

## IMPROVING THE LEVEL OF READING COMPREHENSION OF GRADE 8- STE LEARNERS USING THE QUICK-RESPONSE CODED SELF- LEARNING MODULE ON STATISTICS IN RESEARCH

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### ABSTRACT

*This study aimed to improve the level of reading comprehension of Grade 8 Science, Technology, and Engineering Program using Quick Response Coded Self- learning Module on Statistics in Research. Specifically, it sought answers to the following questions: (1) What is the level of reading comprehension of the Grade 8 STE in Statistics in research before and after the intervention; (2) Is there a significant difference between the levels of reading comprehension of the Grade 8 STE learners in Statistics in Research before and after using the Quick response Coded Self-learning Module; and (3) What are the experiences of the Grade 8- STE learners in using the Quick-response Coded Self-learning Modules in Statistics in Research. A quasi-experimental one-group design was used. The researcher adapted the intervention which is the Quick Response Coded Self-learning Module from the study of Supang (2021). The study found out the following: The level of reading comprehension of the 11 respondents before using the Quick Response Coded Self-learning Module are in the frustration level with the scores ranging from 5 to 9. After using the Quick response Coded Self-learning Module, the level of reading comprehension of 11 learners were moved from frustration level to instructional and independent level. The instructional level has a score ranging from 9-12. There are 7 learners whose reading comprehension level were moved from frustration to instructional, and 4 learners whose reading comprehension level were moved from frustration to independent. This implies that using the Quick response Coded Self-learning Module can truly help in improving the reading comprehension of learners*

## **I. Context and Rationale**

Global education undergoes dramatic digital transformations, (Dwivedi et al., 2020). To learn about the world, one must read and expand the vocabulary (Cicerchia et al., 2022). According to Mella (2021), reading is one of the most basic skills that every learner across the globe must achieve to succeed not only in school but also in life.

Amidst of different circumstances that the nation is facing today, the Department of Education needs to continue to educate Filipino children. What a country can best offer to its people is the quality education. One of the problems that eventually hound the country's basic education would be the reading ability of students due to the different past experiences.

According to English Helper (2022), there are 774 million people in the world who cannot read or write. Due to the pandemic, many children around the world are failing to read and it is alarming due to the inability of 4 out of 10 children to master reading, (Jenkins et al.,2021).

Ornedo (2019) reported that according to the national and international tests of literacy, such as Program for International Student Assessment (PISA), the Philippines ranked lowest out of 79 countries in reading comprehension and scored lower in reading, mathematics, and science than those in most of the countries and economies. Moreover, Dumlao (2019), disclosed that there were reported cases of reading problems in the Philippines not only in the Elementary level but also in the high school level.

Based on the DepEd Memorandum No. 173 (2019), schools across the country are tasked to help learners develop their reading skills to make every learner a proficient reader. Based on the reading assessment conducted by the English teachers at Naguilian National High School, there are 11 out of 23 students in the Grade 8- Mendel of Science, Technology, and Engineering (STE) who needs to improve the level of reading comprehension.

Based on the Division Memorandum No.176 (2022), to improve the reading ability of learners in La Union, teachers are encouraged to be creative, resourceful, innovative, and ingenious in the approach as any available good and suited reading materials (print, offline, online, original composition) may be used for the first five-minutes of the class.

As educational leader, it is thus significant to explore how instructional design can be used in to enhance reading comprehension. Instructional design, which involves systematic development of instructional specifications using learning and instructional theory, ensures that learners achieve specific learning goals or educational outcomes reflected in the education curriculum and provides relevant instructions suitable for a wide range of learning environment. According to Rivera (as cited by Siong, 2019), instructional materials play a key role in the changes that move toward inquiry centered and standard-based instruction. It was recommended that exercises, illustrations, and examples of the instructional material that should be used by a teacher must be authentic and indigenous to be effective. Moreover, Mahabadi (as cited by Siong, 2019) inferred that localization of materials would be beneficial to learners, as it would make the materials more familiar and thus more enjoyable for them. He found out that students performed better when reading localized materials. To localize learning material, teachers may use quick response coded self-learning modules.

This study focused on using Quick-Response Coded Self Learning Module in Statistics in Research for Grade 8- Science, Technology, and Engineering Program to improve their reading comprehension. The researcher is optimistic that the Quick-response Coded Self-Learning Module can remedy the low level of reading comprehension of the Grade 8- Science, Technology, and Engineering learners.

In Asia, mathematics is viewed as one of the most critical subjects wherein students are encouraged to study the discipline (Leatham & Peterson, 2010; Ronis, 2008). It is in this view that in most Asian countries, guiding practices on children's mathematics achievements are quite more vigorous (Wei & Dzeng, 2014). As indicated by Etcuban and Pantinople (2018), that showing acquired an attractive change in the conduct of learning.

In the Philippines, mathematics is a general education subject in primary and higher education where learners are expected to gain understanding and appreciation of its principles as an applied-using appropriate technology in problem-solving, critical thinking, communicating, reasoning, making connections, representations, and decisions in real life (K to 12 Basic Education Curriculum).

According to Blömeke and Delaney (2014), It is essential hence required as a subject almost in every field. However, problems related to mathematics achievement are still evident not only in the Philippine setting but also right in other countries. In the Philippine setting, educational modules in this order contain a specific topic and instructional plan standards to empower understudies to create consistent and numerical abilities expected to get it the fundamental mathematical concepts. However, low performance in this discipline is still evident. The participation of the Philippines in TIMSS confirmed this deplorable condition-based from the report posted last 2013 that the performance of Filipino students in national and international surveys on mathematics and science competencies lag behind its neighboring countries like Singapore, South Korea, Hongkong, Chinese Taipei and Japan (Care et al., 2015).

The Filipino students excel in knowledge acquisition but fare considerably low in lessons requiring higher-order thinking skills (Dinglasan & Patena, 2013; Ganal & Guiab, 2014). Even college students are not exempted from the problems in learning and mastering mathematics (Americans, 2009; Presmeg, 2006). Students' performance in mathematics, as indicated by the grades they achieved, is affected by various factors. Among the various factors, this study will primarily deal with students' affective characteristics, which focus on study habits and study attitudes, which are then further referred to as study orientations as reiterated by Biswas (2015). Two of the significant concerns of college students are getting control of time management and study habits.

## **II. Innovation, Intervention, and Strategy**

As the strategy to improve the level of reading comprehension of the Grade 8 STE learners in Statistics in Research, the researcher employed the use of Quick- response Coded Self-learning Module. This intervention was adapted from the study of Supang (2021).

The researcher distributed the Quick- response Coded Self-learning Modules to the learners of Grade 8 STE during the first day of Second Quarter of the School Year 2022-2023. The Grade 8 learners used the Quick response coded self-learning modules every 10:50 AM to 11:50 AM of Monday to Thursday. The Quick response Coded Self-learning Modules have unique features. The learners can easily scan the QR codes which direct them to the links to access the video lessons. The learners can easily access the video lessons for either face-to-face learning or distance learning. The learners can easily use the Quick-response Coded Self-learning module without the guidance of the teacher because the features are very accessible and child-friendly. Based on the findings of Supang (2021), the Self-learning Modules on Statistics in Research is suitable for the Grade 8 and has a readability score of 8.02 which means it is considered a Conversational English. It is very satisfactory in terms of content, format, presentation and organization, up-to-datedness of information. In the

delivery of lessons, the researcher will also switch codes or translate from English language to Filipino language.

### III. Action Research Questions

This study aimed to improve the level of reading comprehension of the Grade 8 STE learners using the Quick-Response Coded Self-Learning Module in Statistics in Research.

Specifically, it sought answers to the following questions:

1. What is the level of reading comprehension of the Grade 8 STE in Statistics in research before and after the intervention?
2. Is there a significant difference between the levels of reading comprehension of the Grade 8 STE learners in Statistics in Research before and after using the Quick response Coded Self-learning Module?
3. What are the experiences of the Grade 8- STE learners in using the Quick-response Coded Self-learning Modules in Statistics in Research?

### IV. Action Research Methods

#### a. Participants and/ or other Sources of Data and Information

The respondents for this study were the 11 Grade 8- Science, Technology, and Engineering (STE) learners of Naguilian National High School for the School Year 2022-2023. The respondents were selected using purposive sampling based on one common characteristic which is their low level of reading comprehension. They were the ones who used the intervention: Quick response Coded Self-learning Module in Statistics in Research.

#### b. Data Gathering Methods

The study utilized the quasi-experimental one-group design where the only group of respondents are the 11 Grade 8 STE learners of Naguilian National High School S.Y. 2022-2023. This design is appropriate to this study because the learners who have low reading comprehension are in the same classroom setting or they are in the same section with the same grade level

In determining the level of reading comprehension of the respondents, the researcher used the adapted test questions from the study of Supang (2021). The same test questions were employed in pre-test and post-test.

In eliciting the experiences of the learners in using the Quick response Coded Self-learning module in Statistics in Research, the researcher interviewed the respondents in semi-structured way. The researcher asked if the QR coded Self-learning module helped the respondents in improving their reading comprehension. The researcher also asked the respondents for their experiences during the discussions of the lessons on Statistics in Research. The respondents wrote their answers on the answer sheet to test if the respondents can truly express their own point of view.

#### c. Data Analysis Plan

In identifying the level of reading comprehension of the Grade 8 learners in Statistics in Research before and after the intervention, the weighted mean was used. The following scale will be used:

Mean Score	Percentage Range	Oral Reading
12-15	80-100 %	Independent
9-11	59- 79 %	Instructional
1-8	58 % and below	Frustration

In determining the significant difference between the levels of the reading comprehension of the Grade 8 STE learners before and after the intervention, paired t-test were utilized.

In discussing and interpreting the experience of the respondents in using the intervention, narrative analysis was employed.

## V. Results and Discussion

The Quick-response Coded Self-learning module on Statistics in Research was employed to the Grade 8- Science, Technology and Engineering Program. The Pre-test was given to the Grade 8- STE learners to test their initial level of reading comprehension on Statistics in Research. The Pre-test has 15 questions and was administered on November 24, 2022, that is during the first day of the Second Quarter of the S.Y. 2022-2023. The same test questions were used for the post-test. The post-test was administered last April 20, 2023. The post-test was administered to test if the level of reading comprehension of the respondents was developed or not.

Level of Reading Comprehension of the Grade 8- Science, Technology, and Engineering Program in Statistics in Research before and after using the Intervention

The level of reading comprehension of the 11 respondents before using the Quick response Coded Self-learning Module are in the frustration level with the scores ranging from 5 to 9. Table 1 reflects the level of reading comprehension of Grade 8- STE learners before and after using the Quick Response Coded Self-Learning Module on Statistics in Research.

Table 1. Level of Reading Comprehension of the Grade 8 STE learners in Statistics in Research Before and After using the Quick-Response Coded Self-Learning Module on Statistics in Research

Score	Level of Reading Comprehension	Before		After	
		f	%	f	%
12-15	Independent	0	0	7	63.33
9-11	Instructional	0	0	4	36.36
1-8	Frustration	11	100	0	0

It can be gleaned from the table that the level of reading comprehension of the 11 respondents before using the QR Coded Self-learning Module are at the frustration level. After using the Quick response Coded Self-learning Module, the level of reading comprehension of 11 learners were moved from frustration level to instructional and independent level. The instructional level has a score ranging from 9-12. There are 7 learners whose reading

comprehension level were moved from frustration to instructional, and 4 learners whose reading comprehension level were moved from frustration to independent. This implies that using the Quick response Coded Self-learning Module can truly help in improving the reading comprehension of learners. Based on the study of Chee et al., (2021), the Quick-response codes have potential in the incorporation of instruction of pronunciation and facilitate the learning process.

Difference between the Levels of Reading Comprehension of the Grade 8 STE learners in Statistics in Research before and after using the Quick-Response

Coded Self-learning Module

Table 2 depicts the difference between the scores of Grade 8 learners before and after using the Quick-response Coded Self-learning module on Statistics in Research. Since the p-value which is 0.000168 and it is less than 0.05 level of significance, there is a significant difference between the scores of the respondents before and after using the Quick-response Coded Self-learning Module on Statistics in Research. It can be gleaned on the table that the mean score of the Grade 8- learners in the post test which is 10.09 and it is greater than mean 6.64, the score of the Grade 8- learner in the pre-test.

The result is parallel to the study of Capodieci et. al., (2020), that the reading comprehension which involves the ability to differentiate between narrative and informative texts, was improved using new technologies as intervention. The results clearly suggest that using the Quick-response coded Self-learning Module on Statistics in Research can improve the level of Reading Comprehension of Grade 8- Science, Technology, and Engineering Program.

Table 2. Difference between the levels of reading comprehension of the Grade 8 STE learners in Statistics in Research before and after using the Quick response Coded Self-learning Module

Variation	Mean	P- value	$\alpha$	Interpretation
Before	6.64	0.000168	0.05	significant
After	10.09			

Experiences of the Grade 8- STE learners in using the Quick Response Coded Self-Learning Module on Statistics in Research

After using the Quick response Coded Self-learning Module, the researcher had a semi-structured interview with the learner. The researcher asked the learners whether the intervention helped them improve their reading comprehension or not. Some of the learners answered that using the intervention truly helped them in improving their reading comprehension skills.

The researcher also asked the learners about their experiences in using the Quick response Coded Self-learning Module on Statistics in research. Some of the learners answered that they were happy, and they had fun while using the Quick-response Coded SLM because they experienced the scanning of QR Codes. Some of the learners said that “*nakakatuwa mag scan*” while using their mobile phones. By scanning the QR codes, they were directed to the link where they can watch the video lessons after reading the text on the self-learning module.

The result is parallel to the study of Rabu, et. al (2019), that the favorable reception of Quick-response coded in course-related activities by learners significantly influenced the willingness to embrace technology. Using Quick response Coded Self-learning Module can truly motivate learners to study and improves learning comprehension.

## **VI. Reflection**

This study aimed to improve the level of reading comprehension of Grade 8- Science, Technology, and Engineering Program using Quick-response Coded Self-learning module on Statistics in Research. The researcher believed that using Quick response coded self-learning module in teaching Statistics can help her motivate learners especially in reading comprehension activities. Using QR coded self-learning module in improving reading comprehension has been an enlightening experience for the part of the researcher. One of the most apparent benefits has been increased learner engagement in reading. QR coded self-learning module offered a seamless way for learners to access resources, making it convenient for them to delve into video lessons anytime and anywhere.

The respondents used the QR coded Self-learning Module on Statistics in research for the whole duration of Second Quarter of S.Y. 2022-2023. The respondents took the pre-test before using the Quick response Coded Self-learning Module on Statistics in Research. Right after the pre-test, the scores of the learners were analyzed based on their level of reading comprehension. It was proved that the 11 Grade 8- learners are in the frustration level of reading comprehension. The intervention, which is the Quick response Coded Self-learning module was distributed to the respondents immediately. The Quick-response Self-learning Modules were distributed to the 11 respondents. The respondents used the intervention every scheduled time for Statistics in Research Subject. Statistics in Research is one of the elective subjects of Grade 8- Science, Technology, and Engineering Program that is taught four times a week. While the respondents were using the intervention, the researcher found out that the respondents were amazed by scanning the QR codes present on the module. They are enjoying the scanning of QR codes. By scanning the QR codes, the respondents were directed to the link where they watched the video lessons.

The respondents took the post test on April 20, 2023. The scores were recorded and interpreted. It was found out that the level of reading comprehension of the respondents after using the QR Coded Self-learning Module on Statistics in Research have increased from the level of frustration to the level of independent. There are 7 learners whose reading comprehension level were moved from frustration to instructional, and 4 learners whose reading comprehension level were moved from frustration to independent.

In conclusion, the incorporation of QR coded self-learning module on Statistics in Research to improve reading comprehension has been a rewarding experience. Incorporating QR codes in reading comprehension instruction holds great potential for improving learner's understanding and retention of text. However, it's essential to provide proper guidance and support to learners on how to use QR codes effectively and ensure that the content linked to the codes aligns with the learning objectives.

## **VII. Plans for Dissemination and Utilization**

To share the results of the study to the co-teachers inside and outside the school, the researcher will volunteer to organize a focus group discussion. To utilize the findings of the study, the researcher will include the result to the Reading Program of the school so that it can be used for the future. The researcher will also sustain the integration of the Quick

response coded in teaching not only to the Statistics subject but also to the other learning areas.

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