The Status and Impact of Rotational Teaching on Students’ Learning Achievements in the Gambian Lower Basic Schools
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<td>Diploma Alumni Series: Small-Scale Innovative Research, November 2017, No. 14</td>
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Open Note of the IBE

The IBE has launched the Diploma Alumni Series to create a shared space to involve local education professionals into a global dialogue and inspire original research and meaningful discussion. It intends to position the diploma alumni as active and distinct researchers, producers and disseminators of local knowledge and mastery. These through the elaboration of small-scale innovative research projects that will eventually enrich and advance the development of quality curricula for all.

The Diploma Alumni Series is the result of a Diploma Alumni Grant established by the IBE in 2015 with the hopes of providing professional development opportunities for the diploma alumni. The idea of promoting a grant for small-scale innovative research derives from the valuable contributions of the case studies written by the participants of the Postgraduate Diploma in Curriculum Design and Development as part of their coursework. During the past years, participants have been producing comprehensive and unique case studies, sharing a variety of approaches, strategies and practices in curriculum initiatives across regions. These products have become essential tools and reference materials of the Diploma and Masters programmes, as they allow the participants to reflect on diverse contexts and perspectives and further apply these new ideas into ongoing curriculum reform and worldwide discussions on current and critical issues in curriculum, learning and assessment. Echoing the success of the case studies, the Diploma Alumni Grant enables and encourages the animated participation of diploma alumni in continuing with their professional development through evolving their case studies and research topics into small-scale in-depth research.

Endorsed and produced in the three official languages of the Diploma and Masters Programmes, English, French and Spanish, the series of research primarily presents effective and relevant practices around (i) curriculum policy and reform and (ii) teaching, learning and assessment. Through their research projects, fourteen Diploma Alumni, 9 from Africa and 5 from Latin America and the Caribbean, shed light on teaching and learning approaches used at local level as well as on the state of education and curriculum reforms in these two regions. The Diploma Alumni Series becomes, therefore, an invaluable asset as it highlights concrete education practices across regions, fostering inclusive and holistic approaches that are simultaneously community-based and an extension of the global discussion on the concerns of Member States. Along with the series In-Progress Reflections on Current and Critical Issues in Curriculum, Learning and Assessment, the Diploma Alumni Series aims to facilitate online interactions through continuous reflection and exchange of ideas between local and international experts.

Dr. Mmantsetsa Marope: Director, International Bureau of Education
The Status and Impact of Rotational Teaching on Students’ Learning Achievements in the Gambian Lower Basic Schools

Abstract: The purpose of this study is to assess the status of Rotational Teaching in Gambian lower basic schools. This status derived from the declaration of the Ministry of Basic and Secondary Education of the Gambia, which established that from September 2015 all lower basic schools had to adopt Rotational Teaching for grades 4-6. The research also aims to probe into the impact of this teaching methodology on the improvement of students’ learning outcomes so as to inform decision makers of the Ministry of Education and other relevant institutions on the viability of this model in improving the performance of learners. A total of 30 schools were involved in the study. 300 students in grades 2-6 filled questionnaires and did performance tests in Mathematics, English, Science and Integrated Studies. 30 head teachers filled in questionnaires, whilst questionnaires and classroom observations were used to collect data from 150 teachers. At the end, the study provides recommendations aiming to enhance the implementation and sustainability of Rotational Teaching in schools. The results show the positive attitude of teachers towards Rotational Teaching and recognize the positive impact of this practice on students’ performance.

Keywords: Gambia – rotational teaching – school – teaching
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Introduction

Background information

The Republic of the Gambia is a small country on the West African coast. It has a total land area of about 4,000 square miles (11,000 square km). It is divided into the North and South banks by the River Gambia, which takes its source from the Futa Jalon Highlands in the Republic of Guinea in the east, and empties itself in the Atlantic Ocean in the west. The Gambia is surrounded on all three sides by the Republic of Senegal, except for the Atlantic coastline. The country has a population of about 1.8 million people, out of which 55.5% of the adult population is literate (OIC Report, 2015). Due to the rapid expansion of education and the government’s commitment to compulsory basic education, especially for girls, these numbers have drastically increased over the years. However, the country was still far from achieving universal primary enrolment in 2015 (GEMR, 2016). According to the Global Education Monitoring Report (GEMR), the Gambia is moving slowly towards this target. The strong focus on compulsory education for girls has led to an increase of girls’ enrolment in primary education, which has reversed the trend at the expenses of boys, who are currently underrepresented in primary schools, as it will be discussed later in this paper (GEMR, 2015).

The Gambia is divided into six Local Government Administrative Regions, which incidentally become the six educational regions of the country. The Regional Education Directorates, as they are called and specified by number, are responsible for the overall administration of schools at the regional level in a decentralized system of operations. For instance, Regional Education Directorate 1, which covers basic education schools in Banjul, the capital city, and its suburbs, is responsible for teacher deployment in the region, teaching and learning monitoring and supervision, and supply of teaching and learning materials, among others. The Regional Education Directorate 2 is responsible for schools in the West Coast Region, which is the closest region to Banjul. The Regional Education Directorate 6, which is the last and the furthest regional Directorate, is responsible for schools in the extreme end of the country.

During the colonial period, the British missionaries established the first schools. Access to education was very limited as there were few schools and these were found in and around Banjul. There was only one high school in the provinces, Armitage High School, and that was for the sons of chiefs. At that time, not many parents sent their children to school and so schools were easy to manage. This helped to improve students’ academic achievements. This trend continued until some years after the country’s independence, in 1965. From that time onwards, students’ academic performance began to experience a gradual downward trend. Among the reasons for this was that enrolment rates were increasing and there was still a limited number of schools. The Government did not have the required qualified personnel to handle the volume of expansion in the education sector. The Ministry of Education entered into a series of reforms and structural adjustments to reverse this trend. The double shift system was introduced in the schools, under which, the lower grades (1-3) would go to school in the morning, from 08:30 to 13:30, and the upper grades (4-6) in the afternoon, from 13:30 to 18:00. A new Education Policy was formulated for 1998-2003. The development of this policy was broad-based and included all relevant stakeholders in education. It was meant to identify the challenges faced by the education sector as well as the necessary measures needed to be taken to address these challenges. Other policies aligned with international standards were adopted with the main focus of improving educational quality in the country. The Gambia participated in the World Conference on Education held in Jomtien, Thailand, in 1990. The Gambia is a signatory to the conventions on the World Declaration on Education For All and the Framework for Action.
to meet the Basic Learning Needs by providing universal primary education and eliminate adult illiteracy. The 2004-2015 Education Policy coincided with the coming into being of the Millennium Development Goals (MDGs) and the Education for All Goals (EFA).

During this period, the Ministry of Basic and Secondary Education received massive financial support from the World Bank, the International Development Association (IDA) and other financial institutions to help attain the MDGs by 2015. This policy period witnessed numerous interventions undertaken by the Ministry on access to education, relevance and quality, which constituted the basic tenets of that policy. Of these three principles, quality remains the greatest challenge that the Ministry is still grappling with, although significant strides have been taken towards addressing it. The Pupil - Qualified Teacher Ratio (PQTR) according to regions between 2012 and 2015 is as follows: In Regional Education Directorate (RED) One in 2012, the ratio was 55 pupils to 1 qualified teacher (55:1), whereas in 2015, it was 41:1. In RED Two, in 2012, the ratio was 58:1 and in 2015 41:1. In RED Three, in 2012, the pupil – qualified teacher ratio was 60:1 and in 2015 it was 36:1. In RED Four, in 2012 the ratio was 44:1 and in 2015 it was 30:1. In RED Five, in 2012 the pupil – qualified teacher ratio was 41:1 and in 2015 it was 37:1. In RED Six, in 2012, the pupil – qualified teacher ratio was 65:1 and in 2015 it was 53:1 (GBoS, 2016). This shows the increase in the number of qualified teachers in the regions to help boost education quality.

With the construction of numerous schools across the country prompted by the Ministry’s target of having a lower basic school (LBS) for every seven kilometer distance in the rural areas to reduce the long distance trekking daily by pupils, significant progress have been registered in the area of access to basic education. For example, in 1998, there were 338 LBS in the Gambia (EMIS, 2006). In 2012, there were 692 LBS and this number increased to 928 in 2015 (GBoS, 2016). On National Gross Enrolment Rate (2003 census), the GER for LBS was 90.2% and in 2015, it was 101.2% (GBoS, 2016). This data when disaggregated by gender is boys 89.1% in 2012 and 99.0% in 2015 and girls 91.4% in 2012 and 103.5% in 2015 (GBoS, 2016). ‘Enrolment at LBS level has been steadily increasing and dominated by girls throughout the period’ (GBoS, 2016). On school completion rate for girls, ‘Increase Completion Rate in LBS was 75% in 2012 to 93% in 2015. An impressive increase on the girls’ completion rate has been registered between 2012 and 2015’ (GBoS, 2016). However, there is still room for improvement for the Gambia in meeting the EFA target. According to the ranking on the Education for All Development Index (EDI), which is a composite index that allows evaluation of overall progress towards Education for All, the Gambia is ranked low on the EDI, at the 99th position out of the 113 countries, scoring 0.746 (GEMR, 2015). On adult literacy rate, the Gambia is still ranked low with 0.520 on the EDI and on primary adjusted net enrolment ratio (ANER) the Gambia scores low with 0.737 EDI (GEMR, 2015).

The development of a Curriculum Framework for Basic Education by the Curriculum Directorate in 2007, with support from IBE-UNESCO, helped to contextualize the country’s educational programmes in order to address the socio-economic needs and to promote the Gambian cultural values. In this way, the issue of educational relevance has been highly attained.

In its bid to improving the quality of education in the Gambia, the Ministry of Basic and Secondary Education continues to explore teaching approaches, strategies and models that would yield maximum achievements in children’s learning outcomes.

In the Gambian LBS, teachers used to teach all subjects to a given class. Teachers were mostly generalists. For example, a grade 3 teacher was expected to teach his/her pupils all the subjects on the timetable. At the Gambia College School of Education, the only institution that trains teachers to become qualified teachers, training of LBS teachers is tailored in this way. Teachers are trained to teach all subjects in the LBS curriculum. This model of teaching (generalization) was practised by many schools in the Gambia,
notably public schools. However, not all schools were doing it. Some private and few public schools were practising Rotational Teaching. In this model of teaching, specialist teachers teach students on their specialized areas only. That means teachers that are qualified in Mathematics teach only Mathematics in the school. They rotate amongst the classrooms teaching Mathematics in every class while the students stay in their classrooms. A teacher who is qualified in English Language will also do the same thing and likewise all other teachers. This practice enables excellent teachers to reach more students.

The National Assessment Tests (NAT), which are conducted annually for grades 3, 5 and recently 8, are meant to provide feedback to both parents and authorities on the children’s rate of progress. The Ministry soon came to realize that private schools perform better than public schools in NAT. The completion rate (pass) in NAT grade 5 is as follows: by ownership.

- In public LBS in 2012, 93.2% of grade 5 pupils sat to the test. Of this, 36.8% passed English Language, 45.5% passed Mathematics, 33.9% passed Science and 46.4% passed Social and Environmental Studies.
- In grant-aided schools in 2012, 97.0% of grade 5 pupils sat to the test. 59.9% of the candidates passed English Language, 67.9% passed Mathematics, 55.4% passed Science and 66.2% passed Social and Environmental Studies.
- In private schools in 2012, 95.5% of grade 5 pupils sat to the test. Of this, 73.7% passed English Language, 75.3% passed Mathematics, 69.1% passed Science and 76.8% passed Social and Environmental Studies.
- In public LBS in 2014, 94.1% of grade 5 pupils sat to the test. 46.8% passed English Language, 42.8% passed Mathematics, 24.4% passed Science and 59.2% passed Social and Environmental Studies.
- In grant-aided schools in 2014, 96.7% of grade 5 pupils sat to the NAT. 65.2% passed English Language, 59.0% passed Mathematics, 42.1% passed Science and 72.2% passed Social and Environmental Studies.
- In private schools in 2014, 95.8% of grade 5 pupils sat to NAT. 77.0% passed English Language, 74.2% passed Mathematics, 57.7% passed Science and 82.5% passed Social and Environmental Studies (GBoS, 2016).

The Rotational Teaching model allows teachers to devote their time to their subject of instruction. That means they have ample time for lesson planning and delivery. Rotational Teaching provides time to the teacher to sharpen his/her focus on his/her subject of specialization alone. This also results to better teaching and eventually improved students’ learning achievements.

It avails students with the opportunity of meeting different teachers in their areas of specialization. Teachers under this model have more time of meeting students individually and supporting them, which helps in the mastery of learning tasks.

**Literature Review**

Education quality continues to be a problem in the developing countries. Students could hardly meet their learning achievement targets. This situation warrants educators to continue to explore ways and means of improving education quality. In The Gambia, many private schools introduced Rotational Teaching or the Subject Specialization model as a way that could help improve students’ learning achievements. After
some positive correlation was shown, especially in the National Assessment Tests (NAT), some public schools also introduced the teaching model. Here is the completion rate (pass) in the NAT grade 3 in public, grant-aided and private schools in 2014:

- In public schools, 92.8% of grade 3 pupils sat to the test. The pass rate for English Language was 47.8% of the students, Mathematics 43.8% and Integrated Studies 54.4%.
- In grant-aided schools, 92.2% of grade 3 pupils sat to the test. The pass rate for English Language was 64.9% of the students, Mathematics 64.1% and Integrated Studies 72.4%.
- In private schools, 95.2% of grade 3 pupils sat to the test. The pass rate for English Language was 76.9% of the students, Mathematics 75.8% and Integrated Studies 82.3% (GBOS, 2016).

These results reflect the picture in 2012 and 2013 respectively. In 2015, the Ministry of Basic and Secondary Education made it mandatory for all LBS to adopt it in a bid to improve students’ learning outcomes.

This section attempts to show the available literature on the effectiveness of Rotational Teaching or the Subject Specialization Model.

Enhanced Student Achievement

The move towards the subject specialization model in elementary schools is relatively recent. However, the schools that have implemented this model have noted that it contributes towards greater student achievement (see data on NAT completion rate 2014). Students have the benefit of working closely with teachers who are presenting lesson plans in their areas of expertise. They also benefit from personalized attention from multiple teachers rather than just one.

Superior Instruction

Elementary schools organized in such a manner allow teachers to devote their time and attention to their areas of specialization. This can facilitate more effective lesson plans because instead of planning many different classes each week, they can focus on just a few. Specialization also enables teachers to refine their knowledge base for their particular subject areas, which lends itself to superior instruction.

In Rotational Teaching, the best teachers teach one or two priority subjects, leaving other subjects to team mates. A likely combination would be subject pairs: 1) Mathematics and Science and 2) English Language and Social Studies.

Teachers save time for needed and expanded student reach by narrowing their subject coverage.

Students who would not normally have the best teachers in the core subjects can have them in this model.

Both well-performing and struggling schools can benefit from this model. Schools with a typical number of excellent teachers (or more) may be able to close small but persistent gaps completely, without diminishing results for other students. Struggling schools can produce catch-up gains on a deliberately plan schedule by helping the best available teachers reach designated students each year, again without diminishing outcomes for other students.
This model also may allow teachers who are excellent, in one core subject pair (e.g. Mathematics/Science) but not the other (e.g. English Language/ Social Studies) to produce excellent results by focusing on their areas of strength. By specializing, teachers may reach more students while maintaining or gaining planning time.

**Impact on Students**

Research conducted on Rotational Teaching states that, ‘under this model, far more students have the best core subject teachers already available in a school. This can benefit advanced, average and struggling students equally, depending on how students are assigned to the excellent, core, specializing teachers who extend their reach.’

There is the Senior Management Team (SMT) of the Ministry of Education, which comprises of the Permanent Secretary as the chairperson and the directors as members. The SMT takes high level decisions affecting the ministry. There is also the Coordinating Committee Meeting (CCM), which consists of the Minister, the Permanent Secretary, the Directors, the Principal Education Officers and other stakeholders in education. The CCM meets bi-monthly alternating in the Regional Education Directorates to review progress of the ministry in the past two months and to identify activities to be implemented in the future. The CCM also takes high-level decisions affecting the ministry. It was in 2015 in Farafenni in Regional Education Directorate 3 that the CCM proclaimed that ‘Rotational Teaching shall be made mandatory from grades 4-6 in all LBS in the Gambia with effect from September 2015’(CCM, 2015). It has been mentioned that the CCM meets every two months in the six regional Directorates on a rotational basis. This is to give each regional Directorate the chance to host the CCM. It is also during this one-week meeting that the CCM make school visits to obtain first-hand information on the quality of teaching and learning that is going on in the schools as well as teachers’ and pupils’ attendance. The school visits also avails the CCM the opportunity to measure the level of progress the schools are registering in the areas of extra-curricular activities and infrastructural developments. This time it was the turn of Regional Education Directorate 3 to host the CCM and the declaration was made in Farafenni, the regional commercial capital. This officially sets in motion Rotational Teaching for grades 4-6 in the LBS of the Gambia. In the Coordinating Committee Meetings, presentations are made by schools and units under the different directorates on the success stories of programmes they have implemented. This is to make known to education authorities and other stakeholders the programmes they have successfully implemented and what leads to that success. Heads of schools are sometimes rewarded in cash or identified for promotion for remarkable hard work done at school or tangible improvements in children’s academic performance discovered by the CCM. It was out of these displays of successes that Rotational Teaching began to surface as an effective model of teaching and as an approach that enhances students’ learning achievements. The CCM, finally, came to the conclusion that it should be rolled out in the upper grades (4-6) in all LBS.

**Research hypothesis**

Cognizant of the need to improve children’s learning achievements, the Ministry of Education continues to explore suitable pedagogical approaches that would help children perform better academically. Rotational Teaching, which is a general practice in the higher levels of learning, is deemed an appropriate model of teaching. In the LBS, a teacher teaching all subjects is the most common practice. Some LBS in the Gambia, mostly private ones, adopted Rotational Teaching and it has been working well for them. The
Ministry, convinced by the level of children’s academic attainments in few LBS that implement the model, took the bold decision of making an official announcement for its adoption by all LBS, although there has never been any previous study carried out in the Gambia on the model. After one year of implementation by the schools, it becomes prudent to conduct this research so as to come up with empirical evidence that would support the concept:

‘Generally, Rotational Teaching improves students’ learning achievements in the Gambia.’

Research questions

The following questions are the questions that this research aims to probe into:

- Is using Rotational Teaching an appropriate or suitable pedagogic approach?
- Has Rotational Teaching boosted or improved performance in the LBS since the development of the policy?
- What are the constraints or the teething challenges hindering or preventing the implementation of the Rotational Teaching model in schools?
- What recommendations, supported by evidence, show that Rotational Teaching is a viable teaching model and should be institutionalized in all LBS in the Gambia?

Objectives

The research aims to achieve the following objectives:

- To assess the status of Rotational Teaching in Gambian LBS, that means to establish whether all LBS have adopted the teaching model, as mandated by the Ministry, or not. The findings show that of the 30 LBS that took part in the study, 29 of them have adopted the Rotational Teaching model. Only one private school, which has an ECCE, a lower basic and an upper basic components, is not doing it. The principal, however, gave the assurance that the school will embrace the model soon.
- To provide empirical evidence on the impact of Rotational Teaching on the performance of LBS students. The study has succeeded in providing tangible evidence to support that Rotational Teaching has a positive impact on students’ learning achievements. It has been recommended that it should be adopted and maintained in the upper grades of LBS.
- To inform IBE-UNESCO and the Ministry of Basic and Secondary Education as to the effectiveness or otherwise of Rotational Teaching as a means of enhancing students’ learning achievements. The results of this study will be provided to IBE-UNECBO and the Ministry of Basic and Secondary Education to corroborate that the Rotational Teaching model is, indeed, an effective approach of teaching and it helps to improve students’ learning achievements in LBS. It should, therefore, be promoted and/or made mandatory for schools to adopt it. It is recommended that it should be entrenched in the school system to enhance students’ performance.
- To provide tangible recommendations to support the institutionalization of Rotational Teaching as the model of teaching in the upper grades in LBS. The research has provided genuine recommendations from both head teachers and teachers on the need to institutionalize the teaching model in the LBS.
Research tools

We, first of all, developed the Head Teachers’ Questionnaire, followed by the Teachers’ Questionnaire and, finally, the Students’ Questionnaire. The performance test questions were created for the students. The test questions derived from the syllabus of each grade level. For instance, the grade 2 Mathematics questions were drawn from the grade 1 Mathematics syllabus. This is because the research was conducted in September–October, the early part of the school year, so the students would have covered the syllabus of their previous grade. It will not be a fair test to test them on the syllabus of the grade they are just entering. The same thing goes for all the other grade levels, 2-6, making the test a standardized test. It is, therefore, a genuine test and is used as a baseline to measure students’ performance for the study. All students were tested on what they have already been taught.

The aim of the head teacher’s questionnaire is to obtain the views of every head teacher in each of the sampled schools on the effectiveness, challenges and students’ performance under Rotational Teaching as well as under Non-Rotational Teaching. Since they monitor and supervise teaching and learning in their schools, it is expected that they should be able to comment on the model.

The classroom teachers are the implementers of Rotational Teaching in the schools. They are, therefore, the best people to talk about the effectiveness or ineffectiveness of the model. This also led us to develop the teacher’s questionnaire.

After the development of the instruments, the staff of Curriculum Directorate and one researcher from the Directorate of Planning at the ministry headquarters in Banjul, looked at the questionnaires with a view to validate them. The documents were thoroughly scrutinized and adjustments were made on them. The reviewed questionnaires were again handed over to the Director of Curriculum Research, Evaluation and Development Directorate, Dr. Burama L.J. Jammeh, Ph.D. for further verifications and validation. Dr. Jammeh’s comments and suggestions were also incorporated.

A pre-test or trial test of the tools was carried out in two schools in Serrekunda, one public school and one private school. This was meant to familiarize the tools with the researchers, who are to conduct the fieldwork. It was also meant to rehearse the exercise and to obtain information on the number of schools we can cover in a day taking into account the administration of all the questionnaires. The suitability of the questionnaires in terms of difficulty and clarity of the questions were also tested. The feedback obtained from this trial test was very useful in finally helping to reshape the questionnaires.

Participants

Five teachers in each sampled school were randomly selected using the school’s staff list. These teachers were to give their opinions on Rotational Teaching since it is them who implement it. The random selection of teachers applied to large schools with many teachers only. In small schools with only six classrooms, all teachers, except the grade 1 teacher, took part in the exercise. The teachers’ questionnaire included a lesson observation component and each teacher was observed to teach a lesson. This would help the researchers to determine whether the teacher was actually implementing Rotational Teaching as he/she may be observed in different classrooms. The lesson plans could also show whether the teacher is teaching one or many subjects. Two students, a boy and a girl, from grades 2-6 were randomly selected using the class register. They were to answer questions on Rotational Teaching and to do performance tests in Mathematics, English Language and Integrated Studies for grades 2-5 and Social and
Environmental Studies for grade 6. This research was an assessment on performance. It was, therefore, apt to first look at the overall performance of the students in all the grade levels in the three typologies of schools and then looked at the other relevant variables to the research. This was important because some schools were doing Rotational Teaching across the board from grades 1-6. The head teacher of each of the schools was to respond to the head teacher’s questionnaire. In total 16 participants were involved in each school making a cumulative total of 480 participants for the whole exercise.
Chapter 1

Sampling design and methodology

The research is a qualitative research, which aims at providing a detailed and in-depth analysis of Rotational Teaching in terms of improvement of students’ learning outcomes in Gambian LBS. The first thing done was to have a stratified random sampling of the clusters of schools in each region. A cluster is represented by a group of schools in each educational region and it has a total of between 6 to 14 schools. The Ministry of Education has divided the schools into clusters taking proximity into consideration. The rationale behind the clustering of schools is to facilitate the routine monitoring and supervision of teaching and learning in the schools and to oversee the execution of other administrative functions of the regional office.

We obtained the latest list of all LBS in the Gambia from the Directorate of Planning, (Dir. of Planning, 2016). In each region, five clusters were sampled out. The clusters were numbered, 1-5 on pieces of papers. The gambling technique was used to select the sampled clusters. After obtaining the five sampled clusters from each region, we used the same procedure to select the schools from the clusters so that each school has equal opportunity of being selected.

In Regions One and Two, six schools were selected from each region. These are the biggest regions and have the highest concentration of schools. Schools in these regions are also the most privileged in terms of education quality, because they are in the urban and semi-urban areas. There are also more private, public and grant-aided schools in these regions than in the other regions.

Five schools were selected from Regions Three and Five. These are the next biggest regions in terms of number of schools. However, Region Three is more privileged in terms of educational resources than Region Five, because it is closer to Banjul.

In Regions Four and Six, four schools were selected from each region. These are the smallest regions and have the least number of schools in all the three categories, public, private and grant-aided schools. This brings the targeted number of schools for the fieldwork of the research to a total of 30 LBS across the country.

In the sampling, we factored in the three categories of LBS in the country: public schools, which are the government-owned schools; grant-aided schools, which are owned by the different Christian denominations, for example, the Methodist, the Catholics and so on and are supported by the government by paying salaries to their teachers; and private schools, which are completely private-owned schools. We included all these categories because the official pronouncement on Rotational Teaching applies to all categories of schools that operate in the Gambia. In our sampling, we also tried to select schools from these categories proportionately. For instance, the public schools are far more than the other school types, so we have more public schools than private and grant-aided schools in the overall sample. Again in the sample, we have more private and grant-aided Schools in Regions One and Two than in the provincial regions. For public schools also, the scenario is the same as we have more public schools around Banjul than in other parts of the country. In general, we have in the sample, more public schools, followed by private schools and then grant-aided Schools.

After having our sampled schools for the research, we moved on to the development of the research tools and the selection of the participants.
Data Collection Process

Three research teams were constituted. The researchers are officers from the Curriculum Directorate. The Curriculum Directorate has a research unit, just as it has a material development unit and a training unit. The research unit is made up of few officers who are researchers. For data collection exercises however, officers from the other units are co-opted to take part, who are trained on the administering of the tools, as the number of researchers may be insufficient for the job. We engaged the researchers and officers from the other units in this activity. Each team had a coordinator or a team leader and between 3-5 curriculum officers as researchers. It was under the Terms of Reference of the team leader to ensure that the tools were well administered at the end of every school visit. He would make sure that the respondents answer to all the questions on the questionnaires. He would also make sure that he received all the questionnaires distributed.

The teams’ operations should follow the following rules:

- Schools should be visited by all team members together. No one should visit a school alone. This is to ensure that the quality of work is not compromised. Each member of the team works effectively under the supervision of the team leader.
- For effective lesson observation, the researcher should be in class to witness the start and end of the lesson. This is to ensure that the researcher does not miss any part of the lesson. He / She will then be able to gauge the effectiveness of lesson delivery and that of the students’ participation.
- The lesson observation form should be filled by the researcher and not the teacher.
- The researcher fills the observation form as he/she observes the lesson. This gives the researcher first-hand information on the quality of the lesson delivered and to reflect this in the data.
- Each team should prepare and submit a comprehensive report mentioning all details of the school visits as soon as it returns.

These reports are summarized and compiled. This is what constituted the data collection exercise.

One research team was deployed to Regions Five and Six, over 300 kilometres from Banjul, the capital city. The team comprised of the principal researcher and two other curriculum officers, who served as researchers. The team covered five LBS in Region Five and four LBS in Region Six.

In the schools visited, the team first met in the head teacher’s office and the team leader briefed the head teacher on the mission of the team. After introducing the team members, the team leader informed the head teacher that they were there to assess the status and impact of Rotational Teaching on the students’ learning achievements. The head teacher was informed that he/she would answer to a questionnaire, while the researchers were in the classrooms. Five teachers (grades 2-6 teachers) in the school would also answer a questionnaire. The head teacher was also informed that each of these teachers would be observed to teach a lesson. The teacher questionnaire would be answered after the lesson in the classroom. In addition, two students, a boy and a girl, in each of these classes, would do a performance test on the core subjects. The students would need an isolated place, either in the classroom or outside the classroom to respond to the test questions.
The second team was deployed to Regions Three and Four. This team comprised of one team leader and two curriculum officers of the National Languages’ Office as the researchers. This team also covered nine LBS in those two regions respectively.

The last team, which covered the biggest regions, Regions One and Two, was headed by a curriculum officer and four other researchers from the Curriculum Office. This team visited twelve LBS in the two educational regions.
Chapter 2

Analysis

The purpose of analysis is to reduce data to intelligible and interpretable form so that the relations of research problems can be studied and tested (Adeniran, 2003). Therefore, in this section, we will attempt to give an interpretation of the statistical tables and graphs generated by the analysis.

Analysis of the Students’ Performance and Opinions

Figure 1: Students’ overall performance

Figure 1 shows the overall students’ performance. 16% of the 300 students who did the performance test scored on average between 0-25, 37% scored between 26-50, 25% scored between 51-75 and 22% scored between 76-100. 53% of students failed the test as they scored below 50%, we will have 53%, which means that only 47% of the students passed the test.
Figure 2 shows the students' performance by school type. Public schools performed the highest with 20.1% on the 0-25 average score, which is the lowest average score. They are followed by the private schools with 7.5% and the grant-aided schools scoring the least on that range with 6.0%. Public schools also have the highest percentage of the 26-50 average score with 40.2% followed by grant-aided and then private schools. On the 51-75 average score, private schools top the list with 40.0%, followed by the grant-aided schools with 28.0% and the public schools thrilling with 22.0%. The grant-aided schools scored the highest on the 76-100 average score with 36.0%, followed by the private schools with 27.5% and the public schools at the bottom with 17.7%.

Figure 3 shows the students’ performance by region. Region 1, which is Banjul and its suburbs, got the highest scores and those are the 51-75 and 76-100 scores respectively with 35.6% on both scores. On the lowest average scores, 0-25 and 26-50 respectively, Region 1 scored the least with 10.2% and 18.6% respectively. Regions 5 and 6, which are the farthest regions, scored the lowest on the high average scores.
with Region 5 scoring 17.1% on the 51-75 average scores and only 2.4% on the 76-100 average scores. Region 6 scored 26.0% on the 51-75 score range and 8.0% on the 76-100 average score range.

![Rotational Teaching vs student performance](image1.png)

**Figure 4: Rotational Teaching vs student performance**

Figure 4 above compares the students whose schools are using Rotational Teaching and their performance in the tests against the students whose schools are not using Rotational Teaching and their performance in the test. ‘Yes’ represents students whose schools are using this method and ‘No’ represents students whose schools are not using it. We can see that the students whose schools are not using Rotational Teaching score higher on the lowest average scores of 0-25. We can see a stalemate in the 26-50 average scores and in the highest scores, 51-75 and 76-100 respectively, students whose schools are using Rotational Teaching score higher with 25.7% and 23.4% respectively.

![Students' Opinions](image2.png)

**Figure 5: Students' opinions**

I am able to learn better now because I have good teachers.

I want my school to continue to do Rotational Teaching.

With Rotational Teaching, we are able to cover most of our syllabus.
Figure 5 shows the students’ opinions on Rotational Teaching. We can see that students who strongly agree and those who agree are far more than the students who disagree and those who strongly disagree on the three statements. The students who do not know are either those in grades 1-3 and are not affected by the policy or in schools that are not using the method.

![Students' performance - grades 4 to 6](image)

Figure 6: Students' performance - Grades 4 to 6

Figure 6 shows the performance of students from grades 4-6 in the performance tests. These are the students affected by the policy on Rotational Teaching. In the lowest average scores, 0-25, the public schools score higher with 14.3% followed by the grant-aided Schools with 3.3% and private schools performing the least with 0.0%. In the 26-50 score range, public schools still top the group with 38.9% followed by grant-aided schools with 33.3% and private schools with 20.8%. In the 51-75 score range, private schools top the group with 33.3% followed by grant-aided schools with 26.7% and public schools performing the least with 25.4%. In the 76-100 average score range, private schools again performed the best with 45.8%, followed by grant-aided schools with 36.7% and public schools performing the least with 21.4%.
Figure 7 shows the teachers’ response to the above question. Because of the policy pronouncement, 94.3% of public schools are now using it, while only 4.8% of the schools are not using it. In private schools, 73.7% are using Rotational Teaching and 26.3% are not. In grant-aided schools, 96.0% are using it and only 4.0% are not practising Rotational Teaching.

Figure 8 shows students’ responses on the effectiveness of Rotational Teaching compared to Non-Rotational Teaching. In the grant-aided schools, students who responded in favour of Rotational Teaching are 68.0%, in private schools 63.2% and in public schools 61.9%. They are far more than those who favoured Non-Rotational Teaching as well as those who said the two models are the same.
Analysis of the Teachers’ Responses

Figure 9: Effectiveness of the two models

Figure 9 above shows teachers’ responses on the effectiveness of Rotational Teaching over Non-Rotational Teaching. 81% of the teachers agreed that Rotational Teaching is more effective than Non-Rotational Teaching. 15% of the teachers said that Non-Rotational Teaching is more effective while only 4% did not comment on it.

Figure 10: Coverage of the syllabus between the two models

Figure 10 teachers’ responses on the question, ‘Under which model did you have more syllabus coverage?’ 66.4% of the teachers said Rotational Teaching. 17.4% of the teachers said Non-Rotational Teaching. 8.7% said both models and 7.4% did not answer the question.
Figure 11: Improvement of students’ performance with Rotational Teaching

Figure 11 shows teachers’ responses on the inquiry whether there is any improvement in the students’ performance with Rotational Teaching. 77% of the teachers said ‘Yes’, 18% said ‘No’ and 5% did not answer the question.

Figure 12: Time management

Figure 12 shows the teachers’ responses on which model provides better time to plan and prepare for lessons. 35.5% of the teachers said Rotational Teaching, 6.8% said Non-Rotational Teaching and 57.7% gave no response.
Head Teachers’ Response Analysis

Evidence of effectiveness of Rotational Teaching

Figure 13: Evidence of effectiveness of Rotational Teaching

Figure 13 shows head teachers’ responses on the effectiveness of Rotational Teaching. In public schools, all head teachers, representing 100%, have seen evidence of effectiveness of the model in their schools. In private schools, 75% of the head teachers agreed on the evidence of Rotational Teaching in their schools while 0% said ‘No’ on evidence of effectiveness. In grant-aided schools, 60% of the head teachers said ‘Yes’ to the evidence of Rotational Teaching and 20% said ‘No’.

Should Rotational Teaching be maintained in schools

Figure 14: Implementing Rotational Teaching in schools

Figure 14 shows the head teachers’ response on whether Rotational Teaching should be maintained in schools. 94% of the head teachers said ‘Yes’, 3% said ‘No’ and 3% do not respond to the question.
Figure 15 above shows the head teachers’ response on whether the teachers like Rotational Teaching. In public schools, 100% answered in the positive. In private schools, 100% of the head teachers also answered in the positive while in grant-aided schools, 60% of the head teachers answered in the affirmative and 40% answered in the negative.

Evidence

The evidences are manifested in the figures generated in the analysis. In the students’ academic assessment test in Mathematics, English Language, Integrated Studies, Science and Social and Environmental Studies, students whose schools are using the Rotational Teaching model scored higher in the highest average scores of 51-75 and 76-100 with 25.7% and 23.4% respectively compared to students whose schools are not using it, who scored 24.0% and 18.7% respectively in the same score range. In the lowest score range 0-25, all the three types of schools do not score high, indicating a good performance. In the 26-50 average scores, we saw the public and grant-aided schools moving higher than the private schools, meaning the private schools performed better in that category. In the 51-75 and 76-100 scores respectively, all the three types of schools registered high scores except, perhaps, the public schools. This shows a trend of improvement in these cohorts of students (grades 4-6).

Out of the 150 teachers that took part in the research, 77% accept that students’ performance improved under Rotational Teaching. On the effectiveness of Rotational Teaching against Non-Rotational Teaching, 81% of the teachers agreed that Rotational Teaching is more effective than Non-Rotational Teaching. 15% said Non-Rotational Teaching is more effective and 4% did not say anything.
Figure 16 shows the researchers’ views on the lessons observed as regards these three questions. In the first question, 81.9% answered positively, 10.1% answered negatively and 3.1% gave no response. In the second question, 60.4% said ‘Yes’, 20.8% said ‘No’ and 18.8% did not respond. In the last question, 80.5% responded positively, 9.4% responded negatively and 10.1 did not give any response.

Figure 17 shows the researchers’ opinions on whether the Rotational Teaching model helps to reinforce the students’ understanding of the lesson. 37% of the researchers said ‘Yes’, 36% said ‘No’ and 27% could not respond.
During the lesson observation, the researchers gave the following responses to these questions. 81.9% of the researchers agreed that the students participated fully in the lesson, 10.1% said ‘No’ and 8.1% gave no response. In the second question, 60.4% said ‘Yes’, 20.8% said ‘No’ and 18.8% did not respond. In the last question, 80.5% said ‘Yes’ 9.4% said ‘No’ and 10.1% did not respond.

The literature review about Rotational Teaching clearly states that under the Rotational Teaching model, all categories of students, advanced, average and struggling students can benefit academically from this model. These are ample evidences to support that Rotational Teaching improves students’ learning achievements.

Out of the 30 head teachers, whose schools have experienced both the Rotational Teaching model and the Non-Rotational Teaching model, 27 head teachers agreed that the Rotational Teaching model is more effective than the Non-Rotational Teaching model.

**Results of the research**

The results of the research are that, firstly, it has been established beyond any reasonable doubt that Rotational Teaching is more effective than a single teacher teaching all subjects, which has been happening in the elementary schools or LBS. Secondly, with Rotational Teaching, teachers have more time to plan and prepare for their lessons, which helps them to be more effective and productive in their lesson delivery in the classroom. Thirdly, the research has shown that students under a Rotational Teaching model perform better than those under a Non-Rotational model, because they are taught by expert teachers in each subject area and that helps considerably in the attainment of learning outcomes. Fourthly, over 94% of public LBS in the Gambia have adopted the teaching model as of September 2015.
Chapter 3

Recommendations

Rotational Teaching in the LBS is a new initiative. This is because no academic study could be found on the model. We were able to obtain some positive information online about Rotational Teaching in the elementary school although this has not been supported by any data. The research was conducted in a total of 30 schools and all educational regions in the country were represented in the sample. A total of 30 head teachers of LBS gave their opinions on Rotational Teaching. 150 classroom teachers also gave their independent views with regards to Rotational Teaching. Most of the teachers have taught as generalists, teaching all subjects to a particular class.

Figure 19: Experience teaching in a non-rotational setup

Figure 19 shows the responses of the teachers who have previously taught in a school that is not using Rotational Teaching. For those who are now using Rotational Teaching, this gives them a better chance to compare the two models. In public schools, 73.3% of the teachers have previously taught in schools that were not using Rotational Teaching and 25.7% have not. In private schools, 84.2% of the teachers have previously taught in schools that were not using Rotational Teaching and 15.8% have not. In grant-aided schools, 76% of teachers have previously taught in schools that did not practise Rotational Teaching while 24.0% have not.

300 students, 150 boys and 150 girls, taking gender parity into account, responded to questions about Rotational Teaching and each did a performance test in the core subjects to assess the effectiveness of Rotational Teaching on students’ academic performance. The students, themselves, agreed that the model is indeed a good one.
Figure 20: Ability to learn better with Rotational Teaching

Figure 20 shows the students’ opinions on how Rotational Teaching helps them to learn better. 27% strongly agree to that and 29% agree. 37% do not know – these are the students who are not affected by the policy on Rotational Teaching or their schools are not using it. Only 2% of the students disagree to the statement.

The analysis of Figure 21 is taken from the lesson observations conducted by the researchers. With Rotational Teaching, the teacher is expected to be an expert in the subject and the responses may be a pointer to that. 51.7% represents the researchers who agree to the statement. 3.4% could not make any comment. 12.1% disagree to the statement, 28.2% strongly agree and 4.7% strongly disagree.
The objectives of the research are to prove and to document evidences that Rotational Teaching is an effective teaching model and to provide ways of not only maintaining it but strengthening it in the school system. It is also meant to influence policy decisions towards providing the necessary training of teachers on subject specialization at the Gambia College School of Education. Such measures are contained in the recommendations made by the head teachers themselves. The training of school administrators in formulating school timetables that would provide the modus operandi of Rotational Teaching was also sighted by many head teachers as an important step in the implementation process of the model.

The following recommendations have been generated by the research:

- Rotational Teaching should be maintained in schools for better performance;
- Based on the evidence provided by the research, Rotational Teaching has proven to be a viable model for improving mastery of learning targets;
- Teachers should be trained on subject specialization; and
- Rotational Teaching should cover all grades in LBS.
References

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