

# Level of Academic Performance Among Senior High School Students:

# A Differential Study

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#### Abstract

The study on the level of academic performance among Senior High School Students was conducted to determine the difference on the level of performance between ABM, SMAW and HUMSS students in General Mathematics, Oral Communication, and Earth and Life Science. Differential research design was used in this research endeavor, Mean and Analysis of Variance (ANOVA) were the statistical tools used. Finding shows that there is significant difference in the academic performance in General Mathematics, Oral Communication, and Earth and Life Science among students in ABM, SMAW and HUMSS strands. Further, HUMSS and ABM academic performance are comparable based on pos hoc analysis. Study further revealed that there is significant difference in the academic performance among ABM, SMAW and HUMMS students.

Keywords: Academic Performance, Senior High School Students, ABM, SMAW, HUMSS

# Introduction

The goal of improving the quality of education in the Philippines has led to the expansion of basic education in twelve years to be on par with other countries. This initiative, known as the K-12 program, was incorporated into the Enhanced Basic Education Act of 2013 (Enhanced Basic Education Act of 2013). A distinctive feature of the K-12 program is the provision of a career path in the upper secondary schools (SHS). Students may choose a major based on the school's skills, interests, and capabilities for their upper secondary education. Career choice will determine the content of the course students will take in grades 11 and 12 (CHED, 2020).

The number of different suggested preferences among students in the different tracks in Senior High School to pursue higher education may lead to better job opportunities (Tymon & Batistic, 2016). With a group of recent SHS graduates Higher Education Institutions (HEIs) in 2018 and one of the flagship programs to prepare students for higher education (CHED, 2020), the SHS tracks or strands are seen as a new attribute to be considered a predictor of academic achievement (Miguéis et al., 2018) and can provide information on how well students are prepared to take higher education courses. Therefore, the study will look at and compare the performance of Senior High School students from different tracks/ strands in Bawing District in the division of General Santos City as the basis for evaluating students' performance.

#### **Research Questions**

The study aimed to evaluate Senior High School students' performance in Bawing district in this division of General Santos City. Specifically, it answered the following question:

1. What is the level of the academic performance of Accountancy, Business and Management (ABM), Shielded Metal Arc Welding (SMAW), and Humanities and Social Sciences (HUMSS) students in the following subjects:

- 1.1 General Mathematics;
- 1.2 Oral Communication; and
- 1.3 Earth and Life Science?

2. Is there a significant difference in the academic performance of ABM, SMAW, and HUMMS students in:

- 2.1 General Mathematics;
- 2.2 Oral Communication; and
- 2.3 Earth and Life Science?

3. Is there a significant difference in the students' performance based on the following strands:

- 3.1 ABM;
- 3.2 SMAW; and
- 3.3 HUMMS?

# **Literature Review**

#### Senior High School

Senior High School is two years of special upper secondary education; students can choose majors

based on their talents, interests, and school ability. The choice of career path will determine the content of the course that students will take in grades 11 and 12. SHS subjects are included in the core curriculum or in a particular path (Official Gazette, 2012).

Senior High School (SHS) covers the last two years of the program in K to12 and includes grades 11 and 12. At Senior High School, students will undergo a core curriculum and subjects according to the chosen tracks under the K-12 program which includes kindergarten and 12 years of basic education (six years of elementary school, four years of junior high school, and two years of senior secondary school) to provide sufficient time for mastery of concepts and skills, developing lifelong learners lives and prepares graduates for tertiary education, intermediate level skill development, employment, and entrepreneurship. Each high school student can choose between three strands: Academic; Technical-professional livelihoods; and Sports and Arts. The academic track includes three tracks: Accounting, Business Management (ABM); Humanities and Social Sciences (HUMSS); and Science, Technology, Engineering, Mathematics (STEM) and Shielded Metal Arc Welding SMAW for Technical- Vocational Livelihood (TVL). Students undergo an immersion, which can include opportunities to learn while they learn, to provide them with relevant exposure and a real experience on their chosen track (Official Gazette, 2012).

### Hierarchy of Perceived Intelligence among Majors

Being intelligent doesn't solely mean that a person is good at solving math problems; fluent in speaking in English; great at memorizing Physics formulas; brilliant in Chemistry or excels in academics. Because according to Howard Gardener, there are nine different kinds of intelligence, namely:

Naturalist intelligence- ability to incorporate with other living things such as animals and plants. A year after Benigno Aquino III got elected as the president of the Republic of the Philippines, the K-to-12 program has been approved. The K-to-12 program meant an additional two years to the four-year high school before (Philippines Official Gazette) and various of strands are offered like, the General Academics Strand, Stem Engineering and Mathematics Strand, Humanities and Social Science Strand, Accountancy and Business and Management, TVL track and Sports and Design track.

Each of these strands has their own strengths and specialization. Like for example, STEM students are

good in Science subjects or for doing experiments; ABM students are known for their greatness in solving problems involving numbers; HUMSS students are good with words and public speaking; TVL students who focus in culinary and in bread and pastry make the most delicious dishes; and Sports, Arts and Design students create beautiful masterpieces (Pamor, 2019).

Due to cultural background and peoples' mindset, misconceptions happen and that is something we cannot deny. People tend to subconsciously bend facts. They use the strands' strengths to form a hierarchy in their minds fit to their own version and definition of intelligence.

The classic stereotypes arise. If a person has high grades and excels academically, he is expected to take up either STEM or ABM. If a person is good in speaking and has good rapport, he is expected to be in HUMSS as a senior (Ibid). STEM and ABM are the top choices of people as chosen strands because they deem it fit as strands at the top of the food chain, forming hierarchy as time goes by.

People claim that GAS is for those who do not know what they want to take up in college yet, or whose academic ability does not reach that of the other strands, and so they are 'left' or 'tossed' into GAS. The harshest one to receive judgments are students of the TVL strand. They say this strand is also the easiest strand since they see the students belonging here as students who cannot perform well academically (Ibid). These judgmental people are so narrow-minded that they don't even take in consideration the following reasons why students choose a particular strand: GAS students simply have too many interests, or simply see the strand as the most beneficial choice- seeing as they are exposed to specialized subjects from all other strands and TVL students are those who aspire to be a chef in the future not to be scientists or mathematicians.

# Methodology

# **Research Design**

The differential research design was used in this research endeavor which looked into the academic achievements of Senior High School students on the basis of subjects and strands.

# Locale of the Study

The study was conducted in Bawing National High

School in Bawing district in the division of General Santos City. Three (3) strands among the Academic and TVL tracks were utilized in the study, this includes Accountancy, Business and Management (ABM), Humanities and Social Sciences (HUMSS), and Shielded Metal Arc Welding (SMAW).

#### Sampling Technique and Respondents of the Study

Respondents of the study were the students in the following Senior High School strands: Accountancy, Business and Management (ABM), Shielded Metal Arc Welding (SMAW), and Humanities and Social Sciences (HUMSS), only one section per strand was used and total enumeration was employed to determine the population and/ or sample of the study. See Table 1 for the population and sample size.

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13
43
37

### Instrument

The study used the posttest in the Self-Learning Module (SLM) of the Department of Education as an instrument of the study focused on the following subjects: General Mathematics, Oral Communication, and Earth and Life Science.

### **Statistical Treatment**

- To determine the level of the academic performance of Senior High School students per subject, the mean was used.
- To determine if there is a significant difference in the academic performance of students based on given subjects, an analysis of variance (ANOVA) was employed.
- To determine if there is a significant difference among the academic performance of students based on strands, analysis of variance (ANOVA) was also employed.

# **Result and Discussion**

The Level of the Academic Performance of Accountancy, Business and Management (ABM), Shielded Metal Arc Welding (SMAW), and Humanities and Social Sciences (HUMSS) Students

Table 2. Level of Academic Performance of ABM, SMAW and HUMSS Students

STRANDS	GENERAL MATHEMATICS		GENERAL ORAL MATHEMATICS COMMUNICATION		EARTH AND LIFE SCIENCE		TOTAL	
	mean	sđ	mean	sđ	mean	sđ	mean	sđ
ABM	11.31	1.60	11.54	1.33	11.77	0.73	34.62	2.26
SMAW	7.16	1.95	7.89	1.63	8.35	1.32	23.41	4.27
HUMSS	10.70	1.63	12.16	1.40	12.44	1.12	35.30	2.51

As seen in Table 2 above, ABM students got an overall mean of 34.62, standard deviation 2.26. SMAW, on the other hand, 23.41 mean and 4.27 SD. Humanities and Social Sciences students got a mean of 35.30, standard deviation 2.51. Result implies that among students, Humanities and Social Sciences students perform well in comparison to the Accountancy, Business and Management and Shielded Metal Arc Welding students considering it got the highest overall mean (Mean: 35.30, SD: 2.51) but ABM and HUMSS students' performance is almost comparable to each other with a mean difference of 0.68.

### Difference Among the Level of Academic Performance of ABM, SMAW, and HUMMS **Students in General Mathematics**

Table 3. Differences Among the Level of Academic Performance of ABM, SMAW, and HUMMS Students in General **Mathematics** 

Source	SS	df	MS	F	p-value	Interpretat
Between- treatments	304.96	2	152.481	40.01	. 00001	With
Within- treatments	278.87	90	3.0985	49.21	< .00001	Difference
Total	583.83	92				

As shown in the above table (Table 3) there is a significant difference in the academic performance in General Mathematics among ABM, SMAW and HUMMS students (F(2,90) = 49.21, pvalue<.00001).

Additionally, based on post hoc analysis (see Table 4), the difference is between, AMB and SMAW and SMAW and HUMSS students. HUMSS and ABM academic performance are comparable.



Table 4. Post Hoc Analysis on the Level of Academic Performance in General Mathematics Among ABM, SMAW, and HUMMS Students

STRANDS	MEAN	SD	POST HOC
ABM	11.31	1.60	а
SMAW	7.16	1.95	b
HUMSS	10.70	1.63	a

\*means with same letters are comparable

Differences Among the Level of Academic Performance of ABM, SMAW, and HUMMS Students in Oral Communication

Table 5. Differences Among the Level of Academic Performance inOral Communication Among ABM, SMAW, and HUMMS Students

Source	SS	df	MS	F	p-value	Interpretation
Between- treatments	383.17	2	191.58	86.80 <	< .00001	With Significant Difference
Within- treatments	198.66	90	2.21			
Total	581.83	92				

As evident in Table 5, there is a significant difference in the academic performance in Gen Math among ABM, SMAW, and HUMMS students (F(2,90) =86.80, pvalue<.00001) and based on post hoc analysis, the difference is between, AMB and SMAW and SMAW and HUMSS students. HUMSS and ABM academic performance is comparable.

Table 6. Post Hoc Analysis on the Level of AcademicPerformance in Oral Communication Among ABM,SMAW, and HUMMS Students

STRANDS	MEAN	SD	POST HOC
ABM	11.54	1.33	a
SMAW	7.89	1.63	b
HUMSS	12.16	1.40	А

\*means with same letters are comparable

Differences Among the Level of Academic Performance of ABM, SMAW, and HUMMS Students in Earth and Life Science

Table 7. Differences Among the Level of Academic Performance in Earth and Life Science Among ABM, SMAW, and HUMMS Students

Source	SS	df	MS	F	p-value	Interpretation
Between- treatments	349.39	2	174.69	100 57	< 00001	With Significant
Within- treatments	121.34	90	1.35	129.57	< .00001	Difference
Total	470.73	92				

There is a significant difference in the academic performance in Gen Math among ABM, SMAW and HUMMS students (F(2,90) = 129.57, *pvalue*<.00001). And based on post hoc analysis, the difference is between, AMB and SMAW and SMAW and HUMSS students. HUMSS and ABM academic performance are comparable.

Table 8. Post Hoc Analysis on the Level of Academic Performance in Earth and Life Science Among ABM, SMAW, and HUMMS Students

STRANDS	MEAN	SD	POST HOC
ABM	11.77	0.73	a
SMAW	8.35	1.32	b
HUMSS	12.44	1.12	А

\*means with same letters are comparable

### Differences Among the Level of Academic Performance of ABM, SMAW, and HUMMS Students

Table 9. Post Hoc Analysis on the Level of Academic
Performance of ABM, SMAW, and HUMMS Students

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STRANDS	MEAN	SD	POST HOC
ABM	34.62	2.26	a
SMAW	23.41	4.27	b
HUMSS	35.30	2.51	a

\*means with same letters are comparable

There is significant difference in the academic performance among ABM, SMAW and HUMMS students (F(2,90) = 140.72, *pvalue*<.00001). And based on post hoc analysis, the difference is between ABM and SMAW and SMAW and HUMSS students. HUMSS and ABM academic performance are comparable.

### Conclusion

On the basis of the findings, the conclusion and recommendations are hereby presented:

The study was primarily to assess Senior High School students' academic achievements varied among strands and subjects. Accountancy, Business and Management, and Humanities and Social Sciences students excel more academically compared to Shielded Metal Arc Welding students. It must be concluded, that SMAW students are more of skills development. Thus, they lack knowledge of content related to academics. Therefore, it is highly recommended that students under the SMAW strands will be backed up with subjects related to academics which is being neglected since the program is more of skills development. SMAW students must be given opportunities to enhance their competency in numeracy as well as in Problem –Solving and Communication Skills, the same as the ABM and HUMSS students. Consequently, provide quality learners ready for the 21st-century demand.

#### References

Carnevale, P., Rose, S. J., and Chea, B. (2013). The College Payoff: Education, Occupations, Lifetime Earnings. https://repository.library.george town.edu/handle/10822/559300

Commission on Higher Education (2020). CHED K to 12 Transition Program. Philippines

Miguéis, V.L., Freitas, A., Garcia, P.J.V., and Silva, A. (2018). Early Segmentation of Students According to their Academic Performance: A Predictive Modeling Approach. Decision Support System. doi:10.1016/j.dss.2018.09.001.

Official Gazette of the Republic of the Philippines (2012). The K to 12 Basic Education Program. Philippines

Pamon, K. (2019). Hierarchy: Intellectual Discrimination.https://medium.com/@karenmaepamor/hierarchy-int ellectual-discrimination-2eee7e6.

Tymon, A., & Batistic, S. (2016). Improved Academic Performance and Enhanced Employability? The Potential Double Benefit of Proactivity for Business Graduates. Teaching in Higher Education. 21:8, DOI: 10.1080/13562517.2016.11 98761.

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