

# **Sudan University of Sciences and Technology**

## **College of Graduate Studies**

**Effects of Inquiry - Based Science Teaching on Junior  
Secondary School Students' Academic Achievements -  
A Case Study of Hadejia Zonal Education Area of  
Jigawa State, Nigeria.**

**أثر تدريس العلوم المبنية على التقصي في التحصيل الأكاديمي - دراسة  
حالة طلاب المدارس الإعدادية بمنطقة هاديجا التعليمية - ولاية جيجاوا -  
نيجيريا**

**A thesis submitted to the College of Graduate Studies, in  
fulfillment of the Requirement for the award of Masters  
Degree in Education Science [Methods].**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**In the Name of Allah, the Most Gracious, the  
Most Merciful**

# الاستهلال

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صدق الله العظيم

( ٢٨ ————— ٢٥ : طه )

**In the Name of Allah the Beneficent the Merciful.**

*“O My Lord! Expand my breast.*

*Ease My task for me.*

*and remove the impediment for my speech.*

*so they may understand what I say”.*

## Taha: Verses

(25-28) 1

# Dedication

This research work is dedicated to:

My mother,

My family members and

Friends.

## **Acknowledgement**

I would like to thank almighty Allah for given me the opportunity to undertake this study.

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## **Abstract**

This study was carried out to ascertain the extent to which Inquiry- Based Science Teaching could be effective on the Junior Secondary School students' achievement in science. Randomized experimental and control group approach was employed with a view to enabling the researcher to pin down the effectiveness of the Inquiry Based Science Teaching. Inquiry-Based Science Teaching Achievement Test (ISTAT) and the Students' Attitude Questionnaire on Inquiry Based Science Teaching were used as research tools. The study sample consisted of 200 male and 100 female (totaling 300 subjects) Junior secondary school third year students out of population of 2,873 in Hadejia zone. T-test for independent samples and Pearson Product-Moment Correlation Coefficient( $r$ ) using Statistical Package for Social Science (SPSS) were used for data analysis. Some of the major findings were as follows: 1. There is a significant difference in the achievement of the experimental and the control groups in favor of experimental group showing that Inquiry-Based Science Teaching Approach is a more suitable method than the Lecture Method of teaching. 2. There is a significant difference in the achievement of males and females students exposed to Inquiry-Based Science Teaching Method in favor of male students. 3. there is no significant difference in relationship between academic achievement in science and attitudes towards science after exposure to Inquiry-Based Science Teaching that support female to benefit from Inquiry-based science Teaching. Some recommendations were also given as follows:- 1. Positive attitudes towards science should be encouraged and develop in the junior secondary school students, 2. it is recommended that a variety of teaching strategies should be provided or used. The authority should provide educational environments. 3. Gender stereotype should be discouraged. The home, the school and the society should encourage both the male and female.

## مستخلص البحث

تهدف هذه الدراسة إلى التحقق من مدى فعالية طريقة التقصي في تدريس العلوم الأساسية، وأثرها في تحصيل طلاب المدارس الإعدادية الأكاديمية في مادة العلوم. تم تطبيق العينة العشوائية وطريقة المجموعة الضابطة، لكي يتمكن الباحث من معرفة كفاءة طريقة التقصي في تدريس العلوم الأساسية. تم استخدام اختبار تحصيل تدريس العلوم الأساسية بطريقة التقصي، بالإضافة إلى استبيان يتحدث عن مواقف الطلاب نحو تدريس العلوم الأساسية بالطريقة نفسها – كأدوات للبحث. تشمل عينة الدراسة على مائتين من الذكور ومائة من الإناث (بجملة ثلاثمائة طالب) من طلاب المدارس الإعدادية- المستوى الثالث – بمنطقة هديجيا البالغ عدد سكانها ٢,٨٧٣ مليون نسمة. تم استخدام اختبار تدريس العينات المستقلة وقد تم أيضا التحكم في درجة الارتباط عن طريق استخدام الحزمة الإحصائية للعلوم الاجتماعية، التي تم استخدامها في عملية تحليل البيانات.

١. شملت النتائج الأساسية الآتي: أولاً- هنالك اختلاف مهم فيما حققته التجربة والمجموعات الضابطة في تفضيل مجموعة التجربة التي توضح بأن طريقة التقصي في تدريس العلوم الأساسية هي الطريقة الأكثر ملائمة، وتفضل على طريقة المحاضرة. ثانياً- هنالك فرق مقدر بين تحصيل الطلاب الذكور وال طالبات الإناث يوضح بأن طريقة التقصي في تدريس العلوم الأساسية مفضلة لدى الطلاب الذكور. ثالثاً- ليس هنالك فرق مهم في العلاقة بين التحصيل الأكاديمي في العلوم ومواقف الطلاب نحو العلوم بعد التعرض إلى طريقة التقصي في تدريس العلوم الأساسية. تم التوصل إلى عدد من النتائج الفرعية والتوصيات في نهاية هذه الدراسة. تشجيع وتطوير مواقف الطلاب الإيجابية تجاه مادة العلوم في المدارس الإعدادية.

٢. التنوع في استخدام استراتيجيات التدريس.

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## LIST OF ABBREVIATIONS

ISTAT-----INQUIRY- BASED SCIENCE TEACHING ACHIEVEMENT  
TEST

SAQIST----STUDENT'S ATTITUDE QUESTIONNAIRE ON INQUIRY  
SCIENCE TEACHING

SPSS-----STATISTICAL PACKAGE FOR SOCIAL SCIENCE

PPMCC---PEARSON      PRODUCT      MOMENT      CORRELATION  
COEFFICIENT