



## **3ES (EXPLORE ENLIGHTEN EXERCISE) LEARNING WORKSHEET: ITS' EFFECTS TO THE ACADEMIC PERFORMANCE IN IDENTIFYING RESEARCH PROBLEMS AMONG SENIOR HIGH SCHOOL**

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### **Abstract**

This study focused on the Effect of 3Es (Explore, Enlighten, and Exercise) Learning Worksheet on the academic performance of the student in identifying research problems among Senior High School students. Specifically, it aimed to determine the Effect of the 3Es Learning Worksheet on the student's performance in identifying the research problem, the pre-assessment and post-assessment results of the group before and after implementing the intervention, and the effect size of the intervention on the academic performance of the participants. This study utilized 54 participants of the group using – shoot test utilizing total enumeration. The researcher used Pre – Experimental research design, specifically the Pre – Assessment - Post Assessment Only Design, wherein the subjects were randomly assigned to the group. The following findings and conclusions were drawn from the study; the students quickly identify and justify research problems using the Learning Worksheet using the 3Es Learning Worksheet. There is a significant increase in the post-assessment on the students' performance in identifying the research problem. There is a considerable difference in the academic performance of the group before and after the intervention. It is evident that the students performed better; thus, the intervention is effective. From the light findings and conclusion, the researcher would like to recommend that the teacher particular research teacher and teacher who are using an inquiry-based learning approach adopt the 3Es Learning Worksheet as this has been proven to be useful in identifying a problem that is an empirical base. The result must be disseminated through LAC sessions, meetings, and research fora. The same line of the study must be conducted to other tracks or strands.

*Keyword: Explore, enlighten, exercise, worksheet, research problem*

## Introduction

The primary purpose of teaching is to bring a fundamental change in the learners. To facilitate the teaching and learning process, teachers should apply appropriate teaching methods and use languages that best suit specific objectives and productive outcomes that would enhance student learning growth. In today's era, the teaching-learning process should be interactive, encircled with the student-centered approach, that each student bridge the theory-practice gap when they apply in practice what they learned in class.

As stated in the Republic Act. 10533 Sec. 5, the curriculum shall be learner-centered, inclusive, and developmentally appropriate; relevant, responsive, and research-based; contextualized and global and shall use pedagogical approaches that are constructivist, inquiry-based, reflective, collaborative and integrative. To address these needs, the key participants (learners) and the prime mover of the educational wheel (teacher) should design activities (using the constructivist approach) to concretize these approaches.

The main problem of the teacher and students in teaching and learning research is to address the gap between teachers, students, and the environment. The students were challenging to grasp and create a research problem because of the following reasons: (a) lack of engagement in their learning environment, (b) lack of information in creating research problems based on their track and specialization, (c) lack of exploratory activity or inquiry-based activity. Learners should be addressed in independent learning for them to enlighten their theories in life, explore their capacity to think and to solve problems they encountered, and to put their education into exercises for an innovative product or output.

According to the article published by Davis (2015), when it comes to deciding a mode of teaching techniques, the students should be engaged to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extend to the level of motivation they have to learn and progress in their education.

The researcher wants to use the 3Es Learning Worksheet in teaching Practical Research to the Senior High School Students to address the needs of the learners and to link them to the problems in the community as an existing element in creating a research paper. It strengthens the value of Practical Research its kind, characteristics, uses, strengths, and weaknesses, enriches the range of topics in the area of inquiry, and the importance of interest.

## Research Methodology

Participants in this study were selected using a purposive sampling technique. The participants were Grade 11 of the Quirino National High School under the supervision of the course's proponent.

The proponent seeks approval from the principal of Quirino National High School and the respondents' parents to conduct this study. The participants were informed that they are part of the research and orientation was achieved. The proponent was prepared for a pre-evaluation research problem and post – evaluation to be verified and rated by the experts or practical research teachers.

A pre-evaluation was administered to the participants before the implementation of the 3Es Learning Worksheet. After that, participants were engaged in pre-evaluation for one (1) week. After implementing the 3Es Learning Worksheets, a post-evaluation was administered to students after three weeks after implementing the intervention.

The researchers to have a systematic and organized gathering of the data, the researcher will undergo the Observation Method wherein the researcher will gather information from the students.

Using the Descriptive – comparative, the researcher has used the comparative data analysis on the participants' performance before and after using 3Es Worksheets.

Paired Sample T-Tests – this was used to test the significant difference in the Experimental Group's performance.

*ETA*<sup>2</sup> - This tool was used to determine the effect size of the 3Es Work Map on the performance in practical research of the respondents. Further, *ETA*<sup>2</sup> will utilize using Cohen's guidelines.

|             |                        |
|-------------|------------------------|
| <i>0.01</i> | <i>small Effect</i>    |
| <i>0.50</i> | <i>moderate Effect</i> |
| <i>0.80</i> | <i>large Effect</i>    |

Rating Scales - the following scales were used to interpret the performance of the students before and after.

| <i>Rating</i> | <i>Qualitative Description</i> |
|---------------|--------------------------------|
| <i>9 - 10</i> | <i>Outstanding</i>             |
| <i>6 - 8</i>  | <i>Very Satisfactory</i>       |
| <i>3 - 5</i>  | <i>Satisfactory</i>            |
| <i>1 - 2</i>  | <i>Fairly Satisfactory</i>     |

## Result and Discussion

*Table 1. The Effect of the 3Es (Explore, Enlighten, and Exercise) Learning Worksheet on Students in Identifying Research Problem*

| <b>Statements</b>  | <b>Mean Rating</b> | <b>Verbal Description</b> |
|--|--------------------|---------------------------|
| My learning becomes meaningful   | 3.85               | Strongly Agree            |
| I become creative  | 3.78               | Strongly Agree            |
| I gain self-confidence in answering questions during class discussion.           | 3.58               | Strongly Agree            |
| It challenges my ability to think deeply   | 3.63               | Strongly Agree            |
| Past lessons were quickly associated with the new lessons                        | 3.88               | Strongly Agree            |
| I quickly conceptualized my research problem                                     | 3.97               | Strongly Agree            |
| My communicative skill is being developed through the learning worksheets        | 3.77               | Strongly Agree            |
| I quickly identify and justify problems with relevant information and literature | 3.99               | Strongly Agree            |
| I strengthen my knowledge of the different concepts that involve research.       | 3.83               | Strongly Agree            |
| I learn to design a research project related to my track/strand                  | 3.97               | Strongly Agree            |
| I know to value of research in the area of interest                              |                    |                           |
| And the specificity and feasibility of the problem posed.                        | 3.90               | Strongly Agree            |
| <b>Average Mean Rating</b>   | <b>3.82</b>        | <b>Strongly Agree</b>     |

Table 1 presents the Effect of the 3Es Learning Worksheets on the students in identifying the research problem.

It can be gleaned from the table that after the intervention, the students quickly identify and justify problems with relevant information and literature with a mean rating of 3.99, and verbally described as "Strongly Agree."

It implies that students are can quickly identify and justify research problems with the use of the Learning Worksheet using the 3Es Learning Approach Explore, Enlighten and Exercise with an average mean of the rating of 3.82 or "Strongly Agree."

According to Davis (2015), when it comes to deciding a mode of teaching techniques, the students should be engaged to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or teaching, which extends to the level of motivation they have to learn and progress in their education.

This was testified by Student J

*“Noong una talaga nahihirapan po akong mag-identify ng magandang research lalo na relevant pa dapat ito sa aming strand (HUMSS), pero noong pinaliwanag at pinagamit po sa amin ang 3Es Learning Worksheet para lang kami naglalaro very interesting talaga! Nacapture naming agad ang tunguhin ng bubuoin naming research dahil may mga nakausap na kami, nabasa, at napanuod na maaari pong mangjustify sa aming bubuoin problema na hahantong sa isang magandang pananaliksik”.*

Student A added,

*“Na assess ko rin sa sarili ko ang na possible na matapos at mameet ko itong research ko kasi madaming nakaranas na at naipagcoconnect ko na ito sa aking sariling karanasan”.*

Another Student reiterated that,

*“ Lumabas ang pagkacreative ko pagdating sa paggawa ng pananaliksik, sa kadahilanang madami pa palang mga maaaring isaliksik , at kapag may katanungan sa klase about sa aming problema agad-agad ko itong nasasagutan”.*

*Table 2.1. The Result of Pre – Assessment of the Control Group*

| <b>Pre – Assessment</b> | <b>Average Score</b> | <b>Description</b>  |
|-------------------------|----------------------|---------------------|
| Group                   | 2.63                 | Fairly Satisfactory |

Table 2.1 reflects the pre-assessment results of the group during the intervention. It can be shown from the table that the average score is 2.63 with a description of "Fairly Satisfactory."

It implies that the students' performance in identifying the research problem is that the problem statement does not describe the issue under the study.

*Table 2.2. The Post Assessment of the Group*

| <b>Post – Assessment</b> | <b>Average Score</b> | <b>Description</b> |
|--------------------------|----------------------|--------------------|
| Group                    | 9.08                 | Oustanding         |

Table 2.2 reflects the post-assessment results of the group during the intervention.

It can be shown from the table that the average score is 9.03, with a description of "Outstanding." It implies that the students' performance in identifying the research problem is

that it provides an engaging specification of the research problem, which is written logically and explicitly. It contains two paragraphs: the previous is the general statement of the problem usually reiterating the title and later are the questions the researcher would like to answer.

*Table 2.3. Pre – Assessment and Post – Assessment Results and Mean Difference*

|       | <b>Average Pre – Assessment Score</b> | <b>Average Post – Assessment Score</b> | <b>Mean Difference</b> |
|-------|---------------------------------------|--|------------------------|
| Group | 2.63                                  | 9.08                                   | 6.45                   |

Table 2.3 reflects the mean difference between the pre-assessment and post-assessment during the intervention. It can be shown from the table that the average pre-assessment score is 2.63, and the post-assessment is 9.08, with a mean difference of 6.45.

It implies that the mean difference significantly differs from the average post-assessment. This means that there was a significant improvement in their performance as to pre-assessment and post-assessment during the intervention's introduction.

*Table 3. Test on the Significant Difference of the Pre – Assessment, and Post – Assessment of the Group.*

| <b>Variable</b>                                      | <b>Computed t value</b> | <b>Critical Value</b> | <b>P value at 0.05</b> | <b>Decision</b>            | <b>Remark</b> |
|--|-------------------------|-----------------------|------------------------|----------------------------|---------------|
| Pre – Assessment, and Post – Assessment of the Group | 7.856743                | 2.0512                | 0.00002451             | Reject the Null Hypothesis | Significant   |

The result of the test on the significant difference between the pre-assessment and post-assessment of the group is shown in Table 3.

The table shows that the computed value of 7.856743 is greater than the critical importance of 2.0512, and since the p-value of 0.00002451 is less than the level of significance at 0.05, then the null hypothesis is rejected.

Therefore, significant.

It means that the group's scores in the pre-assessment and post-assessment in identifying the research problem have a significant increase.

*Table 4. The Effect Size of the 3Es (Explore, Enlighten and Exercise) Learning Worksheet to the Academic Performance in Identifying Research Problem*

| <b>Effect Size (Cohen's d)</b>  | <b>Verbal Description</b> |              |
|---|---------------------------|--------------|
| Effect of 3Es Learning Worksheet to The Performance of the Participants | 1.048753                  | Large Effect |

This table presents the effect size of the intervention on the performance of the participants. This shows that the computed effect size is 1.048753 and is verbally described as "Large Effect Size."

This means that there is a significant difference in the group's performance and the experimental group before and after the intervention. It is clear that the group performed better after the implementation of the intervention; thus, the intervention is effective.

In the study conducted by Khoirul Anam (2015), learning worksheets can facilitate the student in the direct involvement of the learning process; the student gained the experiences doing the observation, identify the problem, arranging or formulating a hypothesis, designing an experiment, doing an investigation, collecting data, communicating the data from research result and preparing the conclusion.

### **Conclusion**

From the findings of the study, it was found out that the 3Es (Explore, Enlighten, and Exercise) Learning Worksheet is an effective intervention to increase the performance of the students in identifying research problem of the students in Practical Research as manifested by the significant increase in the pre-assessment and post-assessment of the students under the group.

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