which is done to engage learners in assessing and improving other’s work as part of the assessment process. In doing peer assessment, learners are engaged in providing feedback to other learners.

In the study of Elizondo-Garcia & Gallardo (2020), the usefulness of the feedback from learner-learner interaction has been associated with the diversity of learners, since they received different solutions to the problem presented. It was also recognized that peer evaluation or learner-learner interaction is one example of good practices because learners see the work from an advisory perspective (Kulkarni et al., 2013). This also coincides with Meek et al., (2016) who pointed out that doing the evaluation of the work of their peers has advantages on the part of the learners because they are being exposed to solutions, strategies and points of view that they would not otherwise see.

In parent-learner interaction, the background of parent or life context was found to have a significant effect on home-based involvement behaviors. Parents who believe they have the knowledge and skills to help their child learn, perceive they have the time and energy to help are likely to engage in involvement behaviors at home (Strickland, 2015). Parents are more likely to get involved if they feel their involvement is wanted. Therefore, the school heads and teachers can also ask the parents to become involved in the learning of their child. Strickland (2015) concluded in his study that there is a strong relationship between parents’ involvement in learning and academic achievement of their children. Active involvement of parents in education revealed a positive outcome.

2.3 CONCEPTUAL FRAMEWORK

Figure 1. Research Paradigm



The INPUT includes the actual performance of the roles and functions of Grade 6 Science Teachers in the implementation of SMI through HBL approach. The actual roles and functions are based on the standard procedures in the implementation of modular learning set by DepEd.

In the RESEARCH PROCESS, the gathering of data was done through face-to-face modality employing focus group discussion with the respondents using a structured questionnaire. The actual or performed roles and functions were compared against the expected roles and functions to identify the gaps using One Sample T-Test and Pared T-Test to determine the gaps in the performance of roles and functions in all phases of implementation.

As an OUTPUT of the process, gaps were identified in the performed roles and functions in all phases of implementation. The respondents suggested possible suggestions to address the gaps. The expectation that 100% of the Grade 6 Science Teachers will perform all the roles and functions within the standards was not met. To close the gap and to improve the implementation of SMI through HBL, a model called Saet's Model was proposed by the researcher.

3 RESEARCH QUESTIONS

This study was conducted to find out if the implementation of the standard procedures in the delivery of Science Modular Instruction (SMI) through Home-Based Learning (HBL) approach was followed.

Specifically, this research tried to answer the following questions:

1. How do the teachers implement the standard procedures in the delivery of Science Modular Instruction (SMI) through Home-Based Learning (HBL) approach by way of performing the following roles and functions?
 - 1.1 As Planner of Learning Delivery
 - 1.2 As Communicator of Learning Delivery
 - 1.3 As Lead Person in the Distribution of Learning Package
 - 1.4 As Lead Person in the Delivery of Learning Package
 - 1.5 As Lead Person in Receiving the Learning Package by the Parents
 - 1.6 As Implementer of Science Modular Learning
 - 1.7 As Assessor of Knowledge
 - 1.8 As Evaluator of Learning
 - 1.9 As Validator of Learning
 - 1.10 As Recorder of the Evidence of Learning
 - 1.11 As Giver of Feedback
 - 1.12 As Lead Person in the Retrieval of Learning Package

2. What gaps were noted in the performed roles and functions of teachers as compared with the expected roles and functions?
3. Was there a significant difference between the expected and the actual roles and functions performed by the teachers?
4. What possible suggestions were given to address these gaps?
5. What model could be proposed by the researcher for the teachers to effectively perform the expected role and function in the delivery of SMI?

4 RESEARCH METHODOLOGY

4.1 RESEARCH DESIGN

This study made use of a mixed method or a triangulation design of research,

4.2 RESEARCH POPULATION AND SAMPLE

There is a total of 173 complete elementary schools in the Schools Division of Marinduque out of 183 primary and complete elementary schools. Total enumeration of the 173 complete elementary schools with 179 Grade 6 Science teachers, 127 School Heads and 357 Parents were utilized as respondents of the study.

4.3 DATA COLLECTION AND INSTRUMENT

A researcher-made questionnaire for teachers, school heads and parents and guardians, were used to determine the actual roles and functions of teachers in the implementation of Science Modular Instruction through Home-Based Learning Approach. It was validated by the experts and pretested before its actual use. In the collection of data, there was a face-to-face interaction through a focus group discussion between the teacher-respondents, school head-respondents and parent-respondents.

4.4 DATA ANALYSIS

Results were analyzed using frequency, percentage, mean, rank, one sample t-test and paired t-test.

4.5 ETHICAL CONSIDERATIONS

Confidentiality of the data gathered was strictly maintained at all times. Before the implementation of the study, the researcher made sure that the participants fully understood the nature of the study and the fact that participation is voluntary.

5 RESULTS AND DISCUSSION

5.1 PERFORMANCE OF TEACHERS IN THE DELIVERY OF SCIENCE MODULAR INSTRUCTION SMI)

Table 1 Summary of the Rating of Teachers, School Heads, and Parents in all Phases for Q1 and Q2

Phases	No. of indicators/ Functions	Quarter	Mean Summary					
			Teachers' Rating	Average Level	School Heads' Rating	Average Level	Parents' Rating	Average Level
I	6	Q1	3.76	4	3.74	4	3.89	4
		Q2	3.76	4	3.74	4	3.9	4
II	6	Q1	3.77	4	3.86	4	3.88	4
		Q2	3.75	4	3.86	4	3.89	4
III	4	Q1	3.76	4	3.82	4	3.88	4
		Q2	3.75	4	3.81	4	3.88	4
IV	3	Q1	3.80	4	n/a	n/a	3.88	4
		Q2	3.79	4	n/a	n/a	3.88	4
V	2	Q1	3.78	4	n/a	n/a	3.88	4
		Q2	3.78	4	n/a	/a	3.88	4
VI	13	Q1	3.62	4	3.84	4	3.82	4
		Q2	3.64	4	3.82	4	3.81	4
VII	11	Q1	3.49	3	3.60	4	3.75	4
		Q2	3.48	3	3.60	4	3.75	4
VIII	1	Q1	3.58	3	3.65	4	3.81	4
		Q2	3.58	3	3.65	4	3.81	4
IX	1	Q1	3.64	4	n/a	n/a	3.81	4
		Q2	3.64	4	n/a	n/a	3.82	4
X	1	Q1	3.61	4	3.63	4	n/a	n/a
		Q2	3.61	4	3.64	4	n/a	n/a
XI	4	Q1	3.49	3	n/a	n/a	3.76	4
		Q2	3.52	3	n/a	n/a	3.8	4
XII	4	Q1	3.82	4	3.88	4	3.89	4
		Q2	3.83	4	3.88	4	3.89	4

Legend: 4: within the standard
3: below the standard

Table 1 presents the summary of combined mean ratings of teachers, school heads and parents from Phase I to Phase XII for Quarters 1 and 2. It can be seen also in the table the particular functions or indicators which were not answered by the school heads and parents which are marked as n/a. Those indicators marked n/a were not observed by the school heads and parents. When it comes to the rating of teachers, data shows that all the functions or indicators in Phases I (*as Planner of Learning Delivery*), II (*as Communicator of Learning Delivery*), III (*as Lead Person in the Distribution of Learning Package*), IV (*as Lead Person in the Delivery of Learning Package*), V (*as Lead Person in Receiving the Learning Package by the Parents*), VI (*as Implementer of Science Modular Learning*), IX (*as Validator of Learning*), X (*as Recorder of the Evidence of Learning*) and XII (*as Lead Person in the Retrieval of Learning Package*) were performed under level 4 (*almost always true*), which means that the performance of the roles and functions are within the standards set by the Department of Education (DepEd), The

ratings of teachers were supported by the ratings of school heads and parents. All the ratings given by the school heads and parents fall under level 4 (*almost always true*) which means that most of them are satisfied the way teachers performed their role and functions. This means that the teachers performed well in the roles and functions focusing on the learning resources.

On the other hand, when it comes to the teachers’ rating for Phases. VII (*As Assessor of Knowledge*), VIII (*As Evaluator of Learning*) and XI (*As Giver of Feedback*), these were rated under level 3 (*usually true*). This means that the performance of roles and functions in these three phases are below the standards set by DepEd. While majority of the teachers failed to perform the roles and functions as expected of them or in accordance with the standards, it means that the teachers are not that good in performing the mentioned roles and functions focusing on learning and student-centered and communication.

5.2 GAPS NOTED IN THE PERFORMED ROLES AND FUNCTIONS OF TEACHERS AS COMPARED WITH THE EXPECTED ROLES AND FUNCTIONS

Table 2 Summary of Responses of Teachers as to the Level of Performing the Roles and Functions in the SMI through HBL approach

Phases	Roles	No. of indicators (functions)	Quarter	Frequency of Responses in Percent		
				Level 4 (within the standards)	Average description per indicator	Level 3-1 (below the standards)
I	As Planner of Learning Delivery	6	Q1	74.8	AAT	25.2
			Q2	74.4	AAT	25.6
II	As Communicator of Learning Delivery	6	Q1	76.0	AAT	24.0
			Q2	74.9	AAT	25.1
III	As Lead Person in the Distribution of Learning Package	4	Q1	76.0	AAT	24.0
			Q2	75.0	AAT	25.0
IV	As Lead Person in the Delivery of Learning Package	3	Q1	75.0	AAT	25.0
			Q2	75.03	AAT	24.97
V	As Lead Person in Receiving the Learning Package by the Parent	2	Q1	74.85	AAT	25.15
			Q2	74.05	AAT	25.95
VI	As Implementer of Science Modular Learning	13	Q1	61.2	AAT	38.8
			Q2	61.9	AAT	38.1
VII	As Assessor of Knowledge	11	Q1	54.0	UT	46.0
			Q2	53.3	UT	46.7
VIII	As Evaluator of Learning	1	Q1	60.3	UT	39.7
			Q2	60.9	UT	39.1
IX	As Validator of Learning	1	Q1	66.5	AAT	33.5
			Q2	65.9	AAT	34.1
X	As Recorder of the Evidence of Learning	1	Q1	63.1	AAT	36.9
			Q2	63.1	AAT	36.9
XI	As Giver of Feedback	4	Q1	51.25	UT	48.75
			Q2	51.13	UT	48.87
XII		4	Q1	82.65	AAT	17.35

	As Lead Person in the Retrieval of Learning Package		Q2	82.52	AAT	17.48
		56				

Legend: AAT: almost always true (within the standard)
 UT: usually true (below the standard)

Table 2 presents the Summary of Responses of Teachers as to the Level of Performing the Role and Functions in the SMI through HBL approach in all phases of implementation, in which each phase represents each role. Each role or phase is composed of the indicators or functions having a total of 56 indicators or functions in all 12 phases or roles.

Table 2 shows that majority of the ratings of teachers for Phases I, II, III, IV, V, VI, IX and XII is within the standard (almost always true), and gave an overall description or level of 4 which means that most teachers performed the roles and functions in accordance with the set standards. On the other hand, there are percentage of teachers that fall under level 3-1 which means the performance of the roles and functions fall below the standard set by DepEd. The expectation that 100% of the teachers who are expected to perform the mentioned roles and functions was not met. This means that gaps were identified in this nine (9) phases.

On the other hand, for phases VII (as assessor of knowledge), VIII (as evaluator of learning), and XI (as giver of feedback), almost half of the percentage of teachers performed the roles and functions below the standard set by DepEd. The ratings for these three phases gave a description of *usually true*, which means below the standards set by DepEd. This means that these particular roles and functions were not performed as expected of them to be demonstrated. With the obtained percentage which is below the standard, this means that bigger gaps were noted for these three phases when compared to the other nine phases or roles performed.

5.3 SIGNIFICANT DIFFERENCE BETWEEN THE EXPECTED AND ACTUAL ROLES AND FUNCTIONS PERFORMED BY THE TEACHERS

Table 3 Summary Results of the Roles and Functions of Teachers in the Implementation of Science Modular Instruction (SMI) through Home-Based Learning (HBL) approach

Phases	Roles	Number of Functions/ Indicators	Interpretation
I	As Planner of Learning Delivery	6	Significant
II	As Communicator of Learning Delivery	6	Significant
III	As Lead Person in the Distribution of Learning Package	4	Significant
IV	As Lead Person in the Delivery of Learning Package	3	Significant
V	As Lead Person in Receiving the Learning Package by the Parents	2	Significant
VI	As Implementer of Science Modular Learning	13	Significant

VII	As Assessor of Knowledge	11	Significant
VIII	As Evaluator of Learning	1	Significant
IX	As Validator of Learning	1	Significant
X	As Recorder of the Evidence of Learning	1	Significant
XI	As Giver of Feedback	4	Significant
XII	As Lead Person in the Retrieval of Learning Package	4	Significant
		56	All are Significant

Table 3 shows that there is a significant difference between the expected and actual roles and functions of teachers in the delivery of Science Modular Instruction through Home-Based Learning approach in all the phases or roles of implementation. Therefore, the null hypothesis that there is no significant difference between the expected roles and functions based on standards and the actual roles and functions performed by the teachers is rejected.

Table 4 Summary of the Difference Between Quarter 1 and Quarter 2 in all Phases of Implementation

Phases	Roles	Number of Functions/ Indicators	Interpretation
I	As Planner of Learning Delivery	6	not significant
II	As Communicator of Learning Delivery	6	not significant
III	As Lead Person in the Distribution of Learning Package	4	not significant
IV	As Lead Person in the Delivery of Learning Package	3	not significant
V	As Lead Person in receiving the Learning Package by the Parents	2	not significant
VI	As Implementer of Science Modular Learning	13	not significant
VII	As Assessor of Knowledge	11	not significant
	Function # 37	Higher in Q1	significant
	Function # 40	Higher in Q1	significant
VIII	As Evaluator of Learning	1	not significant
IX	As Validator of Learning	1	not significant
X	As Recorder of the Evidence of Learning	1	not significant
XI	As a Giver of Feedback	4	not significant
XII	As Lead Person in the Retrieval of Learning Package	4	not significant

As shown in Table 4 when the performance of role and functions in all phases of implementation of Science Modular Instruction was compared for the two quarters, it was revealed that there is no significant difference in the teachers’ performance of roles and functions between the first and second quarters of SY 2020-2021 in all phases of implementation except for functions #37 and #40 in Phase VII, thus the null hypothesis that there is no significant difference between the performed roles and functions in the First and Second Quarters is accepted except for functions #37 and #40 in Phase VII in which the null hypothesis is rejected.

Although there is an expectation that in the second quarter, performing of the task is near to perfection inasmuch as teachers have adjusted already from their experiences in the first quarter still, the result is not significant for the two quarters. It is because their tasks in the first quarter is being carried

over in the second quarter. The more the teachers become loaded with work in the second quarter. This statement is supported by the statement given by the teachers and parents as well.

5.4 POSSIBLE SUGGESTIONS TO ADDRESS THE GAP

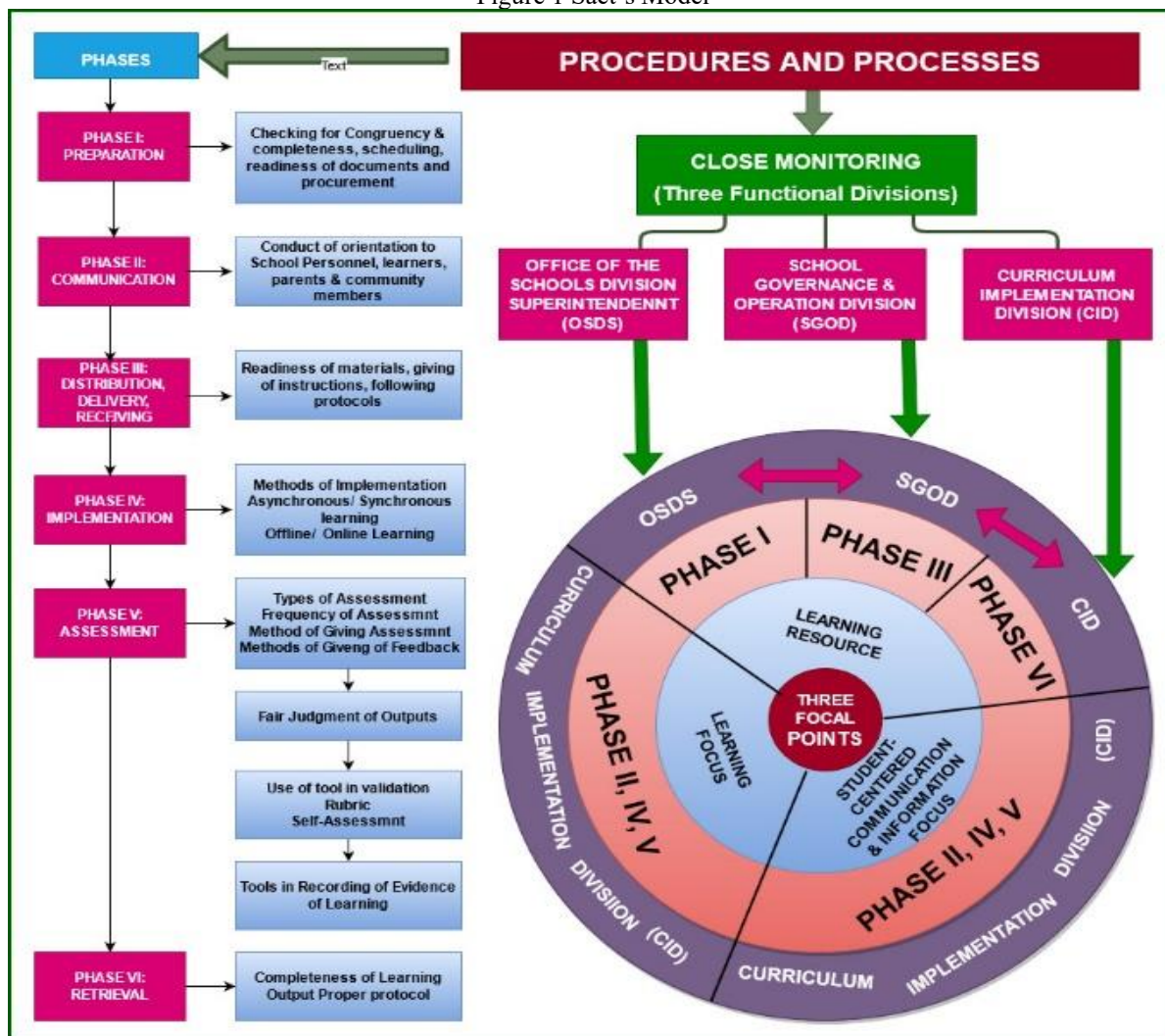
When it comes to the implementation of the modular instruction, teachers suggested the following which were listed based on frequency and rank.

Suggestions Given by Teachers	Frequency	Rank
1. <i>Assign a team to manage the printing and sorting of modules.</i>	15	1
2. <i>Other reports should not be given to the teachers to have focus on their main functions which is teaching.</i>	13	2
3. <i>Let the parents or parent leaders get the SLMs from the teacher, since the school cannot count on the services of the functional module courier for a longer period of time because they also have work to do.</i>	10	3
4. <i>Leaners who cannot learn independently must be identified and be given a Learning tutor (LT) or Knowledge Source to assist them.</i>	4	4
5. <i>Lessen the number of pages in each module.</i>	2	5

5.5 PROPOSED MODEL FOR THE TEACHERS TO EFFECTIVELY PERFORM THE EXPECTED ROLES AND FUNCTIONS IN THE DELIVERY OF SCIENCE MODULAR INSTRUCTION (SMI) THROUGH HOME-BASED LEARNING (HBL)

More than anything else, teachers need clear guidelines, proper information dissemination and close monitoring and assistance for them to perform the roles and functions expected of them with confidence by following the set standards. To provide guidance to the schools as the direct implementer of the curriculum, the researcher proposes a model or framework for effective implementation of SMI through HBL approach.

Figure 1 Sact's Model



6 CONCLUSION

In the light of the foregoing findings of the study, the researcher concluded that:

- Majority of the Grade 6 Science teachers performed the roles and functions as: “Planner of Learning Delivery”, “Communicator of Learning Delivery”, “Lead Person in the Distribution of Learning Package”, “Lead Person in the Delivery of Learning Package”, “Lead Person in Receiving the Learning Package by the Parents”, “Implementer of Science Modular Learning”, “Validator of Learning”, “Recorder of the Evidence of Learning” and “Lead Person in the Retrieval of Learning Package” within the standards set by DepEd;
- Majority of the Grade 6 Science teachers did not perform the roles and functions as: “Assessor of Knowledge”, “Evaluator of Learning” and “Giver of Feedback” based on the standards set by DepEd.;
- Majority of the teachers performed well on their functions focusing on the preparation of learning resources;

- d. Majority of the teachers performed not so well on their functions focusing on student learning and student-centered communication and information;
- e. Gaps were noted in all twelve phases of the implementation, hut bigger gaps were noted in three phases.
- f. Significant difference between the expected and the actual roles and functions performed by the teachers were noted in all phases of implementation, thus, the null hypothesis that there is no significant difference between the expected and the actual roles and functions performed by the teachers is rejected.
- g. There is no significant difference between the performed roles and functions in the First and Second Quarters in all phases of implementation except for functions # 37 and #40 in Phase VII, thus the null hypothesis that there is no significant difference between the performed roles and functions in the First and Second Quarters is accepted except for functions #37 and #40 in Phase VII in which the null hypothesis is rejected.

ACKNOWLEDGMENT

The author expresses her sincere and profound gratitude to the following whose immeasurable contributions have helped in the completion of her dissertation:

Dr. Julieta Q. Nabos, Dean, School of Graduate Education and Professional Studies, for the guidance extended to the researcher;

Dr. Leodegario M. Jalos, Jr., Head of Doctor of Education Program, whose expertise provided significant changes in some parts of her manuscript;

Dr. Victoriano R. Regio, her Research Adviser, for all the wisdom shared to her and whose critical commentaries and suggestions resulted in significant changes in her paper;

Engr. Nelson Rufino M. Montejo for his generosity in sharing his expertise that caused further refinement of her work;

Dr. Rex Emmanuel L. Asuncion, Dr. Merian C. Mani and Dr. Homer L. Montejo for the pieces of advice given to her in the conceptualization of the manuscript;

Dr. Diosdado P. Zulueta, Dr. Ma. Edelwina M. Blasé, Dr. Verna Liza L. Capiña, and Dr. Alexander M. Pascua, the committee on oral defense, for the comments and suggestions for the improvement of the manuscript;

Dr. Julieta L. Go, Dr. Analyn J. Decena, and Mrs. Jelly L. Sore, who gave much of their precious time as language critique of her manuscript;

Mrs. Lany M. Semilla, Chief of the Curriculum Implementation Division, for her wholehearted support in this endeavor and for the words of encouragement to speed up her work;

Dr. Elsie T. Barrios, Mr. Felix M. Famaran, all Public Schools District Supervisors, all Elementary and Secondary School Heads, and all Science teachers in the elementary and secondary levels for the support and assistance extended to the researcher for the successful gathering of data;

Prof. Panchito M. Labay, Mr. Edson R. Sapungan, Mrs. Mariam B. Rivamonte, Mrs. Bernadith L. Regencia, Mrs. Marisol O. Luarca, Mrs. Fretzie P. Alcantara, Mr. Christopher J. Rebistual, Miss Reychelle F. Faeldo, and Mrs. Liezl M. Manoy for the assistance given to her;

Her colleagues and friends for their affection and words of encouragement;

Her children – Hannah Angelie, Lexerd Angelo, Mary Jasmin Margret and grandson - Ives Gavin for their love and support which makes her inspired to speed up the task; and

Our Loving Father whose eternal presence and boundless blessings have made this difficult task possible.

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