IMPROVING THE PERFORMANCE OF GRADE V LEARNERS USING NUMBERED HEADS TOGETHER (NHT) IN LIVELIHOOD EDUCATION: AN ACTION RESEARCH PAPER

Shemae M. De Vera
Apolinario Mabini Elementary School, Philippines
baduriashemaemedina@gmail.com

ABSTRACT

Collaborative learning is a method of learning in which learners with different performance levels work together in small groups to achieve an academic goal (Gokhale, 1995). This study focused on the effectiveness of NHT in improving the performance of Grade V learners in LE. Results of Pre-test and Post Test of the Experimental and Control group were measured using mean and standard deviation. The acceptability of the hypothesis was tested using t-test and the result of the statistical treatment employed in pre-test the experimental group mean were 8.800 with a standard deviation of 2.25093 while the control group mean and standard deviation were 8.600 and 2.22 in Pre-Test. The mean of the control and experimental group has a slight difference of .200. After the 10 days application of NHT, Post Test was administered, the mean of Post-Test for Experimental Group was 15.900 while 11.400 for Control Group. A 4.5 difference between the results of experimental and control group in their Post-test. Results of paired-samples T-test shows a significant difference in pre-post test results performance, indicated by t-test value of 0.000 less than significance level of 0.05 It can be concluded that the application of NHT improves learners' performance.

INTRODUCTION

The use of cooperative learning groups in class creates certain opportunities that are lacking when learners learn competitively or individualistically. In cooperative groups learners are engaged in discussions that will extend and construct their conceptual understandings. Group mates can provide supports, encouragement and provide feedback on how well they are performing within the group. The learners who perform well will serve as behavioral models, and through small group discussions learners acquire attitudes and values for continuous improvement, (Johnson et. al 2014).

Collaborative learning refers to a method of learning in which learners with different performance levels work together in small groups to achieve an academic goal. In collaborative learning, the learners are responsible for one another's learning as well as their own. Thus, the success of one learners helps other learners to be successful, (Gokhale, 1995).

Out of over 100 cooperative learning developed by Spencer Kagan and his associates is Numbered Heads Together (NHT) (Kagan & Kagan, 2009). NHT is based on four basic principles: (1) positive interdependence, (2) individual accountability, (3) equal participation, and (4) simultaneous interaction. NHT was designed to provide opportunities for learners to work collaboratively and support interpersonal interactions among the learners. NHT requires learners to be divided into small heterogeneous groups working collaboratively and provide supports to improve their academic performance (Maheady et al., 2006).

According to the research conducted by Mosik Sutinyo (2007) the use of Numbered Heads Together (NHT) improve the students learning motivation of the student in senior high school. It is also an effective instructional technique to increase student participation and improve their academic performance of Grade IV students in Social Studies.

Ellena et. al. (2018) found out that cooperative learning technique numbered heads together is effective in improving social skill at kindergarten students. The effectiveness of NHT is seen with the improvement of social skills in all aspects of communication, cooperation, assertiveness, responsibility, empathy, self-involvement and self-control.

SIGNIFICANCE OF THE STUDY/RATIONALE

The results of this study will be deemed important to **teachers**: this research will help teachers to develop and improve their performance in Livelihood Education using cooperative learning techniques - numbered heads together as a learning method in the classroom. This action will help the **school administrators** to assess and make observations on how NHT effectiveness affects the academic performance of the learners. By then, they can do recommendations and suggestions to employ NHT in improving the performance of learners. This research will be a tool ground for **future researchers** where they could apply their knowledge and perspective for their future study and research.

This study utilized Numbered Heads Together technique in the class, this cooperative learning used the four steps structure (Cayabyab and Jacobs, 1999: 30), as follows:

1. **Numbering** The teacher divides the class into small groups; every group consist of about three to six learners. Then, each member is given a number from one to six.
2. **Asking a Question**. A question or sets of problems will be given by the teacher to solve or to answer.
3. **Heads Together** The teacher will let the students put their heads together, answer the question, and make sure each team member understands and can explain the answer. In here, the students work together to solve the problem and also ensure that everyone in the group can answer the question.
4. **Answering** Teacher calls a number at random to answer the question. The students with that number raise their hands when called upon. The students with the number called will answer, if there are not enough students ready to respond the teacher may extend the time of the discussion.

RESEARCH PROBLEM/ QUESTIONS

The researcher's goal in this study is to assess the level of effectiveness of Numbered Heads Together in improving the performance of Grade V in Livelihood Education. On the basis of the researcher's goal, the following research questions will guide this study:

1. What is the pre-test results of the experimental and control group?
2. What is the post-test results of the experimental and control group?
3. What is the significant difference between the pre-test and post-test results of the control and experimental group?

METHODOLOGY

The researcher employed the Pre-test/Post-test control group experimental research design. The experimental and control group were formed from Grade V learners of Apolinario Mabini Elementary School.

a. PARTICIPANTS/DATA SOURCE

The researcher's respondents were 20 Grade 5 learners of Apolinario Mabini Elementary School. The 20 respondents were from the same section, the researcher made sure that the academic performances of the two respondents were identical.

b. DATA GATHERING PROCEDURES AND INSTRUMENTS

Among the 10 learners,10 (50%) of the learners belongs to the experimental group and the other 10 (50%) of the learners belongs to the control group. Pre-test was administered in both groups and ensure that both groups experienced the same conditions except that in addition to the experimental group Numbered Heads Together (NHT) was employed. After two weeks of implementation, the researcher administered post-test to all learners in both groups, and assessed the amount of change on the value of dependent variable from the pre-test to the post-test for each groups separately.

A twenty-item objective type questionnaire created by the researcher was used in pre-test/post-test to verify the effectiveness of Numbered Heads Together in teaching Livelihood Education. The topics involved in this action research were a) Pamamaraan sa Pagtatanim ng Halamang Gulay b) Paggawa ng Abonong Organiko c) Pangangalaga ng Halaman and d) Masistemang Pagsugpo ng Kulisap. These topics were included in the First Rating Period of S.Y. 2019 – 2020.

c. DATA ANALYSIS

Statistical techniques used in this study were mean and standard deviation. Mean was used to measures the arithmetic average of the scores in Pre-test and Post-test of the experimental and control group while Standard Deviation was utilized to measure the dispersion among all scores in the distribution. To test the hypothesis of this action research, the researcher made use of t-test.

RESULTS AND DISCUSSIONS

Table 1: Group Statistics of Experimental and Control Group in Pre-test (using SPSS)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Experimental_Group_Pretest	10	5.00	12.00	8.8000	2.25093
Control_Group_Pretest	10	4.00	12.00	8.6000	2.22111
Valid N (listwise)	10				

Table 1 shows the results of experimental and control group performance in Pre-test. Experimental group mean is 8.800 with a standard deviation of 2.250 while the control group mean and standard deviation are 8.600 and 2.221.

Table 2: Group Statistics of Experimental and Control Group in Post-Test (using SPSS)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Experimental_Group_Posttest	10	12.00	18.00	15.9000	2.28279
Control_Group_Posttest	10	7.00	18.00	11.4000	3.62706
Valid N (listwise)	10				

As shown in table 2, the mean of Post-Test for Experimental Group is 15.900 while 11.400 for Control Group. There is a 4.5 difference between the results of experimental and control groups in their Post-test.

Table 3: Paired-Samples T-Test of Pre-Test and Post-Test Result of the Experimental Group and Control Group (Using SPSS)

Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Experimental Group	Posttest - Pretest	7.100	2.685	.84918	5.180	9.021	8.361	9	.000
Control Group	Posttest - Pretest	2.800	3.425	1.08321	.350	5.250	2.585	9	.029

The results of paired-samples T-test shows that there is a significant difference in the performance between pre-post test results, as indicated by the t-test value of 0.000 less than significance level of 0.05 It can be concluded that the application of numbered heads together improves the academic performance of the learners in Livelihood Education.
On the other hand, the t-test value of the control group is 0.029 which is lower than the significance level of 0.05, therefore even without the application of Numbered Heads Together there is an improvement in the performance of the control group.

CONCLUSIONS AND RECOMMENDATION

SUMMARY OF FINDINGS
The results of the statistical treatment of data show that there is a significant difference between the results of Pre-test and Post Test of the Experimental and Control Group. It can be noted that the results of Experimental Group was higher than the Control Group.

IMPLICATIONS/ REFELECTIONS AND RECOMMENDATIONS

Relative to the findings of this research, the following recommendation were made; (1) Teachers can apply numbered heads together technique in teaching to improve the performance of the learners (2) To further study the effects of numbered heads together, researcher may conduct a longer period of study; (3) different collaborative learning other than NHT should be explored in order to provide teachers different option s for teaching techniques which can provide increased in the performance of learners.

REFERENCES:

1) Gokhale, Anuradha A. Collaborative Learning Enhances Critical Thinking Journal of Technology Education Vol. 7 No. 1, Fall 1995 https://scholar.lib.vt.edu/ejournals/JTE/v7n1/pdf/gokhale.pdf

2) Johnson, D.W., Johnson, R.T., and Smith, K.A. (2014). Cooperative learning: Improving university instruction by basing practice on validated theory. Journl on Excellence in College Teaching 25, 85-118. http://personal.cege.umn.edu/~smith/docs/Johnson-Johnson-Smith-Cooperative_Learning-JECT-Small_Group_Learning-draft.pdf

3) Maheady, L., Michielli-Pendl, J., Harper, G., & Mallette, B. (2006). The effects of numbered heads together with and without an incentive package on the science test performance of a diverse group of sixth graders. Journal of Behavioral Education, 15(1), 24–39. https://eric.ed.gov/?id=EJ748127 B. Sutinyo, Mosik (2017)

4) The Use of Numbered Heads Together (NHT) Learning Models with science, environment, technology, society (sets) approach to improve student learning motivation of senior high school. Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Semarang, Indonesia. https://www.researchgate.net/ publication/324256851_

5) The_Use_of_Numbered_Heads_Together_NHT_Learning_Model_with_Science_Environment_Technology_Society_SETS_Approach_to_Improve_Student_Learning_Motivation of_Senior_High_School Kagan, S., & Kagan, M. (2009). Kagan's cooperative learning. San Clemente, CA: Kagan https://www.kaganonline.com/free_articles/dr_spencer_kagan/ASK17.php

6) La Anse and Muhammad Ilham (2018) The Implementation of Cooperative Learning (Numbered Head Together) to Boost Students' Learning Outcome in Social Studies Subject Universitas Halu Oleo, Kampus Hijau Bumi Tridharma, Anduonou, Kambu, Kendari, Kambu, Kota Kendari, Sulawesi Tenggara, 93132, Indonesia https://iopscience.iop.org/article/10.1088/1755-1315/175/1/012147/pdf

7) Muhamad Ilham Hikmawandiny Nia Kurniawati (2017) THE USE OF NUMBERED HEADS TOGETHER TECHNIQUE IN TEACHING SIMPLE PAST TENSE Suryakancana University Cayabyab, E. C., & Jacobs, G. M. (1999). Making small groups work via cooperative learning. The ACELT Journal, 3(2), 27 - https://www. academia.edu/ 3379030/ Making Small Groups Workvia Cooperative Learning

8) Raissa Citra Ellena1*, Dewi Retno Suminar2* Effectiveness Cooperative Learning Numbered Heads Together to Improve the Social Skills of Kindergarten's Student The International Journal of Social Sciences and Humanities Invention 5(01): 4344-4349 2018 DOI: 10.18535/ijsshi/v5i1.16 ICV 2015: 45.28 ISSN: 2349-2031.