ISSN: 2277-9655
Impact Factor: 4.116

IJESRT

INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY

CORRELATION OF COMPREHENSION SKILLS AND MATHEMATICAL ABILITY IN GEOMETRY OF THE STUDENTS OF NAVAL SCHOOL OF FISHERIES

Patricio P. Laurito, Jr.*, Norma M. Duallo, Elvira S. Pecajas
Naval School of Fisheries, Naval, Biliran, Philippines
Naval State University – Main Campus, Philippines
Naval State University – Main Campus, Philippines

DOI: 10.5281/zenodo.60842

ABSTRACT

This study determined the correlation of Comprehension Skills and Mathematical Ability of High School Students in Geometry of Naval School of Fisheries. The study utilized the descriptive correlation design as the main tool in data gathering technique. The profile of the respondents showed that female student-respondents in Geometry outnumbered the male respondents. Only few of the parent's occupation were government employee and majority belonged to private employee. Most of the respondents spent time in reading last only for 1 hour or less 2 hours. Some did not even read for an hour. The comprehension score of student-respondents were very low and results revealed they really lack comprehension skills for the reason that their average grade in English was very low. Time spent in solving mathematical problem is significant to average grade in Geometry and the comprehension at 0.05 level of significance and is discovered to be highly significant to the mathematical score at 0.01 level of significance. The average grade in Math, Geometry and Comprehension score were highly correlated with each other at 0.01 level of significance.

KEYWORDS: correlation, comprehension skills, mathematical ability, Geometry

INTRODUCTION

Education at the elementary and secondary levels is the country's major program for the delivery of mass and universal education. It is thus expected that development of the basics namely; reading, writing, and arithmetic will enhance learning capabilities that will enable Filipinos to become productive, self reliant, versatile, civic minded, physically fit and consequently totally developed citizens (Collado, 2000).

Mathematics plays a vital role in the lives of man. Every citizen should acquire competence and development of power in quantitative competence and in the use of mathematics procedure in daily living. Since the subject requires knowledge of each step before the next one, beginning arithmetic should be emphasized.

In actual setting, are our learners incapacitated to read, comprehend, write, and compute? If so, what are the possible solutions to the problems especially the area of mathematics as further stressed by Collado (2000).

It is an undeniable fact that some of our learners are incapacitated to read, write, compute, has lack of comprehension skills and some also has no retention ability as observed by the researcher since he is teaching geometry for almost 3 years at the venue of the study.

It cannot be denied that students lack the complete range of comprehension skills such as understanding the printed words, word charts, graphs and even to solve problems. They also lack oral language skills, thinking and reasoning skills, study and reference skills (Collado, 2000 supra).

Our school is not exempted from the preceding scenario. These skills were not mastered by the students due to lack of comprehension skills, some do not have the ability to retain what is being figured out.

It was also lamentable to note that based on the achievement test given by the proponent to his students in geometry, out of 151 total population, 40% of the respondents got low scores in the total items. The students in geometry found difficulty in answering the questions in the selection or problem they read.

Currently, there are some students who do not follow the basic rules of effective problem solving in College Algebra, that majority of the students do not possess the verbal reading comprehension and reasoning abilities that could be the stairway to successful achievement of the goal in life. On the other hand, students do not review the basic operation of mathematics, master their subject matter in the sense that they do not like to work on their assignment as they received poor reading and low score in examination. To solve the problem, it was suggested that there should be extensive reading formula (Gayrama, Vilma P. 2006).

With this situation, the call for the conduct of this study comes with a sense of urgency. In order to measure the comprehension skills and retention ability in mathematics/geometry of the students for the purpose that the respondents for this study must have a thorough knowledge in geometry, so that when they enroll in College/tertiary education, these comprehension skills will be applied that whatever course they may choose, they can really pass the entrance examination. Much more that geometry is one of the important areas of mathematics all over the world. As defined by Webster's dictionary, geometry is a branch of mathematics that treats of space, audits relations, especially as shown in the properties and measurement of points, lines, surfaces and solids.

Corollary to this, whether one is employed, entrepreneur, a plain housewife, a laborer or even just a student, knowledge of mathematics/geometry is indispensable.

Finally, result of this study will augment and enhance comprehension skills and develop retention ability of the students on geometry as well as make teaching-learning effective.

METHODOLOGY

This study utilized the descriptive correlation method. This method was appropriate on this study because it attempted to explain possible problems under study in this particular investigation, which include the correlation of comprehension skills and the mathematical ability in geometry reading comprehension of high school students of Naval School of Fisheries.

The main subject for this study were the 151 (60 males and 91 females) High School Students of Naval School of Fisheries.

The instrument that was used in this study was a teacher made test. The instrument was divided into two parts. It was sequenced or arranged systematically.

Part I, the Respondent's Profile which include their Gender, Parent's Occupation, Parent's Monthly Income, Number of Hours Spent in Reading, Number of Hours Spent in Solving Mathematical Problems, their Average Grade in English, Average Grade in Math, and their Performance in Geometry in three Grading Periods.

Part II was the teacher made test made up of 50 item questions where 25 items Comprehension problems and 25 items Mathematical problems using the basic skills in Geometry. The respondents were the Third Year High School students of Naval School of Fisheries Naval, Biliran who responded to the questionnaire by simply choosing letters a, b, c, and d or choosing the correct answer.

The distribution of questionnaire was the data gathering procedure for this study. But before the distribution of the copies, the researcher secured an approval or sought permission from the Dean of the Graduate School and the College President in order that he was allowed to conduct the study using one period of the class for the students to answer the

instrument that was managed/administered by the researcher. Retrieval of the filled-up questionnaire was after two hours.

The data for Comprehension Skills and Mathematical Ability was obtained from the achievement test given to the respondents.

The responses of the questionnaire was collated and tabulated to arrive at valid and specific categories.

Comprehension scoring. The comprehension skill was measured by assigning one point for every correct answer. Based on the practice score obtained by the students correct answers was categorized into three, namely: High (for those with scores ranging 14 points and above), Moderate (11-13 points), and Low (0-10 points). Figure 2 depicts the Comprehension Performance of the respondents.
Practice was categorized into:

Range	Description
High	14 points and above
Moderate	11 - 13 points
Low	0 – 10 points

Mathematical ability scoring. The mathematical ability was measured by assigning one point for every correct answer. Based on the practice score obtained by the students correct answers was categorized into three, namely: High (for those with scores ranging 11points and above), Moderate (9 - 10 points), and Low (0-8 points). Figure 3 depicts the Mathematical Performance of the respondents.
Practice was categorized into:

Range	Description
High	11 points and above
Moderate	9 - 10 points
Low	0 – 8 points

The statistics of this study were treated and entered into SPSS (Version 10) statistical software. The statistical treatment/procedures and equations is utilized by this study to come up with an optimum scientific data analysis modeled after previous studies which were germane to this study. It also utilized percentage to determine the fraction of the respondents from the total number of respondents who scored the specific rating scale of the item, arithmetic mean to measure the central value of the scored rating scale of the item; arithmetic mean to measure central value of scored rating scale per item; weighted mean to determine the overall central value of the scored rating scale of the entire respondents per item. Chi-square was used in determining significant correlation of variables.

RESULTS AND DISCUSSION

Profile of the Respondents

The profile of the respondents that were considered in this study included Gender, Parent's Occupation, Parent's Monthly Income, Hours Spent in Reading, Hours Spent in Solving Mathematical Problem, Grade in English, Grade in Mathematics, and Performance in Geometry and significant correlations variables. The data are presented in Table 1, the discussion related to Table 1 followed after the table presentation. It must be noted that there were 151 total respondents in this study.

Gender. By comparison, there were 91 females or 60.3 percent and 60 were males or 39 percent. Results revealed that more than two thirds of the students in Geometry were females and only one third were males. This ratio was true across all categories of students. This implied that female respondents were dominant in terms of quantity. Corollary to this, a study can be conducted as to arithmetic reasons why the geometry students were female dominated.

Table 1: Profile of the Respondents

Profile of the Respondents	Frequency (*f*)	Percentage (%)
Gender		
Male	60	39.7

Female	91	60.3
Total	151	100.0
Parent's Occupation		
Private Employee	71	47.0
Gov't. Employee	31	13.9
Self Employed	21	20.5
Unemployed	20	13.2
Others	8	5.3
Total	151	100.0
Parent's Monthly Income		
1,000 – Below	15	9.9
1,000 – 4,999	63	41.7
5,000 – 8,999	34	22.5
9,000 – 12,999	26	17.2
13,000 – 16,999	7	4.6
17,000 – 20,999	4	2.6
21,000 – 24,999	0	0.0
25,000 – 28,999	0	0.0
29,000 – 32,999	1	0.7
33,000 - above	1	0.7
Total	151	100.0

Parent's occupation. As gleaned in Table 1, private employee got the highest number of 71 or 47.0 percent; 31 or 20.5 percent belonged to the self employed; 21 or 13.9 percent; 8 parents or 5.3 percent respectively.

Generally results showed that more than two-fifths were private employees and one-fifth was self-employed and unemployed. This further showed that majority of the parents of the students were not government employees.

Parent's monthly income. As portrayed in Table 1, there existed a big monthly income difference among parent's respondents, based on the ranges provided in the aforementioned table. There were 63 parents whose monthly income ranged from 1,000 - 4,999 or 4.7 percent; 34 or 22.5 percent belonged to 5,000 – 8,999; 26 or 17.2 percent belonged to 13,000 – 16,999; 15 parents belonged to 1,000 below, among them only 7 or 4.6 percent fall under the bracket of 13,000 – 16,999. There were only 4 or 2.6 percent whose income is from 21,000 – 24,999. The same result occurred in income range 29,000 – 32,999 and 33,000 above. Results further revealed that no parent whose monthly income fall under the income bracket of 21,000 – 24,999 and 25,000 – 28,999 respectively. This means that most of the parent's monthly income ranged from 1,000 below.

Hours spent in reading. The greater majority of the student-respondents 60 or 39.7 percent spent their time in reading ranged from 1 hour – 2 hours; 36 or 23.8 percent less than an hour; 30 or 19.9 for 2 hours – less 3 hours; 21 students or 13.9 percent did not read and only 4 or 2.7 percent spent their time in reading fall to 3 hours above. A clear manifestation on the results that students in geometry can hardly comprehend and due to the reason that some of them did not even read and others spent their time in reading less than an hour. The implication here is that the teachers and parents should collaborate and cooperate each other to follow-up their students/children to give ample time in reading so as to develop comprehension skills. As we can see in table 2.

ISSN: 2277-9655
Impact Factor: 4.116

Table 2: Profile of the Respondents in terms of Hours Spent in Reading

Profile of the Respondents	Frequency (*f*)	Percentage (%)
Hours Spent in Reading		
Did not Read	21	13.9
Less than 1 hour	36	23.8
1 hr – 2 hrs	60	39.7
2 hrs – less 3 hrs	30	19.9
3 hrs – Above	4	2.7
Total	151	100.0
Hours Spent in Solving Mathematical Problem		
Did not solve		
Less than an hour	28	18.5
1 hour – less than 2 hours	44	29.1
2 hours – less 3 hours	34	22.5
3 hours - above	26	17.2
	19	12.6
Total	151	100.0
Average Grade in English		
75 – 78	60	39.7
79 – 82	53	35.1
83 – 86	28	18.5
87 – 90	7	4.6
91 – 94	3	2.0
Total	151	100.0
Average Grade in Mathematics		
75 – 78	81	53.6
79 – 82	46	30.5
83 – 86	18	11.9
87 – 90	6	4.0
91 – 94	0	0.0
Total	151	100.0

Hours spent in solving mathematical problem. Out of 151 total respondents 44 or 29.1 percent spent their time in solving mathematical problem; 34 or 22.5 percent less than an hour; 28 students or 18.5 percent did not solve this mathematical problem; 26 or 17.2 percent ranged from 2 hours – less 3 hours; 19 or 12.6 percent spent of their time less 3 hours; 19 or 12.6 percent spent the time in solving mathematical problems shall last 3 hours or above. This was the reason why students cannot develop mathematical ability mainly because majority of them spent only 1 hour or less than an hour. This simply means that students should be self motivated in order to develop their mathematical ability. Perhaps, teachers could also employ a novel strategy in teaching geometry that could enhance their learning.

Average grade in English. Out of 151 student-respondents, 60 or 39.7 percent belongs to 76-78 percent average grade bracket. Following them are 53 students or 35.1 percent who said their average grade are between 79-82 average grades. As compared to the average grade between 83 and 86 there are student-respondents whose grades 87-90 and they totaled 7 or 4.6 percent. Three of them or 2.0 percent revealed they are between 91 and 94 average grade bracket.

As disclosed on the preceding results, majority of the students in Geometry got a very low grade in English. This result implied that English reading instruction in this school still needs improvement in Geometry subject.

Average grade in Math. Most of the student respondents 81 or 53.6 percent disclosed that their average grade is in between 75 and 78. Some 46 or 30.5 percent got an average grade in Math in between 79 and 82.

Student's Comprehension Score

The overall comprehension score is presented in Table 2. It is computed by adding up all the scores of the students in the questionnaire given to them. Their score ranged from 2 to 20, with a mean of 9. As reflected in the table, most of the students attained a score of 6 and 10 which implied that they lack comprehension skills.

Table 3: Student's Comprehension Score

Students Score	Frequency (*f*)	Percentage (%)
2-4	10	6.6
5-7	43	28.5
8-10	59	39.1
11-13	22	14.6
14-16	11	7.3
17-19	5	3.3
20-22	1	0.7
Total	151	100.0

Student's level of comprehension. Based on the score, student's comprehension level was determined based on the midpoint score – in this case it was 12. Those who obtained scores lower than 12 were considered to have low comprehension skills, while those with 12 and above score were classified to have high comprehension skills.

Based on the categorized scores, more than two-fifths (39.1%) of the students fall in the low level category in terms of comprehension skills a little more than one fifths (14.6%) fall in the moderate category. Only few (4.0%) fall in the high level category. This implies that there is a need to develop the comprehension skills of the students. Figure 2 shows the student's comprehension skills.

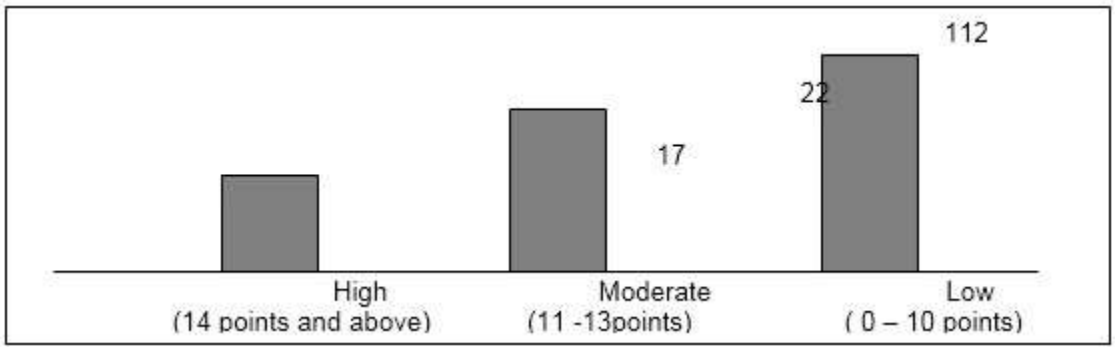

Figure 2. Student's Level of Comprehension Skills

Table 4 Student's Mathematical Score

Students Score	Frequency (*f*)	Percentage (%)
0-2	1	0.7
3-5	8	5.3
6-8	40	26.5
9-11	55	36.4
12-14	31	20.5
15-17	13	8.6
18-20	3	2.0
Total	151	100.0

Student's mathematical score. As gleaned in the aforementioned table, student's Mathematical level was determined based on the midpoint score – in this case, it was 10. Those who obtained scores lower than 9 were considered to have low mathematical ability, while those with 9-11 classified as average and above 11 score was classified to have high mathematical level.

Based on the categorized scores, a little more than one-third (26.5%) of the students fall in the low level category in terms of Mathematical ability, almost two-fifths (36.4%) fall in the moderate category. Less than one-thirds (20.5%) fell in the high level category. This implies the need to develop the mathematical ability of the students, by exposing themselves to more mathematical problems. Figure 3 shows the student's mathematical ability.

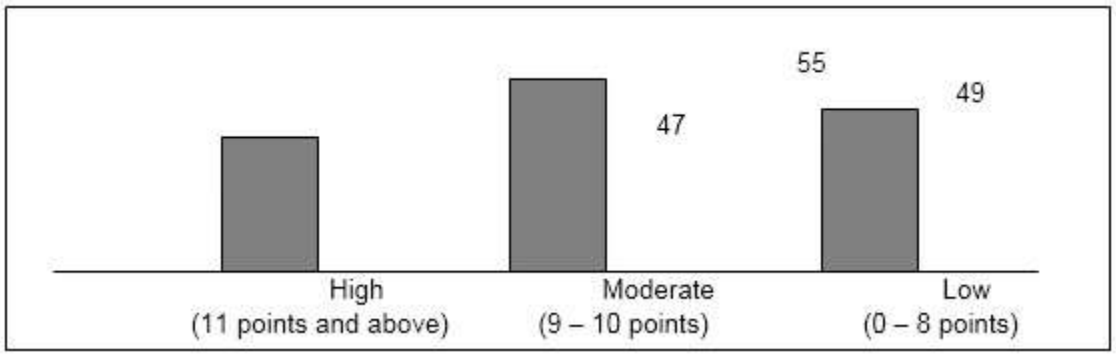

Figure 3. Student's Level of Mathematical Ability

Performance of Students in Geometry

In this study, the performance of the students in Geometry is determined and presented in Table 5. It is ranged from 70-94.

Table 5: Student's Performance in Geometry

Performance in Geometry	Frequency (*f*)	Percentage (%)
70 – 74	9	6.0
75 – 79	89	58.9
80 – 84	42	27.8
85 – 89	8	5.3
90 - 94	3	2.0
Total	151	100.0

When asked about their performance in geometry, 89 of the student-respondents or 58.9 percent revealed that majority of them belonged to 75 and 79 performance bracket. Forty two or 27.8 percent belonged to 80 and 84. Some 9 or 60 percent belonged to the bracket 70 and 74. Likewise, there were eight students or 5.3 respondents that belonged to 80 and 84. Finally, 3 of them or 2.0 percent of the respondents belonged to the highest performance 90 and 94. The data would imply that student's performance in geometry must be enhanced through constant practice by providing more time in solving mathematical problems.

CORRELATION VARIABLES

Chi-square was used to determine the correlations between Respondents' Profile, Comprehension Skills, Mathematical Ability and Parent's Occupation as presented in Table 6.

Table 6: Correlation Matrix for Respondent's Profile, Performance in Geometry, Comprehension Skills, Mathematical Ability and Parent's Occupation

Variables	X^2 Value	df	Probability	Interpretation
Sex and Geometry Grade	49.054	41	.182	Not significant
Sex and Comprehension Skills	11.209	16	.796	Not significant
Sex and Mathematical Ability	17.930	16	.328	Not significant
Parent's Occupation and Geometry Grade	158.244	164	.612	Not significant
Parent's Occupation and Comprehension Skills	78.915	64	.099	Not significant
Parent's Occupation and Mathematical Ability	73.329	64	.199	Not significant

Among the variables tested, it was found out that the Respondent's Profile had nothing to do with the Comprehension Skills and Mathematical Ability, and to the Performance of the Students in Geometry and Parent's occupation as well.

CORRELATION MATRIX ON DIFFERENT LEVELS OF SIGNIFICANCE

Different levels of significance are determined in this study. Pearson correlation was utilized to find out the significant relationships between the Parent's Monthly Income, Time Spent in Solving Problems, Mathematical Ability, Average Grade in English, Average Grade in Math, Average Grade in Geometry and Comprehension Skills. Results of the correlation analysis are presented in Table 7.

Parent's Monthly Income, Number of Hours in Reading and Solving Mathematical Problems, Average Grade in English, Average Grade in Math, Average Grade in Geometry, Comprehension Skills and Mathematical Ability. It can be seen in Table 7 the presentation of double and single asterisks. The double asterisks manifest that the correlation is significant at the 0.01 level (2-tailed). While the single asterisks explains that the correlation is significant at the 0.05 level (2-tailed).

Table 7: Correlation Matrix on Different Levels of Significance

Variables	Ave. Grade in Geometry	Comprehension Skills	Mathematical Ability
Parent's Monthly Income	.004	.156	.044
No. of Hours in Reading	.175*	.019	-.003
Number of Hours Solving Mathematical Problem	-.167*	-.185*	-.233**
English Average Grade	.802**	.420**	.468**
Math Average Grade	.865**	.458**	.519**
Geometry Average Grade	1	.455**	.561**
Comprehension Score	.455**	1	.521**

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Among the variables tested, number of hours spent in Reading and Average grade in Geometry were found significantly related (r = .175, p, .05). As gleaned from the results, number of hours spent in solving mathematical ability was found to be of great impact to the performance of the students in terms of their grades in English, Mathematics, Geometry, as well as to their Comprehension Skills and Mathematical Ability. It also shows that students who were slow in Comprehension Skills and Mathematical Ability spent more time in studying, but students who were above average spent less time in studying.

Findings on the correlations between the parent's monthly income is significantly related to average grade in English, Math, Geometry, comprehension score and mathematical score. Likewise the number of hours in reading is found to be a non-determinant to variables cited above except in the Average grade of Geometry which has a computed value of .175.

As gleaned in the preceding table, the time spent in solving mathematical problem is revealed to be significant to Average Grade in Geometry and the Comprehension Score at 0.05 level of significance and discovered to be highly significant to the mathematical score at 0.08 level of significance. This means that students spent more time in solving mathematical problem are those students that lack mathematical ability which implied that teachers should conduct a remedial teaching or instruction for the development of the mathematical ability with regards to Grade in English it registered a high positive correlation to variables like average grades in math, and geometry, comprehension score, and mathematical score.

Results further revealed that the average grade in math, geometry and comprehension are highly correlated with each other at 0.01 level of significance.

Therefore, the researcher discovers that comprehension skills and mathematical ability of the respondents in geometry revealed to have a great influence with student performance.

CONCLUSION

The female student-respondents in Geometry out numbered the male respondents. Only few of the parent's occupation were government employee and majority belonged to private employee. Most of the parent's monthly income belonged to 1,000 to 4,999 brackets. Most of the respondents spent time in reading last only for 1 hour or less 2 hours. Some did not even read for an hour. The comprehension score of student-respondents were very low and results revealed they really lack comprehension skills for the reason that their average grade in English was very low. The average grade in Math by the respondents fall under 75-78 grade bracket and none of the respondents got the highest grade of 91 to 94.The performance in Geometry revealed that majority of the respondents obtained the rating of 80 to 84.After analyzing the findings, the researcher therefore concluded that the comprehension skills and mathematical ability of the respondents in Geometry revealed to have a great influence to student performance. It was also found out that correlating the variables, they found to be highly significant at 0.05 levels, the average grade in Geometry and the comprehension score.

RECOMMENDATIONS

An in-service training should be conducted to improve the teaching comprehension skills of teaching English and to develop the mathematical ability of teachers teaching Geometry. Collaboration and cooperation among teachers and parents to constantly follow-up their students/children for the improvement of students comprehension skills and mathematical ability. This study be replicated for use by similar secondary school for their benefit. A follow-up study should be conducted to find out the progress of the English Reading and Instruction of the school and to evaluate both comprehension skills and mathematical abilities of the students.

LITERATURE CITED

[1] Albarico, Argentina G. (1983). "The relationship between reading comprehension and the ability to solve mathematical problems of the first year students in experimental rural high school, Visca, Baybay, Leyte". Unpublished Master's Thesis, Cebu State College, Cebu City.

[2] Alcantara, Panfilo C. (1987). "The achievement of pupils in mathematics: Their relationship and reading comprehension skills". Unpublished Master's Thesis, Leyte Institute of Technology, Tacloban City.
[3] Besoyo, Loreta M. (1998). "Factors associated with the academic performance in mathematics I in marine engineering and marine transportation students in state colleges in region VIII: Measures for upgrading", Unpublished Dissertation. University of the Visayas
[4] Collado, Jean L.(2000). Improving pupils performance in reading comprehension. The Modern Teacher.
[5] Ebio, Jr. F. M. (1997). " Factors affecting the national secondary achievement test results of students in national and vocational secondary schools in the province of Biliran in relation to student's achievement: Implications to learning skills". Unpublished Master's Thesis, Naval Institute of Technology, Naval, Biliran
[6] Gayas, Catalina (1991). "The time spent in doing homework assignment: Its effect on the attitude and mathematics performance among average freshmen students of Leyte National High School". Unpublished Master's Thesis, Leyte State College, Tacloban City.
[7] Gayrama, Vilma P. (2006) "Relationship between selected abilities and solving problems in college algebra among students in Biliran National Agricultural College: Basis for improved instruction", Unpublished Master's Thesis, Naval Institute of Technology.
[8] Guillermo, Florenzo L.(1998). A handbook of readings.
[9] Gonzaga, Ester M. (1997). "Difficulties and problems reflected in the performance of grade III pupils in mathematics in public elementary schools in Tacloban Division: Proposal for improvement. Unpublished Master's Thesis, University of the Visayas.
[10] Julian, Erlinda S. (2000). Improving reading comprehension, The Modern Teacher, Vol. XLIX, No. 6.
[11] Justo, Jean A. (1999). Teachers must teach mathematics in a significant way. The Modern Teacher
[12] Lizardo, Fidela S. (1999) Reading as a tool subject. The Modern Teacher, 1999 p. 229.
[13] Momongan, Paz (1993). " A study through the use of teacher-made test of arithmetic difficulties in the intermediate grade in the thirteen elementary schools in the city of abu, 1990-1991". Unpublished Master's Thesis, University of San Carlos, Cebu City
[14] Moursund, D. (2007). Developmental theory. Retrieved on July 29, 2010 from http://www.voregon.edul-moursund\math\developmental theory.htm
[15] Orbeso, Charita T. (2010). " Fast learner pupil's mental processing skills in solving word mathematical problems in Cabucgayan district Biliran" Unpublished Master's Thesis.
[16] Pascual, Jean (2000) Developing comprehension skills among elementary pupils at Licab Nueva Ecija. The Modern Teacher Vol. XLIX No. 6
[17] Ravalo, Elpidio R. (1993). NEAT – The First Step to Quality Elementary Education, The Philippine Journal of Education Vol LXXII
[18] Saladaga, Thelma (2001). "Problem solving and computational errors in basic mathematics among freshmen college education students: Inputs for mathematical clinic". Unpublished Master's Thesis, Leyte State College
[19] Saludo, S. R. (2002). "Factors affecting the division elementary achievement test (DEAT) of grade VI pupils in Mathematics in selected elementary schools in Naval South district". Unpublished Master's Thesis. Naval Institute of Technology, Naval, Biliran
[20] Talamayan, Aida B. (2000). Graphic organizers enhance reading comprehension at Pardo Elementary School, Tuguegarao West District Tuguegarao, Cagayan. The Modern Teacher
[21] Treacy, J.P. (2000) "*The relationship of reading skills to the ability to solve problems"*. Journal of Educational Research, Vol 38, 2000.
[22] Ulit, et al. (2000). Teaching the elementary school subject
[23] Valle, Nolina N. (2005). Center for early childhood and special education. The Modern Teacher Vol. L No. 647