

Senior High School Students' Usage of Time and its Impact on Their Academic Achievement in Northern Ghana

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Abstract: *Research studies have investigated the influence of institutional characteristics on student academic achievement. However, relatively little research focuses on time utilisation and its impact on student academic achievement. The current study investigated students' utilisation of time in public senior high schools in the Northern Region of Ghana. The study aimed to determine how students utilisation of time on self-study, group study, religious activities, and classroom instructional activities predicted their academic achievements. A total of 500 students sampled from 7 public senior high schools in the Northern Region of Ghana participated in the study. The research design employed was the cross-sectional survey research design. The instrument used to collect the data was a questionnaire. Analysis was done using multiple regression analysis with the aid of the SPSS (Version 16) software. The results suggest that the time students spent attending classes positively and significantly influences their academic achievement. Class attendance, group studies and*

self-studies times were found to be positively related. The study recommends that students group study and self-study activities should be made compulsory and that adequate time should be allotted within study hours for students to engage in meaningful self-study and group study activities.

Keywords: Academic achievement, Group-study, Self-study, Instructional time, Time utilisation, Senior high schools.

1. Introduction

A large number of studies (Altonji & Dunn, 1996; Hanushek, 1979; Hanushek & Rivkin, 2007; Blazar, 2017; Walli, Abulfathi & Mustapha, 2019) have analysed students' academic performance within the context of an educational production function. In most of these studies, the focus is often on the impact of institutional characteristics, such as student-teacher ratio, class size, expenditure per student, classroom climate and teacher professional responsibilities. Not much is known about time utilisation and its effect on students' academic achievement. However, knowledge on this could be beneficial to both the students themselves and the educational institutions. In the case of the students, it is important to know how to utilise their time most efficiently to maximise high academic performance. The educational institutions may also be provided with the knowledge about the efficiency of, for example, increasing time allotted for students to engage in self-study activities or increasing the supply of tutorials because of the competitive nature of scarce of financial resources. Research evidence (Edmonds, 1981; Lezotte, Skaife, & Holstead, 2002) has established that successful schools have unique characteristics and processes, which help all children, learn at high levels. Among the factors identified as a contributory factor to academic performance is utilisation of allocated time. But how do individual students make use of time and how does that translate into academic achievement? In other words, although there have been many studies of educational production, the evidence would suggest that there is still a long way from understanding how education is produced in terms of how hours of studying is transformed into knowledge. Indeed, there has been little research on the use of allocated time in public senior high schools in the Northern Region of Ghana. Therefore, there is a rationale for a new empirical study that will shed further light on the process by which time input is utilised to acquire knowledge.

Therefore, this study investigated the utilisation of allocated time and its impact on students' academic achievement in senior high schools of the Northern Region of Ghana. The study is of particular importance if we bear in mind the apparent absence of studies that addressed the

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problem of allocated time usage in public senior high schools in the Northern Region. Cognisance must also be taken of how it will interest stakeholders to know how time utilisation translates into the academic performance of students.

1.1 Research Question

Based on the above, the following research question was raised to guide the study:

- How does students time utilisation on self-study, group study and class attendance influence their academic achievement?

2. Related Literature

Time appears to be one of the most important resources needed in the production of goods and services. Its availability is one thing and how effectively and efficiently it has been allotted and utilised is another thing. Arguably, allocating adequate amount of time for a particular activity does not necessarily translate into higher productivity. What guarantees an increase in productivity might be how efficiently and effectively time is put to use. Students and educational authorities have to deal with the problem of time allocation and its utilisation in our various educational institutions. The Economics of education literature (Grave, 2010, Dolton, Marcenaro & Navarro, 2003, Levin & Tsang, 1987) suggests that the problem of students' utilisation of allocated time is a problem of maximising academic achievement by choosing the optimal combination of time inputs. The problem is illustrated by the use of the educational production function that is expanded to include time as a variable. The function assumes that the student is a firm that has resources in the form of time and effort. As a firm, he or she can combine the resources in the most efficient manner to maximise output measured in academic achievement. Levin and Tsang (1987) demonstrated this problem with an example of a student who is faced with the problem of spending time on two activities, namely learning activity in school and out-of-school activity. They argue that an increase in time spent on instructional activities leads to a decrease in effort per unit of time. Therefore, the net effect on educational performance is small. It thus suggests that an increase in instructional time does not automatically lead to an increase in student achievement.

Using the educational production function as a theoretical model, a significant number of studies (Schmidt, 1983; Park and Kerr, 1990; Romer, 1993; Durden and Ellis, 1995; Devadoss and Foltz, 1996; Chan, Shum, and Wright, 1997; Bauer and Zimmermann, 1998; Grave, 2010) have investigated the effect of students time use on academic achievement. Some studies (Bauer & Zimmermann, 1998; Durden and Ellis, 1995; Romer, 1993) find that spending time on class attendance positively affects academic achievement. Others (e.g. Grave, 2010) find the time students spend on self-study activities to be positively related to academic achievement. Schmidt (1983) uses a sample of students in a macroeconomic principles course and finds that the effect of lecture attendance is higher than the one for study hours. Stinebrickner and Stinebrickner (2008) determine the effect of spending time studying academic achievement for first-year students at Berea College (US) and find evidence that an increase in study quantity by one hour increases the academic achievement substantially. Lassibille, Navarro-Gomez, and Paul (1995) compare the average amount of time spent on different types of student activities for Brazil, France, and Spain and find country-specific disparities. Dolton, Marcenaro, and Navarro (2003) find that time spent on lectures is more productive than time spent on self-study. The authors also find that time used for private tuition has a negative effect, and time used for employment has no effect. Bratti and Staffolani (2002) investigate the effects of students' different time use using data on first-year economic students. They find that class attendance improves academic achievement in quantitative disciplines such as Mathematics and Economics. In contrast, self-study improves academic achievement for the none-quantitative disciplines such as Law and Economic History.

The current study focuses on the way students' time utilisation translates into academic achievement, departing from the existing literature in three aspects. First, the utilisation of time is analysed for the whole group of Senior High School students in 3 fields of study (General Arts, Home Economics and General Science) at different schools. Furthermore, four different types of student time use (time for classroom instruction, self-study, group study and religious activities) are distinguished. Second, the study used a relatively large sample size (500), which facilitated the estimation of students' time utilisation for different subgroups characterised by gender and

academic ability. Thirdly, the context (i.e. the geographic setting) is quite different from that which is found in the literature.

The study's theoretical model is based on the assumption that a student's behaviour is like that of a firm that attempts to obtain an output by combining a set of inputs. The process can be represented in the equation below.

$$Y_i = \alpha + X_i\beta + \varepsilon, \quad i = 1 \dots\dots\dots n.$$

- “ Y_i ” is the measure of the academic achievement of individual student i ;
- “ X_i ” is a vector of the explanatory variables. Apart from the time variables, other factors that might affect students' academic achievement are related to parents' educational background. Additionally, student background characteristics such as religious background, programme of study, gender, age, and boarding status are included because they also affect students' academic achievement. They are all captured under vector (explanatory variables). ‘
- α ’ is a constant and captures what the student will achieve with no educational inputs at all.
- “ β ” captures the effect on the achievement of any of the inputs holding other inputs constant.
- “ ε ” is a random disturbance or error term. The idea of the error term is that each student’s academic achievement is affected by a number of random factors which are inherently unobservable and distributed normally. These factors may include an assignment to a competent teacher, being a member of an inspiring study group just to mention a few. The error term suggests that other factors affect academic performance but are not included in the specification.

3. Research Methods

Research Design: The study employed the cross-sectional survey research design. Cross-sectional survey research is designed to provide a snapshot of how things are at a specific time (Descombe, 1998), and there is no attempt to control conditions or manipulate the variables under study (Kelly, Clark, Brown & Sitziz, 2003). Cross-sectional surveys do offer the opportunity to assess relations between variables and differences between sub-groups in a population (Descombe, 1998). Cross-sectional data may also be used to test causal hypothesis in a number of ways. For example, using statistical techniques such as two-stage least squares (Babbie, 1990). The responses from a well-designed survey with a high response rate can be generalised to a large population. The choice of the cross-sectional survey was appropriate because the purpose of the study was to investigate the relationship between time utilisation and academic achievement of second-year senior high school students in the Northern Region of Ghana. Since the data was predominantly quantitative, the researcher employed a quantitative research methodology in the research work.

The target population was all senior high school students in the Northern Region of Ghana. The accessible population was 2nd-year students of the 2019/2020 academic year. These students had been in school for two years and had accumulated enough experience and might give valid experience about their time use patterns. The sample frame consisted of 15,301 senior high school students from 7 senior high schools in the Northern Region of Ghana. The sample size for this study was 500 students. The sample size was determined using Krejcie & Morgan (1970) table of sample size determination. Krejcie and Morgan's sample size determination is based on $p = 0.05$, where the probability of committing type I error is less than 5 % or $p < 0.05$. The formula is as stated below:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1)} + X^2 P (1-P)$$

Where,

S = required sample size.

The table value of chi-square for 1 degree of freedom at the desired confidence level ($0.05 = 3.841$).

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size. d the degree of accuracy expressed as proportion (0.05). The formula is the most popular among quantitative researchers. Base on this calculation, the corresponding sample size in the Table of sample size determination associated with a population of 15,301 is about 500 students.

Sampling Techniques and Procedure: The probability sampling technique was adopted to sample students for the study. Under this sampling technique, each member of the population has an equal chance of being selected for the study. This scientific sampling is quantitative in nature and involves in selecting a fairly great total of units from a given population or from strata (Bala, 2017). The sample is generated to address quantitative research with sampling question. Probability random sampling is used for the principle of randomisation distribution in deriving the sample. It also uses some form of modelling, validity of the model help in producing what is called valuation of accuracy. Thus, the purpose of the choice of the probability random sampling technique was to avoid the possibility of biases in the choice of respondents so as to improve upon the external validity of the findings.

Under the probability sampling technique, the multi-stage sampling method was adopted to get the sample. Multi-stage sampling involves a combination of two or more probability sampling methods. With more advanced research, it appears that using just one form of probability sampling does not ensure the randomisation necessary to ensure confidence in results. By combining various probability sampling techniques at various stages of research initiatives, researchers are able to maintain confidence that they are mitigating biases as much as possible. First, the cluster random sampling technique was used to get the total number of students to be selected from each of the senior high schools. In cluster-random sampling, the initial research identifies boundaries. In this case, the boundaries (clusters) here are the various senior high schools. The number of students to be sampled from each of the clusters was determined as a proportion of the sample size. Table 3 shows the results

Table 1: Population of clusters

Cluster	Population	Number selected as a proportion of the total population
Tamale Senior High	3039	99
Walewale Senior High	2500	83
Business Senior High	2245	73
Wulugu Senior High	2767	90
Islamic Senior High	1510	49
Nalerigu Senior High	1740	57
Bunkpurugu Senior High	1500	49
Total	15,301	500

The primary advantages of cluster-random sampling are its convenience and ease of use. The number of students taken from each cluster at this stage constitutes the sample size for each of the clusters. Having determined the sample size for each cluster, the next stage was to determine the number of male and female students to be picked from the clusters having in mind this sample size. It was determined based on their number in the population and as a proportion of the cluster sample size. Table 2 gives the details.

Table 2: Sample Size for males and females in the population

Cluster	Population by Gender		Total Population	Sample by Gender		Total Sample
	Male	Female		Male	Female	
Tamale Senior High	2000	1039	3039	65	34	99
Walewale Senior High	1450	1050	2500	48	35	83
Business Senior High	1200	1045	2245	39	34	73
Wulugu Senior High	1700	1067	2767	55	35	90

Islamic Senior High	1010	500	1510	33	16	49
Nalerigu Senior High	940	800	1740	31	26	57
Bunkpurugu Senior High	905	595	1500	30	19	49
Total			15,301	301	199	500

The next stage in the multi-stage sampling exercise was the use of a systematic random sampling technique to sample the individual students from the population. The list of students was obtained from the various schools and stratified into male and female. Then they were serially coded from, for instance, 001 to 2000 for male students of Tamale senior high school. Every 2nd number was picked, and the corresponding students selected. For example, 2, 4, 6, 8, 12, etc., until the researcher was able to get the 65 students required. The processes were repeated for the other clusters until the total sample was obtained. Systematic random sampling allows researchers to create samples without using a random number generator, but the outcomes are not quite as random as they would be if a software program was used instead.

Research instrument and data analysis: The instrument that was used for data collection was the questionnaire. The questionnaire was in 7 main sections. The first part (section A) looked at the background information of the respondents. The second part (section B) touched on students' time use variables. The third part (section C) covered the Academic achievement of students. The use of the questionnaire to collect data has a lot of advantages. In the first place, large amounts of information can be collected from a large number of literate people in a short period of time and in a relatively cost-effective way. It can be carried out by the researcher or by any number of people with limited effect to its validity and reliability. The results of the questionnaires can usually be quickly and easily quantified by either a researcher or through the use of a software package. The results can also be analysed more 'scientifically' and objectively than other forms of research. When data has been quantified, it can be used to compare and contrast other research and may be used to measure change. Positivists believe that quantitative data can be used to create new theories and/or test existing hypotheses.

In spite of the enormous benefits of using the questionnaire to collect data, it has a few challenges that limit its usability. In the first place, it is argued to be inadequate to understand some forms of information - i.e. changes of emotions, behaviour and feelings. Again, phenomenologists state that quantitative research is simply an artificial creation by the researcher, as it is asking only a limited amount of information without explanation. In spite of these shortcomings, the questionnaire is the most widely used instrument in most schools around the world to collect information on school effectiveness for quality assurance purposes.

The data was analysed using multiple regression analysis. Multiple regression analysis is a statistical tool for the investigation of causal relationship among variables. It is used to ascertain the causal effect of one variable upon another. It is valuable for quantifying the impact of various simultaneous influences upon a single dependent variable. The method is appropriate because the variables involved were categorical and continuous variables. All assumptions for the running of regression analysis were tested, and all pointed to the positive direction.

In the first place, the test on homoscedasticity suggests that the regression residuals were normal and the variance of the dependent variable at each level of the independent variables was close to being equal. Homoscedasticity suggests that the dependent variable has an equal level of variability for each of the values of the independent variables. It is a necessary condition for the validity of regression results. Multicollinearity test was also done to find out whether it existed among the predictor variables. Multicollinearity exists when more than two predictors correlate very strongly. In this case, the results produced are very likely to be biased upwards or downwards. An index greater than 15 indicates that there is a possible problem. An index greater than 30 suggests a serious problem with collinearity. The multicollinearity analysis suggests that most of the indices (19 out of 31) were at most 15) with the rest falling between 15 and 25 indicating

the absence of serious multicollinearity problems. Thirdly, bias results are also occasioned when the error term in the regression equation correlates with the predictor variables. Bias results are those that have the systematic tendency to be unreliable. However, a central limit theorem proves that a sufficiently large probability sample size will result in normal distributed error terms and outliers and hence eliminates the bias. The sample size used for the analysis suggests that it is sufficient (500 respondents) to solve this problem.

Ethical issues: The research was purely for academic purposes, and the data that was collected was used for research purpose. The targeted respondents were all children consisting of senior high school students. The purpose of the data collection and the research work was explained to them to a large extent. Before taking part in the study respondents' consent was sorted for. They willingly completed the consent form and signed it, indicating that they wish to take part in the study. No respondent was compelled to take part in the exercise. It was purely a voluntary exercise, and at every point during the research exercise, every respondent had the right to opt-out. The University of Cape Coast Institutional Review Board (IRB) had the opportunity to go through, offer its advice, recommend ethical issues in the data-gathering instruments, and approve the study.

4. Results and Discussion

The study sought to determine whether there was a significant influence of the time students spend in class attendance, group study, self-study and religious activities on academic achievement. To accomplish this, a multiple linear regression analysis was conducted to determine how well the students' time use predicted academic achievement. Three sets of multiple regression analysis were conducted to predict students' academic achievement. Table 3 shows the results.

Table 3: Results of Regression analysis of Academic Achievement and Time variables

Variable	Specification 1			Specification 2		
	B.	B	P	B.	β	P
Class Attendance	.036	.133	.003	.035	.131	.004
Group Study	.023	.089	.007	.022	.075	.009
Self-study	.040	.104	.042	.043	.110	.033
Religious Activities	.031	.084	.062	.028	.074	.105
Constant	1.334					
R ²	.16					
Age				-.004	-.005	.913
Gender				-.001	-.001	.980
Religion				.089	.083	.067
Boarding Status				.072	.071	.119
Programme of Study				-.050	-.078	.113
Mothers' Education				.009	.023	.666
Fathers' education				-.011	-.035	.516

Significant at 95% Level of Confidence

The first analysis (specification i) included the four time-use variables (class attendance, self-study, group study and religious activities) as predictors. The second analysis (specification ii) also included the demographic variables of respondents (age, gender, religious affiliation, father's education level, mother's education level, programme of study, boarding status, and academic ability) as predictors of students' academic performance achievement. The third Analysis was carried out for the sub-groups namely, students of different schools, programmes of study, gender, academic ability, religious affiliation and socio-economic background. Firstly, the linear combination of the time use variables (specification i) was significantly related to achievement, $R^2 = 0.16$, adjusted $R^2 = 0.13$, $F(4, 494) = 6.4$, $p < 0.05$. This suggests that 16% of variation in academic

achievement is explained by the time students spend on various activities in the school. The analysis further revealed a significantly positive influence of time spent attending classes (Beta = 0.133, $p < 0.05$); group studies (Beta = 0.089, $p < 0.05$) and self-study (Beta = 0.104, $p < 0.05$) on academic achievement. The exception was time devoted to religious activities which was positive but insignificantly related to academic achievement (Beta = 0.084, $p < 0.05$). The overall model of fit was $R^2 = 0.16$.

Expanding Specification (1) by including background characteristics as predictors (specification ii) decreased the magnitude of the time use variables' coefficients as well as the significance level. The coefficients for the time spent attending classes, on self-study, and on religious-related activities decreased (class attendance, Beta = 0.131, $p < 0.05$; group studies, Beta = 0.075, $p < 0.05$; time spent in the religious activities, Beta = 0.074, $p < 0.05$). The linear combination all the variables however remained significantly related to academic achievement, $R^2 = 0.14$, adjusted $R^2 = 0.11$, $F(10, 488) = 1.9$, $p = 0.043$. Grave (2010) find similar results when demographic variables are controlled for in the determination of the effect of time allocation on academic achievement. This seems to suggest that time devoted to study-related activities must be looked at within the context of students' background characteristics and when determining its effect on academic achievement.

On class attendance time, the results in Table 1 suggest that students who spent more time attending classes have significantly higher grades than students who spent less. The significant influence is not much affected when the demographic characteristics of the students such as age, gender, programme of study, boarding status, religious affiliation, and socio-economic background of parents are controlled for. Although the mediating effect of students' background characteristics is not significant, one cannot entirely rule out their importance when analysing the effect of time use variables on academic achievement. It must also be noted that factors such as the classroom learning environment, the characteristics of the teacher and other resources in the classroom seem to play a role in the quantity of material a student learns in the classroom. These factors must be taken into account when analysing the effect of the time students spend in class and their academic achievement. The factors were, however, not covered in the current study. Andretti and Addadio (2012); and Grave (2010) similarly find a positive and significant influence of attendance on academic achievement.

The results further suggest that Students who spend more time on self-study related activities seem to have higher grades compared to students who invest less time. In other words, time devoted to self-study activities supporting learning seems to affect grades positively. In agreement with these results, Andretti and Addadio (2012), Grave (2010) find a positive and significant influence of time devoted to self-study activities on academic achievement. Similarly, Stinebrickner and Stinebrickner (2008) find a positive association between the time students spends on self-study activities and their academic achievement. Using whether one of the randomly assigned roommates brings a video or a computer game with them as an instrument, the authors find evidence that an increase in self-study quantity by one hour increases academic performance significantly. The results further confirm Frederick, and Wahlberg (1980) findings that time spent on learning are positively related to achievement. In contrast, Dolton, Marcenaro, and Navarro (2003) find a negative effect of time spent on self-study activities on academic achievement of students. This negative association could be either caused by the inefficiency of the individual students or the nature of the study environment. It seems the individual student's intellectual ability also counts when determining the link between effort and time put into self-study and academic achievement. Unfortunately, with the data at hand, these effects cannot be disentangled. Nevertheless, this result should be kept in mind when allocating time for self-study activities.

The analysis in Table 1 further suggests that students who spent more time in student group studies earn significantly higher grades (Beta = .089, $p < 0.05$). The result is an indication that it is profitable for students to devote more time to group studies. This is consistent with Dolton, Marcenaro and Navarro (2001) group learning principle that states that learning increases when students spend time profitably sharing common goals are dependent on and accountable to each other. The study group environment in a deed appears to offer students the opportunity to engage in a more in-depth discussion with peers, sharing information and knowledge about programmes they are collectively enrolled in. The results also give credence to Van den Bossche et al. (2006)

model of group learning effectiveness. According to this model, group effectiveness is affected by both cognitive and social factors, which ultimately promote effective learning. The cognitive factors that contribute to the effectiveness are referred to as team learning behaviour and include construction, co-construction and constructive conflict. This implies that within a group, different viewpoints are articulated and discussed, and a common understanding is negotiated (Van den Bossche et al., 2006). As mentioned by Van den Bossche et al. (2006), these factors might have contributed to aid students to get high grades as they engage in group learning. In contrast, Grave (2010) finds a negative effect of attending group studies on students' academic achievement. This negative association could be either caused by the inefficiency of such workgroups or tutorials or by a selection effect.

4.1 Regression Results for Sub-Groups

Regression analysis was carried out for the various sub-group, namely, students of different ability, gender, programmes of study, and parents' education level. The results are as follows: Table 4 shows the results of the influence of time allocation and students background characteristics on academic achievement by sex. The analyses were done separately for males and females.

Table 4: Influence of Time use Variables on Academic Achievement for Males and Females

Variable	Male			Female		
	B.	β	P	B	β	P
Class attendance	.100	.265	.004	.035	.101	.163
Group Study	.050	.165	.879	.017	.057	.393
Self- Study	.003	.009	.888	.071	.177	.009
Religious Activities	.004	.008	.012	.128	.277	.000
Age	-.024	-.032	.586	-.035	-.040	.551
Religion	.136	.132	.030	.003	.003	.109
Boarding status	.046	.144	.015	-.120	-.116	.089
Programme of Study	.036	.052	.364	.021	.035	.612
Mothers Education	.014	.037	.585	-.023	-.057	.409
Fathers Education	-.011	-.036	.602	.005	.015	.854
Ability	-.089	-.088	.138	.195	.195	.010

Significant @ 95% Level of Confidence

The linear combination of the time used variables was significantly related to academic achievement for both males ($R^2 = 0.36$ adjusted $R^2 = 0.13$, $F(11, 273) = 3.9$, $p < .05$) and females ($R^2 = 0.40$, adjusted $R^2 = 0.16$, $F(11, 202) = 3.5$, $p < 0.05$). This suggests that 36% and 40% of the variation in academic achievements of males and females respectively is explained by the combined influence of their background characteristics and the time they spend on class attendance, self-study, group study and religious activities.

The influence of class attendance time on academic achievement is positive and significant for males ($\beta = 0.265$, $p < 0.05$) but statistically insignificant for females ($\beta = 0.101$, $p > 0.05$). Grave (2010) finds that investing time in attending classes is positively associated with grades only for female students. The influence of group study time on academic achievement is also significant for males ($\beta = 0.165$, $p < 0.05$) but statistically insignificant for females ($\beta = 0.057$, $p > 0.05$). This is also contrary to Grave (2010) report that says that spending time on student group studies is not associated with grades for both males and females. Self-study time has positive and significant influence on academic achievement for females ($\beta = 0.177$, $p < 0.05$) but has insignificant influence on academic achievement for males ($\beta = 0.009$, $p > 0.05$). This is inconsistent with Grave (2010), who found that

time spent on self-study has a significant positive correlation with academic achievement for both males and females.

The results suggest that no matter the amount of time girls spend on class attendance and group study, their academic achievement does not improve significantly. It may not necessarily be the amount of time that one devotes for group study or class attendance that will bring about improvement in academic performance, but what one does during group or class discussions. Milto and Rogers (2002) reported that differences in attitude and achievement also affect female interaction when working within groups. They explained that females feel less confident than their male counterparts and may be less assertive. According to them, research suggests that females often feel their comments are incorrect and that they have little input to offer groups. This behaviour is especially true for groups comprised of both sexes. Females prefer to work in same-sex lab groups. Perhaps this is because females' lower confidence combined with boys' desire to control scientific activities lowers females' interest and involvement in physical, even leading to feelings of alienation in extreme cases.

Another factor that may influence females' behaviour when involved in engineering tasks is the introduction of competition (Milto & Rogers, 2002). Females traditionally prefer cooperative modes of learning rather than competitions. Females tend to be overshadowed by competition, while males flourish in competitive settings. World Bank (2012) contends that most girls hardly take part in-class discussion. The Bank identified this as one of the contributory factors of their underperformance (World Bank, 2012). Table 5 shows the regression analysis results of the impact of time use variables on academic achievement for high and low academic ability students.

Table 5: Regression results for ability groups

Variable	High Ability			Low- Ability		
	B.	B	P	B.	β	P
Class attendance	.020	.057	.370	.141	.350	.001
Group Study	.001	.003	.162	.058	.194	.002
Self- Study	-.039	-.103	.091	-.013	-.032	.623
Religious Activities	.059	.143	.020	.038	.075	.261
Age	-.024	-.032	.605	-.038	-.034	.613
Religion	.138	.139	.026	-.030	-.023	.728
Boarding status	.020	.020	.746	-.028	.115	.082
Programme of Study	.056	.084	.172	.122	.022	.745
Mothers Education	.007	.017	.815	.013	.068	.364
Fathers Education	-.016	-.048	.499	.023	-.075	.340
Gender	.088	.087	.167	-.246	-.247	.000

Significant @ 95% Level of Confidence

The linear combination of time use variables and students background characteristics was significantly related to academic achievement for both high ability ($R^2 = 0.17$ adjusted $R^2 = 0.13$, $F(11, 269) = 1.9$, $p < 0.05$) and lower ability students ($R^2 = 0.22$ adjusted $R^2 = 0.18$, $F(11, 206) = 5$, $p < 0.05$). This is an indication that 17% and 18% of variation in academic achievement can be explained by the combined effect of students' background characteristics and time spent on class attendance, group study, self-study and religious activities for low and high ability students, respectively.

The influence of class attendance time on academic achievement was significant and positive for lower ability students ($\beta = 0.350$, $p < 0.05$) but insignificant for high ability students ($\beta = 0.016$, $p > 0.05$). Group studies time had positive and significant impact on academic achievement for lower

ability students ($\beta = 0.197, p < 0.05$). The impact was however insignificant for high ability students ($\beta = 0.003, p > 0.05$).

The analyses also revealed that time spent on self-studies has an insignificant influence on academic achievement for both groups. Religious activities time however had positive and significant impact on academic achievement for high ability students ($\beta = 0.143, p = 0.02$) but insignificant impact on academic achievement for lower ability students ($\beta = 0.075, p = 0.26$). Differences in the efficiency of time allocation between students of different abilities may account for these results. In their theoretical model of students' time allocation, Dolton, Marcenaro and Navarro (2001) explain the possibility that some individuals who allocate less time to study may end up with higher exam performance simply due to their higher ability and their more efficient conversion of study time to exam performance. Spending more or less time in academic-related activities may not necessarily have a significant impact on academic gifted children's academic performance.

5. Conclusion and Recommendations

The study concludes that the usage of allocated time matters in discussions on students' academic achievement. This is because the time students spend attending classes, self-study, and group study predict their academic achievement. Students' background characteristics are intervening variables and thus reduce the level of significant relationship between the use of allocated time and academic achievement. Self-study time and group study times are also complementing. Therefore, the study recommends that students group study and self-study activities should be made compulsory and that adequate time should be allotted within study hours for students to engage in meaningful self-study and group study activities. Future studies should focus on the management of allocated time, particularly self-study time and group study time by gender and programmes of study.

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