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Student Mathematics Performance and Problem-Solving Skills in an Experiential Learning Environment

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Abstract:

This study investigation was conducted in response to the great need for an intervention that would require less of reading from students who are not good readers. This investigation was conducted in order to identify whether or not an Experiential Learning Environment would be of help to increase students' mathematics performance and problem-solving skills. Specifically, it compared the scores of the students exposed to the intervention and those who were not, in terms of their pretest, posttest, and retention test scores. The research utilized a quasi-experimental design to find out and compare the mathematics performance of the students and problem-solving skills when they were exposed to Experiential Learning Environment (ELE) and Non-Experiential Learning Environment (non-ELE). Furthermore, this study also used descriptive statistics to identify the level of mathematics performance and problem-solving performance as they were exposed to different learning environments. Results showed that in terms of mathematics performance, both groups performed comparably. However, in their problem-solving skills scores, there had been a significant difference. Based on the findings of the study, the students who were exposed to Experiential Learning Environment performed better in problem-solving compared to those who were not.

Keywords: Experiential Learning Environment, Mathematics Performance, Problem Solving Skills, Problem Solving

Introduction:

The dictionary defines mathematics as the study of relationships among numbers, shapes, and quantities. Calculations using signs and symbols make the subject more abstract. Experiential Learning provides students with opportunities to have hands-on experiences to aid them in learning abstract mathematics concepts. It does not focus only on the cognitive part of learning because accordingly when more senses are involved in the learning process, there is better learning (Corpuz & Salandanan, 2007).

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However, according to the Trends in International Mathematics and Science Study (TIMSS), Filipino students were found to have difficulties in solving problems that are different from the problems usually given in textbooks. This implies that the problem-solving skills of the students are not yet developed and do not meet the standards. This feedback simply means that in the classroom, students deal only with solving routine problems in which the participants of the teaching and learning process are giving more emphasis on the step-by-step procedure rather than meaningful learning (Duque, 2013).

Sugod Integrated School students have a huge difficulty in solving problems. The difficulties originated from the fact that they cannot even read fluently and comprehend how problems are stated. As a personal experience of the researcher, whenever topics involve solving problems, teachers are expected to translate the problems stated in English to Vernacular, for them to understand what is required in the problem. The reading profile of the students showed very alarming results. Only two (2) out of the ninety-two (92) grade-7 students can read and comprehend very well. In addition, students lack the ability to formulate steps on how to solve mathematical problem-solving refuse to think whenever they are asked to solve even simple practical problems. Also, in the previously conducted Division Achievement Test (DAT) for Grade-6 pupils, Sugod Integrated School ranked last with a mean percentage score (MPS) of 24.21.

Mathematics teachers are in an unending quest of finding teaching strategies or methods (Asparin & Tan, 2018; Coronel & Tan, 2018; Gumban & Tan, 2019; Murillo & Tan, 2019; Dapitan & Caballes, 2019) that would somehow improve the problem-solving skills of the students (Duque & Tan, 2018; Tan & Limjap, 2018) because this is the only way that mathematics performance will also be improved (Dagoc & Tan, 2018; Segumpan & Tan, 2018; Saligumba & Tan, 2018). Other researchers developed tools to measure students' understanding (Caballes, 2006) and conceptual change (Gayeta & Caballes, 2017). According to David Kolb (1984), learning is enhanced when students get in touch with the realities of what they are learning.

Hence, the researcher ventured on a strategy that is believed to have helped in improving the mathematics performance of students especially those who enjoy physical activities and tend to be inactive and bored in lessons that are contained in a classroom (Salingay & Tan, 2018; Ciubal-Fulgencio, 2018; Aguanta & Tan, 2018). These students lose their interest when they are only made to sit down, read and listen to the teacher. In this study, the researcher will focus on using Experiential Learning, in teaching measurements, as a way of improving the problem-solving skills and mathematics performance of Grade-7 students.

Review of Literature

The extent of students' learning in the academic subject is determined by the grades they earn for a given period. The grades are the primary indicators of the extent to which they have learned a specific lesson. If the grades are high, it is assumed that they have learned a lot while low grades indicate an insufficient amount of learning (Asparin, 2013).

As cited by Ciubal (2015), there have been several conditions to enhance students' mathematical ability and mathematical power. Based on the National Education Progress Report

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(NAEP), in order to increase students' proficiency in mathematics, they should be taught how to communicate mathematical ideas effectively, link materials to everyday problems and situations, and develop students' reasoning and analytic abilities.

In addition, Mbuguan, et al. (2012), revealed that the mathematics performance of the students is persistently low and this poor performance is affected by factors that include understaffing, inadequate teaching/learning materials, lack of motivation, and poor attitudes by both teachers and students. Also, Tuminaro and Redish (2014) mentioned the two possible distinct reasons for this poor performance which include the students' lack of the mathematical skills needed to solve problems and lack of knowledge on how to apply the mathematical skills they have to particular problem situations.

According to Math Fluency (2011), educators and cognitive scientists agree that the ability to recall basic math facts fluently is necessary for students in order to solve word problems. The study added that lack of math fact retrieval can impede participation in math discussions and successful problem-solving. Word problems primarily serve as means to apply computational skills. According to the study conducted by Bautista and Mulligan (2009), Filipino children have difficulties in solving word problems mainly because of the language. Moreover, multiple studies have shown that word problems in English are more difficult for children who are still in the process of learning English compared to those who are native speakers of the language.

Studies support the effectiveness of an experiential learning environment to students' learning. Brahier (2005) recommends that secondary and middle school students need more hands-on experiences to aid the students in learning probability. Corpuz and Salandanan (2007) clutch their principle of learning that when more senses are involved in the learning process, there is better learning.

Balleck (2006) emphasized that the use of active learning such as experiential learning in the form if simulations, student presentations, and problem-solving situations better prepared the students to understand the lesson resulting to better performance

Hamer (2000) also suggests that multiple experiential techniques be used in classrooms rather than a single experiential technique. An application of Hamer's study suggests the use of series of activities in the concrete experience stage to foster the diversity of learners.

In the study done by Hitchcock and Murphy (1999), experiential learning showed to have a positive effect among junior-level students of College of Our Lady of the Elms in Massachusetts, USA. When these students are immersed a high participatory level research, they developed a high level of interest and foster a positive attitude towards research. Moreover, experiential learning strategy helps students in increasing their content mastery. The study of Moore et.al (2010) concluded that experiential learning helped the students relate the concepts presented in class to their everyday live, thereby increasing retention.

Methodology

The investigation utilized a quasi-experimental design which seeks to find out and compare the mathematics performance of the students and problem solving skills when they

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were exposed to Experiential Learning Environment (ELE) and Non-Experiential Learning Environment (Non-ELE).Furthermore, this study also used descriptive method to identify the level of mathematics performance and problem solving performance as they were exposed to different learning environments. It was conducted at Sugod Integrated School, a public institution situated at Upper Sugod, Valencia City, Bukidnon, Philippines. A total of 92 grade seven (7) students with 46 male and 46 female were the participants of the study.

The instruments used in this study were the teacher-made test and the problem solving questions adopted from DepEd Learner's materials. The 50-item test constructed by the researcher was pilot-tested and validated with a reliability value of .925. Every item was scored 1 for every correct response, and 0 if otherwise. The result was interpreted using the scale below adapted from the standards set criteria after the scores were transmuted:

Level of Proficiency	Range Scale	Interpretation
Exemplary	90%-100%	Very High Performance
Above Average	86%-89%	High Performance
Average	80%-85%	Moderate Performance
Below Average	75%-79%	Low Performance
Deficient	65%-74%	Very Low Performance

The second instrument was used to measure the problem solving skills of the respondents. The items were adopted from the Department of Education Learner's Material for Grade-7 students which is consisting of 4 problems equivalent to 20 points (5 points per problem). The answers of the students will be rated based on the following rubric.

Rubric in scoring the Mathematics Problem Solving Tasks

SCORE	LABEL	DESCRIPTION
5	Exemplary Response	Gives a complete response, with a clear diagram
4	Competent Response	Gives a fairly complete response with an appropriate diagram
3	Satisfactory(Minor Flaws)	Completes the problem satisfactorily
2	Nearly Satisfactory (Serious Flaws) Begins, fails to complete the problem	Begins the problem appropriately, but may fail to complete or omit significant parts of the solution No understanding, diagram may be unclear
1	Unable to begin	Drawing misrepresents, fails to indicate appropriate info, wrong solution

The result was then interpreted using the same scale above adapted from the standards set criteria after the scores were transmuted.

After all the preliminaries and protocol were observed, the researcher identified the students' level of problem-solving skills as well as the mathematics performance of the two groups which served as the experimental and controlled groups, through random sampling. Before the intervention was conducted, the researcher administered the pre-test to both the

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experimental and control groups so as to identify the mathematics performance of the students. During the implementation of the intervention, the experimental group was taught using ELE while the control group was exposed to non-ELE. The researcher conducted the intervention for the following topics: approximation of quantities particularly the length, weight/mass, and time, Conversion of measurements from one unit to another, and Solving problems involving conversion. The retention test was then administered one week after the posttest will be given.

In assessing the levels of problem-solving skills as well as the students' mathematics performance of the students before and after the intervention, this study used descriptive statistics such as mean, standard deviation, frequency, and percentage. Analysis of Covariance (ANCOVA) was used to find out the differences between post-test (mathematics performance and problem-solving skills) scores of the two groups. The pre-test scores served as the covariate to eliminate possible effects between groups.

Results and Findings

Table 1 presents the level of performance of students in their pretest, frequency, qualitative interpretation and percentage of scores of the students exposed to ELE and non-ELE.

RANGE	DESCRIPTOR	GROUP				QUALITATIVE INTERPRETATION
		ELE n=46		Non-ELE n=46		
		f	%	f	%	
74% and below	Deficient	46	100%	46	100%	Very Low
75%-79%	Below Average	0	0%	0	0%	Low
80%-85%	Average	0	0%	0	0%	Moderate
86%-89%	Above Average	0	0%	0	0%	High
90%-100%	Exemplary	0	0%	0	0%	Very High
MEAN SCORE:		14.61		14.20		

As shown in Table 1, 46 or 100 % of the students exposed to ELE have very low performance in the pretest. Identically, 46 or 100% of the students who were exposed to non-ELE had a very low performance. The group which was exposed to ELE had a mean score of 14.61 which indicates that students' scores belonged to the deficient level showing a very low performance. The non-ELE group scored 14.20 which revealed that the students' scores were in the deficient level signifying also a very low performance. Such performance is noticeably far too low from the passing mark which is 75%.

The findings were supported by the results of Tan and Pagtulon-an (2018) which emphasized that the scores of the students in the pretest did not meet the average level of proficiency. Such was attributed to the fact that the students have no knowledge yet about the topic.

Table 2 presents the level of performance of students in their posttest, frequency, qualitative interpretation and percentage of scores of the students exposed to ELE and Non-ELE.

Table 2. Level of Performance of students in the Posttest

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RANGE	DESCRIPTOR	GROUP				QUALITATIVE INTERPRETATION
		ELE n=46		Non-ELE n=46		
		f	%	f	%	
74% and below	Deficient	43	94%	46	100%	Very Low
75%-79%	Below Average	3	6%	0	0%	Low
80%-85%	Average	0	0%	0	0%	Moderate
86%-89%	Above Average	0	0%	0	0%	High
90%-100%	Exemplary	0	0%	0	0%	Very High
MEAN SCORE:		19.11		17.50		

As shown in Table 2, the ELE group had the following performance in their posttest: forty-three (43) or 93 % of the students performed very low, and three (3) or 7 % scored below average indicating low performance. In the non-ELE group, forty-six (46) or 100% of the students had very low performance in their posttest. Based on the results, it can be seen that majority of the students both in the ELE and non-ELE groups belonged to the deficient level which indicated very low performance. However, there has been a noticeable increase in the mean scores of the students in the posttest compared to their scores in the pretest. The mean scores of the students increased from 14.61 to 19.11 in the ELE group and from 14.20 to 17.50 in the non-ELE group. Also, it can be perceived that the mean score of the ELE group is higher than that of the non-ELE Group.

The results conform to the study of Oronce and Mendoza (2007) which emphasized that more learning takes place when students discover mathematical concepts on their own and when they are given questions to investigate, problems to explore and mathematical properties to verify so that they can make connections between the concrete and the abstract.

Table 3 presents the level of performance of students in their retention test, frequency, qualitative interpretation and percentage of scores of students exposed to ELE and Non-ELE.

Table 3. Level of Performance of students in the Retention Test

RANGE	DESCRIPTOR	GROUP				QUALITATIVE INTERPRETATION
		ELE n=46		Non-ELE n=46		
		f	%	f	%	
74% and below	Deficient	43	94%	44	96%	Very Low
75%-79%	Below Average	1	2%	1	2%	Low
80%-85%	Average	1	2%	1	2%	Moderate
86%-89%	Above Average	1	2%	0	0%	High
90%-100%	Exemplary	0	0%	0	0%	Very High
MEAN SCORE:		22.15		20.87		

As shown in Table 3, the ELE Group had the following performance in the posttest: one (1) or 2% of the students performed moderately, one (1) or 2% had low performance and the remaining forty-three (43) or 94% of the students had very low performance. On the other hand,

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in the Non ELE Group, one (1) or 2% had moderate performance, one (1) or 2% had low performance and the remaining forty-four (44) or 96% performed very low.

Table 3 also shows the mean scores of the students in their retention test. Students in the ELE group got 22.15 indicating a very low performance. Likewise, the Non-ELE also performed very low with a mean score of 20.87.

Moreover, despite the fact that both of the groups still performed very low, it is evident that there has been an increase in their performance as compared to their pretest and posttest results shown in Tables 1 and 2 respectively.

This validated the study of Corpuz and Salandanan (2007) in their principle of learning that when more senses are involved in the learning process, as in ELE, there is better learning.

Table 4 shows the performance of the students in terms of problem solving, frequency, qualitative interpretations and percentage of students' scores when exposed to ELR and Non ELE.

Table 4. Level of Problem Solving Performance of students in the Pretest

RANGE	DESCRIPTOR	GROUP				QUALITATIVE INTERPRETATION
		ELE n=46		Non-ELE n=46		
		f	%	f	%	
74% and below	Deficient	46	100%	46	100%	Very Low
75%-79%	Below Average	0	0%	0	0%	Low
80%-85%	Average	0	0%	0	0%	Moderate
86%-89%	Above Average	0	0%	0	0%	High
90%-100%	Exemplary	0	0%	0	0%	Very High
MEAN SCORE:		2.37		2.57		

As revealed in Table 4, in terms of problem solving skills, the forty-six (46) students or 100% of the ELE group belonged to the deficient level. Likewise, 100% of the students in the Non-ELE group fitted also in the deficient level. Hence, results showed that both the ELE and non-ELE groups performed very low in terms of problem solving. Out of the total score which is 20 items, the ELE Group's mean score is only 2.37 while the mean score for the Non-ELE Group is 2.57. The mean scores of both the ELE and the Non-ELE groups indicated a very low problem solving performance.

The results were supported by the study conducted by Trends in International Mathematics and Science Study (TIMSS), which emphasized that Filipino students were found to have difficulties in solving problems. Moreover, the results were reinforced by the study of Silva et.al (2006) which confirmed that one of the factors attributing to Filipino students' difficulty in solving word problems is their reading deficiencies.

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Table 5 presents the performance of the students in terms of problem solving in their posttest, frequency, qualitative interpretation and percentage of students' scores when exposed to ELE and Non ELE.

Table 5. Level of Problem Solving Performance of students in the Posttest

RANGE	DESCRIPTOR	GROUP				QUALITATIVE INTERPRETATION
		ELE n=46		Non-ELE n=46		
		f	%	f	%	
74% and below	Deficient	44	96%	44	96%	Very Low
75%-79%	Below Average	2	4%	2	4%	Low
80%-85%	Average	0	0%	0	0%	Moderate
86%-89%	Above Average	0	0%	0	0%	High
90%-100%	Exemplary	0	0%	0	0%	Very High
MEAN SCORE:		5.91		5.11		

As presented in Table 5, in the ELE group, two (2) or 4% of the students had low performance, forty-four (44) or 96% of the students had very low performance in the posttest. The students in the Non-ELE group had the following performance in their problem solving posttest: two (2) or 4% of the students had low performance, and forty-four (44) or 96% of the students belonged to the deficient level which showed that they have very low performance in the posttest. Thus, it can be seen clearly that majority of the students both in the ELE and Non-ELE group still had very low mathematics performance in terms of problem solving. However, when compared to their pretest results shown in Table 4, it can be observed that there has been a disparity in terms of the number of students in every level of performance.

Moreover, results revealed the difference in the mean scores of the students from the pre-test compared to their posttest results as well as the differences between the mean scores of the students exposed to ELE and those who were exposed to Non-ELE. The mean score of the ELE group is 5.91 while the mean score of the students in the Non-ELE group is 5.11.

The study of Bajan (2005) supports the findings of this study which emphasized that the learning process in terms of problem solving is facilitated well when it is done from concrete to abstract as in Experiential Learning. This is so because problem solving offers opportunity for students to make the connection between the mathematical concepts taught in school and the real world.

Table 6 presents the performance of the students in terms of problem solving in their retention test, frequency, qualitative interpretation and percentage of students' scores when exposed to ELE and Non-ELE.

Table 6. Level of Problem Solving Performance of students in the Retention Test

RANGE	DESCRIPTOR	GROUP				QUALITATIVE INTERPRETATION
		ELE n=46		Non-ELE n=46		
		f	%	f	%	
74% and below	Deficient	43	94%	44	96%	Very Low

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75%-79%	Below Average	1	2%	1	2%	Low
80%-85%	Average	1	2%	1	2%	Moderate
86%-89%	Above Average	1	2%	0	0%	High
90%-100%	Exemplary	0	0%	0	0%	Very High
MEAN SCORE:			22.15		20.87	

It is revealed in Table 6 that in the ELE Group, thirty-six (36) students or 78.3% scored very low, seven (7) students or 15.2% had low performance, two (2) students or 4.3% performed moderately, and one (1) student or 2.2% had high performance. On the other hand, in the Non ELE group, thirty-six (36) or 78.3% of the students had very low performance, four (4) or 8.7% of the students scored low, and three (3) students had moderate performance.

The table also showed the mean scores of the students in the ELE and Non ELE groups with 7.61 and 6.17 respectively. Although the mean scores of the two groups are still low, it can be perceived that there has been a gap between the posttest and pretest.

The study of McCoy (2016) supported this result when she emphasized that students had positive learning experiences from Experiential Learning and that they gained additional knowledge that drew upon their prior knowledge resulting to an increase of their performance.

Comparison of the Mathematics Performance of Grade-7 Learners

Analysis of Covariance (ANCOVA) of Post Achievement Test Results Between Interventions

Table 7 presents the analysis of covariance of posttest results between interventions in the achievement test.

Table 7: Comparison of Students' Performance on the Posttest

GROUP	N	MEAN	SD
ELE	46	19.11	5.70
Non-ELE	46	17.50	4.21
TOTAL	92	18.30	5.05

SOURCE	SS	df	MS	F-Value	Sig.
Group	24.206	1	24.206	1.170	.282
Pre-test	420.794	1	420.794	20.794	.000
Error	1841.163	89	20.687		
Total	33146.000	92			

As can be observed in the table, the pre-test was used as covariate to statistically equate different prognostic variables which may affect analysis. The F-value between groups is 1.170 with a probability of 0.282 (P>.05) indicating that there is no significant difference in the mathematics performance of the students in both groups. Hence, the null hypothesis that the performance of the students exposed to ELE is comparable to those students exposed to non-ELE in terms of posttest has failed to be rejected. In terms of the mean, the dissimilarity can really be

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observed. The mean score of the students in the ELE Group is higher with 19.11, than those in the Non-ELE Group with 17.50.

Results confirm the study of Hamer (2000) which emphasized that experiential learning environment results to better learning in certain areas. He also encouraged that if possible, multiple experiential learning activities be used in order to foster diversity of learners.

Analysis of Covariance (ANCOVA) of Retention Test Results Between Interventions

Table 8: Comparison of Students' Performance in the Retention Test

GROUP	N	MEAN	SD
ELE	46	22.15	6.96
Non-ELE	46	20.87	6.49
TOTAL	92	21.51	6.72

SOURCE	SS	df	MS	F-Value	Sig.
Group	5.958	1	5.958	.160	.690
Pre-test	756.389	1	756.389	20.284	.000
Error	3318.763	89	37.289		
Total	46683.000	92			

It is observed that the F-value between group is equal to .160 with probability value of 0.690 (P>0.05) which indicates that there is no significant difference. Thus, the null hypothesis that the performance of the students exposed to ELE is comparable to those students exposed to non-ELE in terms of retention test has failed to be rejected. This finding implies that students exposed to ELE with mean of 22.15 performed statistically equal to the exposed to non ELE with mean of 20.87.

Moreover, even though there is no significant difference between the two groups, the values of the posttest and retention test would tell that there has been an increase in the mathematics performance of the students compared to their pretest scores.

The results agreed with the study of Villaver (2014) which showed and revealed that Experiential Learning aids attention and retention. Since the students are focused on what they are actually doing, they managed to remember the things imparted to them at a certain period of time.

Comparison of the Problem Solving Skills of Grade-7 Learners

Analysis of Covariance (ANCOVA) of Post Test Results in the Problem Solving Skills Between Interventions

Table 9: Comparison of Students' Problem Solving Skills in the Post Test

GROUP	N	MEAN	SD

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ELE	46	5.91	2.87
Non-ELE	46	5.11	2.50
TOTAL	92	5.51	2.71

SOURCE	SS	df	MS	F-Value	Sig.
Group	19.012	1	19.012	4.310	.041
Pre-test	259.557	1	259.557	58.847	.000
Error	392.551	89	4.411		
Total	3461.000	92			

As shown in the analysis of covariance of the pretest in the problem solving skills to the post test, the F-Value between groups is equal to 4.310 with a probability value of 0.041 (P<0.05). This result indicates that there has been a significant difference between the problem solving skills of the two groups in the posttest. Hence, the null hypothesis that the problem solving skills of the students exposed to ELE is comparable to those who were exposed to Non-ELE in terms of their posttest result, has been rejected. This finding implies that students exposed to ELE with mean of 5.91 performed statistically higher than those exposed to non ELE with mean of 5.11.

The results are supported by the study of Balleck (2006) which emphasized that the use of active learning such as experiential learning in the form if simulations, student presentations and problem solving situations better prepared the students to understand the lesson resulting to better performance. It is also confirmed by other researchers findings on utilization of contemporary teaching strategies which improve performance (Aguanta & Tan, 2018;)

Analysis of Covariance (ANCOVA) of Retention Test Results in the Problem Solving Skills Between Interventions

Table 10 showed the analysis of covariance of the pretest in the problem solving skills to the Retention test. The F-Value between groups is equal to 7.095 with a probability value of 0.009 (P<0.05).

Table 10: Comparison of Students' Problem Solving Skills in the Retention Test

GROUP	N	MEAN	SD
ELE	46	7.61	3.80
Non-ELE	46	6.17	4.15
TOTAL	92	6.89	4.02

SOURCE	SS	df	MS	F-Value	Sig.
Group	59.230	1	59.230	7.095	.009
Pre-test	682.864	1	682.864	81.830	.000
Error	742.701	89	8.345		
Total	5842.000	92			

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This result indicates that there has been a significant difference between the problem solving skills of the two groups in the retention test. Consequently, the null hypothesis that the problem solving skills of the students exposed to ELE is comparable to those who were exposed to Non-ELE in terms of their retention test result, has been rejected. This finding implies that students exposed to ELE with mean of 7.61 performed statistically greater than those exposed to Non-ELE with mean of 6.17.

The study of Moore et.al (2010) supports the findings of this study through the conclusions they have made that experiential learning helped the students relate the concepts presented in class to their everyday live, thereby increasing retention.

Conclusions

Based on the findings of this study, the following conclusions were drawn:

The mathematics performance of students exposed to ELE and Non-ELE is identical in terms of their posttest and retention test. Both groups have very low performance in the pretest, posttest and retention test.

The problem solving performance of the students exposed to ELE and Non-ELE are very low in terms of their pretest, posttest and retention test.

The Mathematics performance of the students exposed to ELE is comparable to the students exposed to Non-ELE. Thus, there has been no significant difference in the performance of the students in both groups.

Lastly, the problem solving performance of the students exposed to ELE is significantly higher compared to those who were exposed to Non ELE. Hence, there has been a significant difference in terms of their problem solving skills.

Recommendations

Based on the summary, findings and conclusions, the following recommendations are given:

The researcher suggests that mathematics teachers might consider trying to conduct diagnostics first before introducing a topic so as to assess what needs to be given emphasis during the discussion. Also, mathematics educators are encouraged to be explorative in terms of teaching strategies suited to be used in a specific topic. ELE, in particular, could be used in appropriate lessons to aid in students' learning process.

Mathematics teachers, administrators and parents are encouraged to include the development of the students' problem solving skills not only in the academe but also in the activities outside the school. Constant exposure to problem solving even in their homes would surely help the students think critically. ELE could enhance the students' skills in solving problems especially because there is emphasis placed in introducing the concrete first before introducing the abstract concepts.

For future researchers, a study related to Experiential Learning and its other subsequent strategies or a combination thereof, may be conducted. It is also suggested that the duration of the use of a certain strategy will be longer so as to determine its effectiveness and reliability.

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