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Correlation among the General Weighted Average, Mental Ability and Battery Test Scores of First Year Teacher Education Students

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Abstract

The researchers used a cross-sectional descriptive study design. This study attempted to establish the correlation that exists among the general weighted averages, mental ability test scores and the battery test scores of all the first year teacher education students at the Bulacan State University Bustos Campus.The researchers relied heavily on questionnaire as the major instruments in gathering information from the respondents. In order to gauge the mental ability of the respondents, the MD5 Mental Ability Test which is a quick and easy test of mental ability which involves finding missing letters, numbers or words was used. Furthermore, the faculty of instruction of the College of Education of the Bulacan State University Bustos Campus A.Y. 2015-2016 came up with a 100-item questionnaire that consists of questions ranging from general education subjects and this was utilized as the battery test. The general weighted average scores were collated from the Certificate of Grades that was issued by the university registrar to each bona fide teacher education student in the university.

Index terms— general weighted average, mental ability, battery test and college students.

1 Introduction

t has been professed, time and again, that it must be incumbent upon the government to ensure the efficiency, productivity and relevance among Philippine educational institutions. Conversely, the quality of our graduates will always depend on the quality of our schools. And with the current on-going Author ?: Bulacan State University Philippines. e-mails: chalynrj@yahoo.com.ph, marilynsevilladl@yahoo.com restructuring of the country's educational system through the Kto12 program, it is hoped to achieve a better and clear program focus where resources are allocated rationally and plans are realistic and attainable.

The Educational Commission Report in 1991 stressed that the educational system in the country is insignificant and irrelevant to the individual and social needs. This is predicated by the fact that there is an inadequacy of trained and effective teachers, plus the issue of mediocre, limited and underdeveloped graduate programs for teachers.

The same study concluded that the strengthening of pre-service teacher education and provision of incentives to make the rewards of teaching commensurate to its importance as a career is quite critical and imperative. Sen. Edgardo J. Angara (2013) once said that since our educational system is not comparable with the more developed countries, our graduates are sometimes unable to become competitive. We must therefore strive to improve this system so that we may overcome these obstacles to national development.

The seeming poor performance of basic education graduates in national administered examinations is nothing short of dismal and unremarkable. As Roces (2006) puts it, quality assurance lost face and started its slow descent during the Marcos era. Widespread graft and corruption took its toll heavily on the nation's economy.

He furthers that because of the failing economy and lack of job opportunities then, majority of highly-educated workforce, including teachers, were left with no choice but to search for greener pastures away from the academe, and what's even worse is, found their feet in the shores of other countries. Regretfully, some teachers just settled for meager jobs that are way below their college training and qualifications, yet higher paying that the roles they left in the classrooms.

Hence, the College of Education of the Bulacan State University Bustos Campus has heightened its efforts to boost the ante in screening the teacher aspirants. In its pursuit to raise the bar of excellence among its graduates and its fervent desire to improve the teacher education graduates' performance in the licensure examination for teachers, it has decided to administer a battery examination among first year students. Those who will fail in the said examination will be advised to take another course, lest they will be forcibly dropped from its rolls.

Furthermore, in order to lift the academic standards of the institution more than the ordinary, a mental ability test has also been given to the same students. This mental ability test is designed to assess a person's ability to use logic and reasoning to solve cryptic problems, under a tight time pressure. It looks at the ability to deduce relationships and to apply the rules governing them, which are commonly considered to be fundamental components of "intelligence". With such database in place, a concrete and clear picture can be deduced on the kind of performance a teacher aspirant would make in the end of the pre-service training.

Verily, this study is a spin-off of the study of **??**alenzuela et.al. (2016), which also investigated the association among the battery test, metal ability and academic performance of college students. However, the aforementioned study utilized a small sample size which could have defeated and compromised the statistical efficiency of the process. Hence, this study remediated such deficiency by using the entire universe or a total enumeration of the population of the first year teacher education students enrolled at the Bulacan State University Bustos Campus for the academic year 2015-2016.

2 II.

3 Statement of the Problem

The general problem of this study is: Is there a significant correlation that exists among the general weighted averages, mental ability test scores and battery test scores of the entire freshmen teacher education students at the Bulacan State University Bustos Campus A.Y. 2015-2016?

Specifically, this study sought answers to the following questions: 1. What are the general weighted averages of the respondents? 2. What are the levels of mental ability of the respondents? 3. What are the battery test scores of the respondents? III.

4 Significance of the Study

The College of Education of the Bulacan State University Bustos Campus has heightened its desire to produce quality graduates that will not only be able to meet the national standards, but also be able to measure up to their foreign counterparts. In its pursuit to raise the bar of excellence among its graduates, it has decided to administer a battery examination among its students. Those who will fail in the said examination will be advised to take another course. Furthermore, in order to lift the academic standards of the institution more than the ordinary, a mental ability test has also been given to the same students.

Hence this study is deemed significant to school administrators, psychologists and curriculum planners as this will give them an idea of the kind of correlation that exists among the general weighted average, mental ability and battery examination scores of freshmen teacher education students. The results of this study will guide them on the retro-fitting adjustments that need to be implemented in order to produce quality teachers. A clear and established correlation among the variables will serve as a significant predictor on the quality of graduates as resonated from the program of the institution. Specifically, this study will reveal if the mental ability and scores in the battery examination administered to the students have a significant effect on their academic performance.

This study may also serve for benchmarking purposes, source of inspiration, documentation, pattern and catharsis to other researchers and writers out there who are in a quandary of pursuing a similar study. The writers strongly suggest to budding researchers to pursue a correlational study with a different angle or twists, involving the same or dissimilar variables, or even pair them with other variables such as gender, age, motivation, religion, socio-economic status, and the like.

IV.

5 Conceptual Framework

The significant correlation that exists among the general weighted average, mental ability and battery examination scores of freshman teacher education students at the Bulacan State University Bustos Campus A.Y. 2015-2016 can be conceptualized by using the paradigm shown in Figure 1. V.

6 Dependent Variables

Independent Variable

7 Methods and Techniques of the Study

The researchers used the cross-sectional descriptive study design. This study attempted to establish the perceived correlation among the general weighted average, mental ability and battery examination scores of all freshman teacher education students at the Bulacan State University Bustos Campus A.Y. 2015-2016. According to Best, as cited by **??**alderon and Gonzales (1993), a descriptive study describes and interprets a manifestation of perceived relationship or association. It is concerned with conditions of relationships that exist, practices that prevail.

To be able to establish the correlation among the aforementioned variables, the researchers requested from the Guidance Office of the institution the scores of the mental ability of the respondents. Permission was sought from the Area Chair of the College of Education to allow the researchers access to the scores from the battery test of the respondents, together with their general weighted average. The results were analyzed by a statistician to see the correlation among the variables.

8 VI.

9 Research Instruments

The researchers relied heavily on questionnaire as the major instruments in gathering information from the respondents. In order to gauge the mental ability of the respondents, this study requested from the Guidance Office the results of the MD5 Mental Ability Test which is a quick and easy test of mental ability which involves finding missing letters, numbers or words. This test, according to the PTS Insight, is designed to assess a person's ability to use logic and reasoning to solve cryptic problems, under a tight time pressure. The MD5 test also looks at the ability to deduce relationships and to apply the rules governing them, which are commonly considered to be fundamental components of "intelligence".

Furthermore, the faculty of instruction of the College of Education of the Bulacan State University Bustos Campus A.Y. 2015-2016 came up with a 100item questionnaire that consists of questions ranging from general education subjects. The general weighted average scores were collated from the Certificate of Grades that was issued by the university registrar to each bona fide teacher education student.

10 VII.

11 Data Gathering Procedure

To be able to establish the correlation among the aforementioned variables, the researchers personally requested from the Guidance Office of the institution the scores of the mental ability of the respondents. Permission was sought from the Area Chair of the College of Education to allow the researchers access to the scores from the battery test of the respondents, together with their general weighted average as reflected in the Certificates of Grades that were issued by the university registrar.

12 VIII. Data Processing and Statistical Treatment

Data analysis was limited to the use of the following statistical tools: frequency count percentage, weighted mean and standard deviation to find the descriptive measures of the independent and dependent variables in this study. The data was further subjected to Pearson Product Moment Correlation Coefficient analysis in order to establish the correlation and thus measure the correlation among the general weighted average, mental ability and battery test scores of freshman teacher education students at the Bulacan State University Bustos Campus A.Y. 2015-2016.

13 IX.

14 Results and Discussion

The population of this study included five hundred twelve, the entire universe or a complete enumeration of all the freshman students enrolled at the College of Education of the Bulacan State University Bustos Campus A.Y. 2015-2016. Table 1 shows the population of the study. It can be gleaned from the table that the entire universe or total enumeration of the population was used as respondents in this study. There were one hundred thirty two males and three hundred eighty females who were enrolled during the second semester of the specified course in the said academic year. This only confirms the fact that there are more females than males who pursue a career in teaching (Dela Pena, 2011).

Table 2 shows the distribution of respondents according to the general weighted average. It can be gleaned from the table that more than half of the respondents or sixty-one point ninety one percent performed satisfactorily in their academic performance. Furthermore, only six point eighty-four percent were outstanding in their academic performance. Unfortunately, two point thirty-four percent of the total number of respondents were rated poorly in their academic performance in college.

Table 3 shows the distribution of respondents according to mental ability. It can be gleaned from the table that majority of the respondents or forty-three point fifty five of the entire population have an average level of mental ability. Second place in the distribution in terms of number belongs to the "below average level" pegged

at thirty-six point seventy two percent. None among the first year students in the college registered as "superior" in mental ability. Unfortunately, the table also shows that ninety-three respondents who would like to be future educators have a poor mental ability. Table 4 shows the distribution according to battery examination scores. It can be gleaned from the table that almost half or two hundred twenty of the total number of respondents performed fairly in the battery examination administered by the college. Close to this figure, or one hundred eighty nine of the total number of respondents failed in the said examination. Only six point sixty four percent of the respondents are rated "very good" in the examination and none came up with an excellent score.

Figure 2 depicts the histograms of the general weighted averages, mental ability test scores and battery test scores of the respondents respectively. The figure depicts the distribution of the respondents illustrated in histograms for general weighted averages, battery test scores and mental ability test scores of the respondents respectively. Table **??** shows the descriptive statistics that gives a thorough analysis of the data in this study.

15 Table 5 : Descriptive Statistics of the Variables in the Study

Where: mean = mean, sd = standard deviation, cv = coefficient of variation, N = sample size, min = minimum value, max = maximum value It can be gleaned from the table that the mean score in the mental ability test of the respondents is 20.92 with a standard deviation of 6.62 and a coefficient of variation at 47.91. The mean score in the battery test is 55.88 with a standard deviation of 8.82 and a coefficient of variation at 83.76. The mean score in the general weighted averages is 1.94 with a standard deviation of .22 and a coefficient of variation at 0.06.

Figure 3 shows the scatter plots of the variables in the study. The first graph in the figure shows the scatter plot of the general weighted averages and the mental ability test scores. The second graph shows the scatter plot of the general weighted averages and the scores in the battery examination. And the third graph shows the scatter plot of the mental ability test scores and the scores in the battery test.

Table 6 shows the pairwise correlation of the variables in the study. Likewise, the general weighted averages of the respondents and their scores in the mental test are negatively correlated (p value = -0.3967). This means that if the scores in the general weighted average go up, the scores in the mental ability test will be poor or viseversa. This means further that if the academic performance of the teacher education student is remarkable, his score in the mental ability test will not be as such. On the other hand, the table shows that there is a low positive correlation that exists between the battery test scores and the mental ability test scores of the respondents (p value = 0.3977). This means that if the scores of the respondents in the battery test are high, their scores in the mental ability will also be high, and vise-versa.

In the similar study conducted by **??**alenzuela et.al.(2016), the battery test scores and the mental ability test scores of the respondents are positively correlated (p value = 0.0191). This means that if the scores in the battery test go high, the scores in the mental ability test will also go high, or vise-versa. It was also established in this study that the general weighted averages of the respondents and their scores in the battery test are negatively correlated (p value = <0.0001).This means that if the scores in the general weighted average go up, the scores in the battery test will go down or vise-versa. This means further that if the academic performance of the teacher education student is remarkable, his score in the battery test will not be as such.

De Castro, E.L. et al (2015) reveals the relationship of academic performance with Mental Ability, Work Behavior and Trait Survey of Freshman Computer Engineering students. Results showed that there is a significant positive relationship between the academic performance of the first year computer engineering students and the following variables: numerical computation, verbal ability, perseverance, affective and purposive traits as denoted by the computed p-values which are less than the 0.05 level of significance. Therefore, the null hypothesis is rejected on these variables. This signifies that those students with high academic performance also obtained high ratings on the mentioned characteristics while those students with low academic performance obtained the least which contradicts to the result of this study.

However, Bux (2014) explained in her paper entitled, "The Relationship between the Cognitive Test and the Academic Performance of Students in an MBA Program", she mentions that a theoretical relationship was established between the variables in her study. The empirical relationship revealed statistically significant relationships between the cognitive tests and the academic performance of the students which is contrary or opposite of what was established in the result of this study.

On the other hand, the study of Dzulkifli and Alias (2012) entitled "Students of Low Academic Achievement -Their Personality, Mental Abilities and Academic Performance: How Counsellor Can Help?", posits that the correlational analysis and independent Sample T-test revealed that personality traits of the low and high achieving students are the same except for assertiveness. In addition there exist significant relationships between personality traits and cognitive abilities only in low achievers.

In the study of Luuk and Luuk (2010) of the academic performance of 134 students from Tartu Aviation College (Tartu, Estonia) where they monitored during their first four study semesters of the respondents stay in the school, they were able to establish that moderate statistically significant correlations existed found between several performance criteria and admission test results. The findings of this study contradicts the findings of the present study.

X.

16 Conclusion

On the basis of the significant findings of this study, the following conclusions are drawn: 1. Majority of the respondents have a "satisfactory" academic performance. 2. Majority of the respondents have an "average" mental ability. 3. Majority of the respondents faired "fair" in the battery test. 4. The battery test scores and the mental ability test scores of the respondents are positively correlated. 5. The general weighted averages of the respondents and their scores in the battery test are negatively correlated. 6. The general weighted averages of the respondents and their mental ability test scores are negatively correlated.

XI.

17 Recommendations

1. Further studies can be pursued using the same model but a different set of respondents. 2. The researchers strongly feel that remediation should be put in place in order to increase the levels of general weighted averages, mental ability and battery test scores.

18 Counselling and Testing Center may invite low

performing students for mini seminars or talks especially designed for their specific needs. [1] [2]

1

Figure 1: Figure 1 :

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[2] Correlation among the General Weighted Average, Mental Ability and Battery Test Scores of First Year Teacher Education Students

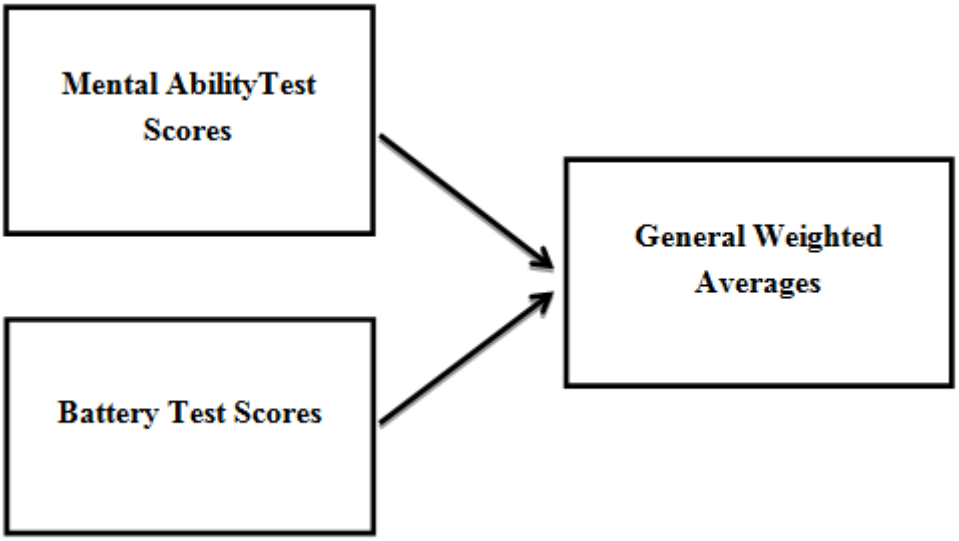

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Figure 2: Figure 2 :

stats	GWA	Battery Test	Mental Ability Test
N	512	512	512
mean	1.949516	55.88395	20.92327
SD	0.236991	8.86128292	6.6180503
N	512	512	512
Cv	0.063222	83.7616522	47.591256
min	1.213	29	5
max	2.583	85	39

3

Figure 3: Figure 3 :

	GWA	Battery Test	Mental Ability
GWA	1.0000		
Battery Test	-0.6002 0.0000	1.0000	
MentalAbility	-0.3967 0.0000	0.3977 0.0000	1.0000

5

Figure 4: Bibliography 5 .

1

Gender	Frequency	%
Male	132	25.78
Female	380	74.22
Total	n= 512	100

Figure 5: Table 1 :

2

Limit	Description	Frequency	%
1.0-1.51	Outstanding	35	6.84
2.0-1.50	Very Satisfactory	148	28.91
3.0-2.01	Satisfactory	317	61.91
4.0-3.01	Needs Improvement	-	-
5.0-4.01	Poor	12	2.34
		Total 512	100

Figure 6: Table 2 :

3

Remark	Frequency	%
Superior	-	-
Above Average	8	1.56
Average	223	43.55
Below Average	188	36.72
Poor	93	18.16
	Total 512	100

Figure 7: Table 3 :

4

Limit	Description	Frequency	%
100-90	Excellent	-	-
89-85	Very Good	34	6.64
84-80	Good	69	13.48
79-75	Fair	220	42.97
74-below	Failed	189	36.91
		Total 512	100

Figure 8: Table 4 :

6

Figure 9: Table 6 :

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