

## **Effect of Senior High School Tracks and Strands on the Academic Performance of the Would-be Teachers: Basis for the Early Childhood Enhancement Program**

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### **Abstract**

The purpose of curriculum enhancement is to give traditional teaching methods a modern twist. Children will explore concepts and activities that will support the development of a positive outlook on life when they are presented with enthusiasm and dedication. In this study, it is sought to determine the level of academic performance of the would-be teachers and the effect of the students' profiles on their academic performance. It also focused on two (2) cohorts of Grade 12 completers currently enrolled in the Bachelor of Secondary Education (BSEd) major in Sciences, with a total of 65 students enrolled in the BSEd Sciences program. This study utilized the total enumeration sampling technique, a type of purposive sampling, considering that the chosen population shared particular and common attributes and exposures, such as courses taken in the BSEd major in Sciences curriculum, specifically during the first semester of the first-year level. The data revealed that graduates from the GAS and HUMSS strands, which are deemed suitable for the BSEd program, performed fairly, while ABM and STEM graduates obtained a description of "good" and manifested better academic performance. Statistically, there is no significant difference between SHS tracks and the GWA obtained by students. However, in terms of computed mean grades, students from the academic track (2.17) performed slightly higher than those from the TVL track (2.20). Similarly, no significant difference between the SHS strand and the GWA obtained by BSEd majoring in Sciences students was statistically recorded. Thus, it is recommended that, to ensure higher education quality, curriculum enhancement be looked into to improve the attributes, knowledge, ability, skills, and potential of learners.

### **Introduction**

Republic Act 10533 also known as the "Enhanced Basic Education Act of 2013", the statute which empowered the full implementation of the K to 12 curricula in the country, vowed to produce learners who are better prepared for tertiary education, as one of the expected benefits from the said education reform. It was further elaborated in the K to 12 Primer (Teacher's Lounge 2013), that graduates of the K to 12 curricula are able and capable of meeting the standards for higher education both within the country and internationally. One of the distinct features of the K to 12 curricula is the addition of two (2) years senior high school level, which according to former Secretary of the Department of Education Bro. Armin A. Luistro will assist completers in deciding what course to take in college (Mohammad, 2016). Four tracks namely (1) Academic, (2) Technical-Vocational-Livelihood, (3) Sports, and (4) Arts and Design generally form the major components of the K to 12 Senior High School curricula. The built-in tracks with identified respective strands aim at providing Senior High School students the option to choose a specialization that matches their aptitude, interest and cognitive capability (Magno & Piosang, 2016).

Acosta (2016) cited that the development of the Senior High School curriculum aligns with the curriculum set forth by the Commission on Higher Education (CHED)- the governing body for Higher Education Institutions in the Philippines (Official Gazette, n.d.). The alignment intends to ensure that SHS completers will have the knowledge, skills, and competencies as requisites for tertiary education. Alignment is deemed important specifically among National Government Agencies (NGAs) which shares common mandates and constantly formulates, revises, modifies and adopts programs and policies, since any change undergone by each department will impact and contribute to the expected result and accomplishment of the other (Gravino, 2019.)

Santos, Blas, Panganiban, Reyes, and Sayo (2019), claimed that the Department of Education (DepEd) recommends SHS completers to align their track in terms of considering their career paths. Accordingly, this will amplify the skills and readiness imbibed by the students as they immerse in

diverse and complex courses in tertiary education. However, this is in a way, in contrary with CHED's Memorandum Order (CMO) Number 105, series of 2017, which directs HEIs in the country to admit all grade 12 completers regardless of the track or strand took during SHS, on the condition that the student passes the respective admission requirements. Higher Education Institutions officially accepted the first cohort of SHS completers during the academic year 2018-2019. The said CMO and official opening of classes, resulted in HEIs accepting graduates coming from various schools, with various tracks and strands, distributed in various programs.

### **Related Literature and Studies**

#### **K to 12 Curricula: Senior High School In-Focus**

The Philippine education landscape formally welcomed the first cohort of Grade 11 students in 2016 and produced the first Grade 12 completers of the Senior High School (SHS) in 2017. Senior High School is the specialized upper secondary education feature of the K to 12 curricula (SEAMEO INNOTECH, 2015), and is considered as the realization of what is stipulated in Section 2, paragraph (a) of Republic Act (RA) 10533 that the state shall "broaden the goals of high school education for college preparation, vocational and technical career opportunities as well as creative arts, sports and entrepreneurial employment in a rapidly changing and increasingly globalized environment."

Students enrolled in the last two (2) years of the K-12 program that the Department of Education (DepEd) has been implementing since 2012, has the option to choose a specialization based on their aptitude, interest, and school capacity. The students' choice of career track will define the content of the subjects they will have to take (SEAMEO INNOTECH, 2015). A Junior High School completer can select from among the tracks offered in the SHS which include the Academic Track with Science, Technology, Engineering, and Mathematics (STEM), Accounting and Business Management (ABM), Humanities and Social Science (HUMSS) and General Academic Strand (GAS) as identified strands under this track. The academic track is said to prepare SHS students who intend to pursue tertiary education. The Technical-Vocational Livelihood Track, on the other hand, have Home Economics, Industrial Arts, Agri-Fishery, and Information and Communications Technology as its strands. Meanwhile, the last two (2) remaining tracks which include Sports Track and Arts and Design Track bears no identified strands (Magno & Piosang, 2016). The SHS curricula are comprised of core subjects in eight (8) learning areas wherein all enrolled SHS students have to take. It is further comprised of applied and specialized track subjects which are determined according to the respective track and strand as chosen by the students (Formosa, "Senior High School Career", 2016). According to John & Estonanto, (2017), preparing secondary students in mastering the pre-requisite skills needed in professional courses for those who will prefer academic tracks, and industrial as well as employment skills for those who prefer technical-vocational and other tracks is the primary goal of the SHS program.

A tertiary education after Senior High School is an available option for most students to further enhance their skills in their chosen academic strand (Laguador et al., 2016). In a study conducted by Valenzuela (2018), results showed that after graduating from Senior High School, students are most likely to attend tertiary education for further career preparation. This is in contrast to the initial concept of K to 12 being able to encourage its completers to work right after Senior High. It is important for graduates who decide to continue to college to have the appropriate preparation as this is one of the goals of the SHS program ("The K to 12 Basic Education Program, Official Gazette of the Republic of the Philippines," 2012).

Though it is necessary to consider the desire of the students on what program to take after Senior High School, considering their varied abilities, family backgrounds, understandings of their academic life, and desire to study for different reasons (Laguador et al., 2016), the tracks and strands respectively completed by the first batches of SHS graduates can be considered to gauge the choice of potential baccalaureate degree as these reflect their interest or preference to a specific discipline. Results from the study conducted by Santos et.al (2019) revealed that 80.67% of the strands of the 119 pioneer SHS graduates of Bulacan State University Laboratory High School are aligned to their current course. The study likewise revealed that strong desire/interest in the program, possible financial outcome, and employment prospects were the three (3) major factors that contributed to the decision of the respondents in enrolling in the said program.

### **Alignment of Tracks and Strands with the Teacher Education Curricula**

In 2017, the Commission on Higher Education released a bulk of its Memorandum Orders majority of which were Policies, Standards, and Guidelines (PSGs) in the offering of the new or revised curriculum of higher education programs all geared towards welcoming the first cohort of SHS graduates for AY 2018-2019. CMO no. 75, series of 2017 specifically addresses the PSGs for Bachelor of Secondary Education (BSEd) with CMO no. 30 series of 2004 as its predecessor. From the old curriculum, Biological and Physical Sciences were merged into one specialization in the revised curriculum—the Sciences. Technology and Livelihood Education, on the other hand, has a separate PSG and is now classified as a direct Bachelor of Technology and Livelihood program from originally identified as one of the fields of specializations in the BSEd program (Biglete, A. n.d). The revised teacher education curriculum is comprised of the following course clusters: General education, professional education, specialization, elective, and mandated courses.

Since CMO no. 105, series of 2017 directs all HEIs to admit eligible SHS graduates regardless of their tracks and strands, the primary concern of Teacher Education Institutions lies on the alignment and academic performance of its students coming from all and varied backgrounds of SHS tracks and strands as a predictor of success in a board course program such as BSEd.

In an article from the College of Arts and Technology (“College Degree Courses”, 2019), they come up with a list of potential career choices deemed related or aligned with SHS tracks and strands. The General Academic Strand (GAS) under the Academic track is said to be a suitable strand for those who intend to enroll in Bachelor of Secondary Education. This agrees with an older article published by Edukasyon.ph (Nucum, “College Courses Fits”, 2018), which cited that although GAS is intended for SHS graduates who remain undecided with what program to take, BSEd is one of the programs that a GAS SHS completer can take. On the other hand, another article published in Edukasyon.ph (Carpio, “K-12 Academic Tracks”, 2018), BSEd program is one of the career options for those SHS graduates from the Humanities and Social Science Strand (HUMSS), still under the Academic Track. This conforms in the summary of possible college programs related to academic track and strand highlighted from the study conducted by Dautz (n.d) on the preparedness of SHS graduates leading to Bachelor of Science in Accountancy program, which listed HUMSS as the preferred strand for potential BSEd college students.

### **Research Questions**

1. What is the level of academic performance of students enrolled in the bachelor of secondary education major in sciences according to aligned senior high school tracks and strands to the college program?
2. What is the effect of profile of students enrolled in the bachelor of secondary education major in sciences program on academic performance?

### **Methodology**

This quantitative study focused on two (2) cohorts of Grade 12 completers, currently enrolled in the Bachelor of Secondary Education (BSEd) major in Sciences. A total of 65 students enrolled in the BSEd Sciences program were selected as respondents of this study. This study utilized total enumeration sampling technique- a type of purposive sampling, considering that the chosen population shared particular and common attributes and exposure, such as courses taken in the BSEd major in Sciences curriculum, specifically during the first semester of the first-year level. The total enumeration exclusively applies only to SHS completers enrolled in the program.

Data were quantitatively analyzed using the SPSS statistical software. The descriptive approach was carried out in determining the SHS tracks and strands of students enrolled in the BSEd major in Sciences program as well as the alignment of tracks and strands, age, sex, ethnicity, religious composition, and type of school last attended. Inferential statistics was applied in determining the implication of SHS track and strands on the students’ academic performance for the first semester of their first-year level.

For profiling purposes, data such as SHS tracks and strands along with age, sex, ethnicity, religious affiliations, and type of schools last attended were accessed through the available records reflected in the students' College Admission Form for Enrollment (CAFE). Meanwhile, the General Weighted Average (GWA) of each respondent was gathered through the records of students rating maintained by the Office of the College Registrar. The following numerical symbols with their corresponding qualitative descriptions were utilized in determining the individual academic performance of the respondents (ZSCMST Student Handbook, 2017):

Grade Point Equivalent	Qualitative Description
1.00-1.24	Excellent
1.25-1.56	Superior
1.57-1.80	Very Good
1.81-2.20	Good
2.21-3.00	Fair
3.01-5.00	Failure

### Results and Discussions

#### On the Level of Academic Performance of students enrolled in the Bachelor of Secondary Education major in Sciences According to Aligned Senior High School Tracks and Strands to the College Program

Based on the qualitative description of academic performance utilized in this study, students enrolled in the BSEd major in Sciences with GAS and HUMSS as their strands taken during SHS, and are perceived to be aligned with the Teacher Education program performed fairly in terms of academic performance during the first semester of their first year. Meanwhile, the level of academic performance of students with STEM as their SHS strand is slightly higher with a mean of 2.13, and students from the ABM strand obtained the highest with a mean of 2.07. Both STEM and ABM obtained a qualitative description of “good”.

**Table 1. Level of Students Enrolled in the Bsed Major in Sciences According to Aligned Senior High School Tracks and Strands to the College Program**

<i>SHS Tracks</i>	<i>SHS Strands</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Qualitative Description</i>
<b>ACADEMIC</b>	<i>ABM</i>	2.07	.09	<i>Good</i>
	<i>GAS</i>	2.21	.16	<i>Fair</i>
	<i>HUMSS</i>	2.21	.13	<i>Fair</i>
	<i>STEM</i>	2.13	.28	<i>Good</i>
	<b><i>TOTAL</i></b>	<b>2.17</b>	<b>.19</b>	<b><i>Good</i></b>

From the results obtained, it can be inferred that alignment must not focus solely on the track and program, or the strand and program, but also emphasis on the alignment specifically of strand and program specialization. Students with Accountancy, Business, Management, Science, Technology, Engineering, and Mathematics possess the core competencies and literacies required for one with Science as a field of specialization. Though all strands share common core subjects, the difference lies in the specialized track subjects. STEM, for instance, contains a curriculum with General Biology,

Physics, and Chemistry- all of these specialized courses are foundations for courses in the BSED major in Sciences which includes General and Inorganic Chemistry, one of the courses offered on the first semester of the first-year curriculum.

**On the Effect of SHS Tracks and Strands on the Academic Performance of Students enrolled in the Bachelor of Secondary Education major in Sciences Program**

As reflected in Table 2., test the difference between the SHS tracks and the General Weighted Average (GWA) obtained by the students enrolled in the BSEd program during the first semester of their freshman year. The p-value of 0.714 with degrees of freedom, 2/62 is greater than the 0.05 level of significant, this means that the null hypothesis of no significant difference is accepted, implying that there is no significant difference between the SHS tracks and the General Weighted Average (GWA) obtained by the students enrolled in the BSEd program during the first semester of their freshman year. Although, the SHS of the Academic Track performed slightly higher than the SHS TVL in terms of their mean grade but, statistically, it is not significant.

**Table 2. One Way Anova Test for Difference Between the SHS Track and the General Weighted Average (GWA) Obtained by the Students Enrolled in the BSED Program**

	<b>SHS Track</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>P-value @0.05</b>	<b>Interpretation</b>
Between Groups	<b>Academic</b>	49	2.17	.19	.02	2	.01	.339	.714	Not Significant
Within Groups	<b>TVL</b>	15	2.20	.18	2.19	62	.04			
	<b>Sports</b>	1	2.08	.						
	<b>Total</b>	65	2.18	.19	2.21	64				

As revealed in Table 3., the difference between the SHS Strands and the General Weighted Average (GWA) obtained by the students enrolled in the BSEd program during the first semester of their freshman year, obtained a p-value of 0.617 with degrees of freedom, 5/57 that is greater than the 0.05 level of significance, this means that the null hypothesis of no significant difference is accepted, implying that there is no significant difference between the SHS Strands and the General Weighted Average (GWA) obtained by the students enrolled in the BSEd program during the first semester of their freshman year. Although, SHS of the ABM and STEM strands performed slightly better than the rest of the SHS students of other strands in terms of their mean grade but, statistically, it is not significant.

**Table 3. One Way Anova Test For Difference Between The Shs Strands And The General Weighted Average (Gwa) Obtained By The Students Enrolled In The Bsed Program**

<b>Strands</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p-value @ 0.05</b>	<b>Interpretation</b>
ABM	7	2.07	.091	.190	7	.027	.767	.617	Not Significant
GAS	19	2.21	.160						
HUMSS	10	2.21	.133						
STEM	13	2.13	.279						
Home Economics	6	2.17	.081						

INDUSTRIAL	3	2.27	.172	2.022	57	.035			
ICT	6	2.21	.254						
SPORTS	1	2.08	.						
Total	65	2.18	.186	2.213	64				

This result is in contrary to the claim of Magtibay & Caballes (2019), that the strand taken possessed an impact on the students' academic performance in higher education when they studied the K to 12 Strands Taken by First Year BIT Food Technology students and its effect on their academic performance in Applied Chemistry.

### Conclusion and Recommendations

As a result of their college education, students place a high value on their academic success, which serves as a representation of their knowledge, abilities, and attitudes. The success of pupils in their future careers is largely influenced by their academic performance. In this study, it was found that completers from the GAS and HUMSS-strands which are deemed suitable for the BSEd program, performed fairly, while ABM and STEM graduates obtained a description of "good" and manifested better academic performance. Statistically, there is no significant difference between SHS tracks, and the GWA obtained by students. However, in terms of computed mean grades, students from the Academic track (2.17) performed slightly higher than those from the TVL track (2.20). Similarly, no significant difference between the SHS strand and the GWA obtained by BSEd major in Sciences students were statistically recorded. However, students from the ABM and STEM strands performed slightly better than the rest of students from other strands in terms of their mean grades. Based from the results of this study, this study recommends that public and private higher institutions may consider revisiting their policies on admission, curriculum review, preparation of syllabi and instructional materials to address concerns in improving the level of academic performance of students and in reducing the gap of aligning SHS tracks and strands completed by students and the program they are enrolled in. More so, this data may also be used to enhance the early childhood curriculum to the competencies of the would-be teacher students.

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