

PREDICTORS OF MATHEMATICS PERFORMANCE OF THE GRADE VI PUPILS OF CAUAYAN NORTHEAST DISTRICT: BASIS FOR INTERVENTION PROGRAM

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Abstract: This is a descriptive-correlational study. Statistical analyses using frequency and tally percent, mean, standard deviation, Pearson Moment Coefficient of Correlation (r), and ANOVA were used to analyze the data. Findings indicate that pupils have positive attitude towards the subject and majority have high self-confidence and high success orientation but low confidence in defense orientation. Among so many factors affecting the performance of pupils in Mathematics, result revealed that only the Mathematics teacher was found to be significant predictor. Thus, this study proved and strengthens the long-time belief that pupils' success in learning greatly depends on the teacher.

INTRODUCTION

Mathematics is an important part of people's daily lives and that nobody can do away with it. People need Mathematics in counting, computing sales, gains and measuring areas and volume, and many more (Mariano, 2004). The need to enhance students' mathematical skills and at the same time develop in them a positive attitude toward the subject is a dire academic need (Salandanan, 2000; Kurucz, 2014; Mawirat, 2000).

The development of positive attitude can be explained by Attribution and Vector Topological Theories. The Attribution Theory (Weiner, 1979, 1980, 1984 in Gines, 1998) attempts to describe or explain the world and to determine the cause of an event or behavior. According to Weiner (1984), the essential factor affecting attributions are ability, effort, task difficulty, and luck. The basic principle of attribution theory as it applies to motivation is that a person's own perceptions or attributions for success or failure determine the amount of effort the person will expend on that activity in the future. The theory predicts the behavior of students depending on their responses.

There are factors that affect the transfer of learning such as attitudes of learners toward the subject matter, mental ability, similarities between subject matter, motivation and effort making capacity, method of teaching, facilities and supervision (Ganal & Guiab, 2014, del Castillo, 2010; Aguinaldo, 2001). Ineffective teaching is the cause of low achievement level. Mathematics teachers have inadequate training to use the available materials and for some reasons the school administrators are reluctant to send the teachers to attend in-service education.

Moreover, the Vector Topological Theory of Lewin (in Gines, 1998) emphasized the explanation of human behavior in terms of the forces and tensions that move them to action which is largely determined by the environment and the people they are in association with. The learning environment includes the teachers whom the pupils interact with. How the teachers affect the pupils can be observed or manifested through the latter's attitude and behavior.

Based on the concepts mentioned, the study on predictors of Mathematics performance of pupils was conceived.

THE STUDY

The mathematics performance of Filipino students in national achievement as well as the international achievement has been consistently low and the situation in local levels is similar (Aguinaldo, 2001; Ayap, 2007; Balbalosa, 2010). The result of National Achievement Test Grade VI in 2012-2013 reveals that Cauayan Northeast District had an average percentage score of 66.22 and in 2013 – 2014, an MPS of 75.54. This indicates that there was a minimal increased in Mathematics performance and that the pupils' performances were still in the "moving towards mastery" level.

The descriptive - correlational method (OonSeng Tan, Parsons Richard D., Hinson Stephanie Lewis, Sardo-Brown Deborah, 2003) was used to determine the relationships between and among the selected variables considered in relation to the pupils' academic performance. There are thirteen (13) schools of Cauayan Northeast

District, one (1) primary school and twelve (12) complete elementary composed of monograde and multigrade classes. To identify the schools to be included in the study the researcher used the cluster sampling, grouping them into monograde and multigrade. There were two (2) multigrade schools and four (4) monograde schools. The fishbowl technique was used to identify the respondents the 117 respondents- 105 Grade VI pupils and 12 Mathematics teachers.

FINDINGS

“I feel a define positive reaction to Mathematics because it is enjoyable.” Most of the indicators of the pupils’ attitudes toward Mathematics were rated as “Positive Attitude” as shown by the overall mean 3. 16. This shows that Mathematics is considered by the pupils as interesting which contradicts the results of their achievement tests in the subject. The pupils’ general average was described as “Approaching Proficient” meaning there is a need to increase their performance to level “Advanced”..

Table 1: Relationship between the Variables and Mathematics Performance of Pupils

| | | Grade | Impression to Teacher | Attitude | Success Orientation | Self-Confidence | Defense Orientation | Math Perception |
|-------|---|-------|-----------------------|----------|---------------------|-----------------|---------------------|-----------------|
| Grade | R | 1 | 0.29 | 0.23 | 0.31 | 0.39 | 0.03 | 0.27 |
| | P | | 0.00 | 0.02 | 0.00 | 0.00 | 0.75 | 0.06 |
| | N | 105 | 105 | 105 | 105 | 105 | 105 | 105 |

Table shows there is a slight significant relationship between impression to Mathematics teacher, attitude, success orientation and self-confidence to Mathematics performance of the pupils while defense orientation and the overall Math self-perception show no significant relationship.

Table 2: Summary Table on Predictors of Mathematics Performance

| Model | Unstandardized | | Standardized | t | Sig. | Correlations | | | Collinearity Statistics | |
|-----------------------------|----------------|------------|--------------|-------|------|--------------|---------|------|-------------------------|------|
| | B | Std. Error | Beta | | | Zero-order | Partial | Part | Tolerance | VIF |
| 1 (Constant) | 65.76 | 3.81 | | 17.26 | .00 | | | | | |
| Attitude | .67 | .72 | .09 | .93 | .36 | .23 | .09 | .08 | .85 | 1.18 |
| Success orientation | .96 | .56 | .19 | 1.71 | .09 | .31 | .17 | .15 | .60 | 1.66 |
| Self-confidence | 1.18 | .66 | .21 | 1.80 | .07 | .39 | .18 | .16 | .59 | 1.69 |
| Defense orientation | -.25 | .39 | -.06 | -.65 | .52 | -.03 | -.03 | -.06 | .84 | 1.19 |
| Impressions to Math Teacher | 1.72 | .67 | .24 | 2.58 | .01 | .29 | .29 | .23 | .90 | 1.11 |

The table above reveals that only the predictor “*impression to Math teacher*” was found to be significant. Since the only predictor found to be significant is the impression to Mathematics teacher, there is a need to craft a

possible intervention program that would probably help teachers increase or enhance pupils' impression on them (Du, Wei and Hilario, Robesa R. , 2006) and enable pupils increase academic performance in Mathematics.

Thus, appropriate teacher-student relationship is an important means for preventing discipline problem and fostering professional development, which contributes to the general improvement of learning environment of the pupils (Garcia and Reyes, 2014). This is the reason why there is a need to strengthen the impression of Mathematics teacher through this proposed program.

The Proposed Intervention Program

The proposed intervention program focuses on the different ways on how to develop positive impression to Math teachers. It will foster good rapport and promote positive pupil-teacher relationship (Tiffin, 2007). This intervention program will help teacher to establish a shared environment that teacher must not be overly possessive or need to complete control of the children and environment (Salazar, 2001). It allows pupils both responsibility and freedom within the classroom community and gradually contributes for a relationship of closeness and acceptance (Salguet, 2000; Villanueva, 2009).

The program also aims to provide professional development to enhance teaching pedagogies, methods of instruction and disciplinary knowledge in Mathematics. The activities are attending trainings, seminar-workshop on strategies in teaching Mathematics; attend conflict and stress management seminar, active involvement in Mathematics education, benchmarking and mentoring, and quarterly school-based meetings or conferences.

CONCLUSIONS

Pupils possess positive attitude towards Mathematics despite low performance in the subject. The predictors' success orientation and self-confidence have a very minimal positive relationship on their performance while defense orientation is not related at all. Mathematics teacher is the only predictor found to be significantly related to the Mathematics performance of the pupils. There is a need to improve impression on Mathematics teachers. Therefore an intervention program must be implemented to address the unique needs of pupils to ensure greater proficiency in Mathematics.

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