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# THE INFLUENCE OF SCHOOL ABILITY MEASURES ON ACCOUNTING COMPETENCIES: A PATH ANALYSIS

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## ABSTRACT

This study aimed to assess the level of school ability measures and accounting competencies of fourth year BS in Accounting Technology students of UM Digos College. It also investigates which of the two school ability measures such as verbal and non-verbal significantly influence to accounting competencies. Quantitative correlational research was used, and primary data were gathered through the use of Accounting Competency Test questionnaire distributed to 32 fourth year BSAT students for the school year 2015-2016 who had took the Otis-Lennon School Ability Test at UMDC Guidance and Testing Center. Frequency and relative frequency, mean, statistical correlation, and multivariate regression analysis were used as statistical method to address the problem in the study. The findings revealed that the fourth year respondents are overall low in terms of school ability with a below average of verbal ability while average in terms of non-verbal ability. They were also found to be competent enough in accounting. Results also showed that among the school ability measures, only verbal ability has significant influence on accounting competencies. Furthermore, the two dimensions such as verbal comprehension and reasoning were significant predictors. On the other hand, the non-verbal ability, in terms of figural reasoning and quantitative reasoning, is a non-significant predictor of accounting competencies.

Keywords: *school ability, verbal ability, non-verbal ability, Accounting competency, path analysis*

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## INTRODUCTION

To pursue accounting, there are needs for proficiencies especially in the areas of English and Mathematics. Based on the previous study of Buba and Umar (2015), the students, who had took and passed English and Mathematics, have good academic performance in Financial Accounting and it was found out that there is significant distinction for being proficient of both aforementioned subjects over to those deficient. This is because English language has something to do in understanding, and interpretation of the

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financial information. Meanwhile, the Mathematics proficiency will execute those understanding into problem solving. Furthermore, according to Ballada and Ballada (2012), intellectual is one of the core competencies of accountants in which this carry out problems that need critical thinking. In this core competency, both English and Mathematics proficiencies are still highly involved like in the analysis of transaction, in the evaluation of which applicable principles to be used in problem solving, and how the problem will be solved based on understanding.

In the United States of America, after the Sarbanes-Oxley Act of 2002 signed into law and enacted, accounting degree holders are in higher need in the job industry. The Act was signed by President George W. Bush with co-sponsors Paul Sarbanes, and Michael G. Oxley, in the legislative body. This Act is also called as "Public Company Accounting Reform and Investor Protection Act," and "Corporate and Auditing Accountability and Responsibility Act," in the senate, and in the house, respectively. The enactment of which was the response with the issue including those corporations in U.S such as the Enron and Worldcom. The case was about the issuance of fraudulent audited financial statements. The SOX attempts to protect investors since President Franklin Delano Roosevelt's Securities Act following the great depression. Because of those, academes need to produce a numerous competent accountants to aid the increase on the demand of accounting professionals. According to American Institute of Certified Public Accountants (2011) as mentioned in the study of Lee, et al. (2014) that the public practice of accounting and auditing services or the CPA firms had raised their new hires in the year 2000 to 2010. It fluctuated from 20,951 to 33,321.

In the Philippines, with regards to professional arrangements, there were substantial flaws in the CPA licensure standards and quality assurance. The accounting education standards and training procedures may also need to be developed (Athukorala & Reid, 2003). Moreover, the committee on Accounting Terminology of the American Institute of Certified Public Accountants defines accounting as an art of recording, classifying, and summarizing in a significant manner and in terms of money, transactions and events which are in part at least of a financial character and interpreting the result thereof.

Scholastic studies have tried to determine the intellectual ability required for students' success in accountancy. Lee et al. (2014) cited that generally, mathematical skills were determined to be the fundamental scholastic knowledge required for successful accounting students. Meanwhile, verbal ability is another intellectual measurement highly interrelated with mathematical ability. However, not all students who desire to pursue accounting are equipped with both Mathematics and English proficiencies. Because of this, there is a need to investigate about the two proficiencies as separate variables in order to find out which of the two significantly predicts more and will have a better performance in accounting. Thus, the study investigated the verbal and non-verbal abilities in relation to

accounting competencies among the fourth year BSAT students in UM Digos College. Specifically, this study sought to answer the following questions: (1) the level of school ability measures among the 4<sup>th</sup> year BSAT students in UMDC in terms of verbal ability (verbal comprehension and verbal reasoning) and non-verbal ability (figural reasoning and quantitative reasoning); (2) the level of Accounting Competencies among the 4<sup>th</sup> year BSAT students in UMDC; (3) if the two school abilities significantly influence accounting competencies.

## **THEORY BASED**

There were studies examined about the correlation with language proficiency in accounting education and performance of accounting students. According to Ayers and Peters (1977) affirmed that academic success can be positively influenced by the English language proficiency. Meanwhile, it was seconded by Saville-Troike (1984) who stated that language is one of the most important factors in academic performance.

However, according to Tella (2007), who stated in contradiction with the above arguments that there is only one subject that pervades all learning areas, and it is Mathematics. This provokes critical thinking among students and predicts the achievement of students academically. He further supported that mathematics is important in sciences, technology, arts, and business. According to Zandi and Shahabi (2012), it is clear that mathematical skills are influential over the accounting discipline outperformance. He also added that the higher the mathematical knowledge, the better the accounting performance.

Most accounting educators readily acknowledge that mathematical ability has a significant impact on student performance in accounting courses (Yunker, Yunker & Krull, 2009). According to them, the discipline of accounting is concerned with accurate numerical measurement of precisely defined operational concepts. It follows that practitioners of accounting should be comfortable with mathematics in general and numbers in particular. Most accounting educators believe that arithmetic skills are important for students to understand accounting systems and financial statement analysis. Zandi, Shahabi and Bagheri (2012) also indicated the needs of accounting students for possessing calculation skills and an acceptable level of knowledge in Algebra. Both, Collier and McGowan (1989) and Yunker et al. (2009) noted that the mathematics talents of accounting graduates could contribute to a better development of the modern accounting that under laid both practice and academic capability. It seems obvious that academic and professional success in accounting will be facilitated by a high level of mathematical skill.

O'Neill and Theuri (2007) literature contains with studies indicating the need to develop students' language skills. Their study investigates whether a student's English language proficiency can be associated with their performance in specific cognitive skills namely knowledge, comprehension,

application, and analysis in an introducing accounting course. Foster et al. (2002) also added that future Accountants must be able to organize and express information with conciseness and clarity, determine what information is appropriate in context, and select the best medium for information exchange since Accounting was known as the "Language of Business".

## METHOD

### Research Design

The study was conducted as a non-experimental quantitative research in which the data were collected to describe variables, to examine relationships among variable and to determine cause and effect interactions between variables (Burns & Grove, 2005) following the quantitative correlational research which aims to systematically investigate and explain the nature of the relationship between variables in the real world (Porter and Carter, 2000). Applying these research designs, the study described, examined, and determined the relationship of the accounting competencies of the participants and their verbal and non-verbal abilities as variables of interest.

### Research Participants

The participants of the study were the fourth year BS Accounting Technology students of UM Digos College who already took up the OLSAT exam just this first semester of the school year 2015-2016, and took up Basic Accounting subject up to Managerial Advisory Services One, in accordance with the prospectus of UMDC.

However, the selection of participants does not limit on the reason above. The fourth year students were the respondents because of their credits and experiences from basic to higher accounting subjects. By that, those students are enduring the hardship of the subject supported with their school abilities in verbal and non-verbal for almost four years. Moreover, they can relate the words used in the Accounting Competency Test. In that case then they can reliably measure their competencies in accounting.

Among the thirty two (32) respondents, there are more females (81.3%) than males (18.8%). In terms of age, there are 56.3% who are 18 to 19 years old, 31.2% who are 20 to 21 years old, and 12.5% who are 22 and above years of age. Majority of them are 18 to 19 years old since this is the typical age of fourth year college students. Almost three-fourth of the respondents came from public high schools (68.8%) while 31.3% came from private high schools. In terms of residence, 71.9% live in Digos City, 6.3% in Hagonoy, and 3.1% each in Sulop, Kiblawan, Malalag, Bansalan, Matanao, Padada, and outside the province of Davao del Sur. Students residing in Digos City has the highest percentage because of accessibility since UM Digos College can just be found within the city.

Table 1. Demographic Profile of BSAT Students in UM Digos College

Profile Variables	Frequency	Relative Frequency (%)
<b>Sex</b>		
Male	6	18.8
Female	26	81.3
<b>Age</b>		
18-19	18	56.3
20-21	10	31.2
22 above	4	12.5
<b>Secondary Education</b>		
Public	22	68.8
Private	10	31.3
<b>Residence</b>		
Digos City	23	71.9
Hagonoy	2	6.3
Sulop	1	3.1
Kiblawan	1	3.1
Malalag	1	3.1
Bansalan	1	3.1
Matanao	1	3.1
Padada	1	3.1
Outside Davao Sur	1	3.1
<b>Total</b>	<b>32</b>	<b>100</b>

### Research Instrument

There were two instruments used with this research in order to measure the level of school ability, and accounting competency of BSAT students in UMDC. The Otis-Lennon School Ability Test, or OLSAT (Otis, 2009), measures the level of verbal and non-verbal abilities of the participants of the study. The OLSAT is used by UM Digos College Guidance and Testing Center to measure and monitor the school ability of all its incoming first year and fourth year students. The test composed of verbal factor, which includes verbal comprehension and reasoning, and non-verbal factor, which includes

figural reasoning and quantitative reasoning. Below is the basis for giving interpretation of test result:

<b>Subtest/Content Cluster</b>	<b>Number of Items</b>	<b>Below Average</b>	<b>Average</b>	<b>Above Average</b>
<b>Verbal</b>	36	0 - 22	23 - 31	32 - 36
Verbal Comprehension	12	0 - 7	8 - 10	11 - 12
Verbal Reasoning	24	0 - 14	15 - 20	21 - 24
<b>Non-verbal</b>	36	0 - 22	23 - 32	33 - 36
Figural Reasoning	18	0 - 10	11 - 15	16 - 18
Quantitative Reasoning	18	0 - 12	13 - 16	17 - 18
<b>Total</b>	72	0 - 45	46 - 63	64 - 72

Moreover, the Accounting Competencies Test is made up through the reliable sources such as Practical Accounting, and other reviewers. This test was validated by the three Certified Public Accountants. Moreover, this composed of questions with constructed five components of accounting competencies such as the following together with its basis in giving interpretation of the test result:

<b>Subtest/Content Cluster</b>	<b>Items</b>	<b>Below Average</b>	<b>Average</b>	<b>Above Average</b>
Basic Concept	15	0 - 6	7 - 10	11 - 15
Analysis	10	0 - 3	4 - 7	8 - 10
Problem Solving	10	0 - 3	4 - 7	8 - 10
Decision Making	5	0 - 1.5	1.6 - 3.4	3.5-5
Communication	15	0 - 6	7 - 10	11 - 15
<b>Total</b>	55	0 - 17	18 - 37	38 - 55

### **Data Gathering Procedure**

**1. Asking through a Letter of Permission to Conduct the Study.** This was the first letter made by the researchers for the study which is being addressed to the school director or the assistant vice president UM Digos College. This is in order to allow the researchers to conduct the study in the campus as its data were being gathered in the campus as well as its respondents are students from the mentioned institution.

**2. Request for the copy of OLSAT Result.** This letter was being addressed to the guidance counselor of UMDC to ask for an access or copy of the OLSAT result of fourth year BSAT students at the UMDC Guidance and Testing Center. After the guidance counselor approved the request and psychometrician, as assigned person of the test, gave the copy of OLSAT result, the researchers were being taught about the interpretation of the result as it is expressed in quantitative and qualitative data

**3. Construction of Accounting Competency Test Instrument.** After the accumulation of data about thereof, the researchers made a draft of questionnaire with the help of different sources of textbooks for CPA reviewers like Practical Accounting, and also questions used by CPA's for the examination of students in UMDC. The draft was being consulted to the three validators of this study, who are Certified Public Accountants, and one of them has master's degree and a program head of Accounting Education Department of UMDC.

**4. Asking through a Letter of Permission to conduct the Accounting Competency Test.** After the instrument was being validated, the researchers made a letter addressed to the accounting professor of UMDC who handles the Advanced Accounting 2 subjects, which class were the fourth year BSAT students who are qualified as respondents. After the approval, the test was conducted one hour per class schedule and that was one hour for the morning session, and the same in the afternoon session.

After the data gathering, the researchers checked, encoded, and passed the accounting competency test result to the research statistician, including the OLSAT Result of the test takers.

Thereafter, with the help of the statistical data retrieved, it was being analyzed for the determination of which of the two components of school ability measures significantly influence to accounting competencies. After all, the result was the basis for the conclusion and recommendations of this research.

### **Statistical Treatment**

Relative frequency was used to get the number of respondents, and its relative percentage in every profile variable of fourth year BSAT respondents. Mean was used to get the average score of the test results. Thus, this was the basis in determining the level of school ability measures and accounting competencies of the participants. Parametric correlation analysis was used to determine the strength and significance of relationship between the accounting competencies and its five components, and between the two components of school ability measures and accounting competencies. Lastly, multivariate regression analysis was used to determine the amount of contribution of verbal comprehension and reasoning to verbal ability, and quantitative and figural reasoning to non-verbal ability, as predictors.



## FINDINGS

### School Ability Measures of Fourth Year BSAT Students of UMDC

Table 2 presents the data of the fourth year BS in Accounting Technology students of UM Digos College on their level of School Ability Measures. The level was measured in terms of its components such as verbal and non-verbal. Verbal ability comprised of verbal comprehension and verbal reasoning while non-verbal ability includes figural reasoning and quantitative reasoning.

*Table 2. Descriptive Statistics of School Ability Measures*

School Ability Measures	Minimum	Maximum	SD	Mean	Verbal Description
<b>Verbal</b>	10	30	5.31	19.06	Below Average
Verbal Comprehension	3	11	2.42	7.03	Below Average
Verbal Reasoning	4	21	3.79	12	Below Average
<b>Non-Verbal</b>	12	35	6.85	25.13	Average
Figural Reasoning	5	18	3.96	12.31	Average
Quantitative Reasoning	5	18	3.39	12.84	Average
<b>Total</b>	<b>22</b>	<b>61</b>	<b>10.79</b>	<b>44.19</b>	<b>Below Average</b>

It can be gleaned in the results that in terms of verbal ability, the overall mean is 19.06 with a standard deviation of 5.31, described as “below average”. This means that they are low in language intelligence. The dimensions under this component have mean scores that have verbal description of “below average”. In addition, the dimension with the highest mean is “Verbal Reasoning” with a mean score of 12 and a standard deviation of 3.79, while the item with the lowest mean is “Verbal Comprehension” with a mean score of 7.03 and a standard deviation of 2.42. This means that in terms of verbal ability, they are more constructive thinker rather than vocabulary oriented.

In terms of non-verbal ability, the overall mean is 25.13 with a standard deviation of 6.85, described as “average”. This means that their level of ability in non-verbal is within the normal range of visual reasoning. The dimensions

under this component have mean scores that have verbal description of “average”. In addition, the dimension with the highest mean is “Quantitative Reasoning” with a mean score of 12.84 and a standard deviation of 3.39, while the dimension with the lowest mean is “Figural Reasoning” with a mean score of 12.31 and a standard deviation of 3.96. This means that in terms of non-verbal ability, they are more comfortable in dealing with numbers rather than working with figures.

### **Accounting Competency of Fourth Year BSAT Students of UMDC**

Table 3 presents the data of the fourth year BS in Accounting Technology students of UM Digos College on their level of Accounting Competencies. The level was measured in terms of its components such as basic concept, analysis, problem solving, decision making, and communication. It is revealed in the table that the total items of Accounting Competencies was fifty five (55), with the minimum score of twelve (12) and a maximum of forty (40), a total result of Standard Deviation 6.43, and a total mean score of 24.09 described as Average.

*Table 3. Descriptive Statistics of Accounting Competencies*

<b>Accounting Competencies</b>	<b>Items</b>	<b>Minimum</b>	<b>Maximum</b>	<b>SD</b>	<b>Mean</b>	<b>Verbal Description</b>
Basic Concept	15	4	14	2.39	9	Average
Analysis	10	1	6	1.28	3.65	Average
Problem Solving	10	0	9	2.2	3.71	Average
Decision Making	5	0	3	1.1	1.56	Below Average
Communication	15	0	13	3.58	6.15	Below Average
<b>Total</b>	<b>55</b>	<b>12</b>	<b>40</b>	<b>6.43</b>	<b>24.09</b>	<b>Average</b>

It was found out that in the Basic Concept, out of fifteen (15) items, the minimum score is four (4) and the maximum is fourteen (14) with the result of Standard Deviation 2.39, and a mean score of 9 which the verbal description is Average. In the Analysis level, out of ten (10) items, the minimum score is one (1) and the maximum is six (6) with standard deviation of 1.28, and a mean score of 3.65 described as average. In the Problem Solving level, out of ten (10) items the minimum score is zero (0) and the maximum is nine (9) with a standard deviation of 2.2 and a mean score of 3.71, described as average. In the decision-making level, out of five (5) items the minimum score is zero (0) and the maximum is three (3) with a standard deviation of 1.1, and a mean score of 1.56 described as below average. In the last level of Accounting Competencies which is the Communication, out of fifteen (15) items the

minimum score is zero (0) and the maximum is thirteen (13) with the result of standard deviation 3.58, and the mean score is 6.15 described as below average.

The researchers found out that in the accounting competencies level; basic concept described as average which explains that the 4<sup>th</sup> year BSAT students were found to have a good foundation in basic terms and concepts in accounting while analysis, and problem solving which are labeled also as average, implies that the 4<sup>th</sup> year BSAT students were found to have been on their normal range of being a critical thinker in terms of computation, and analysis of transactions that lead to judgment and application of accounting principles. Moreover, with regards to decision making and communication which described as below average, this means that the respondents are at low level in terms of effective decision making, and communication or explanation of results based on their analysis and judgment.

### Relationship of School Ability Measures and Accounting Competencies

Between the two components of school ability measures, verbal ability, being an independent variable is indicated to have a significant relationship to accounting competencies since it has a *p*-value of 0.001. The strength of its relationship is moderately low as it has *r*-value of 0.566. On the other hand, the table above reveals that non-verbal has no significant relationship to accounting competencies since the *p*-value is 0.122. The strength of its relationship is low as it has *r* value of 0.279.

Table 4. Relationship of School Ability Measures and Accounting Competencies

Independent Variable	Dependent Variable	Pearson r	Relationship	Remark
Verbal	Accounting Competencies	0.566* [0.001]	Moderate	Significant
Non-verbal		0.279 <sup>ns</sup> [0.122]	Low	Not significant

Enclosed figures in brackets are *p*-values.

More so, regression analysis was conducted on the different variables of the study in an attempt to trace the path of correlations to identify the significant predictors of students accounting competencies. The first analysis is on the verbal component of the school ability test. It was found that both its dimensions verbal comprehension and verbal reasoning are significantly correlated to it. It can also be noted that both verbal comprehension and verbal reasoning are significantly correlated to each other.

These are consistent with the previous researches that the aforementioned two components are the predictors of verbal ability. As

emphasized by Richard and Rogers (1986), verbal ability is an intelligence of persons' performance in language which includes comprehension and reasoning. Furthermore, the two dimensions are sequentially interrelated from each other. Comprehension is a key element in verbal reasoning because it involves constructing of meaning using the information given, and how the readers' are going to reason prior to his knowledge. Although, verbal reasoning and comprehension are not at the same thing, but having a skill in critical reading is one of the most useful aspects of verbal reasoning (Burton et al. 2009).

Wagner and Stanovich (1996) also emphasized that reading and comprehension is especially likely to be a substantial contributor to the cognitive growth of verbal reasoning. Comprehension characterizes as an active process that involves building a mental representation of the text, "constructing meaning", calling up relevant knowledge from memory, evaluating differences between text and the reader's existing knowledge and beliefs, making inferences needed to fill gaps in understanding or clarify meaning, integrating pertinent new information into the reader's knowledge base, and thinking about what are the important and unimportant points in the text and how the information can be used to enhance verbal reasoning of oneself (Chapman, 1993; Sweet, 1993).

In general, reasoning is always required when the reader is first learning to read or is confronting new content. As the reader becomes more proficient, and as his or her knowledge of the content grows, reading comprehension becomes more automatic, requiring less reasoning at a conscious level.

To further determine the amount of contribution of verbal comprehension and verbal reasoning to verbal, multivariate regression was done using the enter method. It was found that both verbal comprehension and verbal reasoning are significant predictors of verbal. The prediction equation could now be put as

$$Y = -0.033 + 1.003 x_1 + 1.004 x_2$$

where  $x_1$  = students' verbal comprehension

$x_2$  = students' verbal reasoning

Second, the non-verbal component of the school ability test was examined. Both its components, quantitative reasoning and figural reasoning are significantly correlated to it. Surprisingly, the students' quantitative reasoning and figural reasoning are also correlated.

These are in congruence with the discussion by the University of Kent, a European Institution, that the non-verbal reasoning involves the ability to understand and analyze visual information and solve problems using visual reasoning. It analyzes and solves complex problems without relying upon or being limited by language skills. Thus, this explicitly stated that figural reasoning and quantitative reasoning are components of non-verbal ability.

Moving further about its components, according to the Otis-Lennon School Ability Test (OLSAT), the quantitative reasoning is the ability to infer and understand relationships with numbers, deduce and use computational rules in context. On the other hand, figural reasoning is the ability to infer relationships between different geometric shapes and figures, understand patterns and progressions, compare and contrast different figures or sets of figures and manipulate and work with figures in a spatial context. Hence, these two dimensions of non-verbal are sequentially interrelated. Although, they have overlap in meaning, they are considered slightly different and not fully interchangeable. What they all do have in common is that they address to your ability to understand and analyze visual information and both apply logical thinking and mathematical knowledge to the solution of pictorially presented problems. The understanding is built first with quantitative problems and followed by abstract understanding.

To identify the degree of influence of the two components of nonverbal ability, multivariate regression analysis was also performed. It was found that both figural reasoning and quantitative reasoning are significant predictors of non-verbal ability. The prediction model is now written as

$$Y = 0.034 + 1.01x_1 + 0.985x_2$$

where  $x_1$  = students score in figural reasoning

$x_2$  =students score in quantitative reasoning

Third, similar analysis was performed on the endogenous variable of this study, which is the Accounting Competency, as measured by the Accounting Competency Test. There were five constructs considered, namely knowledge of basic concepts, analysis, problem solving, decision making and communication. It was found that all these five dimensions significantly correlated with the overall accounting competency.

These are consistent with the previous researches cited in the review of related literature that these five are predictors of being an accounting competent. Those aforementioned dimensions are the strong needs in the work place such as decision making, problem solving, and communication (Foster & Bolt-Lee, 2015), whereas the last two mentioned named as soft-skill competency according to the research study of Riggio et al. (2003). This further implies that the higher the skills of those dimensions, the more competencies an accountant possessed.

Edmonds et al. (2011) also mentioned about analysis. According to him, this will improve through acquiring a formal accounting education. The said ability, focused on financial information, and application of principles, which means that the analytical thinking serves as the assessor of those to perform accounting practice. Thus, it is a component of the overall accounting competencies. Moreover, Basic Concepts Knowledge also correlates to it since this involves the study of theories and principles towards application. Ballada and Ballada (2012) also considered this as one of the core competencies.

However, no correlations were found among them.

For the relationship of the two dimensions of the school ability test, namely verbal and nonverbal and the accounting competency test, it was found that only verbal ability had a positive direct correlation with the accounting competency test scores. On the other hand, the nonverbal ability was found to have insignificant association with accounting competencies.

Although it is true that accounting subsumes working with numbers, which talking about numerical matter is a non-verbal, it must be noted that accounting encompasses outside the limits or range of numbers and involves gathering and preparing reliable information (Siddiqui, 2014). The said information must be comprehended first before an application that deals with numbers. Also in the accountancy field, guiding principles are the bases of solving problems or numerical manipulation like the valuation of assets, liabilities and equity, and even recording of foreign currency transactions. According to Certified Public Accountants that it is almost enough if the students know the concepts and principles because it follows that students can manipulate the numbers or financial information in accounting problems based on the read theories and principles. In which knowing and application of those involves verbal comprehension and reasoning. Those are the supported reasons why verbal significantly predicts more the accounting competency while nonverbal is not but a secondary one.

Moreover, Donges (2001) stressed that even mathematics, which is a non-verbal, requires some verbal reasoning because it is generally taught through oral and written instruction. Thus, the comprehension and verbal reasoning comes first before the non-verbal, in learning phase. Meanwhile, in connection to that towards accounting, even if the student is good in mathematics, if he or she cannot understand the standards or guiding principles of accounting like the Philippine Accounting Standards or PAS and the Philippine Financial Reporting Standards or PFRS, and consequentially does not know how to apply it, then that student will not be competent in that case because of arriving a wrong solution and answer of the accounting problem. For instance, in the case of foreign currency financial statements translation, there are different exchange rates known, such as spot rate, closing rate, presentation currency, weighted average rate, and rate at declaration date, if the students cannot understand the transaction and PAS 21, which governs that certain problem, students shall end up of guessing, multiplying with wrong numbers, and as a result, students cannot explain their work. Moreover, this kind of problem also requires verbal reasoning skills for application purposes, in order to assess the understanding on which appropriate rate shall be used in the certain account title in accordance with the standards, and to explain the work.

As an implication, in pursuing accounting it does not need to be excellent in mathematics because it only necessitates knowledge of mathematical basic operations. In fact, accountants will not work without calculator on hand. Accounting needs more the verbal ability of students since this field is dominant with analysis, and requires understanding the

transaction, accounting terms that has no translation into another language, and standards or guiding principles.

On the other hand, this result does not discourage about Non-Verbal Ability. Although it does not directly and significantly correlates to the accounting competencies, however, it can help through indirect connection to accounting competencies through passing with the verbal ability since those two school ability measures are found to be significantly correlated with each other as illustrated in the path model hereafter. The non-verbal ability is somehow useful since accounting still includes numbers.

However, as overall assessment, in the regression analysis, only the students' verbal abilities can significantly predict their accounting competencies. The regression model is now

$$Y = 12.32 + 0.645 x_1$$

where  $x_1$  is the verbal ability

Figure 1 shows the path analysis of the school ability test and accounting competency. This exploration stresses that students' accounting competencies are really determined by students' verbal abilities, which in turn is determined by two dimensions, verbal comprehension and verbal reasoning. This is called direct effects. This further means that improving verbal comprehension and verbal reasoning will create an improvement in the verbal ability and consequentially, the accounting competency. This analysis also emphasizes the indirect effects of nonverbal ability to accounting competency. This means that the nonverbal abilities like quantitative reasoning and figural reasoning are secondary predictors of accounting competency. Remarkably, verbal and nonverbal abilities are also directly correlated.

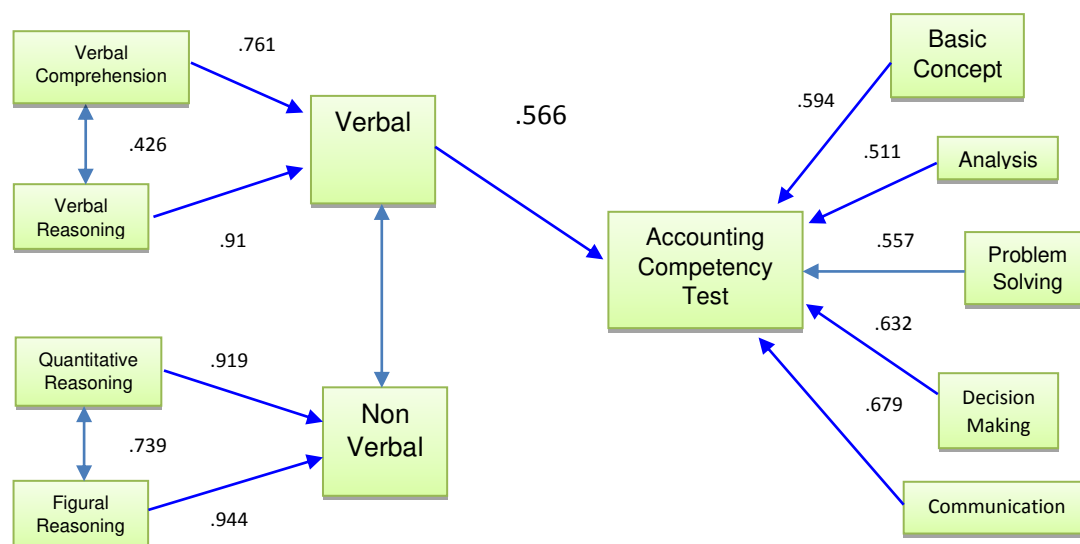


Figure 1. Path Model Showing the Intercorrelation and Causal Relationships of the Verbal and Non-Verbal Scholastic Abilities on Accounting Competency

To sum it up, the path model shows that verbal ability significantly influences the accounting competencies, and not the non-verbal on where a sort of mathematical knowledge belong. This is the answer of the very aim of this research study mentioned in the statement of the problem. This result can be in contradiction to the other researches who enlightened that mathematical skills were determined to be the fundamental scholastic knowledge required for successful accounting students, and are influential over the accounting discipline outperformance (Lee et al., 2014; Zandi, Shahabi & Bagheri, 2012).

## CONCLUSION

In terms of verbal ability, Accounting students are more constructive thinker rather than vocabulary oriented, and in terms of non-verbal ability, they are more comfortable in dealing with numbers rather than working with figures. In terms of accounting competencies, the students were found to have a good foundation in basic terms and concepts in accounting. Furthermore, in terms of analysis, and problem solving, the fourth year BSAT students were found to have been on their normal range of being a critical thinker in terms of computation, and analysis of transactions that lead to judgment and application of accounting principles. Moreover, with regards to decision making and communication, the respondents are at low level in terms of effective decision making, and communication or explanation of results based on their analysis and judgment.

The relationship of verbal ability and accounting competencies is significant and positive. On the other hand, no significant relationship was established by the analysis in the case of non-verbal ability and accounting competencies. These mean that among the school ability measures, only verbal ability has significant influence on accounting competencies.

Furthermore, the two dimensions such as verbal comprehension and reasoning were significant predictors. On the other hand, the non-verbal ability, in terms of figural reasoning and quantitative reasoning, is a non-significant predictor of accounting competencies. This implies that between the two school ability measures, the verbal ability significantly predicts and has a direct influential effect towards accounting competencies, while the non-verbal ability is a non-significant predictor and has indirect effects to accounting competencies.

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