**Experiential Learning Strategy (ELS): Its Effect on Science Performance of Grade VI Pupils at Ripang Elementary School**

.

ABSTRACT

|  |
| --- |
| This study aimed to determine the effects of the Experiential Learning Strategy in teaching science that improved the performance of the 6th-grade pupils at Ripang Elementary School. The researcher employed the two-group pretest-posttest experimental design, which used experiential Learning Strategy in the experimental group. The pupils in the experimental group and control group obtained poor performance during the pre-test, with mean scores of 20 and 22, respectively. The experimental group reflected a good performance level (32) compared with the control group, with a Fair performance level (30) in the post-test. There is a significant difference between the pre-test and post-test performance in Science among the pupils in the experimental group after using the ELS. There is a significant difference in the post-test performance in Science between the control and experimental groups. As a result of the research, it is recommended that Experiential Learning Strategy should use as a teaching strategy in Science classes; Experiential Learning Strategy as a strategy should conducted by the teacher in other Topics in Science; and a parallel study on the Experiential Learning Strategy should be encourage to find its effectiveness on other subjects. |

*Keywords: Experiential Learning Strategy, Performance, Science*

1. INTRODUCTION

Science learning is a vehicle for students to learn about themselves and their environment, as well as the prospect of further development when applied to everyday life.

The K to 12 science curriculum is learner-centered and inquiry-based, emphasizing evidence in constructing explanations. Concepts and skills in Life Sciences, Physics, Chemistry, and Earth Sciences are presented with increasing levels of complexity from one grade level to another in a spiral progression, thus paving the way to a deeper understanding of core concepts (Orbe et. al, 2018). The K-12 curriculum paved the way for developing innovative, reflective, collaborative, and critical thinking skills. Teachers opted to adapt different teaching strategies to cater to the diverse needs of the learners (Department of Education, 2016).

One of the strategies that is widely used by teachers in teaching science is the experiential learning approach. Experiential learning is an educational approach that focuses on learning through real experiences and direct interaction with the learning environment (Thi Thu et. al, 2024; Miettinen, 2000). Furthermore, the experiential learning approach involves students in a complex understanding rather than surface learning and enables students to transfer knowledge better (Kasim et. al, 2024). Moreover, activities and environments associated with experiential learning, such as experiments, are primary examples of how experiential learning acts as a bridge to developing the skills of the students and encouraging them to actively engage in the subject matter (Tanner et. al, 2012; Alvi & Gillies, 2021; Hanratty & Taggart, 2005; Mutmainah et. al, 2019).

In the Program for International Student Assessment (PISA) results in 2022, the Philippines was ranked 77th among 81 PISA-performing countries worldwide. The Philippines had the lowest mean score in science (356/600). Insufficient access to quality science education and resources is a major factor contributing to students’ low academic achievements (Magsambol, 2024). Moreover, it is reported that not all schools in the Philippines have access to adequate science materials, including laboratory equipment and up-to-date textbooks, which hinders students' practical understanding of scientific concepts (Organisation for Economic Co-operation and Development [OECD], 2023). This lack of resources leads to students being less motivated in class, resulting in low adaptability and comprehension. As a result, students fail to learn scientific phenomena on certain topics and are unable to connect theories and knowledge from the classroom to real-world situations.

Experiential learning emphasizes cognitive, affective, and psychomotor aspects (Susiloningsih et. al, 2023). This approach provides students with high-impact learning experiences through several pedagogical methods (Vecchiarini et. al, 2023). Effective experiential learning opportunities have many advantages: they are learner-centered and student-directed, structured with an emphasis on problem-solving, discovery, and inquiry, and focus on practical applications of course content. These strategies promote a holistic understanding of a discipline, perception-based learning, and a heuristic process—learning about learning (Anthony et. al, 1990). With these benefits, the use of experiential learning approaches can improve the quality of education, and it is recommended that such approaches be applied, especially in science learning.

2. Statement of the problem

The study aimed to determine the effect of Experiential Learning Strategy (ELS) in the Science performance of Grade 6 pupils of Ripang Elementary School.

Specifically, it sought answers to the following questions:

1. What is the pre-test performance of control and experimental group in science before the use of Experiential Learning Strategy (ELS)?
2. What is the post-test performance of control and experimental group in science after the use of the Experiential Learning Strategy (ELS)?
3. Is there a significant difference in the post-test performance in science of between control group and experimental group

**2.1. Hypothesis**

There is no significant difference in the post-test performance in science between the control group and experimental group.

**3. METHODOLOGY**

**3.1 Research Design**

The study used the pre-test and post-test experimental design. The study aimed to determine the effect of Experiential Learning Strategy (ELS) on the Science achievement of Grade 6 pupils in the experimental group, while the control group was taught using Traditional strategy.

**3.2 Locale of the Study**

The study was conducted at Ripang Elementary School (RES), Ripang, Conner, Apayao for the School Year 2024-2025. The school is located at Purok 3, Ripang, Conner, Apayao, and one of the barangay schools in the Northern Conner District Division of Apayao.

**3.3 Participants of the Study**

The participants of the study are the Grade 6 pupils of Ripang Elementary School, consisting of 18 males and 8 females, a total of 26 learners. The class were divided into two groups, 13 pupils in the control group and 13 pupils in the experimental group. Total Enumeration was employed in the study.

**3.4 Research Instrument**

The main instrument used in the study is a 40-item multiple choice test prescribed by the Department of Education, CAR. The pre-test and post-test were obtained from PROJECT SMART (Standardized and Meaningful Assessment Result-Based Teaching) for science 6.

**3.5 Data Gathering Procedure**

The researcher asked permission from the Public Schools District Supervisor (PSDS) of Northern Conner District and the School Head of Ripang Elementary School. Upon approval, the researcher utilized her time in her science subject to conduct the study. After which, the pre-test was administered to the learners on the first day of the designated week of the chosen learning competency to be learned and mastered by the learners. The class was divided into two groups, control and experimental with matched abilities based from the Q1 and Q2 performances. The researcher picked the learners' names but in consideration of the matched abilities of those in the experimental and control group. The pupils in the two groups were pre- tested. Then, control group was taught using the traditional method, while the experimental group used the ELS approach as a strategy. The researcher taught the control group from 1:30 pm to 2:20 pm, while the experimental group was taught from 2:21 pm to 3:11 pm. The research was conducted within 8 weeks duration every Tuesday and Thursday. After the experimental period, the researcher administered the post-test to the experimental and control groups.

**3.6 Statistical Analysis**

Mean and standard deviation were computed on the pre-test performance of pupils in science before the use of Experiential Learning Strategies (ELS). Likewise, the mean and standard deviation on the post-test performance of pupils in science after the use of Experiential Learning Strategy (ELS) using the scale based on the grading system standard of the Department of Education. To test the hypotheses that “There is no significant difference between the pre-test and post-test performance in science of the control group and experimental group before and after the use of ELS,” a t-test was computed.

**4. RESULT AND DISCUSSION**

**4.1. Pre-test Performance of pupils in science before the use of Experiential Learning Strategy (ELS)**

**Table 1. Mean and Standard Deviation of Performance of Pupils in Science in the Pretest**

|  |  |  |  |
| --- | --- | --- | --- |
| Groupings | Mean | Descriptive Scale | Standard Deviation |
| Control Group | 22 | Poor | 6.39 |
| Experimental Group | 20 | Poor | 4.43 |

The performance of pupils in science before the use of Experiential Learning Strategies (ELS). The pupils in the experimental group and control group obtained poor performance during the pre-test. Moreover, the performance of the control and experimental group is supported by the mean score 22 and 20, respectively in the 40 items multiple choice pre-test. The scores are highly spread as reflected by the high value of the standard deviation. In addition, the pupils in the control group slightly have higher performance than those in the experimental group but both groups have poor performance.

**4.2. Post-test performance of pupils in science after the use of Experiential Learning Strategy (ELS)**

**Table 2. Mean and Standard Deviation of Performance of Pupils in Science during the Post test**

|  |  |  |  |
| --- | --- | --- | --- |
| Groupings | Mean | Descriptive Scale | Standard Deviation |
| Control Group | 30 | Fair | 2.18 |
| Experimental Group | 32 | Good | 3.46 |

The experimental group's performance reflected better performance compared with the control group, with a mean post-test score of 32 correct answers compared to 30 correct answers from the control group out of a total of 40 items pre-test on the topic Friction, Gravity, Energy, and Simple machines during the third quarter period. Jannah and Shofiyah (2024) stated that the experiential learning strategy improved the performance of pupils in science. With ELS, pupils search for concepts through experiments and are trained to conduct discussions in groups and present in front of the class. In the learning process, this strategy puts students in a deep search process to understand the material being taught. Using the Experiential Learning Strategy, students are given knowledge and insights about concepts and invited to build skills through actual assignments. Therefore, using the Experiential Learning Strategy can achieve better student post-test results.

**4.3 Significant difference in the post-test performance in science between the control and experimental group.**

**Table 3. Test of significant difference in the post-test performance in science between the control and experimental group.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Grouping | Mean | DS | Std. Deviation | t | df | p | Decision at α= 0.05 |
| Control | 30 | Fair | 2.18 | 2.167 | 24 | 0.040 | Reject Ho |
| Experimental | 32 | Good | 3.86 |

As shown in Table 3, results revealed that the p-value is lower than the 0.05 alpha level, thus, the null hypothesis is rejected. Therefore, there was a significant difference in the post-test performance in science between the control and experimental groups. The pupils who were taught using ELS in the experimental group had better performance during the post-test compared with those in the control group.

5. Conclusion

The Grade VI pupils who were exposed to the Experiential Learning Strategies attained better Science performance compared to the students who were not exposed to the Experiential Learning Strategy. The ELS is effective in the learning process since the academic performance of pupils in Science 6 has improved during Quarter 3 along the topics such as friction, gravity, kinds of energy, transformation of energy and simple machines.

Consent (wherE ever applicable)

I affirm that the respondents voluntarily agreed to participate after being informed about the purpose, nature, and potential implications of the study. Their responses have been collected with utmost respect for their privacy and confidentiality, in accordance with ethical research guidelines.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

I acknowledge that I have not used Copilot in refining some of the sections in the document.

Ethical approval (where ever applicable)

The study was conducted with the approval and in accordance with the standards of the college. no ethical approval was required, as the research followed all applicable ethical guidelines, ensuring respect for the respondents’ privacy and confidentiality.

References

Alvi, E., & Gillies, R. M. (2021). Promoting self-regulated learning through experiential learning in the early years of school: A qualitative case study. *European Journal of Teacher Education, 44*(2), 135–157.

Anthony, J., Ewing, M., Jaynes, J., & Perkus, G. (1990). *Engaging psychology and history in experiential learning*. McKinney, Texas: Collin County Community College.

Department of Education (DepEd). (2016). *K to 12 science curriculum guide*. <http://lrmds.deped.gov.ph/>

Hanratty, B., & Taggart, D. (2005). The Pushkin Trust: experiential learning and children with special educational needs. An investigation. *Irish Educational Studies*, *24*(2-3), 243-252.

Jannah, S. F., & Shofiyah, N. (2024). Implementation of experiential learning model to improve science process skills. Edunesia: Jurnal Ilmiah Pendidikan, 5(1), 377–389.

Kasim, A.-., Shimar, H., & Bakil, H. A. (2024). The effect of experiential learning approach on the academic achievement and reflective skills of Grade 8 students in science. *Ignatian International Journal for Multidisciplinary , 2*(7), 533–549.

Magsambol, B. (2024). Why Filipino students performed poorly in global learning assessments. *RAPPLER*.

Miettinen, R. (2000). The concept of experiential learning and John Dewey’s theory of reflective thought and action. *International Journal of Lifelong Education, 19*(1), 54–72. https://doi.org/10.1080/026013700293458

Mutmainah, R., Rukayah, & Indriayu, M. (2019). Effectiveness of experiential learning-based teaching material in mathematics. *International Journal of Evaluation and Research in Education, 8*(1), 57–63.

Orbe, J. R., Espinosa, A. A., & Datukan, J. T. (2018). Teaching chemistry in a spiral progression approach: Lessons from science teachers in the Philippines. *Australian Journal of Teacher Education (Online)*, *43*(4), 17-30.

*Journal of Teacher Education, 43*(4), 17–30. https://doi.org/10.14221/ajte.2018v43n4.2

Organisation for Economic Co-operation and Development (OECD). (2023). *PISA 2022 results: The state of learning and equity in education*. OECD Publishing.

Susiloningsih, E., Sumantri, M. S., & Marini, A. (2023). Experiential learning model in science learning: Systematic literature review. *Jurnal Penelitian Pendidikan IPA, 9*(9), 550–557.

Tanner, S., Green, K., & Burns, S. (2012). Experiential learning and journalism education: Special Olympics – A case study. *Australian Journalism Review, 34*(2), 115–127. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-> 85027833757&partnerID=40&md5=3ec6964c3244ca59055e9f9b550f4c2d

Thi Thu, D. H. N., Chung, V. T., & Thi Nam, B. (2024). Developing lesson plans for elementary students based on experiential learning. *International Journal of Education and Social Science Research, 07*(02), 190–198.

Vecchiarini, M., Muldoon, J., Smith, D., & Boling, R. (2023). Experiential learning in an online setting: How entrepreneurship education changed during the -19 pandemic. *Entrepreneurship Education and Pedagogy*. https://doi.org/10.1177/251512742311791