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A Study on Academic Performance of Public and Private Schools in Winneba Municipality

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Abstract:

The purpose was to evaluate and compare academic performance of private and public schools in Winneba. The study concentrated on basic level of education with descriptive survey of the ex-post facto research design using quantitative approach. Purposive sampling was used to select two schools one being private and other public. Simple random sampling was used to select the ten (10) teachers, five from each school. Moreover, purposive sampling was also used to select two (2) head –teachers of which one from each school. The instruments for the study were questionnaire and document. Non-parametric statistics was used to analyze the questionnaire and the document. The result revealed that the level of experience of professional teachers, educational material and teaching and learning facilities together with quality of supervision between the two set of schools were significantly different. On academic performance the result of the document shows that there was no significant difference. Recommendations were given to that effect.

Keywords: *teacher experience, supervision, educational material, teaching and learning facilities, quality of supervision, academic performance*

1. Introduction

Education is the bed rock on which individuals, society and nation develops. Aboagye (2002) citing Guggisberg (1924) explains that the keystone of progress in human life is education. Due to this philosophical reason, individuals, societies, and nations attach importance to education.

In Ghana, the above assertion can be supported by Ghana’s Education Act of October 1961 in which government made primary and middle school free and compulsory for every citizen. This policy made an outstanding increase in enrolment of pupils and students at all levels of the educational structure and the corresponding increase in the number of schools and institutions during the Nkrumah’s administration (Abosi and Brookman-Amisshah, 1992). Various governments after Nkrumah made an effort to make education available for every citizen of Ghana.

In 1987, the National Education Reform (NER) had one of its objectives as access and participation in education. Due to this reason, the government made education accessible and invited individuals, Non-Governmental Organization and other stakeholders’ interest in delivery of quality education in Ghana. This gave rise to more private schools known as “International” or “Preparatory” school to be established and they functioned alongside public and mission schools Antwi, 1992 cited by Okrah (2012)

However, the 1987 Educational Reforms reviewed the educational system by decreasing the number of years at school claiming that with the old system of education, students spent more years (22 years) in school and the period of service to the nation is less than what is spent in school. This argument gave rise to the implementation of new educational system in September, 1987. This new system is known as 6:3:3:4 educational systems in Ghana. The system has the total of 16 years at school. Hence more years would be spent at work place before retirement than the old system.

The new system can be explained in the table below.

Number of years	Types of educational structure
9	Basic Education
3	Senior Secondary education
4	Tertiary education

Table 1: Educational system

The primary and junior secondary education is collectively known as Basic Education. Before a student graduate from basic education to senior secondary education, the student writes an examination taken by West African Examination Council (W.A.E.C) of which the candidate is expected to pass, before enrolling to the next stage. The same happens when a student is graduating from senior secondary education to tertiary education. The examination result is presented in the form of a league table and pasted at the various district and municipal offices of education in Ghana. This serves as a source of healthy rivalry between the schools that perform better than the others which do not do well resulting in to a morally sound academic competition.

In all these competitions, Basic education is the foundation stone for all educational structure and very important in educational build up for the individual or student. This would in a long way help to develop the society and the nation at large.

1.1. Statement of the Problem

Parents, guardians and stake holders in Ghanaian education are anxious about the academic performance of their pupils or students. They become happy when the Basic Education Certificate Examination (B.E.C.E.) results are good and apprehensive when it is poor. These poor results signify poor academic performance.

The situation worsens when headmasters in the well-endowed senior secondary schools reject a qualified student for admission on the basis that the student's aggregate was not for instance ten ones. In this view, parents and guardians are disappointed and dissatisfied.

Upon these bases, parent and guardians are compelled under these circumstances to send their wards to some schools with the notion that they would perform better in B.E.C.E. At these places parent pays exorbitant fees to get their wards enrolled. This practice is visible in some public schools as well as some private schools. Based on this reason the researcher is much concerned about investigating academic performance of public and private schools in the Winneba Municipality. This would lead the researches to find out the teaching methodology, facilities available, and the environmental conditions in these educational settings.

1.2. Hypothesis

1. H_0 = There is no significant difference in the level of experience of professional teachers in Private and Public Basic Schools in Winneba Municipality.
2. H_0 = There is no significant difference in the use of educational materials and facilities in Private and Public Basic Schools in Winneba Municipality.
3. H_0 = There is no significant difference in the quality of supervision in Private and Public Basic Schools in Winneba Municipality.
4. H_0 = There is no significant difference in the academic performance of students in Private and Public Basic Schools in Winneba Municipality from 2013 to 2015. At α Level of Significance.

2. Literature Review

2.1. Teacher Experience

According to Ankomah, Koomson, Busn and Oduro (2005), the teacher as an input is the principal factor in education provision and thus affects the quality of education in a significant way. Teacher experience therefore, has a significant effect on pupils' performance in basic schools. Experience teachers have a wide range of background knowledge to draw from and contribute immensely to the ideas of the course of teaching and learning. Teacher experience and student achievement has it that student taught by more experienced teachers achieve at higher level, because their teachers have mastered the content and acquired classroom management skills to deal with different types of classroom behaviour and problems (Rivkin, Hanushek, & Kain, 2005). Furthermore, more experienced teachers are considered to be able to concentrate on the most appropriate way to teach particular topics to students who differ in their individual abilities, prior knowledge and background. For many reasons, measuring the real impact of experience on teacher effectiveness is complex, more so than measuring any other teacher attribute. Darling-Hammond(2000) stipulates that benefits of experience appear to level off after 5 years, and there are no noticeable differences in the effectiveness of a teacher with 5 years of experience versus a teacher with 10 years of experience; however, teachers with 5 or 10 years of experience are more effective than new teachers with less than two years' experience. Though it is impossible to limit the teaching force only to experienced teachers, the effects of new teachers may be diffused and reduced if new teachers are evenly distributed among the schools, and proper assistance is given to them.

2.2. Educational Materials and Facilities

The primary purpose of every academic institution (i.e. Teaching and learning process) is to bring a significant change in behavior through active participation and critical thinking of the learner. This cannot take place without the availability and proper use of educational materials and facilities and other needed resources. Adediwura and Tayo, (2007) observed that the availability and effective utilization of learning resources were very important to academic performance in order to achieve the desired goals and objectives. This is the reason why government in every country spend a sizeable percentage of its budget on education every year. Earthman (2002) emphasized that, quality of education that students receive and examination results that comes out depends on the availability and proper utilization of an overall school facility in which teaching and learning takes place and how properly teachers are motivated by every state. In areas where these variables under discussion differ academic performance turn to favour the area in which the variables are managed better.

2.3. Supervision

Education is one of the critical sources to alleviate poverty in every society (Sule, 2013). Due to this reason students' academic performance is crucial to the society. One of the most important factors that determine students' academic performance is supervision. Academic performance based on supervision depends on Teacher and Parental supervisions.

2.4. Teacher Supervision

Effective supervision of students by school personnel is an essential part of the total educational programme. Supervision should be a continuous process which relates directly to the on-the job performance (Oredein & Oloyede, 2007). The responsibility of the supervision lies with immediate supervisors and support of staff members; in that effective criteria in performance based supervision system should reflect measurability, observability, and definability behavior. The primary purpose of staff supervision is to facilitate growth, development, and renewal outfit. An effective supervision system therefore should identify strength and weakness and also provide direction for maintaining and improving necessary skills in the society. According to Sule (2013), for fair, objective decision making by the school to the society supervision should provide a basis.

Alongside supervision is growth, appraisal and review and this is an ongoing process that involves the collection and analysis of information about an individual job performance which should promote academic performance of students to benefit society at large (Oredein & Oloyede, 2007).

2.5. Parental Supervision

An extensive body of research has found what many parents already know that children prosper academically when their parents are actively involved in their education. Research about pupils in United States of America show that support from families, including greater family involvement in their learning is a critical factor leading to a high-quality education (Weiss, Bouffard, Bridglall, Gordon, 2009). Policymakers have tapped into this important resource, for example their National Education Goals include parental involvement in children education as a top priority. Clearly, teacher's job is easier when parents work with them rather than against them. For this reason, parental support is important factor of teachers' work environment and academic performance of their ward. The paper continuous to point out that parents support better if they are educated especially to higher level of education. This means that parental education is crucial factor in the determination of parental support to the teacher and the type of contribution towards the child academic performance (Grawue, 2007).

2.6. Academic Performance

It is of great importance to look at factors that determine the future of every person in every society, even the society itself. Academic performance is one of the important topics that need the attention from all people from all walks of life. Due to this reason, in every society, comparison is made between the private and public schools at all level of education because of the following reasons:

In order to encourage one side to perform to improve the future of the society;

For parents to send their children to best schools to bring about good academic performance to secure their future and that of their children and even the extended family at large.

In some society the public school's performance is better than that of the private schools. Contrary in other society it is the reverse.

2.7. Non-Parametric Models

Non-parametric models differ from parametric models in that the model structure is not specified priority but is instead determined from data. The term non-parametric is not meant to imply that such models completely lack parameters but that the number and nature of the parameters are flexible and not fixed in advance (Montgomery & Runger, 2014).

2.8. Non-Parametric Methods

Non-parametric (or distribution-free) inferential statistical methods are mathematical procedures for statistical hypothesis testing which, unlike parametric statistics. Its make no assumptions about the probability distributions of the variables being assessed. Some of the tests used include Mann-Whitney U and Kruskal-Wallis one-way analysis of variance by ranks (Montgomery & Runger, 2014).

2.9. Mann-Whitney Test

Definition: A non-parametric test (distribution-free) used to compare two independent groups of sampled data.

2.9.1. Assumptions of the Mann-Whitney test

- Unlike the parametric e.g. t-test, this non-parametric makes no assumptions about the distribution of the population data (e.g., normality).
- Random samples are from the same populations.
- Independence within samples and mutual independence between samples.
- Measurement scale is at least ordinal.

Characteristics: This test is an alternative to the independent group t-test, when the assumption of normality or equality of variance is not met. This, like many non-parametric tests, uses the ranks of the data rather than their raw values to calculate the statistic. Since this test does not make a distribution assumption, it is not as powerful as the t-test. It is used to test hypotheses where we have two

independent groups for the comparison. These hypotheses are also sometimes written as testing the equality of the central tendency of the populations. The test statistic for the Mann-Whitney test is U . This value is compared to a table of critical values for U based on the sample size of each group. If U exceeds the critical value for U at some significance level (usually 0.05) it means that there is evidence to reject the null hypothesis in favour of the alternative hypothesis. Actually, there are two versions of the U statistic calculated, where $U' = n_1 n_2 - U$ where n_1 and n_2 are the sample sizes of the two groups. The largest of U or U' is compared to the critical value for the purpose of the test. For sample sizes greater than 8, a z -value can be used to approximate the significance level for the test. In this case, the calculated z is compared to the standard normal significance levels. The U test is usually performed as a two-tailed test; however, some text has tabled one-tailed significance levels for this purpose. If the sample size is large, the z -test can be used (Montgomery & Runger, 2014).

2.10. Theorem

Let $X_i (i = 1, 2, 3, \dots, n_1)$ and $Y_j (j = 1, 2, 3, \dots, n_2)$ be two samples such that all the observations are ranked, X_i takes rank R_i and

Y_j takes rank S_j . The rank sum is $T_1 = \sum_{i=1}^m R_i$ and $T_2 = \sum_{j=1}^n S_j$. Define the statistics

$$U_{12} = \text{number of pairs } (X_i, Y_j) \text{ with } X_i < Y_j$$

$$U_{21} = \text{number of pairs } (X_i, Y_j) \text{ with } Y_j < X_i.$$

Then

$$U_{12} = T_2 - \frac{n_2(n_2 + 1)}{2}$$

$$U_{21} = T_1 - \frac{n_1(n_2 + 1)}{2}$$

$$U_{12} + U_{21} = n_1 n_2$$

For large sample size (i.e. $n > 8$), the normal approximation is used i.e.

$$\text{Mean, } \mu_u = \frac{n_1 n_2}{2}$$

$$\text{Standard deviation, } \sigma_u = \sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}}$$

$$\text{Standard normal, } Z = \frac{U - \mu_u}{\sigma_u} \quad (\text{Clarke and Cooke, 1995}).$$

2.11. Kruskal-Wallis Test

Kruskal-Wallis test was developed by Kruskal and Wallis jointly and is named after them. Kruskal-Wallis test is a nonparametric (distribution free) test, which is used to compare three or more groups of sample data. Kruskal-Wallis test is used when assumptions of ANOVA are not met. ANOVA is a statistical data analysis technique that is used when the independent variable groups are more than two. In ANOVA, we assume that distribution of each group should be normally distributed. In Kruskal-Wallis test, we do not assume any assumption about the distribution. So Kruskal-Wallis test is a distribution free test. If normality assumptions are met, then the Kruskal-Wallis test is not as powerful as ANOVA. Kruskal-Wallis test is also an improvement over the Sign test and Wilcoxon sign rank test, which ignores the actual magnitude of the paired magnitude.

2.12. Assumptions of Kruskal-Wallis Test

- It is assumed that distribution of each sample group is not normally distributed.
- It is assumed that the samples drawn from the population are random.
- It is assumed that the cases of each group are independent.
- The measurement scale for Kruskal-Wallis test should be at least ordinal.
- All the sample sizes are greater than or equal to five.

Hypothesis in Kruskal-Wallis test:

Null hypothesis: In Kruskal-Wallis test, null hypothesis assumes that the samples are from identical populations.

Alternative hypothesis: In Kruskal-Wallis test, alternative hypothesis assumes that the sample comes from different populations.

Procedure for Kruskal-Wallis test:

1. Arrange the data of both samples in a single series in ascending order.
2. Assign rank to them in ascending order. In the case of a repeated value, assign ranks to them by averaging their rank position.

3. Once this is complete, ranks of the different samples are separated and summed up as T_1, T_2, T_3 , etc.
4. To calculate the value of Kruskal- Wallis test, apply the following formula:

$$H = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{T_i^2}{n_i} - 3(n+1)$$

Where,

H = Kruskal- Wallis test

n = total number of observations in all samples = $\sum_{i=1}^k n_i$

n_i = number of observations in samples i .

T_i = Sum of ranks in sample i .

Kruskal- Wallis test statistics is approximately a chi-square distribution, with $k - 1$ degree of freedom where n_i should be greater than 5. If the calculated value of Kruskal- Wallis test is less than the chi-square table value, then the null hypothesis will be accepted. If the calculated value of Kruskal- Wallis test H is greater than the chi-square table value, then we will reject the null hypothesis and say that the sample comes from a different population (Montgomery & Runger, 2014).

3. Methodology

3.1. Research Approach

McMillan and Schumacher (1997) posit that quantitative approach emphasizes objectivity and quantification of a phenomenon. As a result, the method maximizes objectivity by using numbers and statistic structure. A quantitative approach to a study makes the researcher ask specific narrow questions, collects numeric data from participants, analyses the numbers using statistics and conducts the enquiry in an unbiased, objective manner Creswell (2005). Quantitative approaches are more structured than qualitative ones. The questionnaire item would be structured to yield specific, numerical results.

3.2. Research Design

The purpose of the research was to investigate academic performance between public and private school at basic level of education in Winneba municipality of education. The method is descriptive survey of the ex-post-facto type because the variables which are teachers, parent, educational infrastructure and materials available do not involve manipulation with the reason that they have ready occurred.

3.3. Population and Sample Size

The target population for the study consists of eight circuits of schools in Winneba Municipality. In addition, Head-teachers and teachers in the circuits having their pupils involved in B.E.C.E. A private and public school was sampled out of the Winneba circuit located in the municipality; with twelve (12) participants which was made up of two head teachers, one from each school, and 10 teachers 5 from each school.

Note, the head teacher for the purpose of data analysis was treated as a teacher.

3.4. Sampling Technique

Winneba circuit was simple randomly selected since it has the characteristic of the population. Purposive sampling was used to select two schools one being private and other public. Simple random sampling was used to select the ten (10) teachers, five from each school. Moreover, purposive sampling was also used to select two (2) head –teachers of which one from each school.

3.5. Instrumentation

The instruments for the research were Questionnaire and Documentation.

3.6. Questionnaire

Questionnaires according to Cohen, Manion and Morrison (2003), citing Wilson and McLean (1994), are widely used and useful instrument for collecting information, providing structured, often numerical data, being able to be administered without the presence of the researcher and often comparatively straightforward to analyze. Thus the questionnaire which was a Likert rating scale of close ended items prepared for teachers to respond to. Respondent were expected to tick the correct option to the questions asked and make brief statement where necessary.

Robson (2003) posits that a Likert scale makes respondents to enjoy responding to questions posed by a researcher since in many cases, respondents are just not ready to co-operate in giving data and on that note, this type of data gathering will be appropriate.

3.7. Documentation

B.E.C.E results from 2013-2015 as documents were collected from the two schools. Vierria, Pollock and Golez (1998) stipulate that records evaluate the evidence they gather by assessing the validity of their sources. They also examine the authenticity of their sources.

4. Data Analysis and Results

4.1. Hypothesis One

- H_0 = There is no significant difference in the level of experience of professional teachers in Private and Public Basic Schools in Winneba Municipality.
At α Level of significant

Number of Teachers	Private Basic School Teachers		Public Basic School Teachers	
	Number of Experience	Rank	Number of Experience	Rank
1	5	3	5	3
1	6	5	10	8
1	4	1	10	8
1	5	3	20	10.5
1	10	8	20	10.5
1	9	6	38	12
Total Number of Teachers for each School=6	Total Rank, $T_1=26$		Total Rank, $T_2=52$	

Table 2: Ranked no. of years' experience of teachers

Let the samples from the Private Basic School Teachers on number of years' experience be X_i while their public counterparts be Y_j . By comparing number of pairs (X_i, Y_j) , $X_i < Y_j$ then,

4.1.1. Test Statistic

$$U_{Calculate} = T_2 - \frac{n_2(n_2 + 1)}{2}, \text{ where } n_1 = n_2 = 6 \text{ and } U_{calculate} = U_{12}$$

$$U_{calculate} = 52 - \frac{6(7)}{2} = 31.$$

Since the sample size 6 (i.e. small sample size), the distribution cannot be approximated using normal distribution.

4.1.2. Critical Value

Let the level of significance, $\alpha = 5\% = 0.05$. Also, $n_1 = n_2 = 6$. The test is two-tailed due to word 'no' significance difference' which means identical hypothesis (Mendenhall, Beaver & Beaver, 2003).

The Critical values from Mann-Whitney (two-tailed testing) table

$$n_1 = 6, n_2 = 6 \text{ and } \alpha = 0.05$$

$$U_{table} = 5$$

4.1.3. Decision

Since $U_{Calculate} > U_{table}$, we reject the null hypothesis, H_0 and accept the alternative hypothesis H_1 at $\alpha = 0.05$.

4.1.4. Conclusion

We conclude that there is significant difference in the level of experience of professional teachers in Private and Public Basic Schools in Winneba Municipality.

4.2. Hypothesis Two

- H_0 = There is no significant difference in the use of educational materials and facilities in Private and Public Basic Schools in Winneba Municipality.
➤ At α Level of significance

Assign 1 for 'yes' response while 2 for 'no' response.

Number of Teachers	Private Basic School		Public Basic school	
	Teachers response on adequacy of educational materials	Rank	Teachers response on adequacy of educational materials	Rank
1	1	3	1	3
1	2	9	2	9
1	2	9	2	9
1	1	3	2	9
1	1	3	2	9
1	1	3	2	9
Total Number of Teachers for each School=6	Total Rank, $T_1 = 30$		Total Rank, $T_2 = 48$	

Table 3: Ranked educational material

Let the samples from the Private Basic School Teachers response on adequacy of educational materials be X_j while their public counterparts be Y_j . By comparing number of pairs (X_i, Y_j) , $X_i < Y_j$ then, from the Theorem under 2.5.3.1,

4.2.1. Test Statistic

$$U_{calculate} = T_2 - \frac{n_2(n_2 + 1)}{2}, \text{ where } n_1 = n_2 = 6 \text{ and } U_{calculate} = U_{12}$$

$$U_{calculate} = 48 - \frac{6(7)}{2} = 27.$$

Since the sample size 6 (i.e. small sample size), the distribution cannot be approximated using normal distribution.

4.2.2. Critical Value

Let the level of significance, $\alpha = 5\% = 0.05$. Also, $n_1 = n_2 = 6$. The test is two-tailed due to word 'no' significance difference' which means identical used in the hypothesis (Mendenhall, Beaver & Beaver, 2003).

Critical values for Mann-Whitney (two-tailed testing) table

$$n_1 = 6, n_2 = 6 \text{ and } \alpha = 0.05.$$

$$U_{table} = 5$$

4.2.3. Decision

Since $U_{calculate} > U_{table}$, we reject the null hypothesis, H_0 and accept the alternative hypothesis H_1 at $\alpha = 0.05$.

4.2.4. Conclusion

We conclude that there is significant difference in the use of educational materials and facilities in Private and Public Basic Schools in Winneba Municipality.

4.3. Hypothesis Three

- H_0 = There is no significant difference in the quality of supervision in Private and Public Basic Schools in Winneba Municipality.
 - At α level of significance

By assigning values to the responses, let 1 represent 'very often', 2 represent 'often' and 3 represent 'not often'.

Number of Teachers	Private Basic School		Public Basic School	
	Teachers response on quality of Supervision	Rank	Teachers response on quality of Supervision	Rank
1	2	7.5	3	11
1	1	3	3	11
1	3	11	2	7.5
1	2	7.5	2	7.5
1	1	3	1	3
1	1	3	1	3
Total Number of Teachers for each School=6	Total Rank, $T_1 = 35$		Total Rank, $T_2 = 43$	

Table 4: Ranked quality of supervision

Sum of ranks of Private Basic School Teachers response on quality of Supervision, $T_1 = 35$.

Sum of ranks of Public Basic School Teachers response on quality of Supervision, $T_2 = 43$.

Let the samples from the Private Basic School Teachers response on quality of Supervision be X_i while their public counterparts be Y_j . By comparing number of pairs (X_i, Y_j) , $X_i < Y_j$ then, from the Theorem under 2.5.3.1,

4.3.1. Test Statistic

$$U_{\text{calculate}} = T_2 - \frac{n_2(n_2 + 1)}{2}, \text{ where } n_1 = n_2 = 6 \text{ and } U_{\text{calculate}} = U_{12}$$

$$U_{\text{calculate}} = 43 - \frac{6(7)}{2} = 22.$$

Since the sample size 6 (i.e. small sample size), the distribution cannot be approximated using normal distribution.

4.3.2. Critical Value

Let the level of significance, $\alpha = 5\% = 0.05$. Also, $n_1 = n_2 = 6$. The test is two-tailed due to word 'no' significance difference' which means identical used in the hypothesis.

The Critical value from Mann-Whitney (two-tailed testing) table

$$n_1 = 6, n_2 = 6 \text{ and } \alpha = 0.05.$$

$$U_{\text{table}} = 5$$

4.3.3. Decision

Since $U_{\text{calculate}} > U_{\text{table}}$, we reject the null hypothesis, H_0 and accept the alternative hypothesis H_1 at $\alpha = 0.05$.

4.3.4. Conclusion

We conclude that there is significant difference in the quality of supervision in Private and Public Basic Schools in Winneba Municipality.

4.4. Hypothesis Four

- H_0 = There is no significant difference in the academic performance of students in Private and Public Basic Schools in Winneba Municipality from 2013 to 2015.
 - At α Level of Significance

GRADE	2013				2014				2015			
	Private Basic School		Public Basic School		Private Basic School		Public Basic School		Private Basic School		Public Basic School	
	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank
1	113	30	12	16	236	45	5	10	170	39	11	15
2	120	31	61	27	204	40	29	19	240	46	56	25
3	102	28	160	37	208	41	112	29	287	49	142	35
4	57	26	230	44	128	32	228	43	145	36	256	48
5	17	17	313	54	36	20.5	303	52	52	23	311	53
6	2	8	288	50.5	8	13	251	47	7	12	288	50.5
7	0	3	226	42	0	3	162	38	6	11	130	30
8	0	3	134	34	0	3	55	24	1	6.5	36	20.5
9	10	14	19	19	0	3	43	22	1	6.5	3	9
	$T_1=160$		$T_2=323.5$		$T_3=200.5$		$T_4=284$		$T_5=229$		$T_6=286$	

Table 5: Ranked frequency of grades from 2013-2015 B.E.C.E. results

4.4.1. Test Statistic

The value of Kruskal- Wallis test,

$$H = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{T_i^2}{n_i} - 3(n+1)$$

Where,

H = Kruskal- Wallis test

n_i = number of observations in samples i , where $i=1, 2, \dots, 6$.

$$n_1 = n_2 = n_3 = n_4 = n_5 = n_6 = 9$$

$$n = \text{total number of observations in all samples} = \sum_{i=1}^k n_i = \sum_{i=1}^6 n_i = 9 + 9 + 9 + 9 + 9 + 9 = 54$$

T_i =Sum of ranks in sample i , where $i=1, 2, \dots, 6$.

Let $H = H_{calculate}$ then,

$$\begin{aligned}
 H_{calculate} &= \frac{12}{54(55)} \sum_{i=1}^6 \left(\frac{160^2}{9} + \frac{323.5^2}{9} + \frac{200.5^2}{9} + \frac{284^2}{9} + \frac{229^2}{9} + \frac{286^2}{9} \right) - 3(55) \\
 &= 0.0040(42816.167) - 165 \\
 &= 6.264668
 \end{aligned}$$

4.4.2. Critical Value

Taking $\alpha = 0.05, k = 6$, since the test is two-tailed, from chi square table,

$$H_{table} = \chi_{(\alpha/2, k-1)}^2 = \chi_{(0.025, 5)}^2 = 12.8325$$

4.4.3. Decision

Since $H_{calculate} < H_{table}$, we fail to reject the null hypothesis.

4.4.4. Conclusion

We conclude that there is no significant difference in the academic performance of students in Private and Public Basic Schools in Winneba Municipality from 2013 to 2015.

4.4.5. Discussion

The result of hypothesis one indicate that there was significant difference in level of experience of professional teachers in private and public schools. The Biodata of the questionnaire, respondents laid emphasis on the difference. The public schools teachers were all

professionals with majority being first and second degree holders. In case of the private schools most of the teachers are non-professionals with secondary level of education. In terms of number of years of teaching it tends to favour the public school teachers than their private counterparts. This assertion refutes what Darling -Hammond (2000) mentions that teacher experience levels off after 5years. He continued to clarify that, for many reasons, measuring the real impact of experience on teacher effectiveness is complex. This explains why despite the number of years being more than 5years for especially the private school's teachers there is significant difference.

The second hypothesis was on the difference in the use of educational materials and facilities in private and public schools. From questionnaire data point of view, there is a significance difference in the use of educational materials and facilities in private and public schools. From hypothesis three, the questionnaire data has it that there is significant difference in the quality of supervision in public and private schools. On the basis of academic performance, Etsey, Amendahe and Edjah (2006) in their study on academic performance reported that very little evidence however exist to show that there is difference in academic performance between private and public schools. This report implies that to large extent there is evidence that academic performance of private and public schools are similar and identical. Examination documents from West Africa Examination Council, a well recognized internationally examination body on BECE when analyzed statistically in this thesis indicates that difference in academic performance between private and public schools are not statistically significant at 5% level of significance.

5. Conclusion

The results of the study indicate the academic performance does not only depend on level of experience of professional teachers, educational material and facilities and quality of supervision but also may other factors when taken in consideration would help spell out the difference in academic performance of between individuals, public and private schools.

6. Recommendation

It is recommended further research should be carried out on "identification of other variables that can help to bring about the difference in academic performance between public and private schools".

7. References

- i. Aboagye, J.K. (2002). Historical & philosophical foundation of education in Ghana.
- ii. Winneba: Department of Basic Education, University of Education.
- iii. Abosi, C.O. & Brookman-Amisshah, J. (1992). Introduction to education. Accra: Sedco Publishing Ltd.
- iv. Adediwura, A. A. & Tayo, T. (2007). Perceptions of Teacher Knowledge, Attitude and
- v. TeachingSkills as Predictor of Academic Performance in Nigerian Secondary Schools. *Educational Research and Review*, 2(7): 165-171.
- vi. Ankomah, Y., Koomson, J., Bosu, R., & Oduro, G. K. (2005). Implementing Quality Education in Low Income Countries. Institute for Educational Planning & Administration (IEPA)University of Cape Coast Ghana.
- vii. Clarke, G.M and Cooke, D(1995). A basic course in statistics. Great Britain: St Edmundbury Press Ltd
- viii. Cohen, L., Manion, L. & Morrison, K. (2003). Research methods in education (5th ed).
- ix. New York: Routledge Falmer – Taylor & Francis Group.
- x. Creswell, J. W., (2005). Educational research: Planning, conducting, and evaluating quantitative and qualitative research (2nd ed.). New Jersey: Merrill Prentice Hall.
- xi. Darling-Hammond, L. (2000). Teachers and teaching: testing policy hypotheses from a national commission report. *Educational Researcher*, 27(1), 5-15.
- xii. Washington, DC: U.S. Department of Education Earthman, G. (2002). School facility condition and student academic achievement:
- xiii. UCLA'S Institute for Democracy, Education and Access (IDEA): Los Angeles,
- xiv. CA.
- xv. Etsey, Y. K. A., Amendahe, F.K. & Edjah, A(2006).A comparative study of academic performance of private and public schools: A case study in selected regions of Ghana. *Journal of research development in education* 6(1), 1-10.
- xvi. Grawue (2007).Transforming school supervision into a tool for quality improvement.
- xvii. *International Review of Education*, 53 pages 710-712.
- xviii. McMillan, J.H. & Schumacher, S. (1997). Research in education. A conceptual. Introduction (4th ed.). Sydney: Addison, Wesley Longman, Inc.
- xix. Mendenhall W, Beaver R.J., & Beaver B.M.,(2003). "Probability and Statistics ". USA:Thomas Printing Press.
- xx. Montgomery, D.C & Runger, G.C.(2014). Applied probability and statistics for engineers (6th ed).USA: John wiley and Sons, Inc.
- xxi. Okrah, K.A.(2013),Nyansapo(the wisdom knot)toward an african philosophy of education. New York:
- xxii. Routledge Taylor &Francis Group
- xxiii. Oredein, A. O. & Oloyede, D. O. (2007). Supervision and Quality of Teaching Personnel Effects on Student Academic performance. *Educational Research and Review*, 2
- xxiv. (3): 032-035

- xxv. Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement.[Online] Available:
- xxvi. <http://www.utdallas.edu/research/tsp/publications.htm>. (May 12, 2012).
- xxvii. Robson, C. (2003). Real world research: A resource for social scientists and Practitioner-researcher (2nd ed.). Berlin: Blackwell Publishing.
- xxviii. Sule, M. (2013).The influence of the principals' supervisory demonstration strategy on teacher's job performance in Nigeria secondary schools. IQSR journal of Humanities and Social science.Vol. 2(1): pp.39 - 44
- xxix. Vierra, A., Pollock, J. & Golez, F. (1998). Reading educational research (3rd. ed).New Jersey: Prentice – Hall Inc.
- xxx. Weiss,H.B., Bouffard, S.M., Bridglall, B.L.,Gordon ,E.W.,(2009). Reframing family involvement in education: supporting families to support educationa equity.New York: teachers college. Columbia University.