

# **Attitudes Towards Research: Research Barriers at Secondary School Level, and Experiences Of University Students in Africa**

The Collaboration for Research Excellence in Africa (CORE Africa)

Douala, Cameroon

CORE Africa

Camberley, United Kingdom

Ngongalah Lem, Niba Rawlings Ngwa, Wepngong Emerson, Musisi James and the CORE Africa Research Team

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## Background

The purpose of this study was to identify factors that influence the engagement of secondary school students, secondary school teachers and university students with research-related activities. It also highlighted barriers to doing research, and opportunities for increasing participation in research. The findings will inform the development of the RCISSA project, as well as other CORE Africa research awareness and skill development programs targeting these populations.

## Study Objectives

This study had three objectives:

1. To have an understanding of the secondary school academic curriculum in Africa
2. To understand teachers' perceptions on factors influencing teaching and student learning
3. To explore university students' research experiences, and the factors influencing these.

## Methods

The study was conducted in three African countries: Cameroon, Nigeria and Uganda. Questions were asked through a mix of face-to-face interviews and an online survey. Using an anonymous survey provided opportunities for participants to share opinions which they may not have felt comfortable doing so in person. The study was carried out between March and September 2018.

## Results

Participant characteristics are presented in table 1. This study received responses from a total of 252 participants - 47 teachers and 205 university students. A majority of teachers (73%) taught science subjects, while students (81%) were mostly studying health-related subjects at the University. This report presents qualitative findings from a subset of the study participants.

Table 1: Number of students and teachers who participated in the study

Group	Participated, n(%)
Teachers	
Cameroon	24 (51.1)
Uganda	12 (25.5)
Nigeria	11 (23.4)
Total	N=47
Students	
Cameroon	113 (55.1)
Uganda	40 (19.5)
Nigeria	56 (27.3)
Total	N=205

### A. Findings From Secondary School Teachers

The findings from this study revealed three key themes

#### 1. Student learning is confined to classroom work

Teachers described the academic curriculum as “stiff” and believed that it does not give students the opportunity to go beyond what they have been taught in the classroom.

*“These students only learn from what is taught in class, what they have written in their notebooks and what they read in textbooks. It’s very rare to see any of them go beyond that” (Chemistry teacher, Cameroon)*

*“It has been that way for years. Teachers teach, students read and write what they’ve been taught in tests and exams. Sometimes, many students do well because they have the ability to do cram work” (Biology teacher, Uganda)*

*“I don’t think they find it important to find information from other places. Some of them with textbooks don’t even use them for their assignments or when answering questions in class. We have to force them to read these book” (Biology teacher, Cameroon).*

## **2. Students are not encouraged to supplement learning with information from other sources**

Teachers commented on a lack of encouragement for students to supplement their learning with information from other sources.

*“In school they’re taught to follow instructions... in class, in exams, even in their daily lives. It’s not a requirement for them to do any extra searching and no one even talks about it. So the norm is just to read*

*and reproduce what you’ve read” (Chemistry teacher, Cameroon)*

*“If I want my students to read a textbook, I have to tell them that some of my exam questions will come from there. Otherwise, they see no need for that” (Physics teacher, Nigeria)*

*“Students do things for a reason and sometimes, it’s not just about giving them a reason but also making them see how it is useful to them” (Maths teacher, Cameroon)*

## **3. Teachers have a heavy workload and lack resources**

Teachers cited their heavy workload as a key barrier to finding ways to encourage students to supplement their learning with additional material. They also mentioned a lack of resources as a challenge to accessing research information.

*“We the teachers have a lot of work assigned to us and the target usually is making sure that we cover the whole scheme for the year. There’s no time to think about how to make anything different” (Biology teacher, Cameroon)*

*“To do research you need internet, which we don’t have in school and even most times at home” (Biology teacher, Uganda)*

## **B. Findings From University Students**

University students highlighted challenges they faced with doing research. These were clustered into three themes:

## 1. Choosing a research topic

African university students studying health-related subjects expressed tremendous challenges they faced at the university, especially when it was time for them to decide what topic they were going to do their research on. Many students choose topics for convenient reasons, or sought advice from peers. Very few students mentioned wanting to do a project that could be beneficial to their community, or working on something that they could carry on with in the future. Having previous exposure to a research environment, or contact with health professionals had a positive influence on students' research choices.

*"I checked what my other classmates had chosen to work on" (Third year Biochemistry student)*

*"It was last minute for me, and there's usually a given number of students per topic. There was a lot of pressure so I just picked the best out of the remaining topics" (Final year Medical student)*

*"At the time, I went with something that I knew I could complete quickly" (Biomedical science Masters student)*

*"I picked the easiest topic, to be honest" (Third year Microbiology student)*

*"I wanted to do something related to surgery but I wasn't sure what exactly. My friend's brother is a surgeon and sometimes when he tells us about his experiences at work I find them interesting. He linked me to some people and they helped me through the*

*process of defining my research question" (Final year Medical student)*

*"I did an internship in a hospital in my second year so I learned some things from there and it helped me to develop my research. I wanted to know more about onchocerciasis" (Public Health Masters student)*

## 2. Staying motivated

Some students were interested in their research topics, especially at the beginning. However, several students reported working on projects that they had no interest in. Staying motivated throughout was a challenge and the main goal for most students was to complete their project in time so they could graduate. A key factor that led students to put in the required effort throughout their academic research was so they could achieve a good grade. Having previous exposure to a research environment, or contact with health professionals also had a positive influence on students' research experiences.

*"To me, the main thing was to finish so that I can graduate and find a job" (Third year Biochemistry student)*

*"I wanted to have at least a second class upper and I was doing well in the other subjects so I had to make sure my research gave me a good mark" (Biomedical Science Masters student)*

*"Students are always stressed when it's time to do research. It's hard because sometimes you don't even know what the next step is and you're wondering if*

*the stress is really worth it” (Third year Microbiology students)*

*“There was a research group where I was doing my internship. I couldn’t join because I didn’t have the requirement but I used to reach out to them when I had difficulty and they would help me out” (Public Health Masters student)*

*“My brother studied in the UK before coming back to work here as a pediatrician so he was my go-to person” (Third year Epidemiology student)*

### **3. Lack of Awareness**

A majority of the students interviewed reported that throughout their secondary school education, they were completely unaware about research in general; and or of its importance to them. Students felt that learning about research earlier on would have informed their decisions, especially relating to their academic research projects.

*“We never had any knowledge about how to do research or why they do it before I came to the university” (Epidemiology Masters Student).*

*“If I knew even one-tenth of what I know now about research before I came to the university, I would have been better placed to make decisions about my project” (Final year Medical student).*

*“I still remember the things I learned from secondary school and these gave me background knowledge when I started studying Medicine. I think it helps to give students that background, and early enough too, so that they can have the chance to*

*make use of it” (Nutrition Masters student).*

*“When I think about some of the things I did with my research project, it makes me laugh. Like referencing Wikipedia articles, copying material directly from online reports or websites into my own report and limiting my search to google. I think it’s really unfortunate because these practices are still going on even now” (Public Health masters graduate).*

### **Summary**

This study identified barriers to doing research at secondary school and university level. Teachers revealed that secondary school students are not encouraged to participate in research activity, which limits their learning. Teachers also expressed difficulty with participating in research activity themselves, or encouraging students to do so. University students felt that they did not have enough support to enable them understand the importance of research, or make appropriate decisions around their academic research work. Students felt that having an earlier introduction or background to research would be useful at the university.

### **Conclusion**

These findings highlight the need for research programs in secondary school, to help enhance student’s learning experiences and outcomes at the university and beyond.

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