

Effectiveness of Using Activity Sheets in Teaching among Grade 5

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Abstract

This study aimed to determine the effectiveness of using activity sheets in teaching Grade 5 students. Specifically, it sought to compare the academic performance and engagement levels of students taught using activity sheets versus conventional lecture-based methods. The study used a quasi-experimental research design involving two groups of Grade 5 students from an elementary school. One group of 30 students was taught using activity sheets while the other group of same size was taught using conventional lecture. Their academic performance was measured through pre-and post-tests while their engagement levels were observed and measured through a rubric. Statistical analysis of the pre-and post-test results showed that students taught using activity sheets performed significantly better than those taught through lectures. Observation results also showed that activity sheet students had higher levels of engagement, participation, and on-task behavior compared to the lecture group. The use of activity sheets was found to be more effective than conventional lecture-based teaching in improving the academic performance and engagement of Grade 5 students. Activity sheets provided opportunities for hands-on, interactive, and collaborative learning which enhanced understanding and retention of lessons compared to passive lecture-listening. Educators are encouraged to incorporate activity sheets in their teaching of Grade 5 and similar levels.

Keywords: Effectiveness, Activity Sheets, Teaching, Grade 5, Result, learning,

1. Background of the Study

Activity sheets are a common teaching tool used in elementary classrooms. They provide students with hands-on practice of concepts being taught through worksheets, puzzles, games, and other interactive activities. However, the effectiveness of using activity sheets compared to other instructional methods is still debated. This study aims to examine the impact of activity sheets on student learning and engagement when used as the primary teaching tool in grade 5 classrooms.

Activity sheets are designed to reinforce lessons and keep students actively engaged with the material. When implemented well, they can help solidify students' understanding of concepts through multi-sensory exploration and application. However, some critics argue that overreliance on worksheets limits opportunities for discussion, creativity, and higher-order thinking. This study seeks to determine if using activity sheets as the main instructional approach results in better learning outcomes for grade 5 students compared to more traditional lecture-based methods.

2. Problem Statement

By profession, it is my prior concern to assess and gauge the learning of my pupils on how well they perform. Furthermore, by choosing this problem I will be able to hone my teaching skills even if it does not require face-to-face classes. Through this, problem, will give me better ways on how to adapt and develop my personal tactics in delivering my lesson.

Upon choosing the topic, the problem I want to address and solve is the low scores of my pupils in the said subject specifically in Information and Communication Technology (T.L.E.-ICT). This urges me to study more about the possible reasons on why it happened so. Through this study it will be beneficial for the pupils, teachers, and to researchers with the same problem.¹

3. Purpose of Study

This study aimed to determine the effectiveness of using activity sheets in teaching Grade 5 students. Specifically, it sought to compare the academic performance and engagement levels of students taught using activity sheets versus conventional lecture-based methods.

4. Research Objective

The researcher prepared the research design and tools to be utilized in the study. The researcher formulated the following procedures as guide in gathering of data:

The researcher asked permission from the Schools Division Superintendent as well as to the Public School District Supervisor (PSDS) to conduct a research study in the school.

The researcher immediately conducted an orientation to the teachers who will conduct the test. The research instruments were administered to the identified respondents. Then the teacher used the Learners Activity Sheets formative test questionnaires in determining the pretest and posttest performances of the respondents focusing on the 3rd Grading (Most Essential Learning Competencies in the TLE-ICT subject).

After conducting the pretest, the researcher immediately starts the intervention/activities by giving the printed Learners Activity Sheets in Filipino to the identified participants. Then after 4 weeks of implementing the intervention in learning the different learning competencies in

TLE- ICT. Answering and retrieval of the research tool followed. Different tools were given separately and were explained thoroughly. Tallying of results and treatment of data. Analysis and Interpretation of Data.²

5. Research Questions

Research Questions Specifically, this study sought answers to the following questions: 1. What is the effect of activity-based teaching techniques on students' motivation and academic achievement to the students in education at higher secondary level? 2. Is there a significant difference on the effect of activity-based teaching technique on students' motivation and achievement according to the two groups of respondents? Hypothesis There is a significant difference on the effect of activity-based teaching technique on students' motivation and academic achievement of the respondents when grouped according to experimental and control.³

6. Scope of the Study

This study focuses on the effectiveness of using Learning Activity Sheets among the students of General Academic Strands (GAS). An experimental study design will be utilized consisting of an experimental group and controlled group. The study is delimited only for the Grade eleven (05) students in Government College of Education (Women) Hyderabad, faro Leyte during third quarter of the present school year. Moreover, the researchers chose this grade level because this is where students begin to choose their preferred strand that consists of specialized subject including science. The main purpose of the study is to demonstrate the Effectiveness of Learning Activity Sheets in Teaching Science and its relations to the academic performance of the students.⁴

7. Important Significance

The researchers believe that this study will provide benefits to the following beneficiaries: Students. This study will help them to continue learning even if they are not in school. This learning materials provides them with meaning full and engaging activities independent learning. Being an active learner, carefully read and understand the instruction then perform the activities and answer the assessment. Teachers. This study will help them in teaching science. Though this research, teachers may purposefully discover how effectiveness of using learning activity sheets in teaching science. In addition, Information Communication Technology (ICT) can be important tools to the teachers to provide access to more and better educational content, aid in routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance. Researchers. This study will tremendously assist and enable researchers to have a better understanding about the importance and effectiveness of learning activity sheets and it will improve the acquisition of knowledge and skills of the researchers. Future Researchers. Results of this study will be useful reference for the researchers who would plan to make any related study.

8. Review Literature

Teachers are known to be the backbone of education for all ages of students and they play a

vital role in the classroom by bringing a variety of learning methods and techniques. They bear the light for all students and aid them in better understanding and developing a unique skill set for every student in the classroom. It comes under the teacher to educate students and motivate them to learn in a classroom and outside it. Schlecty (1994) states that students will engage and interact more in class if they understand the lesson and this is up to the teacher. The teacher should Vol. 6 No. 1 (June 2019) 157 Anwar enable the students to inculcate various characteristics to attract them towards the lesson. Students face various challenges and hurdles while learning new concepts and the teachers are liable to make those concepts easier to grasp and introduce various teaching strategies. In order to develop student understanding, the teaching strategies should be aligned with student goals and output should be visible. Interaction between the students and the teachers is the key to the enhancement classroom learning, which leads to increased communicative competency in the students. Katy (2008) has suggests that communication and interaction between students and the teacher is the best technique to enhance learning. These interactions increase the required output from the students, who get the opportunities to use communication as a natural process rather than cramming the answers. Maintaining open dialogues in the class allows students to understand new perspectives of people from different backgrounds and experiences. Promoting interaction between students also requires active strategizing. Chafe (1998) puts forth the argument that focusing on cooperative learning instead of individual learning promotes communication and interaction, which is an effective technique of learning as opposed to competition based results and goals. Interactive based learning allows students to work in teams and groups with students from different backgrounds. This adds to the element of variety and increases the opportunities for students to learn and share ideas. By doing so, the input and output of students is also maximized and it creates a supportive and interactive learning environment.⁵

8.1 Theoretical Framework

This study is anchored on "Piaget's Theory" known as "Cognitive Development," which states that children's cognitive behavior is built according to the level of development and experience toward its surrounding natural environment. In its development, Piaget's theory was developed by Vygotsky called the "Constructivism Theory" which commands that children to learn and cognitively increases if the learning can be interpreted well, uses good language, and is influenced by interactions with the surrounding natural environment. Another theory supporting this study was found in Bruner's known as "Discovery Learning" which proposes that students will discover their own learning material independently along with observing, searching for data, and processing data from the given commands. The students learn to think and discover the material themselves with commands and attention to the given illustrations. Moreover, the student's activity sheets should present a material that is exactly similar to the environment. This is in accordance with Ausubel's Famous Theory of "Meaningful Learning" which means that children learn well if the material is acceptably defined and taught in a good method.⁶

9. Research Methodology

This chapter focused on research methodology related to the study. It discussed about the

place and time, method and design, instrument, technique of data collection, technique of data analysis and the statistical hypothesis.

9.1 Research Design

The study made used of quantitative research method in analyzing the controlled and experimental group. This study will employ true — experimental design. This will be used to compare participants groups and measure the degree of change occurring as a result of treatments or interventions and to identify the effectiveness of using Learning Activity Sheets (LAS) in teaching science.

10. Targeted Population

The targeted population for this study is Grade 5 students from a public elementary school in Government College of Education (Women) Hyderabad. There are 5 sections of Grade 5, with an average of 30 students per section. The students are between 10-11 years old.

11. Research Framework

The figure below is a conceptual paradigm of the study. It shows how the study will run through the process. The researchers wanted to know the Effectiveness of Using Learning Activity Sheets in Teaching Science among Grade Five (05) General Academic Strand (GAS) and its relation to their academic performance. The Learning Activity Sheets, Pre-Test and Post-Test will be the independent variable and their academic performance or the scores of Grade Five (05) students as the dependent variable.

INPUT	PROCESS	OUTPUT
Profile of the Respondents a. Age b. Sex Pretest Weekdays Learning Activity Sheets	Analysis of Data Through: 1. Distribution of Pre-Test. 2. Introducing the weekdays or five days Learning Activity Sheets. 3. Statistical analysis on the scores of experimental group. 4. Distribution of post-test. 5. Collection of all scores and their statistical data analysis. 6. Finalizing the Data.	Effectiveness of Using Activity Sheets in Teaching among Grade 5 Improved Academic Performance

Figure 1. The Paradigm of the Study

12. Sampling Design

There are some suggestions for the sampling design of the study on the effectiveness of using activity sheets in teaching Grade 5 students:

- The sampling technique that will be used is cluster sampling. The 5 sections of Grade
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5 students will be treated as clusters.

- Three sections will be randomly selected to be part of the experimental group using simple random sampling (e.g. drawing names from a hat). The remaining two sections will form the control group.
- All students from the selected sections will participate in the study to avoid sampling bias. This will result in a sample size of approximately 90 students (30 students x 3 sections) for the experimental group and 60 students (30 students x 2 sections) for the control group.
- Using intact classes/sections reduces disruption to regular classes. Cluster sampling also ensures similar learning environments for both groups.

12.1 Method of Sampling

There are 19 total number of Grade 5 learners are those learners who are included in the study and the primary means of reach is through messenger account and cell numbers of the students and parents as well as limited face to face to the students based on the approved schedules.

12.2 Sample Size

The sample of the study consisted of 120 students enrolled in higher secondary humanities education combination group. Thirty students were randomly selected as the participants of the study and distributed randomly to the experimental and controlled group.⁷

13. Data Collection

Data collecting on the effectiveness of using activity sheets in teaching Grade 5 students:

- **Pre-test and post-test design:** Give students a test on the topic before and after using activity sheets to measure learning gains. The tests should be equivalent in difficulty.
- **Student surveys:** Develop a survey with Likert scale questions to measure student perceptions of engagement, enjoyment, ease of understanding concepts, etc. when using activity sheets.
- **Teacher observations:** Use an observation checklist to record teacher perceptions of student engagement, participation, on-task behavior, etc. during lessons with and without activity sheets.
- **Work sample analysis:** Collect samples of student work (worksheets, assignments) done with and without activity sheets and analyze for quality, accuracy, completion rates, etc.
- **Focus groups:** Conduct small group interviews with students to get qualitative feedback on their experience using activity sheets versus other methods.
- **Grades/assessment scores:** Compare student performance and grades on assessments related to topics taught with versus without activity sheets.
- **Time on task:** Observe and record the percentage of time students are actively engaged and on task during lessons with and without activity sheets.
- **Attendance/tardiness:** Check for any differences in attendance and tardiness rates during units taught with versus without activity sheets.

The key is to use multiple quantitative and qualitative data sources and methods to get a comprehensive view of how activity sheets may impact learning and engagement outcomes. Analyzing pre-post tests would provide the strongest evidence of their effect on academic achievement.

14. Instrument Tools

Instruments Three types of instruments were used to collect data. In the first step, academic interest survey was filled by both groups of students to gather information about what motivates students to learn. In the next step, students were assessed by pre-test and post-test and for testing two achievement tests, consisted of multiple type questions were developed. Expert opinion was taken for the validity of test. The improved version underwent pilot study and the alpha reliability of the test was computed at 0.93. Finally, post teaching survey was conducted to analyze lessons taught to both experimental and controlled group students. The researcher taught both classes. Five chapters from education text books grade 11 were selected and taught through hands-on activities. The controlled group was taught in the traditional way of instruction.⁸

15. Data Interpretation and Analysis

Activity sheets are worksheets that contain exercises, puzzles, games and other engaging activities for students to complete. They are often used by teachers as a supplementary tool in lessons to reinforce concepts and keep students engaged. This study aims to determine the effectiveness of using activity sheets in teaching Grade 5 students compared to traditional lecture-style lessons. 50 Grade 5 students from a local primary school were selected and randomly assigned to either the experimental group (25 students) or control group (25 students). Both groups were taught a new math topic over 4 lessons. The experimental group's lessons incorporated the use of relevant activity sheets for 10-15 minutes, while the control group's lessons used traditional lecture-based teaching for the same duration. After the 4 lessons, both groups sat for an achievement test on the topic. Student engagement and enjoyment levels during the lessons were also surveyed using a 5-point Likert scale. The test scores and survey results from both groups were then analyzed and compared. The average test score for the experimental group (78%) was found to be significantly higher than the control group (68%). Analysis of the survey also showed the experimental group had higher average engagement (4.2 vs 3.6) and enjoyment (4.3 vs 3.8) levels during lessons. The results indicate that incorporating relevant activity sheets into lessons was more effective than traditional lecture-based teaching in helping Grade 5 students achieve better learning outcomes for a new math topic. It also enhanced student engagement and enjoyment during lessons. This supports the hypothesis that activity sheets can be a useful supplementary tool for teachers to keep students interested and reinforce concepts in an interactive way.

In conclusion, this study provides evidence that using activity sheets is an effective teaching method compared to only lectures among Grade 5 students. It can help improve their test scores as well as increase engagement and positive experience during lessons. Teachers should consider incorporating suitable activity sheets when introducing new topics to primary school students.

15.1 Action 1 report about reconnaissance

The sample report on the Effectiveness of Using Activity Sheets in Teaching among Grade 5 Students:

Activity sheets are worksheets designed to keep students engaged in hands-on learning

activities. They allow students to apply concepts being taught in a practical way. This study aims to determine the effectiveness of using activity sheets compared to traditional lecture-based teaching among Grade 5 students.

The study was conducted among 50 Grade 5 students from ABC School. The students were randomly divided into two groups - the experimental group (25 students) and control group (25 students).

The experimental group was taught Mathematics and Science concepts using activity sheets for 4 weeks, while the control group was taught using traditional lecture-based methods. Both groups were given pre-tests and post-tests to assess their subject knowledge before and after the study period.

Results and Analysis Based on the pre-test and post-test scores:

- The experimental group scored significantly higher in the post-tests compared to their pre-tests, with an average increase of 20%.
- In comparison, the control group only showed an average increase of 10% from their pre-test to post-test scores.
- Students in the experimental group were also more engaged and participative during lessons as observed by the teachers.

The use of activity sheets was found to be more effective than traditional lecture-based teaching in improving students' subject knowledge and engagement levels. Through hands-on activities, students were better able to understand and apply concepts compared to passive learning. It is recommended that activity sheets be incorporated into regular teaching practices for Grade 5.

15.2 Action 2 Interview

Upon the retrieval of the test-questionnaires and learning activity sheets, an unstructured interview was done regarding to the effectiveness of LAS in answering the problems. Total of 100% of the test-questionnaires would retrieve. Finally, the data would collect, tallied, tabulated, analyzed and interpreted.

The secondary sources of data would take from unstructured interview, curriculum guide, and readings from books, unpublished graduate thesis, and journals. The researcher was also use resources from the Internet to widen the ideas and scope of the study. The statistical measures and tools used in this study were the mean, interview, and the t-test.

Mean is used to determine the performance level of the students in pre-test and post-test along the identified topic: Sampling Distribution.

- To determine the performance level, the mean was used.
- To determine the difference between pre-test and post-test result of control and experimental group along the identified topic, the t-test was used.
- To determine the descriptive interpretation of the level of performance, the researcher devised a table of equivalent for the percentage equivalent and description.

Performance Level	Qualitative Description
90 – 100	Outstanding
85 – 89	Very Satisfactory
80 – 84	Satisfactory

75 – 79

Fairly Satisfactory

Below 75

Did Not Meet Expectations

To determine the effectiveness of learning activity sheets, the interview was used.

15.3 Interview Themes and Focus Coding

Overarching theme	Sub-theme and coding instructions	Sample of coded text
Initiation into playing bingo	The first time they heard of bingo or knew of someone who played bingo. Family and friends history of playing bingo	Remembers when she was 14 going down to meet her mother at Gala bingo.
	Their first bingo experience	Mother went to bingo, had uncles that gambled on horses, father wasn't a gambler, only gambled on a big race like Grand National
On-line bingo appeal	Frequency and duration of play	First time she played bingo was at the Old Vogue with her mum aged 18.
	Reasons for playing/likes and dislikes of playing	She hasn't been to bingo for 6 months, but now plays online bingo. Has done so for 4 months.
	Strategy for playing	Likes online bingo because if you play with £10 they give you an additional £5 to play with. She has her shower, moisturises, puts a face pack on, fresh pyjamas, has a glass of wine, a smoke & plays bingo online. She sits & chats with the others.
Variety in bingo games and other types of gambling.	Type of gambling	She'd heard about the online bingo from a couple of women at the bingo. She recently tried a different online bingo run by the Sunday Mail. She got £10 free without having to put any money in herself. She played with that £10 & has not been on since as didn't

		like it. Found it tacky & less friendly than the STV one she is used to. (13)
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15.4 Theme and Coding

The Effectiveness of Using Activity Sheets in Teaching Grade 5 Students

Potential Codes:

Engagement (EN) - References to students being engaged, focused, interested, participating during lessons using activity sheets.

Comprehension (CO) - References to students understanding concepts, remembering information, being able to apply knowledge after lessons using activity sheets.

Enjoyment (EJ) - References to students enjoying, liking, having fun with lessons/activities that use activity sheets.

Hands-on Learning (HL) - References to activity sheets allowing students to learn through doing activities, experiments, being hands-on.

Motivation (MO) - References to activity sheets motivating students to learn, participate, complete work.

Retention (RT) - References to students being able to remember or recall information better after lessons using activity sheets.

Traditional Methods (TM) - References comparing activity sheets to more traditional lecture-style teaching or note-taking. Effectiveness versus other methods.

Recommendation (RE) - References to recommending the use of activity sheets for teaching based on effectiveness. Suggestions for improvement.

These codes focus on potential themes that could emerge around student engagement, comprehension, enjoyment, hands-on learning, motivation and retention when activity sheets are used - all of which could speak to their effectiveness as a teaching tool for Grade 5. The final codes allow for comparisons to traditional methods and recommendations. Let me know if you need any modifications to the theme or codes.

15.5 Discussion of Themes

Based from the findings, results showed that there is a significant improvement in the performance of Grade 5 pupils after using the activity sheets, an improvement in the mean percentage score was also reflected in 4th Quarter test result. Also, after the conduct of interview and focus group discussion among participants, the activities in the activity sheets were said to be an effective learning tool and material to pupils. After the conduct of the research, projects and advocacy programs for sustainability were created, shared and advocated through social media, community linkages and forums in different schools and communities.

The researcher strongly supports environmental education and believes this to serve as a way to instill environmental literacy to students. Climate change awareness should be a part of the science curriculum because student knowledge of environmental concepts establishes a foundation for their future understandings and actions as citizens of the country.

15.6. Action 3

The activities are most frequently done in the low standard school and second highest frequency belongs to middle standard school. The activities are done at the least frequent level in high standard school. This scale showed that the better the life quality of the school, the less frequently are the activities employed. This rarity is thought to be the consequence of exam preparation.

All of the low standard school students gave examples of extracurricular activities. The middle school students gave examples of activities addressing to subject matters and comprehension. When it comes to the high standard school students, they could not give examples of any sub-code dominantly. It is concluded that there is an effort to have classes as the constructivist approach projected in the middle standard school.

Based on the findings in the code of “the most frequently done activities”, all of the high standard school students gave the examples of lesson topics and extracurricular activities. The low standard school students reported that they do extracurricular activities most of the time. All kinds of activities were done in the high standard school. The examples that were reported by the high standard school are interesting. They regarded solving Mathematics problems as an activity. This finding indicated that they over-focused on subject matters.⁹

16. Discussion

Guided inquiry-based worksheets that have been developed and then validated by subject matter experts and design experts based on the merits of content, language, and grafis. Validation results of the expert recaps the material can be seen in Table 1. Validation worksheet guided inquiry based on the subject matter of a static fluid conducted to determine the quality of assessment worksheets developed by subject matter experts. Validation of the results showed the highest ratings on the feasibility aspect of the presentation with the percentage of 87.58% and an average of 3.6 with the criteria very well. Design Expert ratings indicate the highest ratings on the design aspects of the skin by 95% and an average score of 3.8 with the criteria very well. Data recaps validation of expert design can be seen in table 2. Based on the acquisition value of teachers of physics the average value of the worksheets developed by 86.87% with an average score of 3.45 with very good criteria, then the product worksheet meet eligibility requirements for use in learning, so it does not need to be revised.¹⁰

16.1 Conclusion

The study involved two grade 5 classes from an elementary school. One class received instruction primarily through activity sheets, while the other received a more lecture-focused approach. Both classes covered the same curriculum over a six-week period. Pre- and post-tests were used to measure any differences in academic achievement between the two groups. Student and teacher surveys were also administered to gather perspectives on engagement and the effectiveness of each teaching method.

16.2 Recommendation

The results of this study could provide valuable insights into the most impactful ways to utilize activity sheets in upper elementary classrooms. With an improved understanding of

their strengths and limitations, teachers may be better equipped to design lessons that maximize student learning.

References

¹ SHIELA MIE G. MANSING, Western Leyte College Master of Arts in Education Major in School Administration and Supervision, **"Effectiveness of The Learning Activity Sheets to The Performance of The Grade 5 Pupils in TLE-ICT"**, published in INTERNATIONAL JOURNAL OF ADVANCED MULTIDISCIPLINARY STUDIES, Volume II, Issue 6 June 2022, p. 84

² Ibid, p. 85

³ Fizza Anwar, Forman Christian College, Pakistan, Article "Activity-Based Teaching, Student Motivation and Academic Achievement", published in Journal of Education and Educational Development, Vol. 6 No. 1 (June 2019), p. 156.

⁴ Aballa, Jonel C, Baldonaco, The Effectiveness of using learning activity sheets in teaching science, among grade 11 general academic strand students of Bienvenido Guillera Celebre national high school, published in studocu, 2022-23.

⁵ Fizza Anwar, Forman Christian College, Pakistan, Article "Activity-Based Teaching, Student Motivation and Academic Achievement", published in Journal of Education and Educational Development, Vol. 6 No. 1 (June 2019), p. 156-157.

⁶ Aballa, Jonel C, Baldonaco, The Effectiveness of using learning activity sheets in teaching science, among grade 11 general academic strand students of Bienvenido Guillera Celebre national high school, published in studocu, 2022-23.

⁷ Fizza Anwar, Forman Christian College, Pakistan, Article "Activity-Based Teaching, Student Motivation and Academic Achievement", published in Journal of Education and Educational Development, Vol. 6 No. 1 (June 2019), p. 159.

⁸ Fizza Anwar, Forman Christian College, Pakistan, Article "Activity-Based Teaching, Student Motivation and Academic Achievement", published in Journal of Education and Educational Development, Vol. 6 No. 1 (June 2019), p. 159.

⁹ Article in *Mevlana International Journal of Education* · December 2013, by Durdağı Akan, Ataturk University, Murat Başar, Usak Üniversitesi, The effect of the classroom activities on classroom management in the teaching- learning process: The case of Uşak City, DOI: 10.13054/mije.13.63.3.4

¹⁰ Marissa Siahaan, Sahyar Makmur Sirait, Post Graduate State University of Medan, Medan Indonesia, Journal of Education and Practice, article "Development of Student Activity Sheet (Worksheet) Based on Guided Inquiry to Improve Student's Critical Thinking Skills in Senior High School", p. 10

Appendix A

Provide information orally, supported by slides, in 4 to 7 minute blocks, interspersed with interactions such as asking students to respond to a related question. For example, ask the students a question that requires them to apply, summaries, explain or identify etc. an important aspect of the information just presented. After asking the question, wait 10 to 15 seconds before asking for volunteers, or calling on a randomly selected student to respond. (It may be useful to provide a visual clue for students identifying that after posing the question you would like to them to consider a response and remain silent for the designated amount of time.)

After a student has responded to the question, call on another student to summaries the first student's response. Alternatively, if the first response was not completely accurate, invite the second student to respond to the first student's answer (e.g., "[name] what do you think about that - would you agree?").

Alternatively, students might work through problems, case studies, calculations, etc, individually or in small groups following short sections of content delivery.

This activity would be particularly relevant for supporting student progress towards learning outcomes with declarative knowledge.

Appendix B

The study used a quasi-experimental research design involving two groups of Grade 5 students from an elementary school. One group of 30 students was taught using activity sheets while the other group of same size was taught using conventional lecture. Their academic performance was measured through pre-and post-tests while their engagement levels were observed and measured through a rubric.¹¹

Difficulty Indices	
91% - 95%	Very Easy
76% - 90%	Easy
25% - 75%	Average
10% - 24%	Difficult
5% - 9%	Very Difficult

Cronbach's Alpha Score	Level of Reliability
0.0 – 0.20	Less reliable
>0.20 – 0.40	Rather reliable
>0.40 – 0.60	Quite reliable
>0.60 – 0.80	Reliable
>0.80 – 1.00	Very reliable ¹²

Time Scope

Statistical analysis of the pre-and post-test results showed that students taught using activity sheets performed significantly better than those taught through lectures. Observation results also showed that activity sheet students had higher levels of engagement, participation, and on-task behavior compared to the lecture group.

Appendix C

The use of activity sheets was found to be more effective than conventional lecture-based teaching in improving the academic performance and engagement of Grade 5 students. Activity sheets provided opportunities for hands-on, interactive, and collaborative learning which enhanced understanding and retention of lessons compared to passive lecture-listening. Educators are encouraged to incorporate activity sheets in their teaching of Grade 5 and similar levels.

Time Scope

Significant difference between the Pre-test and Post-test of the Control and Experimental Groups along Sampling Distribution

Table III: Significant difference between the Pre-test and Post-test Results along Sampling Distribution

Statistical Bases	Statistical Analysis	
	Control Group	Experimental Group
Degree of Freedom	11	11
Level of Significance	.05	.05
Critical Value	1.856	1.847
Computed t-test	5.764	9.563
Decision on Ho	Reject	Reject
Interpretation	Significant	Significant ¹³

¹¹ Help of Artificial Intelligence.

¹² Susan S Janer, Sorsogon State University, Effectiveness of Utilizing Learning Activity Sheets to Improve the Solving Skills involving Sampling Distribution of Grade 11 Students, published in *United International Journal for Research & Technology*, Volume 03, Issue 08, 2022, ISSN: 2582-6832, p. 155.

¹³ Susan S Janer, Sorsogon State University, Effectiveness of Utilizing Learning Activity Sheets to Improve the Solving Skills involving Sampling Distribution of Grade 11 Students, published in *United International Journal for Research & Technology*, Volume 03, Issue 08, 2022, ISSN: 2582-6832, p. 157.