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EMOTIONAL INTELLIGENCE: IT'S RELATIONSHIP TO MATHEMATICS ACHIEVEMENT OF SENIOR HIGH SCHOOL

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Abstract

The main purpose of this study was to determine the relationship between emotional intelligence and Mathematics achievement of the senior high school students of Don Mariano Marcos National High School. Respondents were Grade 11 students with a total number of one hundred sixteen (116) students. This study applied descriptive Correlational design. The Bar-On Emotional Quotient Inventory: Short (BarOn EQ-i: S) was used to determine emotional intelligence of the respondents and Mathematics achievement was measured by their third quarter grade in Statistics and Probability. The study revealed that the emotional intelligence of the respondents was average, which indicates that they have an adequate emotional and social capacity. Furthermore, their emotional intelligence varies when grouped according to Strand. On the other hand, negligible difference was observed when they were grouped in terms of their socio-economic status, age and sex. There exist a weak relationship between emotional intelligence and Mathematics achievement of the respondents. Lastly, the study revealed that Mathematics achievement is affected by emotional intelligence of the respondents. Senior high school students should be abreast of their emotional intelligence they possess and as much as possible, so they can find ways and means to increase their emotional intelligence. In addition, curriculum developers must include emotional intelligence in the competencies to be developed in the senior high school curriculum.

Keywords: Emotional Intelligence, Relationship, Mathematics, Achievement, SHS.

INTRODUCTION

Education plays a pivotal role in producing professional in the academe and in the actual scenario of living. The desire of any educational system is to produce students who are sufficiently trained to contribute meaningfully to the development of the system and the society in general. Among all academic subjects studied at school Mathematics is one of the most challenging subjects. According to the study of Festus (2012) students perform poorly in most Mathematics examinations. This simple fact explains why researchers and scholars, all over the world, continue to do research into ways of improving Mathematics achievement.

Mathematics achievement is simply defined as the level of attainment in any or all Mathematics skills, usually estimated by performance on the test is being viewed by the used of different teaching methods and strategies used by the teachers in teaching their everyday lessons.

Many researchers hunt for the magic bullet that enables teachers to assess student needs and make relevant connections in order to better motivate and instruct students within their classrooms. However, literatures on teacher effectiveness tend to focus narrowly on cognitive outcomes, with insufficient attention placed upon broader domains associated with student morale and social well-being, and the establishment of positive relationships with colleagues and parents Campbell et al., (2003). But Festus (2012) concluded in his study that apart from cognitive factors, emotional intelligence of students also affects their academic achievement. He also recommended that there is need to include emotional intelligence in the schools curriculum. As cited also in the study of Shahba (2013) states that "In the ever changing world of today, having a high IQ does not guarantee peoples success in individual and social life and every individual is required to be equipped with appropriate coping skills and success factors such as emotional intelligence in order to be able to establish relationship with his surrounding environment and to more effectively solve his day-to-day life problems Sharon et al., (1984). Therefore intelligence and success are not viewed the same way they were before.

There are some factors that can cause a student either to have high or low performance. Among that dysfunction personality is part of the composition of the formation of emotional intelligence which is the reason for students' low grade performance (Ebinagbome and Nizam, 2016). The student that has dysfunctional characteristic such as lack of confidence, possess low self- esteem, lack of self- control and have a high anxiety are said to have a low emotional intelligence, and this will affect their academic performance. Thus, students who possess high emotional intelligence would perform better academically.

Many researchers conducted study about emotional intelligence correlated to different areas. Many of them proved that emotional intelligence is fundamental to effective learning. According to Goleman (1995) Intelligence Quotient alone is no more a measure of success, it accounts for 20% and the rest 80% goes for emotional, social intelligence and luck. These statements have attracted attention of educators and educational policy makers. However, some researchers have shown a weak relationship between emotional intelligence and academic performance.

In the Philippines, not much attention has been focused on exploring Emotional Intelligence in the school system and its influence in the teaching of Mathematics. Many teachers, schools and students have little idea of emotional intelligence and its effects on learning. This is evidence by the lack of literature on this subject in Philippines. This gap exists in the midst of poor performance of students in school especially in Mathematics. The deteriorating performances of Filipino students in the national and international Mathematics tests for the last decade have become a major challenge to Philippine education. Imum et.al. (2013).

Looking particularly into the National Achievement Test (NAT) results, DepEd singled out low reading competence as a primary factor for the failure of public school students in Mathematics. Along this line, appropriate measures were undertaken to improve students' performance in Mathematics. Some of these measures included implementing various reading programs of the DepEd, training of Mathematics teachers, and strengthening the use of English language as a primary medium of instruction in all public institutions of learning at the secondary level. Despite all these government efforts to improve the quality of Mathematics performance the problem on these area still persist.

Don Mariano Marcos National High School is one of the big schools in Echague, Isabela. It is well-known for being competitive among other schools. The school joined several contests one of which is the Metrobank – MTAP- DepEd Math Challenge, for the past year the school didn't qualified for the next round of the said competition. Moreover, the National Achievement Test conducted by the Department of Education, the school got a low score in Mathematics for the past two years. In school year 2013-2014 the academic rating of the school in Mathematics is 50.97% and in school year 2014-2015 the academic rating in the same subject decreased to 42.19%. The foregoing data shows that the Mathematics achievements of the students are seen poorly. This is giving grave concern to educators, parents, students, and the school administrators. There are many factors that can affect the Mathematics achievement of the students, but the researcher observed that many students do not know how to manage their emotions and moods specially when taking exams or in solving Mathematics and personal problems.

These reasons motivated the researcher to conduct this study to determine the emotional intelligence level of students and the extent of the relationship between the emotional intelligence of students and their Mathematics achievement.

METHODS

This chapter presents and discusses the methodology, the research design, research instrument, respondents of the study, data gathering procedure and the statistical treatment that were used in the analysis and interpretation of the data gathered.

Research Design

The study utilized the descriptive-Correlational research design. This design was used since the study dealt with the emotional intelligence of the respondents which was gathered through the questionnaire. Moreover, the study was Correlational since it investigated the assumption of the relationship of the emotional intelligence of the respondents to their Mathematics achievement.

Likewise, documentary analysis was employed since the researcher looked into the Mathematics achievement of the respondents as reflected in their report card for SY 2017-2018.

Locale of the Study

This study was conducted in one of the largest schools in the Queentown of Isabela (Echague), the Don Mariano Marcos National High School at Ipil, Echague, Isabela for the school year 2017-2018. The school was founded on 1965 and situated 150 meters away from the National Highway.

Respondents of the Study

The study involved 116 Grade 11 students from four sections of Don Mariano Marcos National High School, School year 2017-2018.

Distribution of the Respondents of the Study

Section	Number of Respondents
Aphrodite	28
Athena	29
Ceres	32
Zeus	27
Total	116

Total enumeration was utilized. Thus, a total of 116 Grade 11 students served as respondents of the study.

Research Instrument

In gathering the data needed in the study, the researcher made use the survey questionnaire and the report card (Form 138).

The survey questionnaire on emotional intelligence was adapted from the BarOn EQ-i: S as cited from the study of Rust, 2014 consisting of five components which can be subdivided in the following sub-sections: intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood.

The report card was used to gather the fourth quarter grade of the respondents in Statistics and Probability to determine their Mathematics achievement.

Data Gathering Procedure

In pursuing this study, the following steps were undertaken:

1. The researcher secured permission from the Principal of Don Mariano Marcos National High School to conduct the study.

2. A letter of request to float the questionnaire was forwarded to the respective teachers of the Grade 11.

3. The survey questionnaire was personally floated by the researcher to assure 100% retrieval.

4. The data were tallied, tabulated and organized by the researcher and will be subjected to appropriate statistical tools.

Analysis of Data

In analyzing the data obtained through the questionnaire, the following statistical tools were used: Frequency and Percentage. This was used to obtain the profile of the respondents in terms of sex, strand, age and socio-economic factor. Mean. This was used to determine the Mathematics achievement and the emotional intelligence of the respondents along the following components: intrapersonal skills, interpersonal skills, adaptability, stress management and general mood.

To further interpret the Mathematics achievement of the respondents, the following scale was used:

Mean Grade	Qualitative Description
90 – 100	Outstanding
85 – 89	Very Satisfactory
80 – 84	Satisfactory
75 – 79	Fairly Satisfactory
Below 75	Did not meet expectation

The given scale below was used to interpret the students' emotional intelligence.

Score	Qualitative Interpretation
130+	Markedly High
120 – 129	Very High
110 – 119	High
90 – 109	Average
80 – 89	Low
70 – 79	Very Low
Under 70	Markedly Low

T-test and ANOVA. This was used to determine the significant difference on the students' emotional intelligence when they are grouped according to profile variables.

Pearson r Correlation Coefficient. This was used to determine significant relationship between emotional intelligence and Mathematics achievement of the respondents.

The scale below used to interpret the relationship between the students' emotional intelligence and Mathematics achievement was based on Evans (1996) suggested descriptive level of correlation.

R	Interpretation
0.0 - 0.19	Very weak Correlation
0.20 - 0.39	Weak Correlation
0.40 - 0.59	Moderate Correlation
0.60 - 0.79	Strong Correlation
0.80 - 1.0	Very Strong Correlation

RESULTS

The data and findings in this study are presented, analyzed, and interpreted in this chapter.

Profile of the Respondents

Sex

Table 1.1 shows the frequency and percentage distribution of the respondents according to Sex. As gleaned from the table, most of them were female with 55.17% while male had 44.83%.

Table 1.1. Frequency and percentage distribution of the respondents according to sex

Sex	Frequency	Percentage
Male	52	44.83
Female	64	55.17
Total	**116**	**100**

Strand

Table 1.2 shows the frequency and percentage of the respondents according to strand. Majority of the respondents are enrolled in General Academic Strand (GAS) with 52.59%; seconded by Science and Technology, Engineering and Mathematics (STEM) with 24.14%; and Accountancy, Business and Management (ABM) with 23.28%.

Table 1.2. Frequency and percentage distribution of the respondents according to strand

Strand	Frequency	Percentage
ABM	27	23.28
GAS	61	52.59
STEM	28	24.14
Total	**116**	**100**

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Ages

Table 1.3 presents frequency and percentage distribution of the respondents according to age. Most of them ages from 17 -18 years old with 44.83%, followed by 15 – 16 years old with 41.38%. However, there are 16 students or 13.79% are in the age bracket of 19 -20. Furthermore, the table shows that the over- all mean age of the respondents is 17 years old.

Table 1.3. Frequency and percentage distribution of the respondents according to age

Age	Frequency	Percentage
15-16	48	41.38
17-18	52	44.83
19-20	16	13.79
Total	**116**	**100**
Mean = 17	**SD = 1.75**	

Socio-economic Status

Table 1.4 shows the frequency and percentage distribution of the respondents according to socio – economic status. As shown in the table, majority of repondents claimed that their parents' monthly income are ₱5, 000 and with 45. 69%; and least of them claimed that their parents' monthly income are about ₱15, 001 – ₱20, 000 with 6.90%.

Table 1.4. Frequency and percentage distribution of the respondents according to socio – economic status

Monthly Income of Parent	Frequency	Percentage
₱20,001 and Above	12	10.34
₱15, 001- ₱20,000	8	6.90
₱10.001-₱15,000	23	19.83
₱5,001-₱10,000	20	17.24
₱5, 000 and below	53	45.69
Total	**116**	**100**
Mean = ₱8, 448. 28	**SD = ₱6,264.82**	

Emotional Intelligence of the Respondents

Table 2.1 shows the frequency and percentage distribution of the respondents' emotional intelligence based on intrapersonal skills. It is being pictured out that majority or 62.93% of the respondents scored 80 – 89 which indicates low emotional intelligence based on their intrapersonal skills. Moreover, 1 or 0.86% of the respondents got a score 120 – 129 and under 70 which means very high and markedly

low, respectively. Furthermore, the over – all mean of the respondents' emotional intelligence based on intrapersonal skills is 87.74 which can be interpreted as Low.

Table 2.1. Frequency and percentage distribution of the respondents' emotional intelligence based on intrapersonal skills

Score	Qualitative Interpretation	Frequency	Percentage
120 – 129	Very High	1	0.86
90 – 109	Average	33	28.45
80 – 89	Low	73	62.93
70 – 79	Very Low	8	6.90
Under 70	Markedly Low	1	0.86
	Total	**116**	**100**
Mean = 87.74		**SD = 7.37**	

Table 2.2 shows the frequency and percentage distribution of the respondents' emotional intelligence based on interpersonal skills. Most of the respondents or 37.93% got a score of 90–109 which means that the respondents have an Average emotional intelligence based on interpersonal skills. However, 67 or 57.76% of the respondents got a score below average emotional intelligence. Moreover, the over – all mean of the respondents emotional intelligence based on intrapersonal skills is 85.80 which indicates low emotional intelligence.

Table 2.2. Frequency and percentage distribution of the respondents' emotional intelligence based on interpersonal skills

Score	Qualitative Interpretation	Frequency	Percentage
120 – 129	Very High	1	0.86
110 – 119	High	4	3.45
90 – 109	Average	44	37.93
80 – 89	Low	22	18.97
70 – 79	Very Low	26	22.41
Under 70	Markedly Low	19	16.38
	Total	**116**	**100**
Mean = 85.80	**SD = 16.52**		

Table 2.3 shows the frequency and percentage distribution of the respondents' emotional intelligence based on stress management. As gleaned from the table, majority or 53.31% of the respondents obtained average emotional intelligence. Furthermore, only 1 or 0.86% of the respondents obtained a score of fewer than 70 which can be interpreted as markedly low. Hence, the emotional intelligence of the respondents on stress management registered a mean of 93.76 which indicates average.

Table 2.3. Frequency and percentage distribution of the respondents' emotional intelligence based on stress management

Score	Qualitative Interpretation	Frequency	Percentage
120 – 129	Very High	3	2.59
110 – 119	High	5	4.31
90 – 109	Average	63	54.31
80 – 89	Low	36	31.03
70 – 79	Very Low	8	6.90
Under 70	Markedly Low	1	0.86
	Total	**116**	**100**
Mean = 93.76	**SD = 10.89**		

Table 2.4 shows the frequency and percentage distribution of the respondents' emotional intelligence based on adaptability. As seen from the table, 53 or 45. 69% of the respondents had an average emotional intelligence. It ca be seen also that 2 or 1.72% got a score of 120 – 129 which shows very high emotional intelligence. Furthermore, the over- all mean of the respondents' emotional intelligence on adaptability is average with a corresponding mean of 91.63.

Table 2.4. Frequency and percentage distribution of the respondents' emotional intelligence based on adaptability

Score	Qualitative Interpretation	Frequency	Percentage
120 – 129	Very High	2	1.72
110 – 119	High	13	11.21
90 – 109	Average	53	45.69
80 – 89	Low	30	25.86
70 – 79	Very Low	7	6.03
Under 70	Markedly Low	11	9.48
	Total	**116**	**100**
Mean = 91.63	**SD = 13.88**		

Table 2.5 reveals the frequency and percentage distribution of the respondents' emotional intelligence based on general mood. Majority of the respondents' got a score of 90 -109 which indicates average. However, there are 3 repondents who got a score of 120 – 129 which shows very high emotional intelligence. It can be seen also in the table that the over- all mean of the respondents' emotional intelligence based on general mood is 93. 95 which can be interpreted as average.

International Journal of Physics & Mathematics
Vol. 3, No. 1, 2018, pp. 30-47
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Table 2.5. Frequency and percentage distribution of the respondents' emotional intelligence based on general mood

Score	Qualitative Interpretation	Frequency	Percentage
120 – 129	Very High	3	2.59
110 – 119	High	4	3.45
90 – 109	Average	69	59.48
80 – 89	Low	25	21.55
70 – 79	Very Low	15	12.93
	Total	**116**	**100**
Mean = 93.95	**SD = 11.21**		

Table 2.6 shows the frequency and percentage distribution of the respondents' over –all emotional intelligence. As gleaned from the table, 55.17% or most of respondents had average emotional intelligence while 0.86% of the respondents obtained high emotional intelligence. Moreover, the emotional intelligence of the students is average with an over-all mean of 93.58.

Table 2.6. Frequency and percentage distribution of the respondents' over-all emotional intelligence

Score	Qualitative Interpretation	Frequency	Percentage
110 – 119	High	1	0.86
90 – 109	Average	64	55.17
80 – 89	Low	46	39.66
70 – 79	Very Low	5	4.31
	Total	**116**	**100**
Mean = 90. 53	**SD = 6.28**		

Comparison on the emotional intelligence of the respondents when grouped according to their profile variables

Sex

Table 3. 1 shows the comparison of the emotional intelligence of the respondents when grouped according to sex. In terms of sex, the mean scores of male and female students are 89.48 and 91.39, respectively. This indicates that the emotional intelligence of female students is higher than that of the male respondents. This findings is parallel to the result of the study of Katyal & Awasthi (2005) that girls were found to have higher emotional intelligence than that of boys. Similarly, Bracket et al. (2003) also found out that women scored significantly higher in emotional intelligence than men.

Furthermore, the table also shows that there is no significant difference between male and female. This findings affirms the study of Stein (2000) who found out that women and men are equally as intelligent emotionally, but they're strong in different areas. However, this is in contrast with the findings of the study of Hassan et al. (2009) showed that there were significant differences for emotional intelligence level among all students between both genders.

Table 3.1. Comparison on the emotional intelligence of the respondents when grouped according to sex

	Mean	SD	df	t-stat	P-value	Decision
Male	89.48	7.06	115.00	2.23	0.14	Accept Ho
Female	91.39	6.67				

*significant level at α=0.05

Strand

Table 3.2 shows the comparison of the emotional intelligence of the respondents when grouped according to strand. The computed F value of 9.61 with a probability value of 0.00 reveals that there is a significant difference on the emotional intelligence of the respondents when grouped according to their strand. This implies that the respondents in each strand have varied emotional intelligence due to the nature of the strand.

Moreover, post–hoc test showed that between GAS and STEM and STEM and ABM revealed a significant difference on their emotional intelligence as revealed in their probability value 0.00 and 0.04, respectively. However, ABM and GAS did not revealed a significant different on their emotional intelligence.

Table 3.2. Comparison on the emotional intelligence of the respondents when grouped according to strand

	Sum of Squares	df	Mean Square	F	Sig.	Decision
Between Groups	791.97	2.00	395.98	9.61	0.00	Reject Ho
Within Groups	4656.89	113.00	41.21			
Total	5448.86	115.00				

Table 3.2a. Post- hoc analysis on the emotional intelligence of the respondents when grouped according to strand

STRAND		Mean Difference	Std. Error	p-value	Decision
ABM	GAS	2.80	1.48	0.06	Do not reject Ho
GAS	STEM	-6.37	1.47	0.00	Reject Ho
STEM	ABM	3.57	1.73	0.04	Reject Ho

*significant level at the α = 0.05.

International Journal of Physics & Mathematics
Vol. 3, No. 1, 2018, pp. 30-47
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ISSN: 2545-4196

Age

Table 3.3 shows the comparison of the emotional intelligence of the respondents when grouped according to age. As shown in the table, the F value of 1.75 with a p-value of 0.18 reveals that there is a no significant difference on the emotional intelligence when grouped according to their age. It implies that the emotional intelligence of the respondents in various age bracket did not vary. This finding contradicts with the findings of Chen et. al (2015) that there were differential age effects in different components of emotional intelligence.

Table 3.3. Comparison on the emotional intelligence of the respondents when grouped according to age

	Sum of Squares	df	Mean Square	F	Sig.	Decision
Between Groups	163.61	2	81.81	1.75	0.18	Do not reject Ho
Within Groups	5285.25	113	46.77			
Total	5448.86	115				

*significant level at α=0.05

Socio-economic Status

Table 3. 4 shows the comparison of the emotional intelligence of the respondents when grouped according to socio-economic stataus obtained F computed value of 1.10 with a p- value of 0.36 which means that there is no significant difference on the emotional intelligence when grouped according to socio-economic status. It indicates the socio-economic status in life of the respondents doesn't differ in their emotional intelligence. This findings contradicts the study of Davis (2012) who found out that socio-economic status (SES) made a difference in the outcomes of either the component scales or the Emotional intelligence score of respondents.

Table 3.4. Comparison on the emotional intelligence of the respondents when grouped according to socio-economic status

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	207.90	4.00	51.97	1.10	0.36
Within Groups	5240.97	111.00	47.22		
Total	5448.86	115.00			

*significant level at α=0.05

Mathematics Achievement of the Respondents

The frequency and percentage distribution of the respondents' relative to their Mathematics Achievement is shown in Table 4. It is being pictured out that majority or 30.17% of the respondents obtained very satisfactory Mathematics achievement. Nevertheless, it can also be noted that 30 or 25.86% of the respondents were fairly satisfactory. Moreover, the Mathematics achievement of the students in Statistics and

Probability is satisfactory with an over-all mean of 83.91. This implies that the students had developed the fundamental knowledge and skills and core understandings and, with little guidance of teacher and/or with some assistance from peers, can transfer these understandings through authentic performance tasks.

Table 4. Frequency and percentage distribution of the respondents' achievements in Statistics and Probability.

Grading Scale	Qualitative Description	Frequency	Percentage
90 – 100	Outstanding	34	29.31
85 – 89	Very Satisfactory	35	30.17
80 – 84	Satisfactory	17	14.66
75 – 79	Fairly Satisfactory	30	25.86
Total		116	100
Mean = 83.91	**SD = 6.62**		

Relationship between Emotional Intelligence and Mathematics Achievement

The table reveals that the variables have a positive weak correlation. However, the computed Pearson-r value of 0.40 with the computed p-value of 0.00 indicates that there is a significant relationship between the emotional intelligence and the Mathematics achievement of the Grade 11students. This findings indicates that Mathematics Achievement is being affected by Emotional Intelligence which was also proven by Oommen (2015) that there is a significant correlation between emotional intelligence and academic achievement of secondary students in Mathematics. Morover, this finding is consistent with the conclusion of the researches conducted by Shahinzande and Ahmadi (2015) that there is a meaningful and straight relationship between students' emotional intelligence and Mathematics success. In general, when emotional intelligence is high, Mathematics achievement is high.

Table 5. Correlation between the emotional intelligence and Mathematics achievement of the respondents

Variable	r(x, y)	p- value	Decision
Emotional Intelligence and Mathematics Achievement	0.40	0.00*	Reject Ho

*significant level at α=0.05

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the findings drawn from the conduct of the study, the conclusions arrived at, and the recommendations that were purely based on the conclusions made.

Summary

The study aimed to determine the relationship of emotional intelligence and Mathematics achievement of Senior High school students of Don Mariano Marcos National High School, School Year 2017–2018. Based on the result of the study, the findings were drawn: Out of one hundred sixteen (116) respondents' majority of them are female, belongs to General Academic Strand, their average age is 17 years old and most of them claimed that their parents monthly income are below 5, 000 with 45. 69%. For the emotional intelligence of the respondents, the emotional intelligence components which are low levels are intrapersonal and interpersonal, with a mean of 87.74 and 85.80, respectively. The remaining emotional intelligence components which are adaptability, stress management and general mood are of average levels. The overall mean emotional intelligence is 90.58 which reveal average. In comparison on the emotional intelligence of the respondents when grouped according to their profile variables, strand is the only variable that has significant difference. On the other hand, negligible differences are observed when they were grouped in terms of their socio-economic status, sex and age. In addition, the Mathematics Achievement over-all mean is 83.91, which indicates satisfactory. Furthermore, the emotional intelligence and Mathematics achievement of the respondents shows significant correlation but weak relationship.

Conclusions

In light of the above findings the following conclusions were drawn: The senior high school students have the ability to use their emotions appropriately and help them solve problems in Mathematics that they encounter in their daily life. However, intrapersonal and interpersonal components are considered lacking for students where they have low ability to recognize and understand emotions and to express feelings nondestructively and low ability to understand how others deal and relate with them cooperatively. Various variables such as sex, age, and socio-economic status did not differ in terms of emotional intelligence. However, the strand of each student did not differ in their emotional intelligence. The senior high school students had satisfactory developed the fundamental knowledge and core understanding in Statistics and Probability. Hence, they should be afforded with rich opportunity to improve their Mathematics achievement. Mathematics Achievement was proven affected by respondents' emotional intelligence.

Recommendations

Based on the findings of the study and conclusions drawn, the recommendations are as follows.

1. Teachers should provide classroom activities that will enhance the intrapersonal and interpersonal of the students.
2. Mathematics teacher must consider the emotional intelligence aspect of the students in developing instructional materials in Mathematics to improve the Mathematics achievement of the students.

3. Administrators should send or encourage Mathematics teachers to attend seminar on emotional intelligence to orient them on how to deal with learners of varied emotional intelligence.
4. Curriculum developer should include emotional intelligence in the competencies of the curriculum of senior high school students to develop a learner equipped with the 21st century skills.
5. Future researchers are recommended to extend their scope by including other variables and to innovate in qualifying and quantifying the phenomena underlying emotional intelligence.

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BIBLIOGRAPHY

A. Books

1. Bar-On, R (2006), "The Bar-On Models of Emotional-Social Intelligence" (ESI),' Psicothema 18, suppl., pp. 13-25
2. Bar-On, R. (1997b). The Emotional quotient inventory (EQ- i): Technical manual. Toronto, Canada: Multi-Health Systems, Inc
3. Engler, Barbara (1991). Personality Theories. Houghton Mifflin Company, (ISBN: 0-395-36907 – X), United States of America, pp. 325-326
4. Gardner, H. (1983). Frames of mind: the theory of multiple intelligences. New York: Basic Books.
5. Gignac, Gilles E. Ph.D (2010), "Genos Emotional Intelligence Inventory Technical Manual (2nd Edition) pp.10,13
6. Ramos, Jun-Jun R. (2018), Survey Synchronize on Selected English Word among Diamantinians: An Assessment, (ISSN: 2545-4128) Angloamericanae Journal.
7. Ramos, Jun-Jun R. (2017), Study Habits of Senior High School. (ISSN: 2545-4128) Angloamericanae Journal.
8. Team FME (2014), "Measuring Emotional Intelligence" www.free-management-ebooks.com
9. Zimbardo, P.G, Johnson, R.L, and Hamilton, V.M. (2014), Psychology: Core Concepts, Seventh Edition. Pearson Education Limited (ISBN 978-129-2021-24-9), Tower One, Singapore, pp. 440-447

B. Unpublished Studies

1. Addatu, Jona A. (2007), "The Psycology of Emotional Intelligence", Cagayan State University.
2. Arefnasab. Z, Zare. H, Babamahmoodi. A (2012), "Emotional Intelligence and Problem Solving Strategy: A Comparative Study Based on "Tower of Hanoi" Test"
3. Caliguiran, Marites (2017), "The Relationship between Attitude and Academic Performance of Students in General Mathematics", Cagayan State University
4. Cunanan, V. (2013), "Home Learning Environment and Mathematics Achievement Of Grade VII Students", Cauayan City National High School
5. Davis, A.J (2012), "Examining Gender and Socio-Economic Status on the Emotional Intelligence of Early Adolescents", Philadelphia College of Osteopathic Medicine
6. Dr. Madiha Hassan Mohamed Abd El-Rahman, "The Effects of Writing-to-Learn Strategy on the Mathematics Achievement of Preparatory Stage Pupils in Egypt", Faculty of Education, Cairo University (Beni-Swief Branch)
7. Fariselli, L., Ghini, M., Freedman, J. (2006), "Age and Emotional Intelligence"
8. Mendoza, J.B. and Leano, F.G, (2005), "Parental Support: Its Relationships to the student performance in Mathematics", Cagayan State University, Andrews Campus
9. Pantino,F.O, Quimbo,M.T, and Pantino, J.H, (2015), "Effects of Creative Writing Activities on Student Achievement in Mathematics"
10. Rust, D.A (2014), "Relationship Between The Emotional Intelligence Of Teachers And Student Academic Achievement", *University of Kentucky*
11. Sibal, Harlene (2016), " The personal types and Emotional Quotient of Filipino and Foreign Students of St. Paul Uniersity Philippines
12. Sibal, J. and Lagrata, J. (2013), "Students' Mathematics achievement and Numerical and Verbal Abilities of second year college major in Mathematics", Isabela State University
13. Shipley, N.L, Jackson,M.J, and Segrest, S.L "The effects of emotional intelligence, age, work experience, and academic performance", University of South Florida St. Petersburg
14. Sibal, Harlene (2016), "The personality Types and Emotional Quotient of Filipino and Foreign Students of St. Paul University Philippines", Cagayan State University
15. Soriano, K.A, et.al (2014), "Leadership Styles and Emotional Quotient as Correlates of Conflict Resolution Style of Local Government Officials in Tuguegarao City", Cagayan State University, Carig Campus
16. Sucab, J.R, and Tejada, N.A (2013),"Performance and Perception of the third Year Mathematics Majors in Solid Geometry Using and Non-Using of Calculator", Isabela State University.

C. Published Studies

1. Adigwe, J.C (2015), "Emotional Intelligence And Problem- Solving Achievement Of Chemistry Students", (*ISSN: 2277-0011)* Department of Science Education, University of Nigeria Nsukka
2. Ahmad, Nabi and Razia, B. (2017), "Emotional Intelligence and Socio-economic Status as the determinants of Academic achievement among Adolescents", Aligarh Muslim University, Aligarh, U.P, India
3. Dr. Oommen, Nimmi Maria (2015), "Emotional Intelligence and Academic Achievement of Secondary School Students in Mathematics", (ISSN (Online): 2347-3878) Kerala, India
4. Dinglasan, B.H and Patenna A.D, (2013), "Students' Performance on Mathematics Deparmental examination: Basis for Math intervention program", (ISSN: 2278 - 859X) Batangas City, Philippines
5. Enu, J., Agyman, O.K and Nkum, D. (2015), "Factors Influencing Students' Mathematics Performance in Some Selected Colleges of Education in Ghana", Department of Mathematics and ICT, College of Education, Komenda-Ghana.
6. Erasmus, Petro (2013), "Relationship between Emotional Intelligence, Study Orientation in Maths and Maths Achievement of Middle Adolescents Boys and Girls", (ISSN: 2289 -3970)
7. Festus, A.B (2012), "The relationship between Emotional Intelligence And Academic Achievement of Senior Secondary School Students in The Federal Capital Territory, Abuja", (ISSN 2222-1375(Paper); (ISSN 2222-288X (Online) National Mathematics Centre, P.M.B 118, Abuja, Nigeria
8. Geban, Omer and Yuksel, Mehmet (2014), "The Relationship between Emotional Intelligence Leves and Acdemic Achievement", (ISSN: 1309-2707) Ankara, Turkey
9. Heidarie, Mohammad (2014), "Assessment relationship between problem solving skill and emotional intelligence in nursing students", (ISSN: 0449-0576) Shahrekord University of Medical Sciences, Shahrekord, IR Iran
10. Hess, James D. & Bacigalupo, Arnold C. (2014), "Enhancing Management Problem-Solving Processes through the Application of Emotional Intelligence Skills", (ISSN: 2333-6048 (Print), 2333-6056 (Online))
11. Imam, O.A, Mastura, M.A, and Jamil, H (2013), "Correlation between Reading Comprehension Skills and Students' Performance in Mathematics", (ISSN: 2252-8822) Datu Siang National High School (Phil) School of Educational Studies, Universiti Sains Malaysia – Main Campus.
12. Nwadinigwe, I.P and Azuka-Obieke,U. (2012), "The Impact of Emotional Intelligence on Academic Achievement of Senior Secondary School Students in Lagos, Nigeria", (ISSN: 2141-6990) Department of Educational Foundations, University of Lagos, Nigeria

13. Ogundokun, M.O and Adeyemo, D.A. (2010), "Emotional Intelligence and Academic Achievement: The moderating influence of Age, Intrinsic, Extrinsic Motivation", (ISSN# TX 6-342-323) University of Ibadan, Nigeria
14. Ramos, Jun-Jun R. (2018), Critical Thinking Skills among Senior High School Students and its effect in their Academic Performance", (ISSN: 2545-420X) International Journal of Social Sciences & Humanities.
15. Ramos, Jun-Jun R. (2018), Ilokano Funny Phrases and Axioms as a Form of Entertainment, (ISSN: 2545-420X) International Journal of Social Sciences & Humanities.
16. Sabahattin, Deniz (2013), "The Relationship between emotional intelligence and problem solving skills in prospective Teachers", (ISSN: 1990-3839) Mugla Sıtkı Kocman University, Educational Faculty, Department of Educational Sciences, Mugla, Turkey.
17. Shahba, Samaneh and Allahvirdiyani, Khalil (2013), "Comparative Study of Problem-solving and Emotional Intelligence on Decreasing of Third Grade Girl Students' Aggression of the Rajaee Guidance School of Tehran" , (ISSN 1877-0428) Tehran, Iran
18. Sharei, M., Kazemi,F., and Jafari, M. (2012), "Investigation the effect of emotional intelligence skills and metacognitive capabilities on student's mathematical problem solving", (ISSN: 2141-5161) Iranshahr, Iran

Webpages

https://economictimes.indiatimes.com/definition/emotional-intelligence
http://www.pacific.edu/Documents/library/acrobat/EI%20Lit%20Review%202007%20Final.pdf
http://shodhganga.inflibnet.ac.in/bitstream/10603/57369/8/08_chapter%202.pdf
http://shodhganga.inflibnet.ac.in/bitstream/10603/3995/10/10_chapter%202.pdf
https://www.pinoymoneytalk.com/sec-abcde-percentage-population/
http://www.statstutor.ac.uk/resources/uploaded/pearsons.pdf