# Influence of Optimistic Guided Inquiry and Expository Methods on Students' Interest and Achievement in Basic Science, In Junior Secondary Schools Abuja, Nigeria

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## ABSTRACT

This study investigated the influence of optimistic guided inquiry and expository method on academic interest and achievement in Basic Science in junior secondary schools in Gwagwalada Area Council of the FCT. The study adopted a quasi-experimental research design. Four research questions and four null hypotheses were formulated to guide the study. A total of one hundred and eight (108) participants were drawn from the sampled schools. A self-designed Basic Science Interest Scale (BSIS) and Basic Science Achievement Test (BSAT) were used to elicit responses from the participants. The instruments were subjected to face and content validity and test-retest reliability evaluation and were found to be reliable at index of 0.74 and 0.84. Data collected were analyzed using mean and standard deviation for research questions while the null hypotheses were tested using students T-test at at 0.05 level of significance. The result shown that mean pretest scores of the experimental and control groups used for the study were insignificant. The mean posttest scores show a wide difference. There is a significant difference between the achievements of students taught with guided inquiry and those taught with expository method in favour of guided inquiry. Guided inquiry proved more effective than expository method in enhancing academic achievement in Basic Science. It is therefore recommended that Classroom teachers, educational psychologists, school administrators, educational planners and counselors should therefore embraced the use of optimistic guided inquiry method of teaching in the classroom.

**Keywords:** Optimistic Guided Inquiry, Expository, Interest, Academic Achievement

## INTRODUCTION

A pathway to Nigeria breakthrough can be assured through science and technology education. Empirical evidences have proven that the gateway to the survival of any nation socially and economically is through scientific and technological literacy which can only be achieved through science and technology education (Alebiosu & Ifamuyiwa, 2019).

The National Policy on Education encourages all processes geared towards producing educators and scholars that will encourage the spirit of inquiry (FGN, 2014). One of the objectives of primary and junior secondary school Education in Nigeria is to inculcate in children permanent literacy and numeracy and the ability to communicate effectively. The objectives according to Onwu (2013) include the need to prepare students to observe and explore the environment, to explain simple natural phenomena and to develop scientific attitudes such as curiosity, critical reflection and objectivity. Also, to enable students apply the skills and knowledge gained through science to solve everyday problems in the environment, and to develop self-confidence and self reliance through problem solving activities in science. To be able to pursue these noble objectives, among others, basic science and technology was introduced as one of core subjects. According to Nigerian Education Research Development Council (NERDC 2017), the general objective of basic science and technology education is to enable pupils observe and explore the environment using their senses and their hands. The objectives are specifically aimed at enabling the learners: develop interest in science and technology, acquire basic knowledge and skill in science and technology, apply their scientific and technological knowledge and skill to meet their societal needs, take advantage of the numerous career opportunities offered by science and technology and become prepared for further studies in science and technology.

These objectives are enshrined in the basic science and technology curriculum, derived from the Federal Republic of Nigeria document National Policy on Education (2014). The design of the curriculum is based on the idea of spiral of themes which are arranged from year one to year six, that is, from the beginning with the simple to the complex across the 9 (nine) years of basic education in order to sustain the interest of learner and promote meaningful learning. Thus, the above objectives which aim at the interest of the student brings us to the topic for this study which is influence of optimistic guided inquiry and expository method on students' outcome in basic science.

 The poor outcome in sciences as indicated by various empirical studies (Ferdinand, 2009; Betiku, 2011; Omole, 2013; Adeniji, 2009; NECO and WAEC Chief Examiner's reports, (2015, 2017) and in recent years have attracted the concern of all stakeholders including the researchers. Subsequently many factors have been identified and regarded as being responsible for the dwindling trend in the performance of students. These factors include school-teacher-related characteristics, optimistic approaches, social incentives, and host of others (Ogunkola, 2009; Olatoye, 2013). Additionally, the poor outcome in basic science and technology according to (Omole, 2013) could be due to teachers' use of ineffective approaches and strategies in science teaching which among other factors have contributed to the students' poor outcome and interest in science at the junior secondary school.

According to Adeyemi (2009) academic achievement is the scholastic standing of a student at a given moment. It has to do with the successful accomplishment of goals. The purpose of testing a student is to help the teacher and the student evaluate and estimate the degree of success attained in learning a given concept. It is also useful in testing the retention of information and skill. It is equally appropriate in determining the efficiency of instruction. One of the issues at stake in education today is academic achievement of students. Academic achievement measure in relation to teaching is vital for the overall success of students in life and the society in general. The use of optimistic guided inquiry approach in teaching simple machine in Basic Science and technology by teachers makes Basic Science and Technology lesson objective stimulating and interesting to the student.

Optimistic guided inquiry can be seen as an inquiry-based pedagogy approach with a strong affective-emotional orientation that fosters hope, confidence, and perseverance in learners as they engage in problem-solving and discovery. The key features of this approach are: teacher as a facilitator and motivator - the teacher provides structure, resources and encouragement; learner autonomy with scaffolding - students investigate problems but within the supportive  and hopeful atmosphere; focus on affective outcomes - beyond knowledge, it nurtures self-belief, resilience and curiosity; collaborative learning - it encourages team work, peer support and reinforcing optimism and iterative problem-solving - mistakes are viewed as opportunities for growth and not failure.

Guided inquiry approaches are used by teachers to create conducive learning environment and to specify the natture of he activity in which the teacher and the learner will be involved during instructional delivery process. It is primarily a description of learning objective-oriented activities and the flow of information between the teacher and the learner.

The intervening variable which must not be left out in considering students learning achievement in Basic science is gender. Gender as a variable is believed would influence students learning, guides the teacher on the method or strategy to use so as to improve effective performance in Basic science. Academic interest is also another variable of interest in this study which is believed would influence students' learning and improves performance in Basic science. Study interests are learning tendencies that enable students work privately. Academic interest can be good or poor. A good study interest is a systematic and coordinated way a student uses to gain greater access to learning materials and develop confidence in his/her academic work (Agbaje 2010). A low study interest on the other hand, is where a student is not conscious about learning materials thereby performing poorly in academic work and developing lack of confidence in him or herself (Sainji 2003). A good study interest creates awareness in the students, which in turn provides them with career awareness skill. The use of effective instructional strategy such as the guided inquiry strategy will promote good study habit and as well address the issue of gender disparity or bias in students' achievement in Basic science. But the introduction of a poor teaching strategy such as the expository method will create an educational imbalance. This leads to students' poor study

interest and discrepancies in gender thus affecting students' achievement in Basic science (National Policy on Education, 2009).

It is in the light of this background that the researcher seeks to investigate the impact of optimistic guided inquiry approach and expository method on students' academic interest and achievement in basic science within Abuja, Nigeria.

**Statement of the Problem**

The persistent poor performance of students in science-oriented subjects and basic science in particular at the Basic Education Certificate Examination is a threat to the attainment of the educational goals and science education in particular as well as a grave concern to parents, teachers, school administrators, government and psychologists.

**Table 1: Results of Basic Science FCT, Abuja**

| Year | Distinction | Credit | Ordinary Pass | Failed | Total Students |
|------|-------------|--------|---------------|--------|----------------|
| 2015 | 52 | 506 | 1483 | 6 | 2047 |
| 2016 | 59 | 602 | 1127 | 70 | 1858 |
| 2017 | 81 | 501 | 1071 | 69 | 1722 |
| 2018 | 50 | 553 | 1059 | 82 | 1744 |
| 2019 | 68 | 634 | 1256 | 203 | 2161 |

Source: Educational Resource Centre Zone 7, Garki Abuja

Ordinary pass is within 40-49%, it can be seen from above statistics that the performance of students in Basic Science in the FCT in particular is not encouraging. This poor performance is a signal of a process problem at the junior secondary school level. Samba and Eriba (2012) have revealed the poor performance of students in science subjects in general and Basic Science in particular could be as a result of the teachers' use of ineffective approaches in science teaching which among other factors have contributed to the student's poor academic achievement in basic science and technology at the junior secondary school.

Based on the fact that basic science and technology is a new area in the Nigerian 9-3-4 system of education, it evolved from integrated science which was reviewed to provide a holistic presentation of science and technology with the theme "you and technology". There is need to explore more into the best approaches of teaching specific topics in basic science in other to enhance students' outcome. Therefore, it is against this backdrop that the researcher investigates influence of optimistic guided inquiry and expository method on students' academic achievement and interest in basic science.

The following research questions and research hypotheses were formulated to guide the study:

1 What is the influence of optimistic guided inquiry and expository approaches on the mean academic achievement of students in Basic Science in Gwagwalada area council?

2 What is the mean interest of students taught Basic Science using optimistic guided inquiry and expository approaches in Gwagwalada area council junior secondary schools?

3 What is the influence of gender on students mean academic achievment when taught Basic Science with Optimistic Guided Inquiry in Gwagwalada area council?

4 What is the influence of gender on the optimistic guided inquiry approach on students' interest in Basic Science with Optimistic Guided Inquiry in Gwagwalada area council?

The study hypothesizes that:

**HOI**: There is no significant influence of optimistic guided inquiry and expository approaches on the mean academic achievement of students in Basic Science.

**HO2**: There is no significant difference in the mean academic interest of male and female students taught Basic Science using optimistic guided inquiry approach in Basic Science.

**HO3**: There is no significant influence of gender on mean academic achievement in Basic Science when taught with optimistic guided inquiry and expository approach.

**HO4**: There is no significant influence of gender on students' interest when taught with guided inquiry in Basic Science.

# METHODOLOGY

The research adopted a Quasi-experimental design. The Intact or pre-existing groups which are divided into experimental and control groups respectively are used for the study. The population of the study is the entire JS 3(Basic Nine) students (5,489) in Gwagwalada (ERC, 2024). Sampled population was divided into two groups viz; experimental group and control group. The two groups are taught the same concepts in Basic Science. However, the experimental group was taught Basic Science concepts with optimistic guided inquiry while the control group was taught with expository method. There are pretest-postest before and after treatment to determine the level of changes that have occurred. The same achievement test was administered to both groups and their mean scores compared. A purposive and random sampling technique was used to select two junior secondary schools in Gwagwalada Area Council. The junior secondary school phase 3 was used as the experimental group while the junior secondary school Zuba was used as the control group. Each group was made up of 54 students (27 males and 27 females) through random sampling technique. The criteria for selecting these two schools are presence of a well-equipped Basic Science laboratory, availability of professionally qualified Basic Science teachers, large population and they are co-educational.

Two instruments: Basic Science Achievement Test (BSAT) and Basic science Interest Inventory Scale (BSIIS) were developed by the researcher and were used to elicit responses from the participants. The instruments contain 35 items and were vetted through the use of test-retest reliability, and face and content validity technique. A reliability index 0.74 and 0.81 were found to be okay for the study. The data collected were analyzed using mean scores and standard deviation and T-test for the hypotheses.

# RESULTS

Research Question One: What is the influence of guided inquiry and expository on the mean academic achievement of Students in Basic Science?

**Table 2: Mean Academic Achievement of Students Taught Basic Science with Guided Inquiry and those Taught with expository method.**

| Treatment | N | Mean pre-test | Std Dev. | Mean Post-test | Std Dev. | Mean Diff |
|---|---|---|---|---|---|---|
| **Optimistic guided inquiry** | 54 | 25.96 | 4.56 | 40.07 | 6.88 | 14.74 |
| **Expository method** | 54 | 25.86 | 4.22 | 29.48 | 5.07 | 3.62 |

The results presented in table 2 shown that Students taught with Guided Inquiry had pre-test academic achievement mean of 25.96, post-test mean of 40.07 and mean achievement gain of 14.74, while those taught with expository method had pre-test of 25.86, post-test mean score of 29.48 and mean achievement gain score of 3.62.

Research Question 2: What is the mean interest of Students taught Basic Science using guided inquiry and

expository method?

**Table 3: Students' academic interest in Basic Science using guided inquiry and expository method Pre-test**

| S/No | Items | Optimistic Guided Inquiry | | | Expository methods | | |
|---|---|---|---|---|---|---|---|
| | | Mean | Std Dev. | Decision | Mean | Std Dev. | Decision |
| 1 | I like my basic science teacher | 2.66 | 1.06 | Agree | 1.70 | 0.97 | Disagree |
| 2 | I like reading basic science and text books | 2.77 | 1.80 | Agree | 1.83 | 0.81 | Disagree |
| 3 | I like copying my basic science notes | 2.84 | 1.81 | Agree | 1.43 | 0.71 | Disagree |
| 4 | I will like to be a scientist when I grow up | 2.90 | 1.86 | Agree | 1.60 | 0.86 | Disagree |
| 5 | I like reading other science related materials | 2.57 | 0.78 | Agree | 2.15 | 1.04 | Disagree |
| 6 | I like to start my lesson with basic science | 2.69 | 1.07 | Agree | 2.17 | 0.76 | Disagree |
| 7 | I like doing my basic science home work | 2.66 | 0.99 | Agree | 2.16 | 1.09 | Disagree |
| 8 | Being in a science class makes me feel stressed | 2.48 | 0.84 | Agree | 1.47 | 0.50 | Disagree |
| 9 | I will like to study science or engineering in the university | 3.31 | 1.99 | Agree | 2.19 | 1.21 | Disagree |
| 10 | I like doing my science project and assignment | 2.90 | 0.93 | Agree | 1.69 | 0.85 | Disagree |
| 11 | I understand basic science | 2.84 | 0.91 | Agree | 2.03 | 1.03 | Disagree |
| 12 | I like visiting my school garden | 2.74 | 0.89 | Agree | 1.06 | 0.79 | Disagree |
| 13 | L like conducting experiment in the lab. | 2.68 | 1.29 | Agree | 2.00 | 0.93 | Disagree |
| 14 | I like viewing living organism alive | 3.39 | 0.59 | Agree | 1.62 | 0.77 | Disagree |
| 15 | I like drawing organism | 2.58 | 1.40 | Agree | 2.42 | 0.92 | Disagree |
| | **Sectional/std. Dev.** | **2.80** | **1.20** | **Agree** | **1.89** | **0.89** | **Disagree** |

**Post-Test**

| S/No | Items | Optimistic Guided Inquiry | | | Expository methods | | |
|---|---|---|---|---|---|---|---|
| | | Mean | Std Dev. | Decision | Mean | Std Dev. | Decision |
| 1 | I like my basic science teacher | 2.80 | 1.14 | Agree | 1.24 | 0.41 | Disagree |
| 2 | I like reading basic science and text books | 3.04 | 1.09 | Agree | 2.23 | 1.80 | Disagree |

| 3 | I like copying my basic science notes | 3.19 | 1.10 | Agree | 2.19 | 1.04 | Disagree |
|---|---|---|---|---|---|---|---|
| 4 | I will like to be a scientist when I grow up | 2.99 | 0.84 | Agree | 1.96 | 0.80 | Disagree |
| 5 | I like reading other science related materials | 3.50 | 1.94 | Agree | 1.98 | 0.82 | Disagree |
| 6 | I like to start my lesson with basic science | 3.64 | 1.68 | Agree | 1.99 | 0.84 | Disagree |
| 7 | I like doing my basic science home work | 3.78 | 1.24 | Agree | 2.09 | 0.94 | Disagree |
| 8 | Being in a science class makes me feel stressed | 3.20 | 1.86 | Agree | 2.10 | 0.96 | Disagree |
| 9 | I will like to study science or engineering in the university | 2.78 | 1.04 | Agree | 1.86 | 0.71 | Disagree |
| 10 | I like doing my science project and assignment | 3.15 | 1.69 | Agree | 1.64 | 0.85 | Disagree |
| 11 | I understand basic science | 3.41 | 1.28 | Agree | 2.20 | 1.06 | Disagree |
| 12 | I like visiting my school garden | 3.79 | 1.26 | Agree | 2.18 | 1.02 | Disagree |
| 13 | L like conducting experiment in the lab. | 2.94 | 1.70 | Agree | 2.07 | 0.99 | Disagree |
| 14 | I like viewing living organism alive | 3.24 | 1.68 | Agree | 1.89 | 0.88 | Disagree |
| 15 | I like drawing organism | 3.36 | 1.41 | Agree | 1.96 | 0.92 | Disagree |
|  | **Sectional/std. Dev.** | **3.25** | **1.80** | **Agree** | **1.99** | **0.99** | **Disagree** |

Table 3 (A & B) shows Students' academic interest in Basic Science with respect to guided inquiry and expository method. The Sectional mean indicated that the students in the guided inquiry (experimental group) indicated agreement with most of the items and had overall mean pre-test of 2.80 and mean post-test of 3.25 while students in the expository class (control group) indicated disagreements with most items and had overall mean pre-test of 1.89 and post-test of 1.99.

Research Question Three; what is the influence of gender on the mean academic achievement of students taught Basic Science using guided inquiry and expository method?

**Table 4: Mean, Standard Deviation and Mean Difference of Gender on the Mean Academic Achievement in Basic Science.**

| Teaching method | Pre-test | | | Post-test | | | Mean gain score |
|---|---|---|---|---|---|---|---|
|  | N | Mean | SD | N | Mean | SD |  |
| **Guided inquiry** |  |  |  |  |  |  |  |
| **Male** | 54 | 32.08 | 7.23 | 30 | 45.31 | 12.58 | 13.23 |
| **Female** | 54 | 30.96 | 6.85 | 24 | 44.12 | 12.42 | 13.16 |

| Expository Method | | | | | | | |
|---|---|---|---|---|---|---|---|
| Male | 54 | 29.46 | 11.24 | 30 | 36.64 | 12.18 | 7.18 |
| Female | 54 | 28.04 | 11.08 | 24 | 35.94 | 12.00 | 7.9 |

The result of the analysis in table 4 was carried out to determine the influence of gender on the mean academic achievement. From the table is shown that male students taught Basic Science using optimistic guide inquiry had mean gain of 13.23 and female had 13.16 while their counterparts taught using expository method male had 7.18 and female had 7.9 mean gain respectively. Therefore, male and female taught with guided inquiry had higher academic achievement than their counterparts in expository approach.

Research Question Four: what is the influence of gender on the students' academic interest in Basic Science taught using optimistic guided inquiry and expository method?

**Table5: Mean, Standard Deviation and Mean Difference of the influence of gender on mean interest of students taught Basic Science using guided inquiry and expository.**

| Teaching method | Pre-test | | | Post-test | | | Mean gain score |
|---|---|---|---|---|---|---|---|
| | N | Mean | SD | N | Mean | SD | |
| Guided inquiry | | | | | | | |
| Male | 54 | 1.94 | 0.69 | 30 | 3.90 | 0.68 | 1.96 |
| Female | 54 | 1.11 | 0.14 | 24 | 3.07 | 0.95 | 1.96 |
| Expository Method | | | | | | | |
| Male | 54 | 1.87 | 0.65 | 30 | 2.95 | 0.58 | 1.08 |
| Female | 54 | 1.30 | 0.64 | 24 | 2.38 | 0.94 | 1.08 |

The result of the analysis in table 5 was carried out to determine the influence of gender on the mean interest. From the table is shown that male and female students taught Basic Science using optimistic guide inquiry had mean gain interest of 1.96 each while their counterparts taught using expository method male and female had 1.08 mean interest each.

**Test of Hypothesis**

The null hypotheses were tested at 0.05 level of significance:

**Ho₁:** There is no significant difference in the mean academic achievement of Students taught Basic Science with Optimistic Guided Inquiry and those with expository method.

**Table 6: T-test on the difference in the academic achievement of Students taught Basic Science with Optimistic Guided Inquiry and expository method.**

| Group | Mean | Std Dev | N | Df | t. cal | t. crit | Decision |
|---|---|---|---|---|---|---|---|
| Student taught with Guided Inquiry Method | 14.74 | 2.32 | 54 | 107 | 64.9 | 1.66 | Rejected |
| Students taught with expository method | 3.62 | 0.86 | 54 | | | | |

The analysis in table 6 was carried out to determine if there is significant difference between students taught

basic science with optimistic guided inquiry and those taught with expository method. The t.cal 64.8 was greater than the t.crit 1.66 therefore, hypothesis 1 was rejected. This implied that there is significant difference in the academic achievement of students taught basic science using optimistic guided inquiry and expository.

**Ho₂:** There is no significant difference in the interest of male and female Students taught Basic Science using Optimistic Guided Inquiry method and expository method.

**Table 7: T-test on the difference in the interest of male and female Students taught Basic Science with Optimistic Guided Inquiry and expository method**

| Teaching method | N | Mean | Std De. | t.tal | t.cit | Decision |
|---|---|---|---|---|---|---|
| Guided inquiry Male and Female | 54 | 1.96 | 0.68 | | | |
| Expository Male and Female | 54 | 1.08 | 0.58 | 8.148 | 1.68 | Rejected |

The analysis on Table 7 was carried out to determine whether male and female Students differ significantly in their interest in Basic Science when taught with Optimistic Guided Inquiry and expository method. The t.cal 8.15 is found to be greater than the t.crit 1.68 value therefore, Ho₂ is rejected. This implied that there is significant difference in the interest of Students taught Basic Science using Optimistic Guided Inquiry and expository method.

**Ho₃:** There is no significant influence of Gender on Students' mean academic achievement in Basic Science when taught with Optimistic Guided Inquiry.

**Table 8: T-test on the influence of Gender on Students' academic achievement in Basic Science taught with Guided Inquiry method.**

| Groups | N | Mean | S.td | df | t.cal | t.crit | Decision |
|---|---|---|---|---|---|---|---|
| Student taught with guided inquiry (Male) | 54 | 13.23 | 5.01 | | | | |
| Students taught with Guided inquiry (Female) | 54 | 13.16 | 5.51 | 53 | 0.16 | 1.68 | Accepted |

The analysis on table 8 was carried out to determine the influence of Gender on the mean academic achievement of Students taught Basic Science using Optimistic Guided Inquiry. The table value of 1.68 is more than the calculated value of 0.16 therefore, Ho₃ is accepted. This implied that there is no significant influence of Gender on the mean academic achievement of Students taught Basic Science using Optimistic Guided Inquiry. Therefore, the researcher concludes that Gender does not matter when it comes to learning Basic Science using Optimistic Guided Inquiry as a method.

**Ho₄:** There is no significant influence of Gender on mean interest in Basic Science.

**Table 9: Result of T-test on the significant influence of Gender on mean academic interest of Students in Basic Science.**

| Variable | Gender | N | Mean | SD | Df | t.cal | t.crit | Decision |
|---|---|---|---|---|---|---|---|---|
| Students' interest | Male | 60 | 7.90 | 4.5 | | | | |
| | Female | 48 | 6.99 | 4.9 | 107 | 1.23 | 1.68 | Accepted |

The analysis on table 9 is carried out to determine the influence of Gender on academic interest in Basic Science. The table value is 1.68 slightly higher than the calculated value 1.23 therefore, Ho₄ is accepted. The researcher concludes that Gender has no on Students' academic interest in learning Basic Science using optimistic guided inquiry so is not gender bias.

Students taught Basic Science using optimistic guided inquiry have better academic achievements mean score of 14.74 than those taught with expository method having the mean score of 3.62.

# DISCUSSION OF FINDINGS

The first major finding in this study indicated that Students taught with optimistic guided inquiry method performed better or have better academic achievement than those taught with the conventional expository method. Since the pre-test result did not produce any appreciable difference in performance, it all means that the significant difference in performance was caused by the effect of treatment. The effect of optimistic guided inquiry in producing higher academic achievement in Students is in line with the findings of Usman and Momoh (2017); Fatokun and Yalams (2017); Akuma (2005); and Okoli (2017). These researchers found out that optimistic guided inquiry was more effective than the expository method in enhancing Students 'academic achievement. This study therefore, confirmed the positive effect of using optimistic guided inquiry method as found in the previous studies. It means that the method can be used to teach Students in order to reduce poor academic achievement in Basic Science.

Another major finding of the study indicated that Students taught using optimistic guided inquiry have higher and better academic interest than those taught with expository method. This could be as a result of the self-enquiry and discovery of ideas which is common among Students during teaching using optimistic guided inquiry. This finding confirmed the findings of Ngwoke and Oguntaye (2019) who found out that the higher academic interest among Students taught Basic Science using the optimistic guided inquiry is due to the fact that guided inquiry is Student-centered while expository is Teacher-centered and boring.

This study also revealed that there is no significant influence of Gender on the academic achievement of Students taught Basic Science using the optimistic guided inquiry. This implied that when it comes to academic achievement in Basic Science, Gender does not matter especially when taught with optimistic guided inquiry. This finding is in consonance with that of Ngwoke and Uche (2016) who found out that Gender has no significant influence in learning Basic Science. They explained further that with the same determination, attitude, habit and interest male and female Students can learn adequately concepts and ideas that would impact positively the academic achievement in Basic Science. This finding implied that the performance of the two groups are not different. In accordance with this finding, Ezeoba (2011) result indicated that there was no significant difference between the mean scores of male and female Students. Obih (2016) result revealed that a significant difference does not exist in the male and female Students academic achievement. The equivalence in the performance of male and female Students suggested that activities produced similar results irrespective of Gender. When learners are engaged in activities that are meaningful to them, both male and female Students benefit equally.

# CONCLUSION

The purpose of the study was to investigate the influence of guided inquiry and expository approaches on students' academic interest and achievements in Gwagwalada Area Council of the FCT Abuja, Nigeria. The study concludes that Students taught Basic Science with guided inquiry approach performed better than those taught with the conventional expository approach. The study also concludes that both boys and girls can benefit equally from the use of the guided inquiry method in learning Basic Science irrespective of gender. However, the study confirmed that the academic interest of girls and boys varied when taught using optimistic guided inquiry and expository method with Students in the optimistic guided inquiry experimental group experiencing better academic interest than their counterpart in the expository.

# RECOMMENDATIONS

1. In order to improve the poor performance of Students in Basic Science in Junior Secondary Schools, it is recommended that teachers of Basic Science should provide adequate structure and opportunities for learners to be engaged in the use of guided inquiry approach and the old stereotyped expository approach of teaching Basic Science should be discouraged.
2. Guided inquiry method should be practiced seriously by the Basic Science teachers since the method has proved effective in enhancing Students academic achievement in Basic Science.

3. Basic Science teachers should reduce if not eliminate the use of the expository method in teaching Basic Science because it is defective.
4. Teachers should be patient in using the guided inquiry method because it is time and energy sapping for it to be result-oriented.
5. Enough funds should be provided to schools by stakeholders in education for guided inquiry method to be feasible because it is expensive to use.
6. Government should ensure effective implementation of the optimistic guided inquiry approach and integration of technology into the strategy to teach Basic Science through regular visits to Junior Secondary Schools by educational monitoring team.

# ACKNOWLEDGMENT

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