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KNOW WELL BEFORE SUPPORTING:
LESSONS OF A COMPREHENSIVE DIAGNOSIS OF TWO LOW-COST PRIVATE SCHOOLS IN SLUMS OF NAIROBI, KENYA

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ABSTRACT: The purpose of the present report is to show a comprehensive diagnosis of the situation of two low-cost private schools (Destiny and Saint Martin's schools) located in two slums (Mathare and Kibera) of Nairobi, capital city of Kenya, that Educafrica's team found before starting a collaboration programme through field volunteers work. A wide variety of instruments were used in order to collect data that captures all the complexities of schools that deals with contexts of deep scarcity of basic resources as well as challenging working conditions. Data collected and systematized was fundamental to have a proper understanding of the current ongoing educational situation in these schools, in order to articulate the best interventional framework that will help to improve the schools' performance. Several lessons are drawn after analysing the schools' normal operation regarding teachers' methodological and pedagogical practices. Challenges for achieving a desired teaching system are also highlighted, which would also frame the action course of Educafrica for the next years.

1. Introduction

Education has been regarded as an important aspect that contributes to improve skills and human capital, which are fundamental pillars for achieving development. Driven by the Millennium Development Goals Programme and also by the Sustainable Development Goals of the United Nations, Kenya adopted a free primary education policy whose purpose is to guarantee a universal accessibility to primary education. However, this policy has had implementation problems, finding important obstacles in providing an adequate infrastructure to allow access to education to the thousands of children in Kenya.

This fact has been the main reason for the emergence of low-cost private schools. These are scarce resource schools managed by communities, especially in poor areas (slums or rural communities), and in most of the cases they have a precarious infrastructure such as small classrooms, poor environmental conditions, lack of materials and resources to teach, etc. In spite of those constrains, low-cost private schools have been a solution in providing education to children who cannot access to the public education system due to reasons such as lack of vacancies or lack of schools in the area. These schools charge a low amount of money to parents – that is why they are called "low-cost" – but they guarantee that primary education will be given to children attending these schools, according to the educational curricula of the Ministry of Education, Science and Technology of Kenya.

In this context, Educafrica Foundation, a Chilean NGO, is currently working with two of these low-cost private schools: Destiny and Saint Martin Schools, located in the slums of Mathare and Kibera in Nairobi, Kenya. Thanks to the funds granted by the International Cooperation Department of the Foreign Affairs Ministry of the Chilean Government (Fondo Chile), Educafrica committed to make a change in the lives of the children attending these schools by different action lines such as providing nutrition and educational scholarships, improving the schools' infrastructure and providing educational assessment to teachers and principals from those schools.

In order to contribute to improving the educational performance, Educafrica began to develop a situational diagnosis of both schools. With this input, then Educafrica will carry out an intervention in both schools aiming to improve the use of instructional time used by the teachers while doing their lessons. This intervention is planned to be implemented within two years.

The main steps taken to elaborate the diagnosis process were the application of surveys to teachers, classroom observations (while lessons were being imparted), data collecting and analysis and future intervention designing. These steps were done between September 2015 and February 2016.

2. Objectives

The objectives set up by Educafrica were done according to the diagnosis of the current situation of Destiny and Saint Martin's School. In that sense, the objectives were divided in general and specific terms. At the same time, and according to these objectives, some research questions were raised in order to understand better what is the intention and course of action that will guide the labour of Educafrica in helping to address the educational struggles seen in both schools.

2.1 *General objective*

The general objective was to know the reality of both Saint Martin (SMS) and Destiny's School (DS), mainly their teacher's staff, the challenges they face and the needs they perceive regarding the teaching-learning of their students, all of this in order to collaborate with them in tackling and addressing these challenges. Also, was to build a student's academic results baseline to assess the virtual impact

of Educafrica's programs. It is believed that this collaboration will facilitate the delivery of learning opportunities to all students.

2.2 *Specific objectives*

a) To recognize sociodemographic features, professional career path and training level of each teacher in both schools.
b) To identify teachers' use of instructional time and students' involvement levels during the lessons.
c) To make a diagnosis of teachers' use of non-instructional time and of peer interactions' frequency outside classrooms.
d) To explore teachers' expectations about students' academic achievement.
e) To detect teachers' main perceived needs regarding their professional roles.
f) To identify the current student's academic performance of both schools, regarding the most relevant subjects.

2.3 *Research questions*

a) Who are the teachers of both schools, what was their career path and what kind of training they have received?
b) How teachers use their instructional time inside the classrooms, and what levels of participation they achieve with their students?
c) How do they use non-instructional time, with who do they usually interact, and when do these interactions usually happen?
d) What do teachers expect to achieve with their students in terms of academic performance and outcomes?
e) What are the teachers' main perceived needs regarding their professional roles in the schools?
f) What are the current academic results of the students of both schools in knowledge areas such as maths, language, social sciences? How it distributes among different classes and subjects? Are these results a good predictor of the student's performance in the Kenyan Certificate Primary Education (KCPE)?

3. Theoretical Framework

According to one of the main principles of Educafrica, supported by a vast and robust body of evidence, teachers are the most important factors inside schools in respect to students' learning outcomes. In the recent years there has been multiple investigations that confirm this fact. Nowadays, no one has any doubts about the great impact and importance that educators (teachers) have in the learning and development processes of students. Therefore, from the beginning it was defined that, whatever action that Educafrica did, the activities should be based on supporting the professional development of the teachers of the schools with an integral and effective collaboration.

Below it follows a brief bibliographical review that ratifies this principle and that explains the reasons of why the diagnose process carried out in both schools, focused essentially on rescuing information related to its teachers.

3.1 *Teachers' role and their importance in students' learning process*
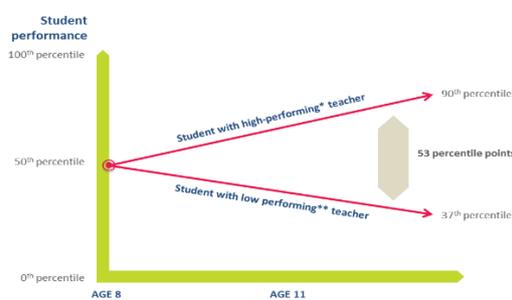
Source: Sanders and Rivers, 1996

According to Hanushek and Rivkin (2002), when assuming that one year's student growth is 0.3 standard deviations, the correlation between teacher quality and student achievement is 0.15. Then, with a good teacher (1sd above the mean) students learn 50% more; and with an outstanding teacher (2sd above the mean), their learning capacity increases by more than 100%.

The importance of teachers over students learning processes is given in positive and negative terms. The former graph means that students (between eight and eleven years old) which are under the wings of "high performing teachers" learn a 50% more than students who are being taught by "low performing teachers". The latter means that students who are under the wings of "low performing teachers" step back or diminish their learning development (their performance diminishes 13% in relation to their starting point). In this sense, good teachers have a very positive accumulative effect over time, while, on the other hand, bad teachers or those who cannot achieve a good performance, have a negative impact. Seen in another way, their role is not absolutely neutral, and this performance can be detrimental to their students.

Inside the classroom of the best teacher from a group of 50 teachers, his students will learn, in average, twice as fast compared to the rest of the students. Inside the classroom of the least effective teacher from a group of 50 teachers, students will learn half as fast as the rest of the students. And inside the classrooms of the best teachers, students from disadvantaged backgrounds will learn as much as others (Hamre and Pianta, 2005).

3.2 *Use of instructional time: why is important to measure it and how to do it*

Time is rarely used consistently in supporting learning activities. The amount of schooling time that students engage with in learning (time on task) is perhaps the most important qualitative variable. It is conceptually easy to grasp, measurable, and has a demonstrable impact on learning outcomes (Abadzi, 2006). However, and according to the following graphs, the use of instructional time is not always appropriate, and several losses can be appreciated. The reasons can be regarded from general to specific, meaning that in some cases the loss of instructional time is due to days in which there are no lessons, and in other cases the loss of instructional time happens within schooling days and inside the classrooms (in activities which are not related to teaching and learning).

Figure 1. Expected and actual number of days students were engaged in learning
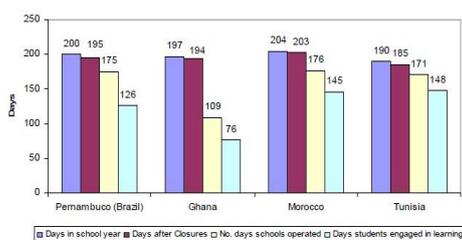
Source: Abadzi, 2007

Figure 1 shows that, amongst the different countries, there is an important difference between the time (expressed in days) that should be dedicated for teaching and the time that students really devote within an academic year. In spite of the differences seen between countries, there is a common pattern related to the loss of instructional time. However, in Ghana the situation is worse than in the rest of the countries, because the difference between both factors is almost two thirds, meaning that the real learning time that students devote is close to a third of the time that they should dedicate.

Figure 2. Instructional time indicators in Basic Education of some Middle Eastern countries
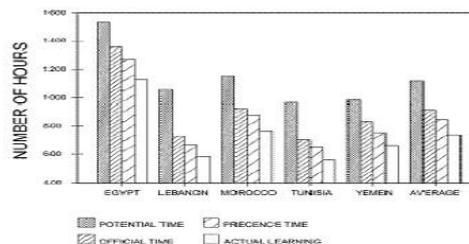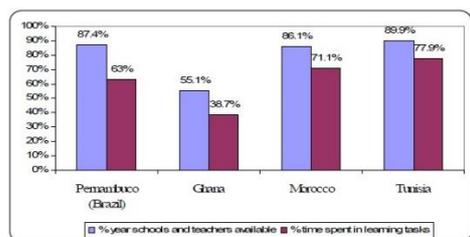

Source: Abadzi, 2007

The situation is similar in Middle Eastern countries according to figure 2. There are big gaps in the way that the instructional time is being used, especially when compared to the potential time and to the official instructional time (given by the respective Education Ministries in these countries). Although, having different potential and official instructional time, there is a common pattern between these countries: the amount of time dedicated for learning is much less than the official time (and even more compared to the potential), showing that there are significant periods of time which are completely lost. And these losses are due to the reasons mentioned before: because of days without lessons or because of time mismanagement during normal school days.

According to Abadzi (2007), in low-income areas around the world, from Brazil to Niger, only a fraction of the intended schooling or instructional time is used for learning tasks. Schools may informally close their operation before or after holidays, start working later than the expected schedule time (for instance, start lessons at 9 am instead of at 8 am) or even finish the schooling activities before the normal ending schedule time. Furthermore, when teachers are present, they may be engaged in activities other than teaching.

Poorer students were found to spend 5% less time per day engaged in academic tasks than schools in better-off areas; and they needed to attend school 1.5 months during the summer break in order to attain an equivalent amount of engaged learning time.

Teacher absenteeism has figured prominently as the culprit in the waste of education investments and learning opportunities. Surveys have shown absenteeism figures ranging from 11% in Peru, 21% in Indonesia, 27% in Uganda and 30% in Kenya (Abadzi, 2007). The case of Kenya is relevant for the present report, as Educafrica is currently working in Destiny and Saint Martin Schools in Nairobi.

Figure 3. Percentage of time lost at the country level

Source: Abadzi, 2007

The most significant amount of time lost happened to be inside the classroom. Ghanaian teachers spent 70% of the schooling time engaging students in learning, while Tunisian teachers spent 87% of the schooling time with the same purpose.

Figure 4. Percentage of time spent in instructional tasks

Instructional Strategy % of time	U.S Classroom Criteria	Pernabuco (Brazil)	Ghana	Morocco	Tunisia
Interactive instruction	50% or more	52.4	59.9	62.8	61.2
Oral Reading		6.7	8.7	15.7	15.3
Teaching, Explanation		32.8	19.9	26.7	27.9
Discussion		6.3	24.1	6.6	6.2
Practice Drill		1.4	6.5	12.3	11.3
Passive instruction	35% or less	19.6	10.3	19.9	25.6
Seatwork		16.3	7.4	14.8	22.9
Copy		3.0	2.9	5.0	2.7
Total Instructional Time		72.1	70.2	82.6	86.7
Organizing/Management	15% or less	27.9	28.0	17.8	13.3
Student Off Task Rate	6% or less	19.3	21.1	9.2	9.9

Source: Abadzi, 2007

Some connections between the use of schooling time inside the classrooms and students' learning outcomes were found. For instance, more time spent on discussion and review (r=+0.40); more time spent reading aloud (r=+0.59); more supportive and corrective feedback from the teacher (r=+0.50), all of these generates a strong impact on students' academic performance. On the contrary, some activities were found to be negatively associated with learning results: more time spent in silent reading (r= -0.23); more time in classroom management (r= -0.24); more time spent by the teacher in organizing activities (r= -0.52); more time spent by the teacher on social interactions (r= -0.52) (Quartarola 1984; Stallings, 1975, 1980).

3.2.1 *How to support the teachers in effectively using the instructional time?*

According to Abadzi (2006, 2007), "the challenge is to transmit clear, simple and doable advice to teachers, who often themselves have limited education. Such advice might include using schooling or instructional time efficiently, delivering interesting activities or frequently changing them in order to maintain students' attention, and presenting challenging but achievable tasks to maximize the likelihood of student response" (p. 12).

Teachers also "need practical classroom management skills to handle large group of students when materials are scarce, including grouping techniques and cooperative learning (…) The best approach to maintain attention is to permanently interchange activities between lecturing, discussion, practice, and evaluation (Abadzi, 2006, p. 13).

3.2.2 *Most effective and ineffective instructional strategies*

Considering the latter, "lecturing is most effective if it accommodates children's attention span. When teachers' presentations last more than a few minutes, students' processing capacity may overflow. Passive listeners have few means of encoding material. In this sense, using oral exposition as a teaching strategy has to be done in short periods of time, while children's attention span is at its best" (Abadzi, 2006, p. 13).

In the same sense, "research studies regarding primary schools' performance show that seatwork is generally associated with low performance, compared to frontal teaching and the use of other methods such as reading aloud. Extensive copying from the blackboard to the notebook is a seatwork activity that usually takes place when there is a material scarcity, and it happens more often in lower-income schools" (Abadzi, 2006).

Preparedness for lessons' delivering, regular assessment of students' work, and the use of instructional materials were found to make a difference between high and low performing schools in Uganda. Feedback and training had been found to change the frequency with which teachers make use of activities, and to improve the effective use of instructional time (Abadzi, 2007).

Is important to train teachers to use time efficiently, "particularly through the dissemination of effective classroom management practices that keep students occupied all the time. Also, it has been found that is important to train principals and supervisors to recognize the major components of instructional time use with brief observations and to use this system in their work" (Abadzi, 2006, p. 11).

It has been proved that there is a strong correlation between the effective use of instructional time and the learning outcomes achieved by students, being this particularly notorious in vulnerable contexts (Russell, 2001; Dodd, 2002; Metzker, 2003; Strasser *et al.*, 2009; in Martinic and Huepe, 2007). This fact should not be surprising at all, because, intuitively, it can be seen that time (instructional) translates into learning opportunities for the students: while they are more exposed to the direct teaching of a certain content (time-wise), and regardless the quality of this process, students will

have (on beforehand) more probabilities to listen and retain what the teacher is explaining. Clearly, this is not enough for them to learn, because that process is not only reduced to a mere exercise of listening and memorizing. The point is that, if students do not have this minimal possibility during their lessons (during the instructional time), they hardly will develop more complex cognitive and non-cognitive skills. The use of instructional time, although is not a sufficient condition to guarantee the learning process, appears to be as a requirement for the possibility to achieve it (Abadzi, 2007). Likewise, its impact becomes more evident in contexts with high levels of vulnerability, because the students immersed in them usually have less possibilities of receiving educational stimulus and/or private tutoring focused on revert or compensate, somehow, the loss that implies the fact of not receiving these educational stimuli (Abadzi, 2007).

It still persists the question on how the amount of time invested in teaching inside the classroom can be measured in a simple, easy-to-manage, reliable, trustful way, based on comparable teachers, school and country evidence, and monitored over time. (Venäläinen, 2008, p. 4). According to Wood, Joe, Cantrell *et al.* (2014), in order to build a robust and trustful system of observation and pedagogical, firstly, is necessary to reduce to the minimum the subjective appreciation of each observer, through a standardized protocol of coding and recording the phenomena that happens inside the classrooms. This recording process should have a non-prejudiced and authentic character. Likewise, is necessary to train and constantly monitor the role that observers play, making sure that they have a good knowledge about the concepts and their operationalization, and also, that they strictly respect the agreed protocol and criteria. In third place, and in order to have an effective feedback (e.g. to generate the desired effect over teaching practices), is not only enough to specify a working focus and strategy but is fundamental that they are also feasible to achieve (by the teachers) in a short time.

The *Stallings Snapshot System* is an instrument that, although it has certain limitations, allows to fulfil quite well the aforementioned requirements or conditions. This tool has been used for several investigations (Abadzi, 2006, 2007; Bruns and Luque, 2014; Garro, Rodrich, Muñoz and Veramendi, 2013), and it has been tested in different cultural contexts, that which, although it has allowed to identify limitations, it has also reinforced its utility (Venäläinen, 2008). Originally, this instrument was created as a part of an integral system used to collect reliable evidence of what happens inside the classroom, in order to provide feedback to teachers and to promote their continuous improvement through a systematic follow-up process (Stallings, 1973, 1975). Additionally, it was used to get evidence of the impact that this has over the students' learning outcomes results (Stallings, Almy, Resnick *et al.*, 1975).

Regarding the most observed pedagogical practices inside the classroom, it can be said that the "exposition" is the teachers' most used didactic strategy. This exposition has to be understood as the teachers' oral presentation of a certain content or concept, or the interaction (or lack of) with the students (Abadzi, 2007; Martinic and Vergara, 2007). Likewise, the less observed practices are the collaborative work amongst students and discussion or debate, and precisely, these kinds of practices are the ones which have a higher impact in learning processes (Abadzi, 2007; Quartarola, 1984; Stallings, 1980).

Lastly, the use of materials and resources done by teachers inside the classroom must not be forgotten. Although the evidence is clear enough in showing that textbooks, guides, notebooks, boards, didactic material, ICT's, etc., by themselves, do not generate a direct and significant impact on learning (Abadzi, 2006; Higgins, Xiao and Katsipataki, 2012), their importance within the teaching-learning process should not be omitted. Is fundamental to consider that several schools have done an enormous economic investment in order to have sufficient materials for all their students, so is important to know up to what extent these materials are being used inside the classrooms. In fact, one of the main findings in a study done by Bruns and Luque (2014) warns about the low frequency with which these elements are used during instructional time. It is estimated that in around a third of the instructional time, teachers' main teaching resource is use of the blackboard, being this the predominant behaviour while doing their lessons. Moreover, around a fourth of the time they do not use any material at all, and a very few cases are observed in which teachers make use of ICT (Bruns and Luque, 2014).

3.5. *Teachers' expectations: main learning predictor*

It has been found that teachers' expectations and beliefs about their students have a tremendous impact both on learning opportunities they deliver and learning outcomes their students achieve

(Cassidy and Eachus, 2000; Chan and Elliott, 2004; Cho, Lee and Jonassen, 2011; Hofer, 2004; Jervis, 2006). There is a vast body of research that confirm the existence of the well-known phenomena called "Pigmalion Effect", which explains how teacher's expectations behave as a self-fulfilment prophecy, that is, how determines students' academic achievement and consequently this reinforce teacher's beliefs about their own learners (Chang, 2011; Jussim and Harber, 2004; Rosenthal and Jacobson, 1966; Rosenthal, 1987, 1994; Spitz, 1999; White and Locke, 2000).

The main point is that if a teacher doesn't believe in their student's own capacities and potentials, is almost impossible to deliver them meaningful learning opportunities. If a teacher thinks that, in general, their pupils only will achieve complete schooling and they are not going to get to university, is hard to see the possibility that he will do his best effort to develop more complex skills in their classes. In summary, teacher's expectations are one of the most important factors of the teaching and learning process, so it was necessary to search about this topic.

4. Methodology

4.1. *Preliminary methodology observations.*

The methodology was based on a qualitative research approach in order to collect data and to develop participative strategies to involve the whole school community. It was used a set of research tools in order to meet the general and specific objectives. Basically, it consisted in collecting data through non-participating observations, personal interviews and workshops, besides some specific tools that were used to measure teachers' perceptions and interactions. All of these tools were properly adapted according to the educational context, by an expert team that had used some of them previously. The interviews guidelines where designed by the whole educational advisory team.

All the fieldwork was undertaken by Educafrica's volunteers' team, who were properly trained for that purpose. It took a period of about five months, including the final term of year 2015 and the first term of year 2016. They applied research tools to the whole population of teachers from both schools. No sampling was done considering the limited range of cases (20 approx.)

4.2 *Research tools and data collection process.*

4.2.1 **Teachers profile interview (TPI):** This interview was conducted through a survey, whose objective was to gather personal and professional information from the teachers of both schools. It was applied at the beginning of the diagnosis process and its application took approximately a month.

4.2.2. **Stallings Snapshot System (*Snapshot*):** This tool is used to do classroom observations, and it is specifically designed to measure the use of instructional time. It had been used in many research programs supported by the World Bank (Abadzi, 2006, 2007; Bruns and Luque, 2014). Three non-participating classroom observations per teacher were conducted in both schools, within a period of three months.

4.2.3 **Instructional Leadership Daily Practice Log (ILL[1]):** This tool is a questionnaire designed to capture teachers' professional interactions with their peers in order to know when and with whom they use to receive or give educational advice (Spillane and Zuberi, 2009). It was applied ten consecutives times per teacher in both schools, over a two-week period.

4.2.4 **Sociometric Test:** The main purpose of this instrument is to complement the data collected from the ILL questionnaire. It consists of four questions regarding with whom they would like to do some activities (have meetings, ask for assistance, etc.)

4.2.5 **Teachers expectations interview (TEI):** This interview was designed to capture the teachers' main expectations about their personal performance and development, students' achievement results and advisory support. It consists of fourteen questions that were applied to each teacher within a period of one month.

4.2.6 **Teachers perceived needs interview:** This interview was carried out in workshops with the teachers of both schools, in which they were asked to select their main professional needs and to prioritize them. It was conducted at the end of the diagnosis process, after getting the results of the rest of research tools.

4.3 *Data Analysis process*

To process the data collected in the interviews, it was necessary to perform a transcription of the answers. After that, the information was codified using an open codifying method and summarized by the field volunteers of Educafrica. In case of the TEI,

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[1] The results of this instrument are not presented in this report because there was too much missing data in the forms.

it was necessary to ask for the support of an external specialist.

The data collected through the *Snapshot* were tabulated in an Excel sheet, generating charts and graphics containing the most important findings. Nine records per class were considered, considering an interval of four minutes between each snapshot of the class. Additionally, the activity called "exposition", was categorized as a passive instead of an interactive instructional activity, despite that, according to the Stallings Snapshot's Manual, usually is consider as an interactive one. It was done in this way because, in the specific case of both St. Martin and Destiny schools, in this activity pupils were mainly listening to the teacher. Finally, due to the lack of properly administrative data in both schools, such as teachers' absenteeism, delay or any extracurricular activities, it was not possible to calculate the loss of instructional time.

5. Main results and findings

5.1 *Use of instructional time in both schools (Snapshot results)*
5.1.1 *Students involvement level in Destiny and Saint Martin's schools*
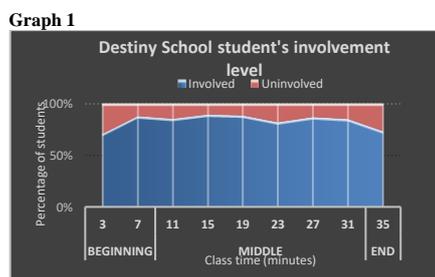
Graph 1

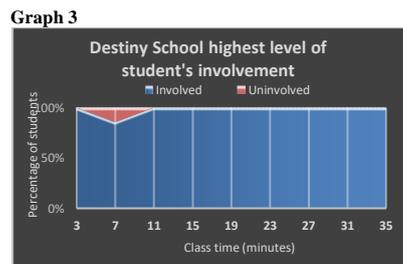Source: own elaboration
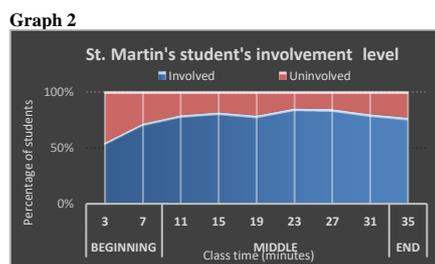
Graph 2
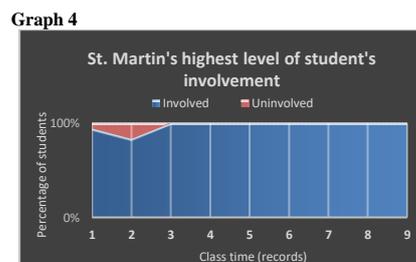

Source: own elaboration

The previous graphs show very similar results, in both schools, in terms of students' involvement level while being in lessons, considering all observed classes. This level was around 80%, which is above the standard in Kenya and almost reaching the U.S. standard. This means that, in average, four out of five students payed attention during the lessons, showing a real high participation level.

5.1.2 *Highest and lowest level of students' involvement*

Next, the following graphs represent the highest and lowest peaks of participation that could be observed in some of the classes, in each one of the schools. The idea is to show a contrast between the best and worst classes in terms of students' participation, supporting the finding that most part of the variance in the learning process is explain intra-school instead of inter-schools (Bruns and Luque, 2014).
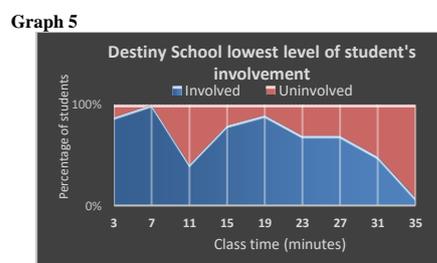
Graph 3

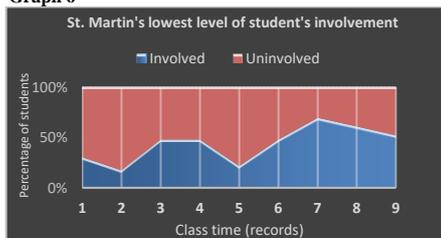Source: own elaboration

Graph 4

Source: own elaboration

The highest level of students' involvement in both schools, which is represented by one of classes recorded, are very similar, considering that, on average, 98% and 97% of the students, respectively, participated during these lessons. This means that a big majority of the students was paying attention, which should mean, to some extent, that these students were effectively learning during those lessons.
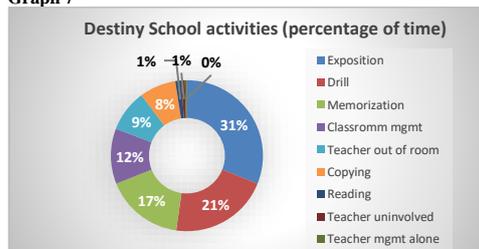
Graph 5

Source: own elaboration

Graph 6

St. Martin's lowest level of student's involvement

Source: own elaboration

Exposition and drill were the main observed pedagogical practices in both schools: more than half of the total time was used on these two strategies and, if memorization is taken into account, about two thirds of the time was spent on that. Collaborative work and discussion were almost not observed in any of the schools.

5.1.4 *School activities and student's participation*

Graph 9

Destiny School activities and involvement level

Source: own elaboration

On the contrary, if we consider the lowest rates of participation, there are significant differences between both schools. In Destiny school there is a higher involvement rate at the beginning of the lessons compared to Saint Martin's school, but at the end on the lessons, the involvement is higher in Saint Martin's school. In average, involvement level of students is almost ten percentiles higher in Destiny (66%) than in Saint Martin's (58%).

Nevertheless, in average, students' involvement levels are very high, despite the fact that still there are some students who need to be motivated and involved in some lessons. However, a significant difference in the student's involvement[2] level is observed when we compare some classes in particular, which is a sign that Educafrica must continue working this area to ensure that the greatest possible number of students participate in all classes and learn the contents.
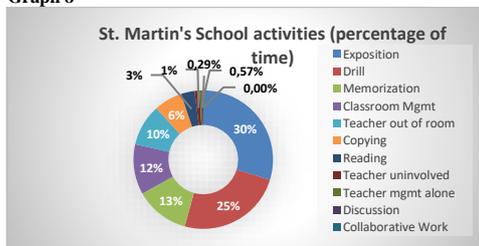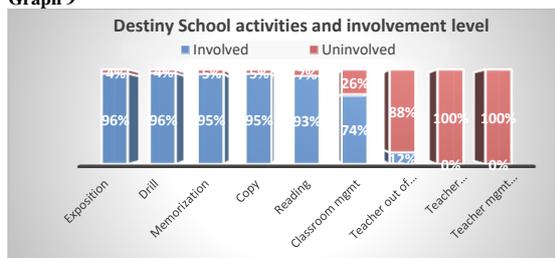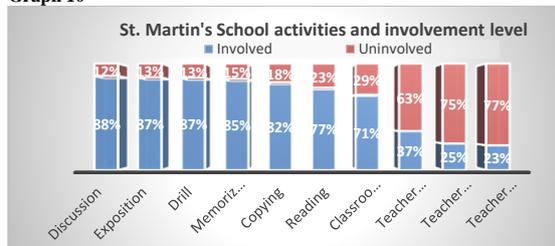
5.1.3 *Main pedagogical activities*

Graph 7

Destiny School activities (percentage of time)

Source: own elaboration

Graph 8

St. Martin's School activities (percentage of time)

Source: own elaboration

Graph 10

St. Martin's School activities and involvement level

Source: own elaboration

On average, almost 90% of students pay attention when teachers are implementing academic strategies, which decreases considerably when they implement non-academic activities. Nevertheless, the results on Saint Martin's school show that almost the double of students were not involved in academic activities.

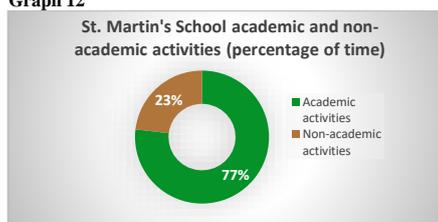### 5.1.5 *Academic and non-academic activities*

Graph 11

Destiny School academic and non-academic activities (percentage of time)
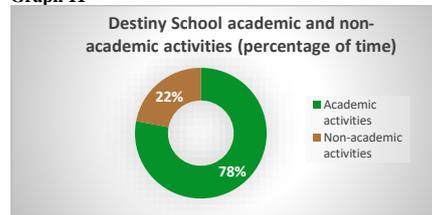
Source: own elaboration

[2] We must note that we took involved as a synonymous of paying attention, which is not the same that participating or being actively engaged in the activity, and that's because we can't know exactly what's going on inside the children's head

![EDUCAFRICA]

Graph 12

St. Martin's School academic and non-academic activities (percentage of time)
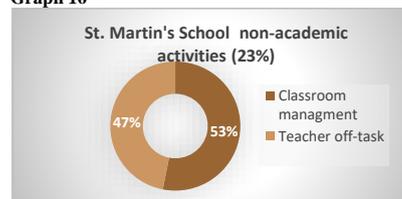
23% Academic activities
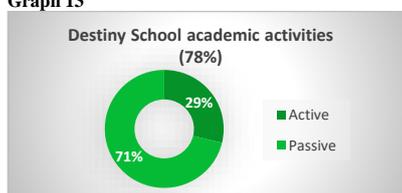77% Non-academic activities
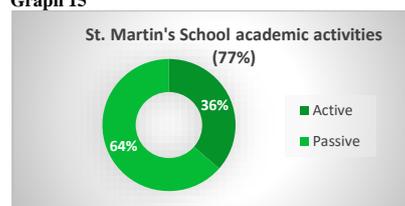
Source: own elaboration

The results show that there is almost the exact same proportion of academic and non-academic activities in each school. Academic activities are all those instances in which teachers teach curricular contents or foster the development of a particular skill. Non-academic activities are those ones in which teachers organize student's behavior.

Graph 13

Destiny School academic activities (78%)

29% Active
71% Passive

Source: own elaboration

Graph 14

Destiny School non-academic activities (22%)

44% Classroom managment
56% Teacher off-task

Source: own elaboration

In graphs 12th and 13th, it is possible to see the use of instructional unpacked depending if is academic or non-academic. In case of Destiny School, it was found that almost three quarters of the time spent on academic activities was devoted to passive instructional activities, that is, activities like listening an explanation, copying in the notebook, doing silent seatwork, etc. Basically, this means that, despite a large amount of time spent in academic activities, most of that time is passive activities that do not pose major cognitive challenges for students.

Graph 15

St. Martin's School academic activities (77%)

36% Active
64% Passive

Source: own elaboration

Graph 16

St. Martin's School non-academic activities (23%)
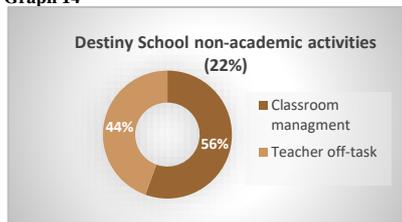
47% Classroom managment
53% Teacher off-task

Source: own elaboration

Considering the situation of St. Martin's school, there are some slightly differences, having a little higher proportion of interactive academic activities compared to Destiny School. However, there is still the challenge to offer more interactive activities to their student's.
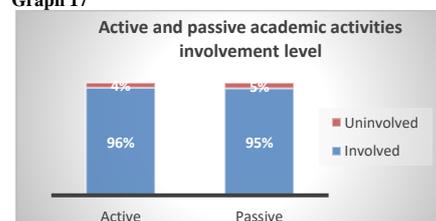
5.1.6 *Academic activities and classroom management*

Graph 17

Active and passive academic activities involvement level

4% Active Uninvolved
96% Active Involved
5% Passive Uninvolved
95% Passive Involved

Source: own elaboration

In graph 16th, the proportion of students engaged in active as in passive academic instructional activities in both schools is shown[3]. During most of the time of the academic activities, a great majority of students were engaged in these activities, being able to learn the contents and develop the skills stipulated. As is possible to see, almost the same amount of pupils were participating both in active and passive academic activities, which is, in one way or another, something slightly counterintuitive, because it was naturally to expect more students participating in interactive than in passive activities.

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[3] For the case of students' involvement level in academic and non-academic activities, both schools obtained the same results, hence, only one graph per both schools is shown.

Graph 18

Classroom management and teacher off-task involvement level
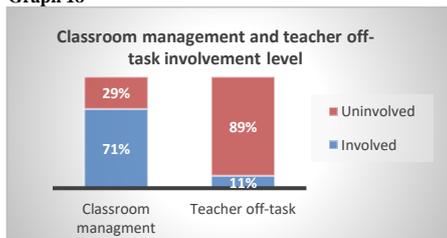
Source: own elaboration

A different situation was observed in case of non-academic activities, where the engagement level descends dramatically as the teacher is involved in off-task activities.
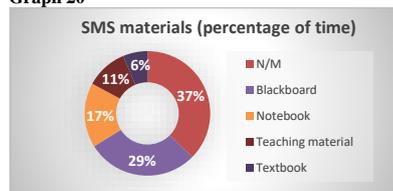
5.1.7 *Use of materials*

Graph 19

DS materials (percentage of time)

Source: own elaboration

Graph 20

SMS materials (percentage of time)
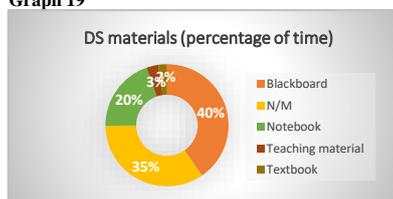
Source: own elaboration

According to the results, the most used material is the "blackboard": about a third part of the observation time, teachers were using this resource. Similarly, we observe that "no material" represent more than a third part of the time and "notebook" the 20%. If we group these three categories, we can estimate that the presence of these material was during almost 95% of the lessons time. Saint Martin's school shows a considerable difference in use of teaching material, which includes things such as worksheets, malleable materials, charts, etc.

In summary, most of the instructional time is spent in academic activities, which means that in most of the time, teachers were orally exposing and explaining curricular contents. Nevertheless, still remains the challenge to promote the interaction between students and the development of more advanced skills. Only a small fraction of the time (approximately one fifth) is used in non-academic activities, reflecting a high effectiveness in the use of time. In addition, it persists the concern about the strong differences between students' involvement

level in some classes. So, not only is important to consider the global average but also the extent of the involvement stability that is achieved throughout each of the classes.

5.2 *Main peer desirable interactions (sociometric test results)*

The results of this sociometric test are shown according to the questions that the teachers were asked. In this way, is possible to get a better sense of the way that teachers interact and also, how do they perceive their peers in their daily relationships.

5.2.1 *Question 1: If you had to choose a teacher to represent all of the teachers, ¿who would you choose?*

Figure 5

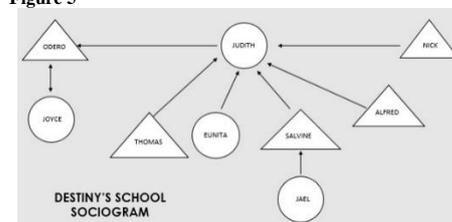DESTINY'S SCHOOL SOCIOGRAM

Figure 6

SAINT MARTIN'S SCHOOL SOCIOGRAM

5.2.2 *Question 2: With whom do you enjoy having your chai or lunch?*

Figure 7

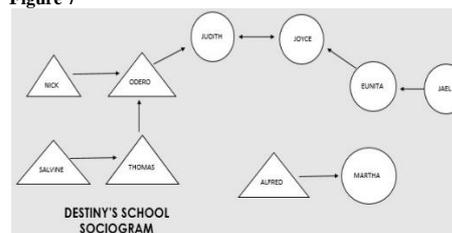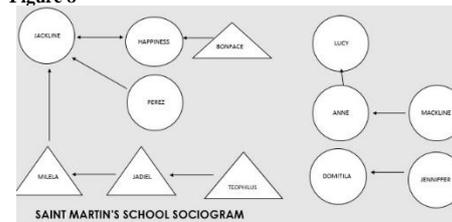DESTINY'S SCHOOL SOCIOGRAM

Figure 8

SAINT MARTIN'S SCHOOL SOCIOGRAM

5.2.3 *Question 3: If you had to plan a meeting with the community, who would you ask to help you with it?*

Figure 9

DESTINY'S SCHOOL SOCIOGRAM

Figure 10

SAINT MARTIN'S SCHOOL SOCIOGRAM

Table 1

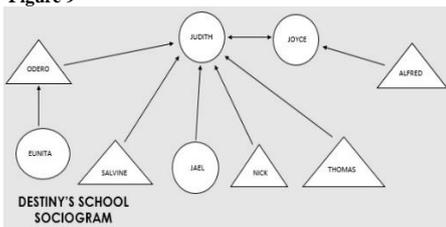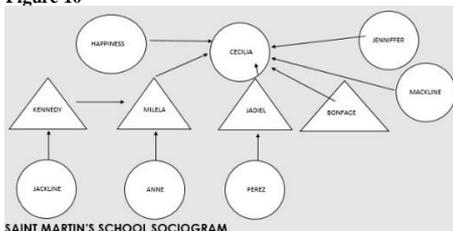| DIMENSIONS	CODES	SCHOOLS	
		SMS	DS
A. TEACHER'S PERSONAL EXPECTATIONS	A.1 General perception of their own experience as teachers	"Good experience" "I like the school" "Living some complications" **"Experience full of challenges"**	"Good experience" "I like the school" "Living some complications"
	A.2 Achievements	Student's visible academic progress Better classroom environment Professionally developed as a teacher **Enhance relationship with parents**	Student's visible academic progress Have better classroom environment Professionally developed as a teacher
	A.3 Students expectations	**i) Better citizens** ii) To achieve their own goals iii) Be promoted to the next level	**i) To achieve professional degrees** ii) To achieve their own goals iii) Be promoted to the next level
	A.4 Self-efficacy	I feel qualified to reach that expectations **Lack of work and resources**	I feel qualified to reach that expectations
	A.5 Professional expectations (within 5 years)	i) Continue teaching ii) Continue studying **iii) Professionally promoted** **iv) Change my career**	i) Continue teaching ii) Continue studying iii) Continue working in school
	A.6 Job satisfaction	i) School community **ii) Environment** iii) Students iv) Principal support v) Positive impact of my job on students life	i) Students ii) Positive impact of my job on students life iii) School community iv) Principal support
B. EXPECTATIVAS SOBRE LOS ALUMNOS	B.1 Students achievement expectations	To reach their own goals Overcome poverty challenges Integrated and meaningful learning Improve academic results God knowledge To be love and respected	To reach their own goals Overcome poverty challenges Integrated and meaningful learning Improve academic results
	B.2 Real possibilities to achieve that expectations	They will achieve their goals It will be need hard work It will depends on effort and persistency	They will achieve their goals It will depends on effort and persistency
	B.3 Students who will be promoted to next year	Hope that everyone can do	Hope that the majority of children can do
	B.4 Class description B.4.1 Needs	a) Students Care Health **Continuous support** b) School Infrastructure Teaching materials	a) Students Care Health b) School Infrastructure Teaching materials
	B.4 Class description B.4.2 Strengths	Disposition Hard work God knowledge	Disposition Hard work
	B.4 Class description B.4.3 Difficulties	Students capacities Lack of motivation Lack of teaching materials Poverty of neighborhood Family situation (violence, psychosocial risk factors)	Students capacities Lack of motivation Lack of teaching materials Family situation (violence, psychosocial risk factors)
	B.4 Class description B.4.4 Challenges	Teachers economic maintenance Relationship with parents External environment Scholarship Poverty	Teachers economic maintenance Relationship with parents External environment Scholarship Poverty
	B.5 Reaction facing challenges	Approaching to parents Teachers coordination Work with students Perseverance	Approaching to parents **Work with principals** **Classroom work**

Source: own elaboration

In terms of leadership perception, in Destiny school there is a clear perception that the leader role relies on the school principal, which is countersigned by the fact that almost the whole teacher's staff declared they would like to be represented by the principal. In contrast, in Saint Martin school it was observed that leadership perception is more distributed amongst different teachers.

On the other hand, when teachers were asked with who they enjoy having lunch or chatting, is interesting to realize that in Destiny school, most of them enjoy those activities with the principal, which is totally different in Saint Martin school, where nobody mentioned her.

Finally, if Destiny school teachers had to plan a meeting with the community, a majority of them would ask for the help of the principal, which in one way or another, is a similar situation as in Saint Martin school.

Definitely, all of the information provided by the sociometric test is not only interesting to know how are the relationships among teachers and school management team, but also useful to shed light and bring up orientations to guide the intervention process.

5.3 *Teachers' expectations*

The tables shown below summarize the expectations interview main results from both schools. The first column describes each interview dimension. The second categorizes the main codes selected. The third and fourth columns corresponds to each school. The text in bold highlights those elements that are different between both schools.

First of all, it was found that teachers are aware about the importance of their role regarding to students' learning achievements, knowledge acquisition and skills development, in order to overcome context disadvantages.

Secondly, teachers show high expectations about students' achievements, especially in terms of secondary and higher studies that they can pursue. In the same way, for teachers, grades are a very important indicators of students' learning outcomes.

A big part of the teachers stressed out the relevance of pedagogical resources and the negative consequences of lacking them, so they expect to receive some support in this aspect in order to address those needs and to be able to provide a high-quality education.

According to Educafrica educational advisory, several teachers declared that they expect to receive pedagogical training and professional development aid, which coincides with some perceived needs. Finally, teachers of both schools underlined the influence of school leadership in their own motivational levels, which allows them to address the school main challenges.

5.4 Teachers perceived needs

5.4.1 *Which of the following do you think you need the most?*

Graph 21

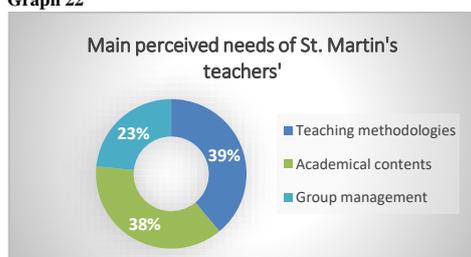Main perceived needs of Destiny School teachers'

- 49% Teaching methodologies
- 33% Academical contents
- 18% Group management
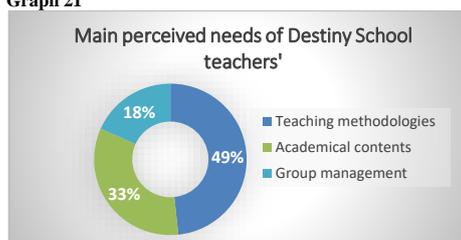
Source: own elaboration

Facing the question about what were the main perceived needs by teacher's staff of both schools, almost half of Destiny's teachers selected pedagogical strategies and methodologies training. Nonetheless, this should not obscure the fact that more than a third declared to need training in academical content knowledge, which is aligned with some needs in other Africans contexts (Needu, 2013).

Graph 22

Main perceived needs of St. Martin's teachers'

- 39% Teaching methodologies
- 38% Academical contents
- 23% Group management

Source: own elaboration

Saint Martin's school teachers show significant differences compared to Destiny school, since the same proportion of teachers said they need training in pedagogical strategies and academicals contents. After a brief discussion, they decided to start with methodologies and then go on with contents.

5.4.2 *From the next set of strategies, which three of these would you like to choose?*

Destiny School

Preschool/ECD	Lower Primary	Upper Primary
Material	Material	Debates
Learning Centre	Learning Centre	Solving Problem
Daily Reading	Daily Reading	Projects

Saint Martin School

Preschool/ECD	Lower Primary	Upper Primary
Learning Centre	Material	Material
Daily Reading	Interactive Writing	Daily Reading
Interactive Writing	Small Group	Small Group

Teachers from both schools were shown a set of twelve pedagogical strategies and techniques, from which they had to prioritize and select the three most important according to the problems they were facing in the classroom.

According to the information collected in the assessment, the teachers' perceived needs from both schools where divided in three different areas:

a. *Teaching Strategies and Methodologies:* it was the most valuable area, so a set of strategies were summarized, and the teachers decided in which one of them they wanted to be trained.

b. *Group Management:* a series of workshops to support in this area has been designed and implemented, especially in Saint Martin School. This was facilitated by a psychologist.

c. *Academic Content*

Interested in having new books for teachers and students, so after the assessment, Educafrica bought 2246 books for both schools. This was an efficient way to tackle the lack of academic content knowledge.

6. Students' academic results

As was mentioned at the beginning of this report, one of the specific objectives of the diagnosis process was to identify the current students' academic performance of both Destiny and St. Martin's Schools. For this purpose, it was necessary to send to Kenya two researchers[4] so they were in charge of making a cadastre of the available information, as well as to collect all the missing data that was possible, all of this with the purpose to build a baseline which allows Educafrica to, eventually, assess the impact of their intervention programs.

The first thing that should be mentioned in this respect are the difficulties faced in the schools to gather all the information of academic results that was available in the schools. In that sense, it happened that many of the records were incomplete or in different formats depending on each teacher, which made it much more difficult to systematize information and obtain results.

However, some preliminary graphs that can be obtained are presented below. On this occasion, a description of the results of 2nd grade of both schools was shown[5]. It is still necessary to obtain more data and analyse in more detail and depth the information, which will be the task of a new
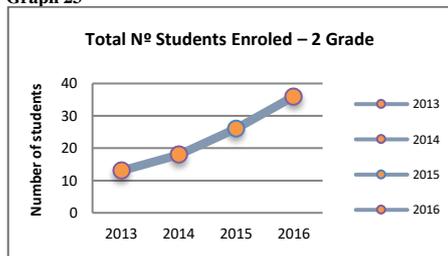
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[4] In this case, they were two chilean psychologists.

[5] Nevertheless, will also show the results of 8th Grade, but only in an aggregate way in the final part.

investigative process to be carried around March this year.

Graph 23

Total Nº Students Enroled – 2 Grade

Source: own elaboration

Graph 24

Students Enroled per Gender - 2 Grade

Female | Male

	2013	2014	2015	2016
Male	5	6	7	11
Female	8	12	19	22

Source: own elaboration

Graph 25

Full time Teacher - 2 Grade

Full time Teacher

2013	2014	2015	2016
2	2	1	2

Source: own elaboration

In order to characterize the sample of students whose academic results will be described and analysed, a set of different variables were considered relevant at the time of investigating this issue, since there is some evidence that found discrete and strong associations with academic results.

In first place, respect to the number of students at these levels, there has been a systematic increase in enrolment in the last three years, reaching around forty students today. On the other hand, it can be argued that the distribution among boys and girls has remained relatively constant, with females accounting for twice as many men in 2016. At the same time, during the previous four years with the exception of 2015, two full-time professors, which means that students teacher ratio has been, on average, about 20 students per teacher.

Before presenting the academic results, it is necessary to clarify that only were considered the results in the standardized tests that the schools apply in the middle as at the end of each term. These are tests that measure students' knowledge in subjects such as mathematics, English, K-Swahili, social science and Christian Religious Education
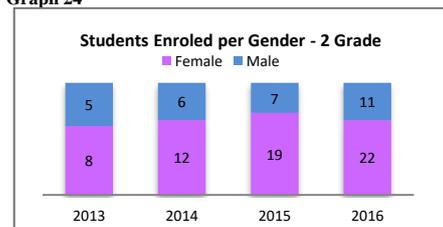
(CRE). Inevitably, these tests are biased in both its composition and the content that evaluate, as they are designed to be applied massively in schools, so their results should be read with caution. There is still no analysis of the reliability of these tests, so it is not possible to consider them as a robust source of information that allows to base pedagogical decisions on the matter. However, they can be an important input to consider for the moment, insofar as their reliability is corroborated.
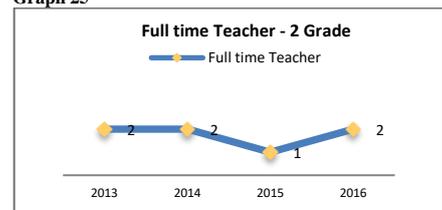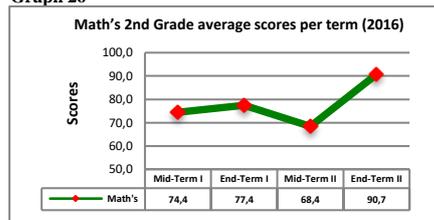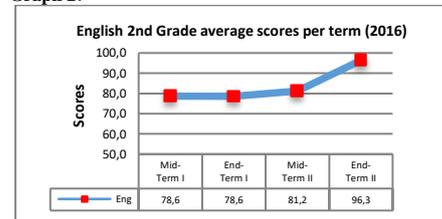
Graph 26

Math's 2nd Grade average scores per term (2016)

	Mid-Term I	End-Term I	Mid-Term II	End-Term II
Math's	74,4	77,4	68,4	90,7

Source: own elaboration

Regarding to the maths' results, is possible to observe a significant increase during the final term of the year, which generates a gap of about 20 points if we compare with the beginning of the year and, also, with the rest of the terms. Nevertheless, it is worrying that students in both colleges have lowered their average performance by the middle of the last quarter, which would require further investigation.
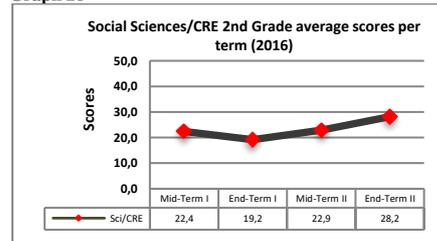
Graph 27

English 2nd Grade average scores per term (2016)

	Mid-Term I	End-Term I	Mid-Term II	End-Term II
Eng	78,6	78,6	81,2	96,3

Source: own elaboration

On the other hand, it is seen that, in English, the students of this class have shown a gradual but progressive improvement in their performance, reaching a result close to the optimum with an increase of almost 20 points from the beginning of the year.

Graph 28

Social Sciences/CRE 2nd Grade average scores per term (2016)

	Mid-Term I	End-Term I	Mid-Term II	End-Term II
Sci/CRE	22,4	19,2	22,9	28,2

Source: own elaboration

A situation diametrically different from the previous one is that observed in the case of social sciences and CRE, in which students show, on average, a much lower performance, reaching only a third of the possible score at the end of the year, even if He considers that it is his best result. Against this, the management teams of schools should pay attention to what is happening in these classes, raising information and offering various additional support as needed.

Graph 29

Overall Academic Performance - 2nd Grade

Source: own elaboration

Graph 30

Overall Academic Performance - 8th Grade

Source: own elaboration
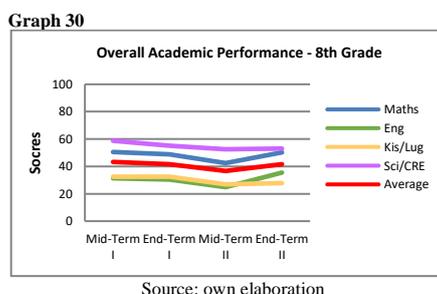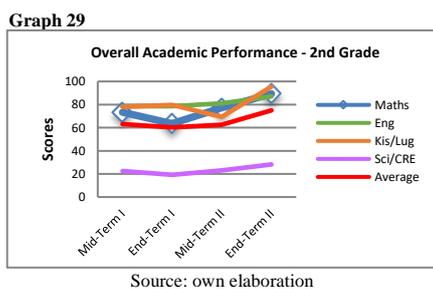
Finally, if the academic results are observed in a comparative way between the different subjects, the differences between each of them can be better perceived throughout the school year. In 2nd class, it is clear that English and Kswahili are the two subjects in which the students obtain the best results, unlike social sciences and CRE, in which the results are well below the average of all the other subjects. However, it is important to highlight that in most of the subjects, students exhibit a progressive improvement in their performance during the school year, which is a good indicator of progress and learning.

Graph 27 shows the performance of eighth graders, whose results are distributed more homogeneously between each subject compared to 2nd class. Unlike the latter, it is possible to perceive that social sciences and CRE are one of the best performing subjects, in conjunction with mathematics, since they are above the average of all subjects considered as a whole. In turn, English and K-Swahili are the ones that show the lowest performance, bordering the 25 points on average, in both mid and end-term tests. As opposed to what is observed in the smaller class, in the eighth, students show a progressive worsening of their results as the school year progresses, which can be a disquieting sign if it takes into account that these are the students who must Surrender the KCPE and then define whether they will be able to pursue their secondary education.

7. Conclusions

It was found that in Destiny and Saint Martin schools, teachers and students spent most part of the time in activities related to teaching and learning process of curricular contents and skills. However, Educafrica is totally convinced that these educational communities still can keep improving in many aspects and in many different ways.

Also, it was noticed that virtually all children paid attention during lessons and showed interest and enthusiasm towards learning. It was observed that, children want to learn, so in this sense, Educafrica must take advantage of this situation and contribute to develop all the potential that they have.

In spite of those previous good results, it was seen that not so many students worked independently and collaborated together. Activities such as collaborative work, discussion and working in projects were not registered. These three main activities are important because they enhance the development of more complex skills, not only cognitive ones, like critical thinking and creativity, but also non- cognitive like empathy, tolerance, collaboration, teamwork, autonomy and self-regulation.

It has to be taken into account the fact that most part of the academic activities were passive instead of interactive, so this could be related to the idea expressed above. Looking forward, in this point there is a need to offer more challenging activities to students and raise the difficulty level of tasks level in order to reach better learning outcomes. Precisely, this is one of the most urgent needs declared by teachers from both schools.

Now, the main challenge that Educafrica is looking forward is to let the children to assume their own responsibility in the leaning process, which implies to offer more participation instances, discussion and critical thinking in lessons. If children are allowed to play and to fully enjoy their lessons, it would be possible to achieve to be the owners of their future.

Last but not least, two important challenges are presented in relation to student assessments and academic performance. First, beyond the specific

performance in each of the subjects, there is the challenge of systematizing more academic information, so that it can be more easily available and thus identify critical situations in time, making pedagogical and administrative decisions that allow address those scenarios in the best way. In that sense, it is not only necessary to raise the information more, but the schools are entertaining in using the data to point to a better decision making, contrasting hypotheses and corroborating initial intuitions on the part of the teachers and managers.

Second, and this is directly related to the work that Educafrica performs, all of the above must be done in a simple, simple and cheap way in terms of human, material and temporary resources. It makes no sense to require schools to keep a detailed record of student performance if they are not delivered tools to do this quickly and easily. Therefore, it is necessary to start with a process that rescues the current practices of the school and that is progressively increasing them, developing an increasing need, both teachers and managers, to have all this information on hand for make the best decisions regarding student learning.

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