STATISTICAL ANALYSIS ON STUDENTS ACADEMIC PERFORMANCE IN RELATION TO LEARNING ENVIRONMENT AND OTHER VARIABLES IN BAUCHI LOCAL GOVERNMENT AREA, OF BAUCHI STATE.

IBRAHIM YUSUF INUWA; USAMATU USMAN; KALABU SALISU AHMAD; & BALA YUSUF,
Department of Mathematics and Statistics Federal Polytechnic Bauch

Abstract:
This study investigate students academic performance in relation to their learning environment and other variables in some selected mixed secondary schools in Bauchi local Government Area, of Bauchi state. A stratified random sample of 150 students was selected from five sampled secondary schools 30 from each school. Cronbach alpha test is used to test the reliability of the questionnaire were as the alpha score is 0.83 this shows that the questionnaire is reliable. T-test was used in analyzing the data at α= 0.05 level of significant, results shows that there is significant differences between the students’ academic performance in relation to learning environment, the result also shows that there is significant differences between students academic performance in relation to teachers attitude towards work, and there is significant difference between students academic performance in relation to students attitudes towards learning, and finally the results also shows that there is significant differences between the students’ academic performance in relation to principals leadership style.

Keywords: academic performance, learning environment, questionnaire, t – test, cronbach alpha.

Introduction:
Education today is the backbone of development of any country. This is why government in every country spend much money in education for it
citizens. Secondary education is an important stage of educational system necessary for human development. It is at these stage tertiary institution admitted qualify candidate into their programmes. According to Byoung – Suk. (2012) that safety, good and attractive environment aid in enhancing children growth and learning. During school period pupils can observe six to eight hours in the school in which the school environment plays an important role in enhancing child development. When schools environment are supportive in nature and friendly in nature and friendly the pupils’ are not likely to be involve in drug abuse, mayhem and other unruly behaviors. He also mentioned that when pupils find their academic environment supportive and caring most of their time is consume in the environment. The academic environment needs careful planning and design to maximize experiences that aid education, health and stewardship. However, the academic environment is of great importance in building and rebuilding of intellectuals’ mind.

According to Mudassir Ibrahim, Norsuhaly. A. (2015) in their study influence of school environment on academic performance of secondary school students in Kuala Trerengganu Malaysia, their findings shows that schools with enough teaching equipment, good teachers and conducive environment, their pupils’ seems to perform better than those pupils’ from schools with less equipment, bad teachers and poor learning environment.

Arul Lawrence A.S. (2012) lamented that children spend majority of their time in school, and that the academic environment has effect on their academic performance through teaching strategies, curricular and relationship.

**Literature Review**

Mudassir Ibrahim, Norsuhaly. A. (2015) in their study influence of school environment on academic performance of secondary school students in Kuala Trerengganu Malaysia, their findings shows that schools with enough teaching equipment, good teachers and conducive environment, their pupils’ seems to perform better than those pupils’ from schools with less equipment, bad teachers and poor learning environment.

Eric. S. (2005) in his study the role supportive school environment in promoting academic success stated that, academic environment has major
effect on pupils’ acquiring knowledge and development, also an important part of their social, emotional and moral development. The investigator point out those supportive schools in nature has these positive results by promoting students connectedness, belongingness or community. That the terms can take the place of one another and use here to students sense of being in a good, respectful relationship with their peers and adult at school. However, building in academic environment is a means of nurturing academic success. He also lamented that students closeness and relationship and their notion that teachers care about them is what boost their attitude towards learning.

Aru Lawrence, A.S, Vimala, A. (2012) carried out a study academic environment and students academic performance of standard six pupils’. He employed data from sample respondents is used to ascertain the correlation between academic environment and academic performance. The result shows that there is no significant difference in the academic environment of standard six students in terms of sex, medium of instruction. However, there is significant difference in academic in the academic environment of standard six pupils’ in terms of the location of the school. The township students have good conducive academic environment than the pupils’ in the remote areas. They township students usually have stressful environment compare to those in remote area because they are living in noisy environment. However, they felt that the academic environment is not good for pursuit their studies. Moreover, well furnished academic environment with modern equipments aid students in concentrating in their studies that lead to immense academic performance.

Mohd Mahzan Awang et. al; (2013) in their research work, students attitude and their academic achievement in nationhood education, the result shows that the perception that the pupils have towards their teachers play an important role in ascertaining their learning output in Malaysian studies, whereas, the teachers are of the opinion that academic environment is an important factor which plays a vital role to students academic performance in the subject of study. They researchers are on the opinion that lecturers should build a close and harmonious relationship with pupils’ and create a beautiful and conducive environment to make students constantly take part in class room activities and learn the
Malaysian studies interestingly and effectively. Nationhood education in Malaysian curriculum varies in many subjects including history civic education, ethnic relations, malaysian studies and general studies. Private higher education of malaysian act of 1990 stated that it is mandatory to all the students to engage in learning and passing the Malaysian studies subject. Because of this rule, all the students in private universities consisting of a total figure of 323,787 students (Da 2007) learn the Malaysian studies subject. Regardless of the significant of this subject for the country at large, result of the study indicates that majority of students don’t have the interest in studying this subject. Everyday interaction with the students shows that the Malaysian studies have been given less importance by majority of students. Because of that, majority of the students obtain lesser grade for the subject, which has immense effect on their academic cumulative grade point.

Erdogan, Bayram & Deniz, (2008); Konting (1990) their study indicate that there is a close correlation between students behavior towards academic subject and their total performance. However, related study on the area shows that there are two major factors that take part in enhancing students academic performance the include psychological and sociological factors. The psychological factors simply refers to those characteristics which an individual posses internally such as emotional and cognitive domain, while the sociological factors refers to external characteristics such as socio-environment and friendship. However, the two factors are inter correlated and dependable.

Ekperi, Paul Maduke et. al; (2019) in their study teachers attitude as a relationship to students’ academic performance results reveals that teachers attitude relate positively and significantly with pupils’ academic achievement. They also lamented that poor government behaviors toward teachers, lack of work satisfaction, poor remuneration and delayed payment of teachers salary, pupils’ learning zest and inadequate instructional materials where among factors found to affect teachers’ attitude positively.

Kurgat and Gordon (2014) in their study influence of teachers characteristics and attitudes on pupils’ academic performance in KCSE economics examination which the carry out a field based survey. The
investigation was carried out in secondary schools offering economics in Eh Rift Valley region of Kenya. The sample for the study was obtained using a simple purposive sampling. The sample comprises of all the fourth form students studying economics in all secondary schools in the Rift Valley region of Kenya, school supervisors in the area where economics is thought and instructors from such schools where the subject are offered. The study employed a total of 187 students, 32 teachers and 4 district supervisors were also involve. The survey method was used in collecting the data by the used of questionnaire. The data was analyzed by used of excel software program, every item in the questionnaire was analyzed using basic statistical techniques. These involve computing the mean differences, percentages and totals. Furthermore, these techniques were employed to compare the numerous data obtained. The researchers finally draw conclusion that teachers have good attitude towards economics and where as bad achievement could be related to other element other than teachers’ behavior.

Nicholas Ngozi Ligwe et. al; (2017) in their study principals leadership styles and students academic achievement I Enugu metropolis: A comparative survey of public and mission secondary schools. Results of the study shows that the autocratic ruling method positively related with students academic achievement. In the study they compare the ruling method which the principals used in the public schools and mission secondary schools on students academic achievement in Enugu south local government area. They make use of Expost Facto descriptive research design. Data for the study was collected by the questionnaire and interview.

Adeyema and Bolarinwa (2013) brought into attention on ruling style that has relation with the autocratic/democratic continuum. This is a chore introduction against the relationship oriented method of leadership with attention orientation which is the same to autocratic style and the relationship oriented method which is to the democratic ruling style. According to the investigators, the present study has shown that the lack of similarities between effectiveness and in effectiveness of the four ruling method is the proper leaders behavior to the particular circumstances for which is used. In relation to the ongoing Duze (2012) lamented that one of
the core factors that would relief or incapacitate each of the four ruling methods is the core purpose maturity of the person or clusters of persons being led with maturity which is define in terms of the ability to set higher goals also real.

It was made known by Nsubuga (2008) that effective and active principal put more attention designing work plan, special responsibilities and allow teachers to take part in decision making process in making effort to achieve set school goals making use these method is of mutual gain. It makes them to become part of or the team and allows you to decide in a better way. Ogunasanwo (2000) lamented that the participatory ruling method provides an atmosphere of sense of unity in the chase of common set of goals.

Previous studies has mainly focused on student academic achievement in relation to each of the following variables, learning environment, students attitude towards learning, teachers attitude to work, and finally principal leadership styles separately based on the variable each researcher choose to relate with students academic performance where they employed statistical tools like the chi-square and descriptive statistics on a different case study. This present study in addition set to find out students academic achievement in relation to all the four domain variables stated above in this paper which they are related each with academic performance. Cronbach alpha and t – test was use in the data analysis in a new case study Bauchi Local Government Area.

**Objectives of the Study**

This study seeks to achieve the following objectives:

1. Determine if students academic performance is enhance by learning environment.
2. Determine if students academic performance is enhance by students attitude towards learning.
3. Determine if students academic performance is enhance by teachers attitude to work.
4. Determine if students academic performance is enhance by principals leadership style.
Research Hypothesis

1. $H_0^1$: there is no significant difference between the student’s academic performance in relation to facilities in learning environment
$H_1^1$: there is significant difference between students academic performance in relation to learning environment

2. $H_0^{ii}$: there is no significant difference between students academic performance in relation to students attitude towards learning.
$H_1^{ii}$: there is significant difference between students academic performance in relation to students attitude towards learning.

3. $H_0^{iii}$: there is no significant difference between students academic performance in relation to teachers attitude to work.
$H_1^{iii}$: there is significant difference between the students’ academic performance in relation to teachers attitude to work.

4. $H_0^{iv}$: there is no significant difference between students academic performance in relation to principals leadership style.
$H_1^{iv}$: there is significant difference between students academic performance in relation to principals leadership style.

Delimitation

This study was restricted and focuses on students’ academic performance in relation to learning environment, students attitude towards learning, teachers attitude to work and principals leadership style in some randomly selected 5 mixed secondary schools in Bauchi local Government area.

Population and sample

The population of the current research was students from the mixed secondary schools in Bauchi local Government area from which five mixed secondary schools were randomly selected. Sample of 150 students were also selected randomly from the five mixed senior secondary, 30 from each schools 15 boys and 15 boys which constitute a total of 150.

Study design

In the current study a simple random sampling procedure was employed in selecting the five mixed secondary schools, followed by a stratified
sampling procedure which is used in selecting the sample of 30 students from each of the heterogeneous population of the selected schools. Finally a self made questionnaire was administered to the sample respondents to answer.

**Statistical techniques used**

For the current study the following statistical techniques was employed using spss

1. Cronbach alpha test : This was used in testing the internal consistency of the questionnaire that is testing reliability of the data.
2. t – test: The t – test was used in the analysis and interpretation of the data

**Data analysis and Result**

➢ **table 1:** t – test for significant difference between students academic performance in relation to learning environment

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
<th>Paired Differences</th>
<th>T</th>
<th>D f</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error Mean</td>
<td>95% Confidence Interval of the Difference</td>
</tr>
<tr>
<td>Pair 1 Agree – Disagree</td>
<td>22.000</td>
<td>16.911</td>
<td>7.563</td>
<td>1.001</td>
</tr>
</tbody>
</table>

*Field survey, 2020.*

**Significant at α = 0.05**

P value = 0.044

T value = 2.909

P value < α
From table one since the p value is less than the level of significant $H_1$ is accepted for the first hypothesis and conclude that the test is significant, that there is significant difference between students academic performance in relation to learning environment.

➢ **table 2:** $t$- test for significant difference between students academic performance in relation to students attitude towards learning.

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired Differences</td>
</tr>
<tr>
<td>Mean</td>
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<td>Std. Deviation</td>
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<tr>
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</tr>
<tr>
<td>95% Confidence Interval of the Difference</td>
</tr>
<tr>
<td>Lower</td>
</tr>
<tr>
<td>Upper</td>
</tr>
<tr>
<td>T</td>
</tr>
<tr>
<td>Df</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
</tr>
</tbody>
</table>

| Pair 1 | Agree - Disagree | 30.00000 | 11.57584 | 5.17687 | 15.62670 | 44.37330 | 5.795 | 4  | .004 |

*Field survey, 2020.*

Significant at $\alpha = 0.05$

$P$ value = 0.004

$T$ value = 5.795

$P$ value < $\alpha$

From table two since the p value is less than the level of significant $H_1$ is accepted for the second hypothesis and conclude that the test is significant, that there is significant difference between students academic performance in relation to students attitude towards learning.

➢ **table 3:** $t$- test for significant difference students academic performance in relation to teachers attitude to work.

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired Differences</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Std. Error Mean</td>
</tr>
<tr>
<td>95% Confidence Interval of the Difference</td>
</tr>
<tr>
<td>Lower</td>
</tr>
<tr>
<td>Upper</td>
</tr>
<tr>
<td>t</td>
</tr>
<tr>
<td>df</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
</tr>
</tbody>
</table>

| Pair 1 | Agree - Disagree | 16.80000 | 14.87279 | 6.65132 | -1.66701 | 35.26701 | 2.526 | 4  | .045 |

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Significant at $\alpha = 0.05$

P value = 0.045

T value = 2.526

P value < $\alpha$

From table three since the p value is less than the level of significant $H_1$ for the third hypothesis is accepted and conclude that the test is significant, that there is significant difference between students academic performance in relation to teachers attitude to work.

➢ table 4: t-test for significant difference between students academic performance in relation to principals leadership style.

Paired Samples Test

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1: Agree - Disagree</td>
<td>33.20000</td>
<td>25.32193</td>
<td>11.32431</td>
<td>64.64133</td>
<td>2.932</td>
<td>4</td>
<td>.043</td>
</tr>
</tbody>
</table>


Significant at $\alpha = 0.05$

P value = 0.043

T value = 2.932

P value < $\alpha$

From table four since the p value is less than the level of significant $H_1$ for fourth hypothesis is accepted and concludes that the test is significant, that there is significant difference between students academic performance in relation to principals leadership styles.

Conclusion and Recommendation

Based on the findings of the study it is concluded that school environment, students attitude towards learning also teachers attitude to work and finally principals leadership styles has effect on students academic performance significantly.
However, based on the results of the above findings the study thus recommends that.

i. The government should induce more funds into educational system for the procurement of teaching and learning and learning facilities, building of modern classrooms, laboratories, and well furnished libraries and organizing workshops for teachers.

ii. Parents should also show active zest in their children education by providing them with rich learning materials at home and also make the home environment conducive for learning by making sure they do their home work and other academic activities at home in order to help them build interest and positive attitude towards learning.

iii. With respect to teachers attitude to work, government should provide vehicle allowance to teachers to enable them afford cars for themselves. Also provide accommodation for teachers close to the school or in the school yard. These as such will make the teachers be in classroom early.

iv. The teachers should also change their attitude to work to a more positive attitude mentally. They should also be friend to their students so that they can find the subject interesting and enhance their academic performance.

v. Any student who display interest in learning should be encourage by the parents and teachers and also the school management should provide some sort of gift at the end of every term to any student who comes first, second and third position so that other students can be more determine too.

vi. The government should make sure those educational administrator they appoint to monitor school principals are doing their job and also give principals appropriate orientation before they appoint them as school heads. They should be prepared for managerial skills and in- service training to help improve their leadership skills.

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