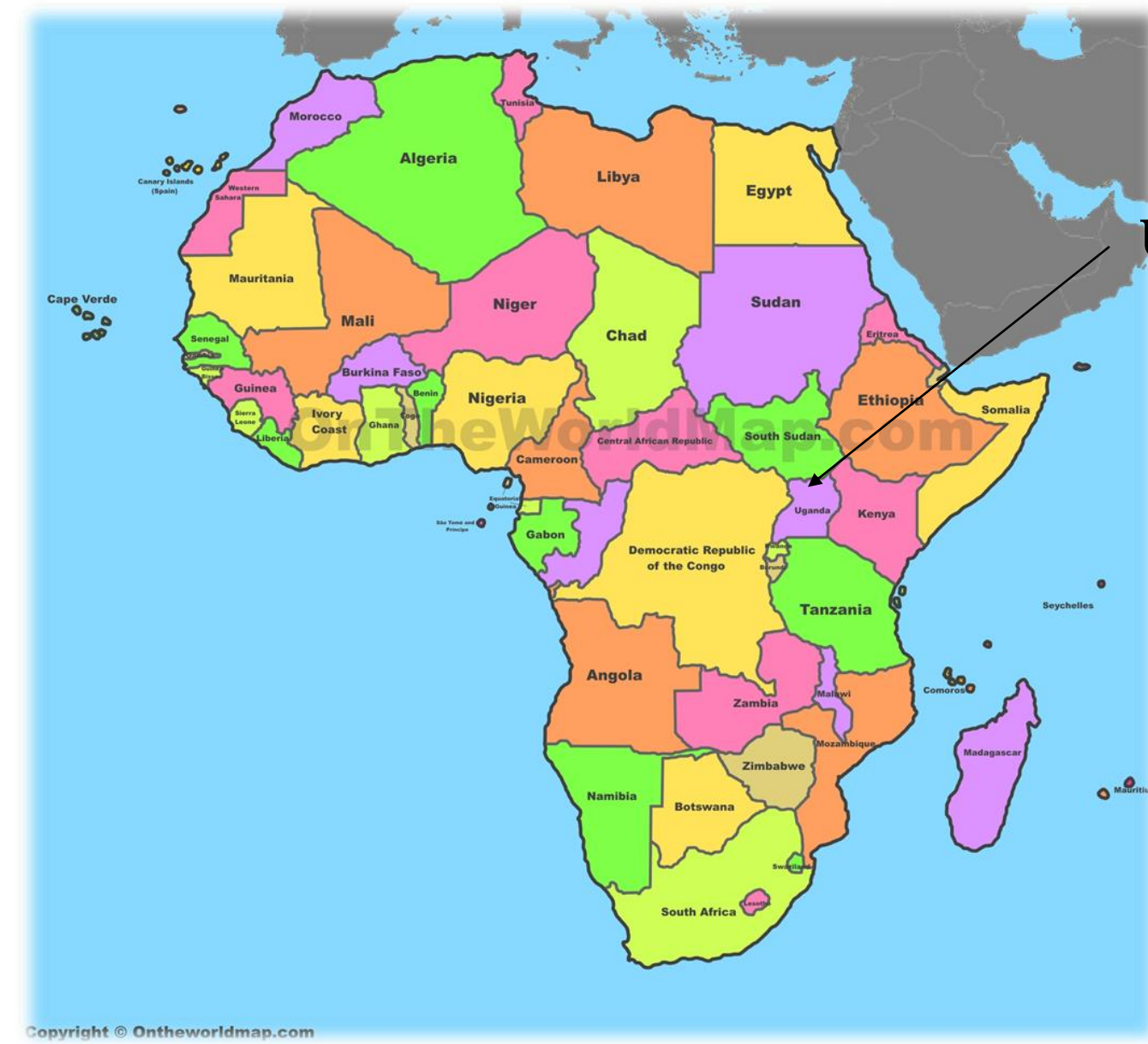# Observed Effects of Sheltered Instruction Observation Protocol (SIOP) Methods in Education of Students in Uganda

Ms. Amanda Whitlock and Dr. Ikechukwu Ukeje
Bagwell College of Education
Kennesaw State University, Kennesaw Georgia.

Location of Study

This study was conducted at Ekitangaala Primary School in Nakasongola, Uganda located in East Africa.

Every student is an English Language Learner. The class sizes are large, ranging from 65-105 students which makes instruction very difficult. I saw this during my supervised internship and wanted to get involved and do something to impact the students.

Abstract of the Study

Researchers have examined the effects of the SIOP, Sheltered Instruction Observation Protocol, model on English Language Learners (ELLs) in the United States. With the SIOP model, teachers use research-based instruction that benefits all students including ELL students. However, there is a need to examine its effects for students in other countries. This study compares the performance and engagement of students in a rural setting in Uganda when they experience instruction that follows parts of the SIOP model. Many students in Uganda struggle in mathematics because of the lack of support due to class sizes of about 65-105 students. This study will highlight the use of researched methods for ELLs within the United States for students in other countries, such as Uganda, that will help students in Uganda's educational system. Based on the observations of participation, engagement, and performance on the tests given by the researcher during this study, the data gathered from the researcher and the local teachers will show that the methods are working for the students at Ekitangaala. The analysis of this observational data has resulted in cross-cultural symbiotic pedagogical learning. The results show that the students are more engaged when they are learning in an environment that employs SIOP researched methods and better retain content for testing which allowed for better performance.

Typical classroom in Ekitangaala Primary School

Figure 1. Base-line Student Performance in Subjects – Pie Charts

Primary 5 Math Baseline: Poor 81%, Average 18%, Excellent 1%

Primary 6 Science Baseline: Poor 68%, Average 31%, Excellent 1%

Primary 7 English Baseline: Poor 25%, Average 66%, Excellent 9%
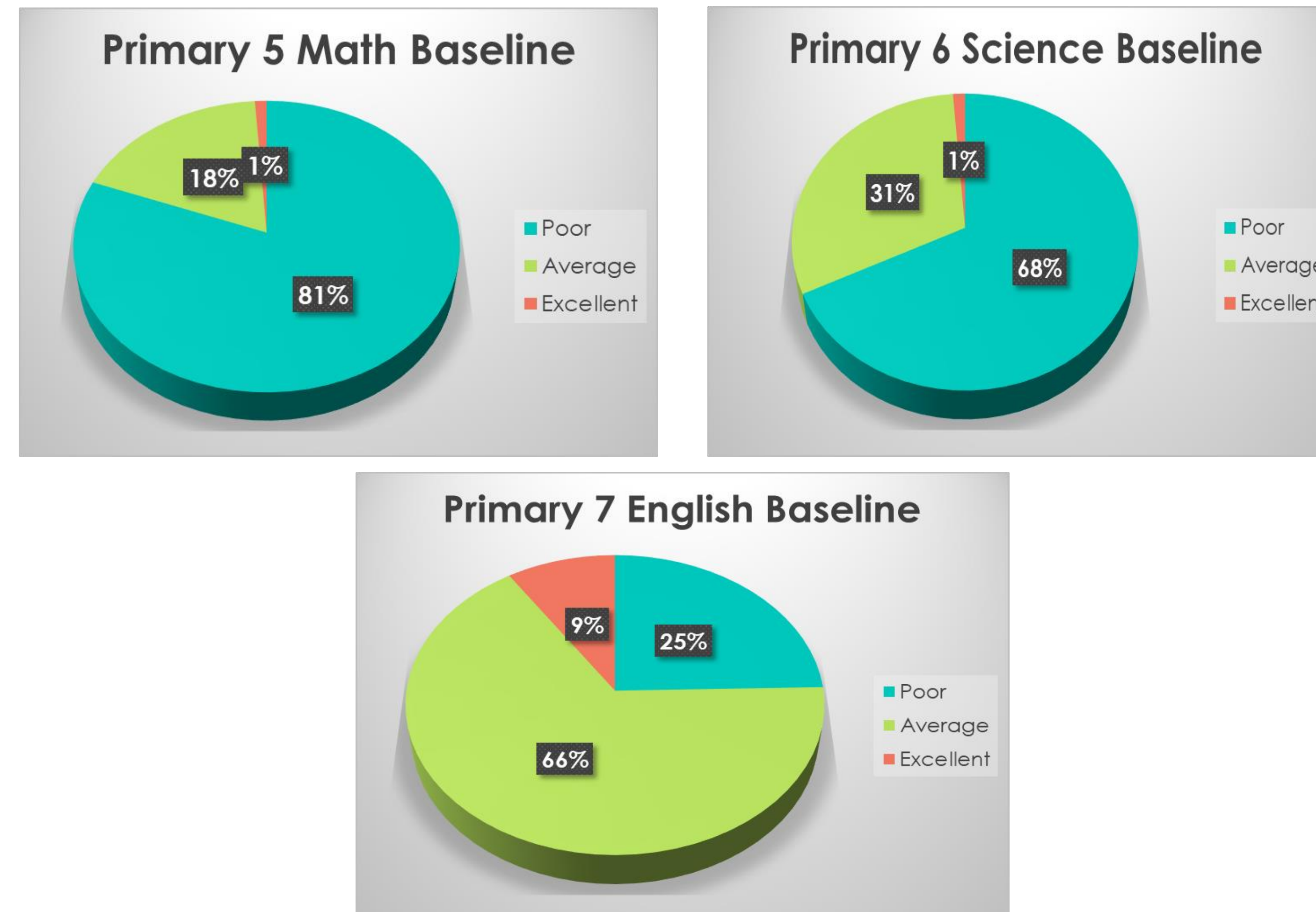
Figure 2. After Intervention Student Performance in Subjects – Pie Charts

Primary 5 Math Resuts: Poor 12%, Average 48%, Excellent 40%

Primary 6 Science Results: Poor 3%, Average 10%, Excellent 87%

Primary 7 English Results: Poor 3%, Average 14%, Excellent 83%
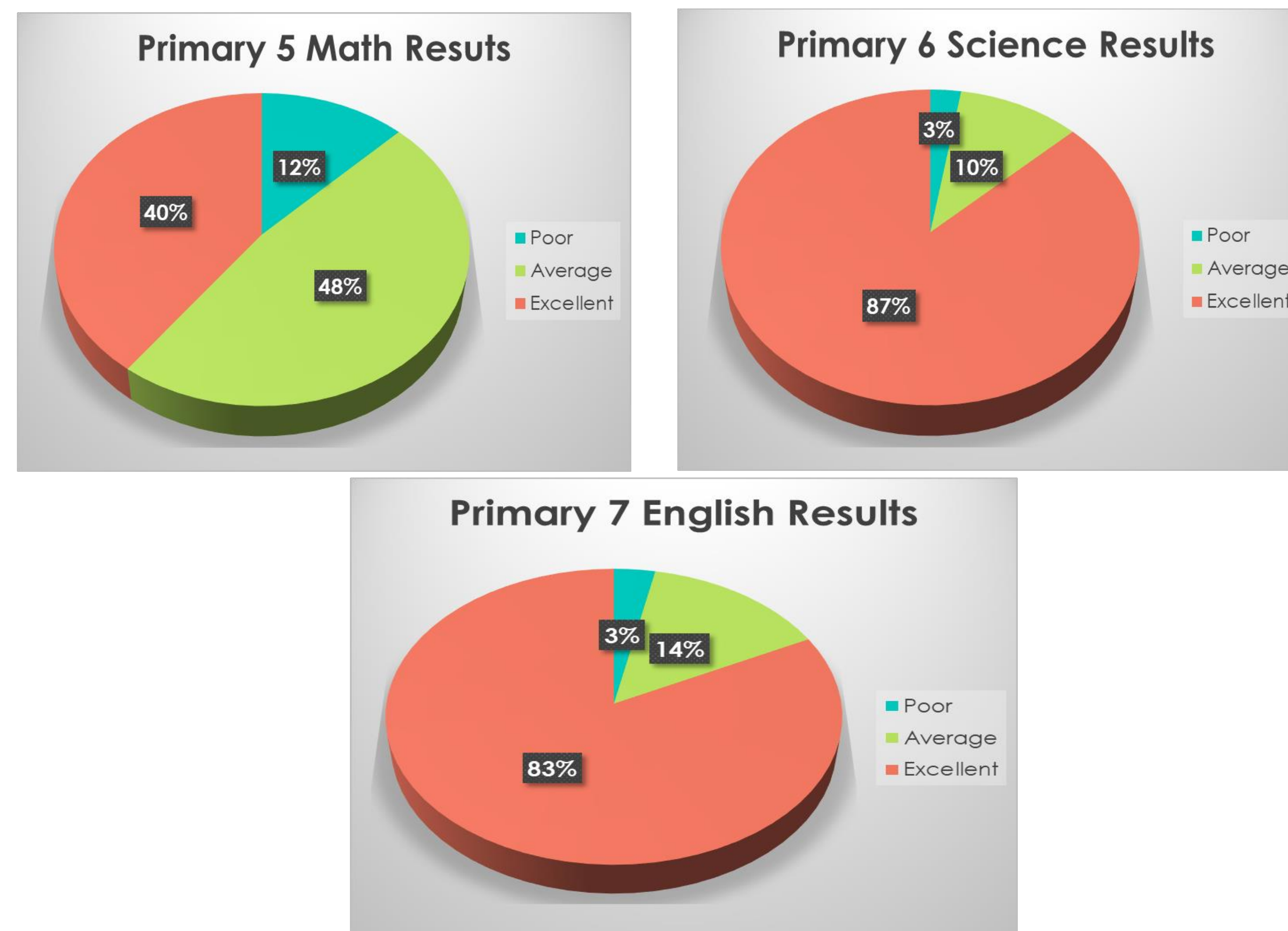
Figure 3. Student Performance in All Three Subjects: Baseline and After Intervention Testing

Student Performance in All Three Subjects: Baseline Testing

Student Performance Across All Three Subjects
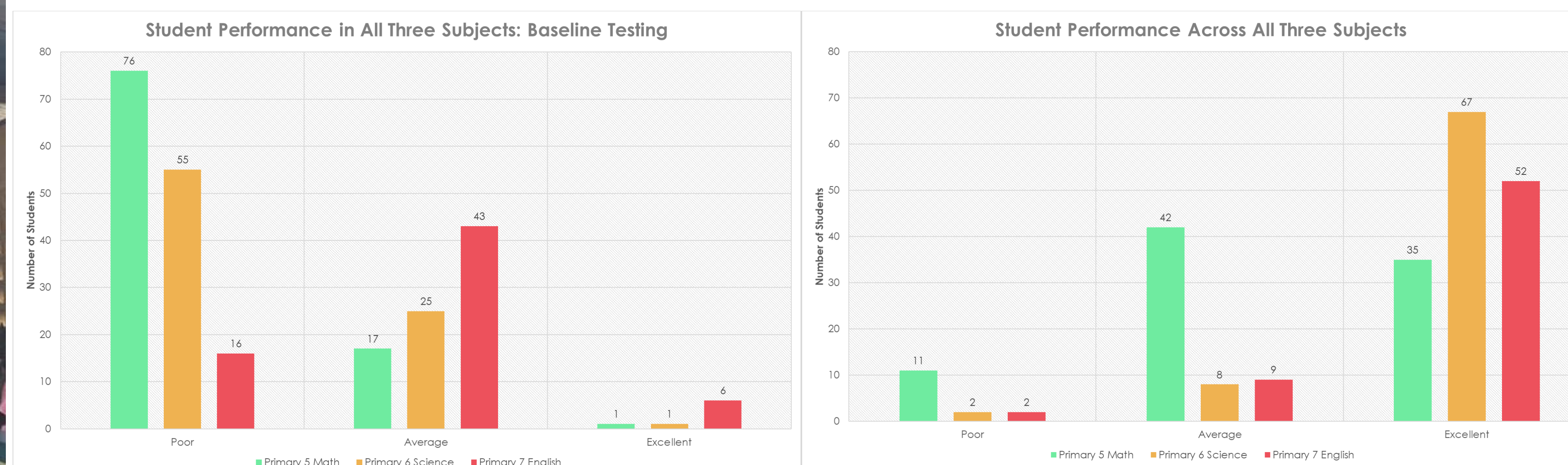
Intervention Classes

Administration and Teacher Support

This method was shared with the administration at the onset who provided permission for the researcher to implement this program in the three selected classes. The SIOP method was presented to the selected teachers of the three participating classes for their buy in and collaboration. All teaching staff were provided information about the SIOP method during a staff development workshop day. KSU Professor, Dr. Ikechukwu Ukeje approved all aspects of this study before implementation in Ekitangaala Primary School.

Sheltered Instruction Observation Protocol (SIOP)

The SIOP model is targeted instruction for ELLs that helps to fully develop students' content and language abilities within a general education classroom. There are 8 components and 30 features that make up the SIOP model. The researcher incorporated 7 chosen features in the lessons that were taught. Feature 4 from the Lesson Preparation Component: Using supplementary materials to a high degree like making models, graphs, visuals, etc. for the lesson to be comprehensible. Feature 6 from the Lesson Preparation Component: Meaningful activities that incorporate reading, writing, speaking, and listening to practice language. Feature 7 from the Building Background Component: Linking concepts explicitly to students' background experiences. Feature 8 from the Building Background Component: Links explicitly to background knowledge (link past learning to new concepts). Feature 9 from the Building Background Component: Key vocabulary emphasized (introduced, written, repeated, and highlighted for students to see). Feature 16 from the Interaction Component: Frequent opportunities for interaction and discussion between teacher/student and among students which encourage well-thought out responses about concepts. Feature 20 from the Practice and Application Component: Hands-on materials or manipulatives provided for students to practice using new concepts.

Methodology

The researcher taught 3 lessons in 3 different classes over the course of a week. Science, math, and English were the chosen subjects. In these lessons, SIOP features were implemented as intervention teaching programs. The researcher used the SIOP features to plan interventions alongside the classroom teachers. Using models and visuals to make the lesson more comprehensible, incorporating reading, writing, speaking, and listening in each lesson, linking to background experiences and prior knowledge, emphasizing key vocabulary, discussion amongst peers and with the teacher to allow for well-thought out responses, and hands-on materials or manipulatives were all used to effectively implement the SIOP model. In Primary 7 English class, the students used all 7 features to create a letter on paper that they do not normally use with a decorated cover using vocabulary from a chapter that the researcher taught. This incorporated two major parts of this class, letter writing and using vocabulary correctly. In Primary 6 science class, the students used all 7 features to complete an activity about animals. The researcher incorporated hands-on materials to allow the students to see the animals that they were learning about and had never seen before through the use of small figurines and books with real pictures while working in groups. In Primary 5 math class, the students used all 7 features during the lesson like using recycled bottle caps from their village for counters as needed for multi-digit addition and subtraction while working in groups. Teachers observed and were later taught 3 key features of the SIOP model for implementation during the next school term.

Findings and Conclusions

The baseline data reveals that while over 80% of students did poorly in math before, the after intervention testing data shows that about 12% did poorly in math. The baseline data reveals that while only 1% of students performed excellently in math and science respectively, the after intervention testing data reveals the excellent performance of 40% in math and 87% in science. There is an overall major trend in the results that suggest the SIOP model improved learning outcomes for the students involved in all three subject areas. The SIOP model had the greatest impact in the science class. These findings show that the students benefit from instruction using the SIOP model.

Next Steps

- Future plans to implement more of the SIOP model to see if all of the components and features can work, or if only some can work for this pedagogical setting for these students and teachers.
- Tests of significance will be applied to all future analysis of data.
- A teacher survey, within Ekitangaala Primary School, will be conducted to identify how the teachers think students learn best and their preferred instructional methods.
- Further trainings for the teachers on other aspects of the SIOP model and discussions of their perceptions of the benefits and challenges of the 3 learned features of the SIOP model.
- Expanding this preliminary study into all other subject areas and classes at Ekitangaala Primary School as well as other schools within the district.
- Potential impacts for the educational system of Uganda and other nations if proven to help students in Uganda.

References:
Echevarría, J., Vogt, M., & Short, D. (2018) *Making content comprehensible for elementary English learners: The SIOP model.* Upper Saddle River, NJ: Pearson Education, Inc.
Vogt, M., Echevarría, J., & Washam, M. A. (2015) *99 more ideas and activities for teaching English learners with the SIOP model: Lesson planning for the common core.* Upper Saddle River, NJ: Pearson Education, Inc. .