

Original Research Article

Localization of a Module on Ecosystem (Science 7) in Schools Near the Mapanuepe Lake, Zambales

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Abstract: Creating an original instructional material in teaching science by relating learning content to local information and materials from the learner's community is one of the main features of the K to 12 Curriculum that will enhance students' achievement. The study aimed to develop and determine the acceptability of a localized module on ecosystem (Science 7) in Schools near the Mapanuepe Lake, Zambales. The study utilized mixed method- concurrent transformative design. The respondents of the study were four (4) selected evaluators and specialists in the field of Science from the Schools Division of Zambales. The researcher reviewed the grade 7 science curriculum guide then conducted a thorough observation on community near the Mapanuepe Lake, Zambales. Afterwards, he developed a localized module that was given to the respondents identified by the researcher together with the evaluation form. The results of the evaluation were used by the researcher in improving some aspects of the module to come up with a Localized Module on Interaction (Science 7). Results revealed that lessons in Grade 7 Science that concerned with the environment are components of an ecosystem, ecological relationships, and transfer of energy through trophic levels. The module was acceptable. The overall mean 4.52 indicates that the module is Excellent. This means that the aspects of module are very adequately covered and the quality is superior. Five major themes emerged to describe the comments and suggestions of the evaluators and specialists in the improvement of the module. These are the following: Localized activities, Activities are organized, Objectives are met, Translate localized terms, Complete and Simplified.

Keywords: Localized module, ecosystem, Mapanuepe Lake, science, evaluators.

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INTRODUCTION

There is a consensus that in many places around the world, science education is facing serious challenges. It is clear that developing countries face greater challenges in science education than economically developed countries due to lack of teaching materials, laboratory facilities and equipment, as well as shortage of skilled teachers (Ballesteros, 2016). Science education in our country cannot be considered as strength. The passing rate for high school seems far worse, with a passing rate of only 46.38 % from 2010 statistics. Moreover, the Philippines consistently perform abysmally in international surveys. More recently, the country participated in the 2018 Program for International Student Assessment (PISA).

Conducted by the organization for Economic Cooperation and Development (OECD), the study ranked 79 participating economies based on their students' performance in reading, science and math. Filipino students had the lowest mean score in reading comprehension (340 points, below the 487-point survey average). They also ranked second to the last in science (357) and math (353), below the 489-point average in both subjects (Ambag, 2019). There are possible factors that influence students' performance and achievement in science. Traditional teachings have worked for years; it would not hurt to integrate new ideas or strategy in the teaching of science to improve results on students' achievement and performance. One of the concerns that a teacher has to employ is the initiative to conceptualize, prepare and utilize instructional devices

and materials that are beneficial to student effective and creative learning (Rio, 2014). In addition, one of the instructional materials that are widely used today is the use of module.

However, Instructional-aids such as module should also be reviewed to determine whether their use is feasible in the training environment and whether they are appropriate for the students' use (Rio, 2014). On the other hand, one of the main features of the K to 12 is the delivery of the lessons through Contextualization and Localization (Torres, 2015). RA 10533 or the Enhanced Basic Education Act of 2013, Sec. 10.2 (d) and (h) states that "The curriculum shall be contextualized", "The curriculum shall be flexible enough to enable and allow schools to localize, indigenize and enhance [the curriculum] based on their respective educational and social context. Resources for science teaching are not only found in the classroom, but they are also available in the immediate school environment and community. As such, a science teacher should be familiar with the immediate school environment and the community in order to be able to source out all the human and non-human materials that can facilitate science learning (Ballesteros, 2016). The researcher believes that developing localized module in Science is worth pursuing. Drawing on the insights obtained through prior studies; the researcher conducted this study to develop a localized module in Ecosystem (Science 7) that will serve as an instructional material and learning resource for the students. Likewise, this will be a benchmark for other teachers in the field.

Objective of the Study

The study aimed to develop and determine the acceptability of the localized module on Ecosystem (Science 7) in Schools near the Mapanuepe Lake, Zambales.

Localization of Curriculum

According to DepEd Order No. 32, s. 2015 entitled Adopting the Indigenous Peoples Curriculum Framework; contextualization is the process of relating the curriculum to a particular setting, situation, or area of application to make the competencies relevant, meaningful, and useful to all learners. The degree of contextualization can be further distinguished into localization, which involves relating curriculum content to information and materials found in the learners' immediate community, and indigenization, which involves enhancing curriculum competencies, learning resources, and the even instructional process in relation to the biogeographical, historical, and socio-cultural context of the learners' community. In preparing lessons, teachers are encouraged to make full use of these contextualization strategies, if necessary, to make full use of these contextualization strategies, if necessary, to make lessons more relevant and meaningful to learners. Localization, being one of the degrees of contextualization, is the process of relating

learning content specified in the curriculum to local information and materials from the learner's community. Localization maximizes materials, activities, events, and issues that are readily available in the local environment we localize and contextualize the curriculum and the use of learning materials in terms of Geography, Cultural Diversity and Individuality. (Bringas, 2014). In addition to this, localization is a freedom for schools or local education authorities to adapt a curriculum to local conditions, and relating the content of the curriculum and the processes of teaching and learning to the local environment (Taylor, 2004). Technically speaking, localization was the process of adapting and relating the content of the curriculum and the process of teaching and learning to local condition, environment, and resources. Meanwhile, contextualization was the process of presenting lesson in meaningful and relevant context based on previous experiences and real-life situations. In commonality, both adhere in making the lesson flexible, fit, creative, relevant, meaningful, and adaptive to students' level of understanding and instructional needs (Lotz-Sisitka, 2002).

The concept of localization and contextualization fell on the idea that students learned best when experiences in the classroom had meanings and relevance in their lives. Things students did and associated with them was the learning that lasted forever. Applying the rule for learning by doing, applied learning and manipulative learning was also necessary in executing localization and contextualization in teaching. If students were put in an actual learning environment letting them to manipulate, relate, and adapt to various learning opportunities and resources available within the locality or community, profound learning would be assured and realized. It helped teachers and students comprehend concepts by relating and presenting lesson on the context of prevailing local environment, culture, and resources. Hence, lessons were becoming more real-life, customized, and appropriated (Ng'onomo 2016). In the study conducted by De Lara (2017), he assessed the level of acceptability of the developed activity sheets in Science V integrating climate change adaptation of Grade V science teachers in the District of Piliia for the school year 2016-2017. Result shows that participants were able to recognize and understand the importance of environmental education lessons through localization and contextualization. Using a checklist, as main instrument of the study, the researcher found out that developed activity sheets in Science 5 is very much acceptable. Likewise, as revealed by the findings, it is more acceptable to localized and contextualized the learning materials for pupils. Through developed activity sheets, researcher strongly supports environmental education and believes this to serve as way to instill environmental literacy to students. Furthermore, the study conducted by Ballesteros (2016) entitled localization and contextualization of science

activities in enhancing learners' performance shows that the overall performance of the learners showed a proficient level with a mean of 86.67 that implies that there was significant improvement in their performance in science using localization and contextualization approach in teaching science.

Module as Instructional Material

Instructional materials are used by teachers to facilitate effective teaching and better quality of learning among students. Instructional materials are created to suit the different ways that students learn. While some students learn and retain information that are fed to them through a lecture, others learn better by reading. Other students however absorb information with the aid of visual cues in addition to the lecture and reading. The use of different instructional materials assures and provides the student with different learning aids to maximize learning and retain the information given to them. (Rio, 2014). A module is defined as a set of learning opportunities systematically organized around a well-defined topic which contains the elements of instruction-specific objectives, teaching activities and evaluation using criterion-reference measures (Cruces, 1993). According to Suwanawongse (1991), modular instruction meets all conditions for effective learning whereas the other methods of study meet only very few. All elements are brought together in time and space. Individual differences are catered to and the objectives are achieved because students work on them at their own pace. They have built-in statements of objectives informing students about what they should be able to learn after instruction. The modules have the information sequenced in logical steps.

METHODOLOGY

Research Design

In developing and determining the acceptability of a localized module, three stages were conducted. Stage 1 is R-O-D or the review, observe and develop stage; stage 2 is V stage or the validation stage, and the stage 3 is R stage or revise stage. The study utilized mixed method- concurrent transformative design. According to Creswell and Clark (2007), mixed method is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in single study or series of study. In concurrent transformative design, both the qualitative and quantitative data are collected at the same time. A theoretical perspective informs the conduct of this study and data are integrated during the interpretation phase. Hurmerinta-Peltomaki and Nummeria (2006) claimed that mixed methods

provide information on different levels of understanding.

Respondents and Location

The respondents of the study were four (4) selected evaluators and specialists in the field of Science from the Schools Division of Zambales. The study was conducted on the School's Community near the Mapanuepe Lake, Zambales.

Instruments

The following instruments were used by the researcher in data gathering and in the development of the localized module. **A) Observation Tool.** The observation form was accomplished during observation in the school community near the Mapanuepe Lake, Zambales. In the observation form, the researcher wrote and documented all the necessary information regarding geographic location, topography, climate, existing flora and fauna in the location of the study. The tool was used in making the module especially it served as the basis in the localization process. **B) Evaluation Form.** The evaluation form was used by the evaluators and specialists in evaluating the module for its improvement. The evaluation form allows the evaluators and specialist to evaluate the aspects of the module such as physical aspect, objectives, instructions, learning activities, and evaluative measures (Ticao, 1986). There was also a section in the evaluation form for the recommendations, suggestions and personal perception on the module. This form was used by the researcher in improving and developing the module in ecosystem.

Data Collection

Stage 1 (Drafting/Formulating of a Module).

The researcher reviewed the Grade 7 Science Curriculum Guide focusing on the content standard, performance standard and learning competencies of Ecosystem under Living Things and their Environment (Second Quarter). Based on the review, the researcher conducted a thorough observation on the two school's community near the Mapanuepe Lake, Zambales. While observing, the researcher accomplished the observation form by documenting the necessary information regarding geographic location, topography, climate, soil types, existing flora and fauna in the location of the study. Likewise, the researcher also read and study Learner's Guide, Teacher's Guide and Textbooks of the Grade 7 Science. This served as the reference in the development of the module. This was used by the researcher in making objectives and learning activities. The content and instruction used in the module was based on the guides. Afterwards, he developed a localized module on Ecosystem with careful application of the identified critical elements in mastery learning program.

Stage 2 (Evaluation of the Formulated Module by the Respondents).

Developed Localized module on Ecosystem was given to the respondents identified by the researcher together with the evaluation form. The evaluation form used was based on the criteria of Querubin (1996). The evaluators and specialists were asked to indicate their appraisal on the module by checking the appropriate columns in the evaluation form. Likewise, they also asked to write their suggestions, recommendations and personal perceptions on the space allotted. Afterwards, the data obtained from the evaluation form was summarized, tabulated, presented, analyzed and interpreted.

Stage 3 (Revision and Evaluation of the New Module).

The results of the first evaluation were used by the researcher in improving some aspects of the module. Finally, the developed localized module was given again to the same set of evaluators and specialists for the second evaluation. Afterwards, the data obtained from the second evaluation form was summarized, tabulated, presented, analyzed and interpreted.

Data Analysis

To analyze the demographic profile of the respondents, frequency counts and percentage was utilized. This was computed in order to gain information in the frequency of respondents as to their demographic profile. To describe the result of the evaluation in the different aspects of the module such as physical aspect, objectives, instruction, learning activities, and evaluative measures weighted mean was used. The weighted mean is a mean where there is some variation in the relative contribution of individual data values to the mean. The comments and suggestions were subjected to thematic analysis to cull the underlying themes and code the significant statements. The resulting significant themes were clustered into underlying themes. The scale of means above and corresponding descriptions adopted and modified from Larawan (2013) was employed. Module aspect with a rating of Excellent (4.21 -5.00) and Very Satisfactory (3.41 – 4.20) are considered acceptable, while those with an average rating of Satisfactory (3.40- 2.6) and below are revised.

FINDINGS AND DISCUSSION

Review of the Science Curriculum Guide

The present study reviewed the science curriculum guide focusing on ecosystem under Quarter II of Science 7. Learning standards such as content standard, performance standard and learning competencies were studied. The result of the review shows that there were four learning competencies under ecosystem. These are the following: differentiate biotic from abiotic components of an ecosystem; describe the different ecological relationships found in an ecosystem; predict the effect of changes in one population on other populations in the ecosystem; and predict the effect of changes in abiotic factors on the

ecosystem. These learning competencies will help the learners to learn that interactions occur among the different levels of organization in ecosystems. Organisms of the same kind interact with each other to form populations; populations interact with other populations to form communities. However, due to the diverse environment of the Philippines, delivering the learning standards of ecosystem should be based on the locality. Each locality features different ecosystem highlighting varied flora and fauna that some are endemic. Likewise, geographic location, topography and climate were also different in some places wherein organisms may show different ecological interactions. These are some of the reasons why there is a need to adapt curriculum to local conditions. The results of the review was supported by Thesia (2012), according to her local delivery must be "...associated with the natural environment, social environment, as well as the cultural and environmental needs of the region". Likewise, according to UNESCO (2002), a key factor driving the localization of school curricula and the localization of schooling content is the ethnic and linguistic diversity of many nations. This diversity must be taken into account when designing school lessons, both in terms of local relevance and in terms of linguistic delivery, to create the vital links previously mentioned between learner and materials.

Environmental situation of the school communities near the Mapanuepe Lake

The environmental situation of the school communities near the Mapanuepe Lake were discussed in terms of Geographic location, Topography, Flora and fauna.

Geographic location. Mapanuepe Lake is a freshwater lake located in San Marcelino, Zambales. The lake was created after the cataclysmic eruption of Mount Pinatubo in 1991. Lahars following the eruption blocked the drainage of Mapanuepe River, south of the volcano, flooding Mapanuepe Valley including the barangays of Aglao (lower) and Buhawen. (wikipedia.org). Communities of Mapanuepe Lake are the two barangays in the Municipality of San Marcelino, these are Barangay Aglao and Barangay Buhawen located 30 kilometers eastern part of the town. Aglao is situated at approximately 15.0212, 120.3128 while Buhawen is at approximately 15.0095, 12.3717. Aglao and Buhawen share a common border with the following barangay: Batiawan, Subic, Zambales; San Pablo, Castillejos, Zambales; San Rafael, San Marcelino, Zambales; Rabanes, San Marcelino, Zambales, Palmayo, Floridaablanca, Pampanga and Nabuclod, FloridaBlanca.

Topography. Barangay Aglao and Buhawen are generally rolling, mountainous and rugged terrain. Mapanuepe Lake situated on these barangays. Sto. Tomas River separates these mountainous barangay to the flat land barangays on the western side. This was

supported by the data from San Marcelino, Zambales Website. According to the website, the terrain and contour of the land in San Marcelino was described as follows: 13% upland and rolling land in the eastern and 44% comprise the forest and mountainous area.

Climate. Communities near the Mapanuepe Lake have two distinctly pronounced seasons; the dry and the wet seasons. The wet season falls between the months of June to October, where in the communities experienced typhoons and habagat that causes soil erosion. While the dry season from December to May is marked by an almost total absence of rain

Flora and fauna. The communities near the Mapanuepe Lake are home for the varied forms of life such as flora and fauna. Some of the fruit bearing trees and plants found in the area are mango, banana, santol, cashew, jackfruit, coconut, guava, narra, ipil-ipil, cogon, talahib, sugar cane, different species of bamboo. While some of the animals that can be found in the area were monitor lizard, wild pig, carabao, cow, goat, different species of snakes, frog, rat, owl, and different fishes such as bunog and mudfish, carp. This study is similar with the Environmental Impact Assessment (EIA) conducted from December 2002 to June 2003. The different flora and fauna around Sto. Tomas River, San Marcelino, Zambales were the following Agoho, Kakuate, Ipil-ipil, Talahib, Hagonoy, Ouko,

Rain tree, Centrosema, Calopogonium, Narra, Auri, Bugawak, Hauili, Kawayan tinik, Kawayan killing, Teak, Mango, Akleng parang, Balinghasai, Anacardiaceae, Binayuyo, Olasiman. Hanging parakeet, Fantail House swifts, Brush cuckoo, Common Quail, Wild chicken, Phil. Deer, Wild pig, Monitor lizard, Phil. Python, Vine snake, River king fisher, Monkey, Rice field rat, Phil. Bulbul, Tailor bird, Pond turtle, Phil. Gecko, Freshwater Eel, Snake-head, Carp, Air breathing Catfish, Cichlid, Goby and snail.

Evaluation Results on the Formulated Module

The localized module was evaluated in terms of Physical aspect, Objectives, Content & Instruction, Learning Activities and Evaluative measures.

Physical Aspect. Table 1 shows the first and second evaluation of the module in terms of Physical Aspect. On the first evaluation, the highest mean is 4.75 interpreted as excellent. This refers to the “The whole material is handy”. The next is “The layout of the material is clear” with a mean of 4.50 interpreted as excellent. On the second evaluation, both indicators have a mean of 5.00 interpreted as excellent. The mean of first indicator increased from 4.75 to 5.00 while the second indicator increased from 4.50 to 5.00. This means that the module improved after the first evaluation.

Table 1: Result of the evaluation of the module in terms of Physical Aspect

Indicator	First Evaluation		Second Evaluation	
	Weighted Mean	Description	Weighted Mean	Description
1. The layout of the material is clear.	4.50	Excellent	5.00	Excellent
2. The whole material is handy.	4.75	Excellent	5.00	Excellent

Point Scale: 4.50 – 5.00=Excellent; 3.50 – 4.49=Very Satisfactory; 2.50 – 3.49=Satisfactory; 1.50 – 2.49=Fair; 1.00 – 1.49=Poor

“The whole material is handy” infers that the module can be handed easily by the students. Likewise, “The whole material is handy” infers that the layout of the module is clear without any defects.

Module Objectives. Table 2 shows the first and second evaluation of the module in terms of Objectives. On the first evaluation, all the indicators have the same mean of 4.75 interpreted as excellent, while on the second evaluation, all the indicators have the same mean of

5.00 interpreted as excellent. The mean of the three indicators increased from 4.75 to 5.00. This means that the module improved after the first evaluation. The first indicator refers to “The objectives are based on the learning competency and stated in behavioral terms”. This infers that the objectives are based on K to 12 science curriculum. Likewise, according to Querubin (1996) and SEAMEO-INNOTECH (1991) the module must have a list of instructional objectives in behavioral terms which is a critical part of it.

Table 2: Result of the evaluation of the module in terms of Objectives

Indicator	First Evaluation		Second Evaluation	
	Weighted Mean	Description	Weighted Mean	Description
1. The objectives are based on the learning competency and stated in behavioral terms.	4.75	Excellent	5.00	Excellent
2. The Objectives are SMART	4.75	Excellent	5.00	Excellent
3. The objectives will develop higher-order thinking skills and science processes.	4.75	Excellent	5.00	Excellent

Point Scale: 4.50 – 5.00=Excellent; 3.50 – 4.49=Very Satisfactory; 2.50 – 3.49=Satisfactory; 1.50 – 2.49=Fair; 1.00 – 1.49=Poor

Another one refers to the indicator “The Objectives are SMART”. This means that the objectives of the module are specific, measurable, attainable, related and time bound. The last indicator refers to “The objectives will develop higher-order thinking skills and science processes”. This infers that the objectives will lead the students to analyze, evaluate and create.

Content and Instruction. Table 3 shows the first and second evaluation of the module in terms of Content

and Instruction. On the first evaluation, two indicators have the same mean of 5.00 interpreted as excellent. These refer to “The content is relevant to the grade 7 science curriculum guide” and “The content is localized based on the environmental situation of the community”. The last indicator refers to “The content is presented in logical sequence” with a mean of 3.75, interpreted as very satisfactory. On the second evaluation, all the three indicators have the same mean of 5.00 interpreted as excellent.

Table 3: Result of the evaluation of the module in terms of Content and Instruction

Indicator	First Evaluation		Second Evaluation	
	Weighted Mean	Description	Weighted Mean	Description
1. The content is relevant to the grade 7 science curriculum guide.	5.00	Excellent	5.00	Excellent
2. The content is presented in logical sequence.	3.75	Very Satisfactory	5.00	Excellent
3. The content is localized based on the environmental situation of the community.	5.00	Excellent	5.00	Excellent

Point Scale: 4.50 – 5.00=Excellent; 3.50 – 4.49=Very Satisfactory; 2.50 – 3.49=Satisfactory; 1.50 – 2.49=Fair; 1.00 – 1.49=Poor

There was an improvement after the first evaluation showed by the increased of the mean of the three indicators from 4.75 to 5.00. The first and second indicators indicate that the content of the localized module was based from the grade 7 science curriculum guide. All the lessons covered in the module are suited for grade 7 learners. In addition to this, the content is localized based on the environmental situation of the community. The third indicator infers that the contents are presented logically. This is congruent with the specific criteria considered to zero-in at a state-of-the-art modules given by Querubin (1996) that the objectives and activities of the modules should be

properly sequenced into a logical arrangement that follows the inductive pattern of learning.

Learning Activities. Table 4 shows the first and second evaluation of the module in terms of Learning Activities. On the first evaluation, the data gathered shows that three indicators have the same mean of 4.75 interpreted as excellent. These refer to “The learning activities are suited to the target learners”, “The learning activities carry out the objectives of the lesson” and “The learning activities are localized based on the environmental situation of the community”.

Table 4: Result of the evaluation of the module in terms of Learning Activities

Indicator	First Evaluation		Second Evaluation	
	Weighted Mean	Description	Weighted Mean	Description
1. The learning activities are suited to the target learners.	4.75	Excellent	5.00	Excellent
2. The learning activities carry out the objectives of the lesson.	4.75	Excellent	5.00	Excellent
3. The learning activities are localized based on the environmental situation of the community.	4.75	Excellent	5.00	Excellent
4. The context of the material are properly sequenced from simple to complex learning task.	4.00	Very Satisfactory	4.75	Excellent
5. The learning activities adequately cover the content pertinent to the quarter.	4.00	Very Satisfactory	4.75	Excellent

Point Scale: 4.50 – 5.00=Excellent; 3.50 – 4.49=Very Satisfactory; 2.50 – 3.49=Satisfactory; 1.50 – 2.49=Fair; 1.00 – 1.49=Poor

This indicates that the learning activities of the localized module are suited for grade 7 learners. Likewise, the activities support the objectives. This is congruent with the specific criteria considered to zero-in at a state-of-the-art modules given by Querubin

(1996) that components of a module should be highly supportive of one another. For instance, such parts as objectives, learner’s activities and evaluation should be interrelated with one another. The suggested activities are used to achieve the predetermined objectives and

likewise evaluation is used to find out the extent of the realization of the objectives. The two other indicators have the same mean of 4.00 interpreted as very satisfactory. These are “The context of the material are properly sequenced from simple to complex learning task” and “The learning activities adequately cover the content pertinent to the quarter”. This indicates that the activities are from easy to difficult and covers the content for the quarter. This supports the area to be considered in making module that logical progress of learning centered on what is to be taught to avoid any element which may distract students’ attention and which gradually increases in difficulty (SEAMEO, 1991). On the second evaluation, the first, second and third indicator have the same mean of 5.00 interpreted as excellent, likewise, the fourth and fifth indicator

improved from very satisfactory to excellent having the same mean of 4.75. This indicates that the module improved on the second evaluation after its first evaluation. All the comments and suggestions by the evaluators were integrated in the module.

Evaluative Measurement. Table 5 shows the first and second evaluation of the module in terms of Evaluative Measurement. On the first evaluation, it is noticeable that the three indicators have the same mean of 4.25 interpreted as excellent. These refer to “The test items measures the skills it intend to measure”, “Items of the test adequately cover the content and subject matter” and “Evaluative measurements are consistent with curriculum requirements”.

Table 5: Result of the evaluation of the module in terms of Evaluative Measurement

Indicator	First Evaluation		Second Evaluation	
	Weighted Mean	Description	Weighted Mean	Description
1. The test items measures the skills it intend to measure.	4.25	Very Satisfactory	5.00	Excellent
2. Items of the test adequately cover the content and subject matter.	4.25	Very Satisfactory	4.75	Excellent
3. Evaluative measurements are consistent with curriculum requirements.	4.25	Very Satisfactory	5.00	Excellent

Point Scale: 4.50 – 5.00=Excellent; 3.50 – 4.49=Very Satisfactory; 2.50 – 3.49=Satisfactory; 1.50 – 2.49=Fair; 1.00 – 1.49=Poor

This indicates that the evaluative measurement used in the module is appropriate and consistent with the curriculum. According to Querubin (1996) and SEAMEO-INNOTECH (1991), a module must have the following components: mastery post-test that should correspond to one-to-one with the specific objectives of the modules. On the second evaluation, the two indicators increased from 4.25 to 5.00 these are “The test items measures the skills it intend to measure” and “Evaluative measurements are consistent with curriculum requirements” while the second indicator refers to “Items of the test adequately cover the content and subject matter” improved from 4.25 to 4.75. This means that the module improved after the first evaluation. The comments and suggestions of the evaluators was used to improve the localized module.

To summarize the results of the module, on the first evaluation the overall mean was 4.52 while the on second evaluation was 4.95. This indicates that there was an improvement on the module after the first evaluation. Using the scale of means and corresponding descriptions adopted and modified from Larawan (2013), the module is acceptable. This indicates that all the aspects of module are very adequately covered and the quality is superior.

Comments and suggestions of the evaluators and specialists in the improvement of the module

The themes with the corresponding descriptions and frequency occurrence from the four evaluators were presented in Table 6.

Table 6: Generated Themes from the comments and suggestions of the evaluators and specialists in the improvement of the module

Generated Theme	Theme Description	Frequency
Localized activities	This refers to the process of relating learning content specified in the curriculum to local information and materials from the learner’s community.	4
Activities are organized	This refers to the logical arrangement of activities.	3
Objectives are met	This pertains to the objectives that were achieved using the activities.	3
Translate local terms	This focuses on translating localized terms in to English.	2
Complete and Simplified	This theme deals with the content and activities.	2

Localized activities. The evaluators noted that the activities in the module are localized. It uses local information and materials from the community. One of the evaluators stated, *“The lesson/activity are contextualized, localized and indigenized that makes learning more meaningful and relevant”* [E3, Female]. Learning activities are one of the aspects of the module. Sequenced activities form the core of the module and set out the input-processing output or input-practice task-feedback sequences for each activity in turn. According to Bringas (2014), Localization, being one of the degrees of contextualization, is the process of relating learning content specified in the curriculum to local information and materials from the learner’s community. Localization maximizes materials, activities, events, and issues that are readily available in the local environment we localize and contextualize the curriculum and the use of learning materials in terms of Geography, Cultural Diversity and Individuality.

Activities are organized. Another significant theme from the comments mentioned by the evaluators is on the organized activities. One evaluator commented that learning activities are organized. Meanwhile, another evaluator stated, *“Activities are presented logically”* [E1, Male]. These evidences supported the comments and suggestions of the evaluators. Learning activities are one of the aspects of the module. Sequenced activities form the core of the module and set out the input-processing output or input-practice task-feedback sequences for each activity in turn.

Objectives are met. A list of instructional objectives in behavioral terms is a critical part of the module. It should be achieved using the set of activities. One evaluator said, *“Objectives are met all throughout the activity”*. [E1, Male] Likewise, another respondent pointed out that *“The activities made will help the students achieve the objectives”*. [E2, Female]. Larawan (2013) cited that the suggested activities are used to achieve the predetermined objectives and likewise evaluation is used to find out the extent of the realization of the objectives.

Translate local terms in English. Interestingly, two participants suggested that localized terms used in the learning activities, content and instruction and evaluative measurements should be translated into English. One participant said, *“The localized terms should also be translated in English Terms e.g sawa (snake). This will enhance learner’s literacy in English Language. It also adds up to their vocabulary.* [E4, Female). Hence, the researcher followed these suggestions and wrote a translation for the localized terms. Pym (2004) cited that localization processes appear to overlook the full range of effects that can be achieved by translations, at the same time as they offer little that is radically different from a dynamic view of translation practices.

Complete and Simplified. Another significant comment by the evaluators is all about the completeness and simplicity of the aspects of the module such as objectives, learning activities, content and instruction and evaluative. The following statements along this theme include the following: *Activities are easy and simple.* [E2, Female]; *the module can be used because of the simple learning activities; and students can do the activities even without the guidance of the teacher.* [E3, Female]. The localized module showed that the objectives and learning activities were simple, complete and easy to carry out. Likewise, all the activities can be done even without the guidance of the teacher because the content and instructions were also simple and complete. Activities will not also require them to bring various materials. Larawan (2013) cited that modules should be self-contained; the content should be prepared to allow students to work independently by themselves and if there is a need for some teacher’s assistance, such help will be at its minimum. Five major themes emerged on the first evaluation to describe the comments and suggestions of the evaluators and specialists. The researcher, to improve the module utilized this comments and suggestion. All the themes on the first evaluation were the same on the second evaluation except for theme number 4. The suggestion of the evaluators to add English translation for the local terms was evident in the revised module.

CONCLUSION

Based on the findings of the study, the following conclusions are drawn: First, there were three lessons in Quarter II of Grade 7 science curriculum concerned with the environment such as components of an ecosystem, ecological relationships, and transfer of energy through trophic levels. Second, all the aspects of the localized module are excellent. Third, there was an improvement on the module after the first evaluation. Fourth, the localized module was accepted. Fifth, there were five major themes emerged to describe the comments and suggestions of the evaluators and specialists in the improvement of the module such as Localized activities, Activities are organized, Objectives are met, Translate localized terms, Complete and Simplified. Sixth, Environmental situation in the area was used in developing localized module.

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