SCIFOLD IN TEACHING EARTH AND SPACE TOPICS FOR SCIENCE 4 LEARNERS

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Scifold in Teaching Earth and Space Topics for Science 4 Learners

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Abstract

Elementary science education faces challenges, with learners in the Philippines consistently ranking low in international assessments, indicating a deficiency in essential scientific competencies. This research aimed to examine the effect of scifold on the least mastered competencies in science for Grade 4 learners during the fourth quarter of the school year 2022-2023 at Camp 30 Elementary School. The participants comprised 38 grade four learners, and the research employed a one-group pretest-posttest pre-experimental design with mean and paired t-test as data analysis. The results showed a significant increase in the mastery level of Grade 4 learners from the pretest (28% MPS categorized as "Did not Meet Expectations") to the post-test (95% MPS categorized as "Outstanding"). Additionally, there is a highly significant difference between the pretest and posttest scores, emphasizing the effectiveness of scifold in enhancing their mastery level. The scifold proves to be a valuable intervention for instructing the less familiar competencies in earth and space concepts.

Keywords: intervention, mastery level, learning competencies

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Context and Rationale

The importance of science in elementary education cannot be overstated. It is crucial for learners to engage with science early on, as it permeates various aspects of daily life. Acquiring a foundational understanding of science from an early age enables individuals to comprehend the world around them more thoroughly. By incorporating science into elementary education, people are better equipped to make sense of and actively participate in the activities that characterize their daily lives.

According to Sadera et al. (2020), science education plays a crucial role in achieving success in today's global knowledge-driven society. However, Slavin et al. (2012) argue that it poses challenges when implemented at the elementary level. Many countries face obstacles in providing effective science education, such as a lack of student motivation, inadequate time allocation for science instruction (Kaptan and Timurlenk, 2012), and limited availability of teaching resources (Anderman et al., 2012). These factors contribute to the complexity surrounding science education at the elementary level worldwide.

Considering these challenges, many educators are actively seeking a science teaching approach that can cater to the needs of today's diverse learners and improve their academic achievement. To accommodate these learners, science teachers are implementing differentiated instructional strategies. They employ various learner-focused methods such as game-based learning and project-based learning. Additionally, to address the different learning styles and multiple intelligences of students, teachers are incorporating multisensory materials into their instruction when teaching various competencies in the realm of learning.

Science education presents a significant challenge for learners, as evidenced by international assessments. An example of this is the low ranking of Grade 4 students from the Philippines in science, where they placed third from last out of 25 countries in the Trends in International Math and Science Study (Martin, Mullis, Gonzalez, and Chrostowki, 2004). Furthermore, Sadera et al. (2020) found that learner performance in science during the 2008 Trends in International Math and Sciences Study (TIMSS) was below average. The Program

for International Students Assessment (PISA) conducted in 2018 revealed that the Philippines scored only 357 points in science—an achievement below the average of participating Organization for Economic Co-operation and Development (OECD) countries. These findings indicate that Filipino learners have not yet reached global standards when it comes to acquiring essential scientific competencies necessary for their education.

An essential component of the elementary school curriculum is the comprehensive understanding of earth and space subjects. These topics are typically covered during the fourth quarter of science classes at the elementary level. According to Bulunuz (2007), earth and space concepts can prove challenging for students to grasp due to their complexity and abstract nature.

During the regional Assessment test for the school year 2021-2022, elementary science learners in Benguet achieved a Mean Percentage Score (MPS) of 49.37. At Camp 30 Elementary School, grade 4 students performed poorly on the earth and space topics during the diagnostic test for science class in the school year 2022–2023. The key learning competency that was least mastered by these students was identified as identifying different types of soil, followed by recognizing safety measures for various weather conditions and understanding weather instruments. Martin's experimental study conducted at Bonglo Elementary School for the school year 2019-2020 also emphasized these earth and space learning competencies as being least learned during summative assessments. Furthermore, documentation from Camp 30 Elementary School reveals a consistent trend of low mastery levels among learners when it comes to earth and space-related subjects over three consecutive academic years: Mean Percentage scores were recorded at 55% in the school year 2019–2020, increased slightly to 58% in the following school year, and further improved to reach a score of 64% in the most recent academic term, the school year 2021-2022.

The findings revealed that the achievement of grade 4 students in earth and space concepts fell short of the school's target of 75% or higher. Moreover, these learners consistently received low scores on both formative and summative assessments about earth and space-related topics. As a result, the researcher invests significant amounts of time in

teaching these subjects to ensure that students attain a thorough understanding before progressing to subsequent grade-level competencies. Unfortunately, this situation hampers the number of sessions available for discussing other science lessons. Consequently, science educators have developed audio-visual resources like learning activity sheets and self-learning modules to mitigate these issues. However, the available teaching materials are limited in their scope. Teachers at the school have also observed that due to a shortage of instructional resources, learners possess a weak grasp of scientific concepts. Teachers further highlighted that insufficient laboratory space and inadequate supplies contribute to poor academic performance in science subjects. To address this issue, the researcher proposes implementing scifold as an effective tool for teaching Earth and space topics to elementary learners. The findings from this study can also benefit Science 4 teachers by providing them with valuable resources that streamline lesson planning and preparation time.

In addition, certain educators utilize graphic organizers in two- and three-dimensional formats as instructional tools during their lessons. This approach allows for the organized and visual presentation of information, which helps students focus on key concepts, access materials easily, and promote effective learning. According to Casteel and Narkawicz (2006), foldables are specific types of graphic organizers that can be tailored to suit the needs of different learners. They have been found to positively impact academic achievement in social studies classrooms. The researchers further noted that using foldables leads to higher levels of performance among learners compared to traditional methods such as lectures and worksheets. As a result, they recommended incorporating foldables into other subject areas and age groups as well.

Moreover, based on the experimental study conducted by Tanjung (2018), it was found that foldables significantly enhance the mastery of vocabulary among grade 1 learners. The researcher emphasized that incorporating foldables into teaching practices is crucial for consistently reinforcing vocabulary acquisition. Despite the widespread belief in the benefits of using foldables, there is limited empirical evidence of their effectiveness in the

classroom, as noted by Hardin (2016). Additionally, Casteel and Narkawicz (2006) highlighted a lack of peer-reviewed research examining the impact of foldables. Consequently, there exists a research gap regarding how three-dimensional graphic organizers specifically influence learners' progress, which this current study aims to address. Therefore, this study explored and investigated the use of foldables within an elementary educational context.

The study intends to provide science educators with alternative strategies for delivering earth and space lessons. By utilizing the scifold tool, teachers can enhance their understanding of the required curriculum. Furthermore, the outcomes of this research may motivate educators within the school to adapt these methods according to their areas of specialization, thereby inspiring students to actively engage in learning and enhancing their academic achievements.

Action Research Questions

The main purpose of this study was to investigate the effect of scifold in developing and enhancing the academic performance of the Grade 4 learners of Camp 30 Elementary School on earth and space topics such as identifying the different types of soil, identifying safety precautions during weather conditions, and identifying weather instruments. Specifically, it addressed the following questions:

1. What is the mastery level in the least learned competencies of the learners in the pretest and post-test?
2. Is there a significant difference in the mastery level in the least learned competencies between the pretest and post-test scores of the learners?

   Ho: There is no significant difference in the mastery level in the least learned competencies between the pretest and post-test scores of the learners.

Innovation, Intervention, And Strategy

Scifold “Science Foldables”

The visual nature of graphic organizers makes them essential for enhancing learning. According to Antoine (2013), the use of these organizers had a notable impact on student performance, resulting in positive outcomes. One such organizer, known as foldables, was created by Dinah Zike to enhance presentations with interactivity and three-dimensional elements (Dinah-Might Adventures, LP, 2015). These foldables are versatile tools that can be used for organizing information, practicing skills, and reinforcing knowledge. By incorporating images, charts, and graphics into lessons, they capture students' attention and make the learning process more engaging. According to Casteel and Narkawicz (2006), using foldables also improves the long-term retention of learned skills. Despite this potential effectiveness in the classroom setting, there has been limited empirical research conducted on the use of foldables (Hardin 2016).

The utilization of the scifold is proposed as an effective method to enhance the scientific proficiency of Grade 4 learners at Camp 30 Elementary School during the final quarter of the school year 2022-2023. These resources specifically target the most crucial learning competencies in science for this period, as outlined in the K to 12 Most Essential Learning Competencies, along with their corresponding curriculum guide codes for science grade 4. The scifold aims to support learners in visualizing their thoughts and organizing information while facilitating connections between scientific concepts, aiding comprehension, and retention. The term "scifold" originates from combining "science" and "foldable," indicating a learner-centric interactive graphic organizer that focuses on earth and space topics within this study. It is employed throughout each lesson, teaching learners’ innovative techniques for creating study materials and practice tools, empowering them with a sense of ownership over their education. By utilizing scifold, learners gain a deeper understanding and improved recall of scientific principles related to earth and space subjects. Its application allows for differentiated instruction, increased student engagement, promotion of higher-order thinking skills, as well as efficient content organization.

The researcher constructed each scifold utilizing colored paper, bond paper, and laminating film as the main materials. There are five distinct designs of scifolds available: three-track scifold, flip me scifold, layered scifold, open-up scifold, and showcase it scifold. Each of these designs effectively presents crucial information related to specific competencies. To maintain cultural sensitivity and respect for various groups and beliefs, the researcher ensured that all images used in the project do not infringe upon religious practices or customs of indigenous groups nor reinforce gender stereotypes or any other form of group affiliation.

This approach is grounded in Bruner's (1960) theory, which posits that learners achieve optimal learning by actively engaging in the classroom and constructing their knowledge. The process of knowledge creation involves organizing and structuring information based on personal experiences, as well as using examples and practical applications provided by the teacher. To facilitate student learning, the researcher employed a scifold, a tool that supports students in creating their scifolds related to the subject matter. Moreover, Gardner's Multiple Intelligence Theory emphasizes that incorporating various learning modalities into teaching enhances student learning outcomes (Gardner, 2006). By integrating multiple intelligences through scifold implementation, students gain a deeper understanding of the material being taught. In this study, ten (10) scifolds will be developed to present crucial competencies in earth and space topics that have been least learned by learners.

Application of Scifold

During the fourth quarter of May-July 2023, ten scifolds were used as teaching aids. After each lesson, participants were required to create their scifolds based on the topic. In the immersion phase of instruction, a scifold was utilized to present the lesson. During the synthesis phase, learners created their scifold. The researcher assessed each completed scifold to determine the level of mastery achieved by the learners in earth and space competencies. This assessment served as a basis for subsequent activities. The following are the specific scifolds used in teaching earth and space competencies:

Three Tracks Scifold

This scifold was used to compare three types of soil, making it easier for learners to recognize and distinguish each one. It aimed to provide a practical way for learners to identify the unique characteristics of these different soils. By using the scifold, learners were able to visually engage with the soils, enhancing their understanding of the distinctions among them. Essentially, the scifold served as a hands-on tool for learners to explore and differentiate various soil types effectively.

Flip Me Scifold

This scifold served as a structured guide for presenting information about five aspects of water sources and daily usage. Its purpose was to organize details within the context of explaining the significance associated with the water cycle. By utilizing this scifold, learners could easily flip through and explore essential information on various aspects of water. The scifold aimed to make the understanding of water sources and usage more accessible and engaging for students.

Layered Scifold

This scifold was created with the sole purpose of assisting learners in identifying and understanding weather instruments. Its design focused on providing a layered approach to present information, making it accessible and comprehensible for students. Through the use of this scifold, students could navigate through different layers of information, enhancing their grasp of various weather tools. Ultimately, the Layered Scifold aimed to simplify the learning process and foster a better understanding of weather instruments among students.

Open Up Scifold

This scifold is a valuable tool designed to assist learners in recognizing safety precautions for various weather conditions. Its primary function is to provide a straightforward and accessible means for learners to understand how to stay safe during different weather situations. By using this scifold, students can easily access information about necessary precautions, fostering a better understanding of safety measures related to

weather. Ultimately, the Open Up Scifold serves as a practical resource for learners to grasp and apply safety guidelines across diverse weather conditions.

Showcase It Scifold

This scifold is a helpful tool designed to assist learners in recognizing various weather components. Its purpose is to showcase and present information in a user-friendly manner, making it easier for students to identify and understand different elements of weather. With the use of this scifold, learners can navigate through the showcased content, gaining insights into the diverse aspects that constitute weather patterns. Ultimately, the Showcase It Scifold provides a practical and visual means for learners to enhance their knowledge of weather components.

Action Research Methods

Research Design

The research employed a quantitative approach, specifically utilizing the one-group pretest-posttest research design. This design enabled the researcher to examine and contrast the variations between learners' pre-and post-test scores both before and after implementing the intervention (Creswell, 2009). Furthermore, it facilitated observation of how scifold as an instructional intervention affects learners' understanding of earth and space competencies.

Participants and/or Other Sources of Data and Information

The study involved a total enumeration of 38 Grade 4 learners from Camp 30 Elementary School during the school year 2022-2023. The selection of Grade 4 learners as participants in the research is based on their performance in a diagnostic test, which indicated lower scores in Earth and Space competencies. Focusing on Grade 4, the research seeks to explore the difficulties encountered by learners during this stage. It aspires to provide valuable insights and implement interventions to tackle identified challenges, improving competence in Earth and Space concepts and positively influencing their academic advancement.

Data Gathering Methods

To gather the necessary data, performance tests such as pre-tests and post-tests were administered. Each performance test consisted of thirty (30) items that specifically focused on topics related to Earth and space. The purpose of these tests was to assess the Grade 4 learners' understanding of earth and space concepts. The material used for both the pre-tests and post-tests was developed by the researchers themselves. To ensure its validity and reliability in evaluating students' competence in earth and space topics, master teachers who taught similar lessons to Grade 4 learners evaluated the material. The relevance of each item was rated using a 4-point scale, following the content validation ratio method. To determine the reliability of the performance tests, Kuder Richardson 21 was employed. For this purpose, twenty-two (22) Grade 4 learners from Filomena P. Cating Elementary School participated in reliability testing. Each performance test lasted for one hour. In addition to providing written instructions on the test paper itself, the researcher also verbally discussed them with the learners to address any potential queries or need for clarification during administration. Overall, these carefully designed measures aimed at gathering accurate data about students' knowledge of earth and space topics while ensuring consistency and fairness throughout their implementation process.

Data Analysis

To assess the mastery level of grade four learners, the mean was employed both before and after the intervention. The mastery level of these learners in terms of the most essential learning competencies was determined using the scale provided in DepEd Order No. 8, s. 2015. To establish any significant disparity in their mastery levels, a paired t-test was conducted for grade four learners.

Table 1

Mastery Level of Learners

Mastery Level	Descriptive Equivalent	Description
90-100	Outstanding	Mastered the most essential learning competencies
85-89	Very Satisfactory	Closely approximating mastery of the most essential learning competencies
80-84	Satisfactory	Moving towards mastery of the most essential learning competencies
75-79	Fairly Satisfactory	Average mastery of the most essential learning competencies
Below 75	Did not meet expectations	Low mastery of the most essential learning competencies

Ethical Issues

Before conducting the research, a formal letter was sent to the school principal of Camp 30 Elementary School, requesting permission to administer the scifold to Grade 4 students. In addition, an assent form was distributed to the students themselves to obtain their consent for participation in the study and ensure they understood its purpose and procedures. It was made clear that participants had full autonomy and could withdraw from or terminate their involvement at any time without facing any negative consequences. Parents of the participating students were also required to provide consent for their children's participation in this action research. They were reassured that all information about their child would be treated with utmost confidentiality.

Furthermore, participants were informed of both their pre-test and post-test results, enabling them to identify areas where additional support may be needed as well as recognize their strengths. Throughout data analysis, anonymity was strictly maintained so that no identifiable information could be attributed back to any individual participant.

Additionally, it was ensured that data would be securely stored for a reasonable period while being free from any biased writing toward certain groups or individuals.

Discussion of Results and Reflections

Mastery Level of the Grade 4 Learners in their Pretest and Posttest

Table 1 displays the mastery level of Grade 4 learners in their pretest and posttest, focusing on the three least mastered earth and space competencies. In the pretest, the mean percentage score was 28%, indicating a mastery level categorized as "Did Not Meet Expectations" (DNME). This score shows the initial struggles of learners in grasping these least learned competencies, indicating a significant gap in comprehension and emphasizing the pressing need for educational support.

The identified challenges in the pretest results underscore the imperative for strategic interventions focused on the earth and space least mastered competencies. The low mean percentage score signals a demand for targeted efforts to address specific deficiencies in these competencies, necessitating tailored interventions to fortify areas of weakness. Furthermore, the categorization in the pretest implies a need for adaptability in educational approaches.

Rukmana, Suhandi, Ramalis, Samsudin (2022), Suciati, Liliawati, and Utama (2017) and Bulunuz and Jarrett (2010) provided additional context to the challenges in comprehending earth and space concepts. The consensus among these sources emphasizes the complexity and abstract nature of these learning competencies, contributing to the difficulties learners face in grasping them. This perspective further corroborates the observed struggles in the pretest results, reinforcing the notion that targeted and innovative instructional strategies are crucial for overcoming these challenges.

The post-test results indicate that the overall Mean Percentage Score (MPS) is 95%, showcasing the effectiveness of the scifold as an intervention tool in elementary science education. This result presents that grade 4 learners not only acquired but also comprehended the Earth and Space competencies targeted by the scifold. The intervention

likely involved interactive and hands-on activities utilizing scifolds, fostering active engagement and contributing to the demonstrated high level of understanding in the post-test. Consequently, the scifold emerges as a valuable resource for teaching earth and space concepts and enhancing academic achievements in various science subjects.

These findings align with the research conducted by Casteel and Narkawicz (2006), indicating that the use of foldables, like scifolds, leads to enhanced learner performance surpassing traditional approaches such as lectures and worksheets. Additionally, Tanjung's (2018) experimental research supports this finding, demonstrating a significant improvement in vocabulary acquisition in first-grade students using foldables. The implementation of scifold, as an interactive visual tool, positively influences the proficiency of fourth-grade learners. Antoine (2013) similarly found that incorporating graphic organizers significantly enhances student achievement. Despite the initial lack of mastery, the utilization of scifold as an intervention tool resulted in a notable improvement in comprehension and abilities.

Table 1

Mastery Level of the Grade 4 Learners in their Pretest and Posttest

LEARNING COMPETENCY	PRETEST	MASTERY LEVEL	POSTTEST	MASTERY LEVEL
• Identifying the different types of soil	38%	DNME	96%	O
• Identifying safety precautions during weather conditions	16%	DNME	98%	O
• Identifying weather instruments	29%	DNME	92%	O
Overall MPS Mean	28%	DNME	95%	O

LEGEND:		
90%-100%	Outstanding	O
85%-89%	Very Satisfactory	VS
80%-84%	Satisfactory	S
75%-79%	Fairly Satisfactory	FS
Below 75	Did not meet expectations	DNME

The Difference in the Mastery Level between the Pretest and Post-Test Scores of the Grade 4 Learners

Table 2 presents the difference in the mastery level between the pretest and post-test scores. Results showed highly significant differences in the learners' mastery level compared between their pretest and post-test scores with a t-computed value equal to -158.46 and a p-value of 0.000. This finding implies that the mastery level of the learners increased after using the scifold which further suggests that the use of this intervention the diverse learners is effective. The significant increase in mastery levels implies that the utilization of the scifold intervention has a substantial positive effect on the learners. It indicates that the interactive and hands-on features of the scifold contribute significantly to the learners' understanding of earth and space competencies, reinforcing its efficacy as an instructional tool. It also shows that the scifold is adaptable and beneficial for a broad range of learners, accommodating various learning needs within the diverse student population.

Casteel and Narkawicz (2006) have found that incorporating foldables in teaching has yielded positive results. Similarly, Tanjung (2018) affirms the efficacy of foldables as a valuable tool for classroom instruction, promoting active student participation during lessons.

This recent study reveals that foldables possess a captivating nature. The learners exhibited high levels of motivation while utilizing the scifold technique. Foldable pedagogy allows learners to visualize complex scientific concepts that are otherwise abstract. It proves to be an efficient approach to developing teaching and learning abilities, easily adaptable, and integrated into various other subjects. Furthermore, as a developmentally suitable educational tool, it caters to the diverse needs and preferences of learners.

Table 2

The Difference in the Mastery Level between the Pretest and Post-test Scores of the Grade 4 Learners

PERFORMANCE TEST	MEAN SCORE	T-CRIT	T-COMPUTED	P-VALUE	Decision
Pretest	6.55	2.03	-158.46**	0.000	Failed to reject H_o
Post Test	28.84				

**-highly significant

Reflection

As a researcher, the investigation underscored the importance of developing interventions like scifolds designed to enrich the creative and critical thinking skills of learners. The vital role of staying informed through continuous engagement with research journals on graphic organizers was recognized, exploring diverse teaching strategies that could elevate pedagogies. This correlation with enhanced teaching and learning processes ultimately led to improved academic performance among learners. Furthermore, the experience prompted consideration of the importance of conducting further research endeavors contributing specifically to the field, particularly in evaluating the effectiveness of developed instructional materials like scifolds in science education.

In the role of a teacher, the study emphasized the importance of diversifying teaching strategies, incorporating hands-on activities, and utilizing interactive tools like scifolds to accommodate diverse learning styles. The value of implementing learner-centered activities to ensure active participation from learners became evident.

The success of the study can be attributed to the engagement of learner-centered learning approaches, where the learning experience became more interactive and tailored to learners' needs, maximizing the effectiveness of scifolds. This success was influenced by the teacher's adept ability to implement scifolds effectively in the classroom, employing strategies such as clear instructions, active participation, and fostering a positive learning environment.

Encouraging learners to generate various designs for scifolds was recognized as beneficial, fostering creativity and catering to diverse learning preferences. Additionally, integrating technology into scifolds, including interactive digital elements, was seen as enhancing their overall appeal and effectiveness, aligning with the preferred approach of creating opportunities for collaborative learning experiences using scifolds.

Summary of Findings

1. The mastery level in the least learned competencies of the grade four learners in the pretest is “Did Not Meet Expectations” and in the posttest is “Outstanding”.

2. There is a highly significant difference in the grade four learners' mastery level mastery level in the least learned competencies compared between their pretest and post-test scores.

Conclusions and Recommendations

Conclusions

Based on the findings uncovered in this research, the following conclusions were made:

1. The scifold enhanced mastery level in the least learned competencies of the Grade 4 learners in earth and space concepts.

2. The scifold is an effective intervention to be used in teaching the least learned competencies in earth and space concepts.

Recommendations

Based on the conclusions of the research, the following suggestions are put forward:

1. Teachers are advised to incorporate scifold as an additional resource to enhance learners' mastery level in earth and space competencies. It is recommended that foldables be integrated not only into science lessons but also across various subjects.

2. School heads are encouraged to advocate and implement the use of scifold as an intervention in different modes of delivering education.

Action Plan

The researcher plans to disseminate the valuable insights obtained from the study on scifolds at various platforms. These platforms include INSET sessions and seminars, aiming to engage directly with teachers and school heads at the grassroots level. The focus is on tailoring the presentation to address specific concerns within the local educational context, ensuring a personalized and impactful delivery of the study's implications. The primary objective is to showcase the effective utilization of scifolds in the teaching and learning process.

Furthermore, the researcher plans to extend the reach of the research findings to a diverse audience, encompassing elementary and secondary teachers, policymakers, and education stakeholders. Seminars and training workshops are envisaged as avenues to translate academic insights into practical strategies, fostering collaboration, and contributing to the enhancement of teaching methodologies and professional development.

The researcher plans to leverage digital platforms, utilizing a Facebook page and a YouTube channel to disseminate research findings to a broader audience. Additionally, presenting the research findings at conferences, seminars, or events organized by educational entities will ensure visibility and engagement with a diverse audience of educators.

To further support knowledge dissemination, the researcher will develop a centralized resource repository containing templates, guidelines, and success stories related to scifolds. This repository will be accessible to colleagues within the school, providing a reference for teachers interested in implementing scifolds in their own lessons.

In addition to live presentations, the researcher intends to create tangible resources for wider dissemination. A leaflet summarizing the research findings will be crafted for distribution, providing a quick reference for educators. Moreover, an article highlighting the benefits of scifolds will be produced as an additional resource for publication in a local newspaper, increasing visibility within the community. Seeking approval from the district supervisor to host a seminar on creating an action research proposal is also part of the

researcher's plan, demonstrating a commitment to institutionalizing research-driven practices.

On a more localized level, the researcher is committed to integrating the use of scifolds into their own classroom setting, ensuring continuous monitoring and reflection on the impact of scifolds on student engagement and understanding. This practice will be shared and expanded upon during in-house professional development sessions organized for fellow teachers within the same school. These sessions will serve as a platform to share insights, practical tips, and evidence-based outcomes from the research, emphasizing the benefits and effective integration of scifolds in diverse lessons.

Collaboration with neighboring schools in Benguet is also on the agenda, with the aim of organizing workshops and training sessions. These collaborative efforts will contribute to fostering a community of practice among educators in the region, sharing methodologies and materials related to scifolds.

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Financial Report

A. Supplies and Materials						
Activity	Item	Unit	Quantity	Estimated Cost	Total	Actual Cost
Implementation of the study and Preparation of Research Papers, Instructional Materials/Worksheets, and other documents	A4 Bond Paper	ream	10	250.00	2,500.00	2,500.00
	Printer Ink Black	bottle	5	300.00	1,500.00	1,500.00
	Printer Ink Cyan	bottle	2	300.00	600.00	600.00
	Printer Ink Magenta	bottle	2	300.00	600.00	600.00
	Printer Ink Yellow	bottle	2	300.00	600.00	600.00
	USB Flash Drive	Pc	1	1,000.00	1,000.00	1,000.00
	Colored paper	ream	5	200.00	1,000.00	1,000.00
	35 mm staple wire	box	2	35.00	70.00	70.00
	Ballpen	pc	80	15.00	1,200.00	1,200.00
	pencil	box	10	70.00	700.00	700.00
	A4 Laminating Film	ream	6	600.00	3,600.00	3, 600.00
B. Domestic Travel Expenses						
Submission of deliverables- First Tranche with wet signatures	Camp 30 ES to RO	Back and Forth	2	250.00	500.00	500.00
C. Food and other incurred expenses during the conduct of research						
Validation of Instruments	Meals and snacks		5	500	2,500.00	2,500.00
Implementation of the intervention	Snack of Learners/Participants	pax	38	100.00	3,800.00	3,800.00
D. Reproduction, Printing, and Binding Cost						
Photocopy of the prior informed consent form, letter to participants, and other preliminary documents needed during and after the study	20 pages x 1.00	set	50	20	1,000.00	1,000.00
E. Communication Expenses for the Implementation / Conduct of the Study						
Implementation of the Study - Data Gathering/Collection, Preparation and Submission of Research Papers and other documents.	Cellphone and Internet Load	Card	6	1,000.00	6,000.00	6,000.00
F. Other Expenses						
					27,170.00	**27,170.00**

Prepared by:

CESAR S. MARTIN
Research Grantee