Relationship Between the Students' Perceptions on the Activities in the Learning Activity Sheet and their Level of Performance in Earth Science 8

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***Abstract*—** During the COVID-19 pandemic, one of the obstacles faced in learning is the low students' involvement in the learning activities. This study generally aims to identify the relationship between students' perceptions on the activities in the Learning Activity Sheets and their level of performance in Earth Science 8. This research involved 40 Grade 8 students in Cadandanan National High School. The results showed that the students' perception is significantly correlated to their level of performance in Earth Science 8. The results of this research also illustrated the importance of designing effective learning activity sheets that support the effectiveness of modular distance learning during the COVID-19 pandemic.

***Keywords*—** Learning Activity Sheet, Perception, Level of Performance, Modular Distance Learning.

I. INTRODUCTION

The widespread of COVID-19 disrupted the normal way of education, leading to the near-total closures of schools, early childhood education, universities, and colleges. Most government decided to temporarily close educational institutions to reduce the spread of COVID-19. In response to the school closures, the UNESCO recommended the use of distance learning programmes and open educational applications and platforms that school and teachers can use to reach learners remotely and limit the disruption of education [1]. In the new normal way of education, learning is through modules and Learning Activity Sheets (LAS) are the primary tools to continue supplementing education to the learners.

Modular distance learning (MDL) is one of the types of modalities that takes place between the teacher and the learners who are geographically remote from each other during instruction. The teacher takes the responsibility of monitoring the progress of the learners. The learners may ask assistance from the teacher via e-mail, telephone, text message/instant messaging. Where possible, the teacher shall do home visits to learners needing remediation or assistance. Any member of the family or other stakeholder in the community needs to serve as para-teachers [2].

In modular distance learning, Learning Activity Sheets is one of the tools used as a way for the students to learn. Learning activity sheet provides course materials in a logical, sequential, order, guiding students through the content and assessments in the order specified by the teacher. Through LAS, self-learning takes place outside the formal systems thereby giving them more flexibility and freedom to explore new avenues of learning. Students engage themselves in learning the concepts presented. They develop a sense of responsibility in accomplishing the tasks provided. With little or no assistance from others, the learners progress on their own. In addition, learning continues despite COVID-19 spreading non-stop in the Philippines.

The above information caught the attention of the researchers to design an effective and efficient Learning Activity Sheets to identify the relationship between the students' perceptions on the activities in the LAS and their level of performance. It was observed by the researchers that during modular distance learning, learners showed high/low interest and attention to science lesson. Based on the formative assessment tracking of the learners' achievement by the subject teachers for the 1st quarter, there are competencies which are not mastered by the students that need remedial and supplemental activities. This also implies that there are learners who manifest difficulties on the activities in the LAS.

Thus, with the alarming condition of the results and observe scenario in the returned activity sheets, the researcher developed an effective and efficient learning activity sheet. The researchers opted that it is very timely to conduct action research to test if the learning activity sheet would have relationship between students 'perception and their level of performance in Earth Science 8.

METHODOLOGY

Researchers used qualitative with a descriptive method to explain and summarize students' perceptions on the

activities in the learning activity sheets. Researchers also used descriptive and inferential statistics. The obtained data was examined, interpreted and the implications were determined. Frequency counts, percentages, mean, and standard deviation were utilized to describe the level of performance of students in Earth Science 8. Correlation Analysis such as Pearson-Product Moment Correlation Coefficient was used to determine the relationship between students' perceptions on the activities on the LAS and their level of performance in Earth Science 8.

Purposive sampling was used in the choice of the Cadandanan National High School as the venue of the research. The total number of respondents were Grade 8 students with 20 males and 20 females. Purposive sampling was used in cases where the specialty of an authority can selects a more representative sample that can bring more accurate result than by using other probability sampling technique [3]. To gather pertinent data, the following instruments were used: Part I was a checklist consists of 20 items that described the students' perception on the activities in the LAS. Previously, each of these questions had been validated by the school head of Cadandanan National High School. The opinion questionnaire contains questions about the delivery of content, learning preference, language used and degree of difficulty of Learning Activity Sheets. The reliability coefficient of the test was estimated using Cronbach's coefficient alpha (α) as provided by Gregory [4]. The reliability coefficient was found to be 0.804. In this questionnaire, all respondents were required to choose the answer that reflects their own views and stance on the statements that are administered in accordance with the Likert scale of five points, strongly disagree-1 to strongly agree-5 points.

Table 1. *Survey Results Interpretation*

Options	Scale Rating	Adjectival Rating
1	1.00-1.80	Strongly Disagree (SD)
2	1.81-2.60	Disagree (D)
3	2.61-3.40	Nether Agree nor Disagree (N)
4	3.41-4.20	Agree (A)
5	4.21-5.00	Strongly Agree (SA)

Part II was the summative test that measure the students' performance of the topic in Earth Science 8. The test contained 30 multiple choice tests that are based on the learning competency of science. Validity is an important feature for an instrument [5]. An instrument is said to have high validity if the degree of its ability to measure what it should be measured is high. All the items were reviewed by the school heads and Science expert teachers for validation.

1. Perceptions of the Students on the Activities in the Learning Activity Sheet.

Table 2 presents the students' perception on the activities in the Learning Activity Sheets. The obtained over-all mean of 4.426 was described as "Strongly Agree".

Table 2: *Perceptions of Students on the Activities in the LAS*

PERCEPTIONS	Weighted Mean	Verbal Interpretation
A. CONTENT		
1. Contents of the lesson are clearly presented in the Learning Activity Sheets (LAS)/worksheets.	4.55	Strongly Agree
2. Lessons and activities in the LAS/worksheets are readible and legible.	4.58	Strongly Agree
3. Illustrations, graphs and pictures help the lessons to be understood better.	4.50	Strongly Agree
4. Instructions on the activities are presented from simple to complex.	4.48	Strongly Agree
5. Deepening of the content through examples is present.	4.50	Strongly Agree
6. Key concepts of the content are present and helpful.	4.58	Strongly Agree
Composite Mean	4.53	Strongly Agree
B. LEARNING PREFERENCE		
1. Activities and exercises are suited to my learning style.	4.35	Strongly Agree
2. Time allotment is adequate for each activity in the LAS/worksheets.	4.40	Strongly Agree
3. Activity in the LAS//worksheets promotes discovery method.	4.33	Strongly Agree

4. Activities in the LAS/worksheets provided application/principles in daily life.	4.30	Strongly Agree
5. I find the activities in the worksheets interesting.	4.40	Strongly Agree
Composite Mean	4.36	Strongly Agree
C. LANGUAGE USE		
1. Words and terms in LAS/worksheets are suited to my level of understanding.	4.23	Strongly Agree
2. Instructions are understandable and easy to follow.	4.15	Agree
3. Explanations provided are easy to follow.	4.15	Agree
4. English as medium are more understandable.	4.13	Agree
5. Examples in English are good enough.	4.13	Agree
Composite Mean	4.16	Agree
D. LEVEL OF DIFFICULTY		
1. Guide questions in the activities are easy.	4.03	Agree
2. Test items in the evaluation are easy to answer.	4.00	Agree
3. Activities and task given in the LAS/worksheets were very easy.	3.95	Agree
4. Outputs asked are easy to perform.	3.88	Agree
Composite Mean	3.96	Agree
OVERALL MEAN	4.28	Strongly Agree

Content. As shown in Table 2 content got a pooled mean of 4.53. All the statement was described as Strongly Agree.

The statements "lessons and activities in the LAS/worksheet are readable and legible" and "key concepts of the content are present and helpful" both got the highest mean of 4.58 and described as strongly agree. Meanwhile the statement "contents of the lesson are clearly presented in the LAS/worksheet" got the mean of 4.55 and described as strongly agree. The statements "illustrations, graphs and pictures help the lessons to understand better" and "deepening of the content through examples is present" both got the mean of 4.50 and described as strongly agree. However, the statement "instructions on the activities are presented from simple to complex" got the lowest mean of 4.48 and described as strongly agree.

Learning Activity Sheets play an important role in delivering instruction to the students. Content of the LAS must be suitable to the students' level of development and are attractive to catch their attention specifically in its format. Illustrations are a common language in sequence with the visual world's requirements. Human beings' first language is the image [6]. It offers a means that we can understand intuitively. Illustrations are excellent teaching aids in today's "visual world" since they present to the eye what can only be imagined otherwise [7]. It was found out also that writing, images, and colors can affect students' motivation in studying the worksheets. Aside from that, the practice questions in it allowing students to gain knowledge and train them to learn independently [8].

Learning Preference. The learning preference got a pooled mean of 4.36. All the statements were described as Strongly Agree.

The statements "time allotment is adequate for each activity in the LAS/worksheet" and "I find the activities in the worksheets interesting" both got the highest mean of 4.40 and described as strongly agree. This might be because during the modular approach, there's monitoring in the development of the learners. Meanwhile, the statements "activities and exercises are suited to my learning style" got the mean of 4.35 and described as strongly agree. Furthermore, the statements "activity in the LAS/worksheet promotes discovery method" (4.33) and "activity in the LAS/worksheet provides application/principles in daily life" (4.30) both interpreted as strongly agree.

Worksheet must be integrated with life skills that could be applied in the daily lives as they discover new concepts within. This trains students to construct conceptual understandings independently through various activities such as exploring, processing, and problems solving. Thus, students will be able to carry out learning independently, relating to everyday life [9]. In addition, science student worksheets are designed to help students improve their scientific literacy, so they can apply their knowledge in everyday life [10].

Language Use. The language use had a pooled mean of 4.16 where most of the statements were described as Agree. The statement "words and terms in the LAS/worksheet suited to my level of understanding" obtained the highest mean of 4.23 which is described as strongly degree. Meanwhile the statements "instructions are understandable and easy to follow" and "explanations provided are easy to follow" both got the mean of 4.15 and described as agree. However, the statements "English as the medium are more understandable" and "examples in English are good enough" both got the lowest mean of 4.13 and described as agree.

As language is the primary means of instruction, the learners' ability to participate in science is dependent on their language ability: talking, listening, reading, and writing [11]. In addition, science has its own genre and register. The ability to use science register is essential for learners to understand, conceptualize, discuss, read, and write in science subjects. Introducing new vocabulary or glossary of terms in the LAS, the learners will understand the use of these new words in context. This is important to ensure learners' readiness for learning science in English. Wellington and Osborne [12] note that 'the key to understanding a subject like science is to understand its language.' In other words, science teachers mustn't ignore the fact that to some extent they are language teachers. It is important to incorporate vocabulary development into science lessons both to ensure that learners understand science and to improve their English skills.

Level of Difficulty. The degree of difficulty had a pooled mean of 3.96 where all the statements were described as Agree. The statement "guide questions in the activities are easy" obtained the highest mean of 4.03 and described as agree. Meanwhile the "test items in the evaluation are easy to answer" got the mean of 4.00 and described as agree. However, the statements "activities and task given in the LAS/worksheet were very easy" (3.95) and "outputs asked are east to perform" (3.88) both got the lowest mean ad described as agree.

This could mean that the students' concerns within the Learning Activity Sheets (LAS) have primarily something to do to its level of difficulty.

This suggests that cognitive dimension specifically the Blooms taxonomy is an important aspect to consider. According to Bissell, et.al [13] the use of Bloom's Taxonomy [14] has been shown to enhance student mastery of skills and concepts and critical thinking.

Bloom's taxonomy is a tool that can help human services educators broaden the depth of their students' learning. The challenge with the taxonomy is developing assessments that measure each of the six levels. It is imperative to examine the use of the taxonomy. For students to gain more from their education, it is important to also consider where students are in terms of cognitive development. [15].

2. Level of Performance of the Students in Earth Science 8.

Table 3: *Performance of Student in Earth Science 8*

Scores	Frequency (f)	Percentage
n=40		
25-27	6	15%
22-24	9	23%
19-21	8	20%
16-18	7	18%
13-15	10	25%

Table 3 presents the students' scores in summative test (multiple choice type). The result showed that the performance of the students from 13-27 scores with a mean score of 19.55.

Roediger and Marsh found both positive and negative effects of taking a multiple-choice test on a later cued recall test.

When students got an answer right on the multiple-choice test, their performance was boosted on a later cued recall test for the information.

However, when they answered erroneously, the negative suggestibility effect occurred: students tended to supply the wrong answer on the cued recall test later at levels much greater than that in the control condition [16].

However, the positive effects of testing outweighed the negative suggestibility effect in these studies. Interestingly, the same pattern of results occurs on the widely used Scholastic Assessment Test [17] and in one study in that series in which students did very badly on the initial multiple-choice form of the SAT, the negative effects outweighed the positive effects on the final test given later.

The data gathered enabled the research to understand deeper and carefully analyze if there is a significant relationship between the students' perception on the activities in the LAS and Level of performance in Earth Science 8.

3. Relationship between the Perceptions and the Level of Performance of the Students.

Table 4: *Relationship between Students' Perception on the Activities in the LAS and their Level of Performance in Earth Science 8*

	Students' Perception on the Activities in the LAS			
	Content	Learning Preference	Language Use	Level of Difficulty
Level of Performance in Earth Science 8	-0.173*	0.335*	0.349*	0.520*

Table 4 shows the relationship between the students' perception on the activities in the LAS and Level of performance in Earth Science 8.

A highly significant relationship was found between students' perception on the level of difficulty on the activities in the LAS and their level of performance in science 8 (r = 0.520). This result implies that in preparing learning activity sheets, it is important to consider the learners' level of difficulty.

Learners' preference and language use were found to be highly significant with their level of performance (r = 0.349). This finding implies that teachers need to be more knowledgeable and skillful in preparing learning activity sheets for the individual preference of learners and language to be use.

Thus, the hypotheses state that there is no significant relationship between students' perception on the activities in the LAS and Level of performance in Earth Science 8 was rejected.

CONCLUSION

The following conclusions are reached based on the above findings: The challenges in the learning activity sheets as the primary tools in teaching and learning were the perception of the student in the activities in the LAS. The factors that affect this were the content, learning preferences, language, and level of difficulty. Students' perception on the activities on the LAS was correlated with their level of performance in Earth Science 8. Students' perceptions were found to be significantly correlated with their level of performance in Earth Science 8.

RECOMMENDATIONS

Based on the foregoing conclusions, the following are hereto recommended. Teachers should shape the learning activity sheets in terms of content, learning preferences, language use and level of difficult in increasing the level of performance of students in science lesson. Teachers should implement repetition of testing the students' performance by means of disseminating summative test whether it is a multiple-choice type. Teachers should get appropriate training on how to create learning activity sheets and summative test that helps the students gain further knowledge. Facilities and equipment needed for creating learning activity sheets of learning must be provided to schools. For future researchers, studies may be conducted using other variables not covered by this study.

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