POSITIVE DEVIANCE IN PRIMARY EDUCATION

Schools and teachers making an outstanding contribution to learning in Eastern Uganda

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Attribution:

Acknowledgements:

ABBREVIATIONS

CAO   Chief Administrative Officer

CCT   Coordinating Centre Tutor

DADs   Discovery and Action Dialogues

DEO   District Education Officer

DPO   Deputy Principal - Outreach

OBs   Old Boys

OGs   Old Girls

PLE   Primary Leaving Examination

PTA   Parents Teachers' Association

PTC   Primary Teachers' College

PTE   Primary Teacher Education

RDC   Resident District Commissioner

SACCO   Savings & Credit Savings Society

SMC   School Management Committee

UNEB   Uganda National Examinations Board

EXECUTIVE SUMMARY

Too many children enrolled in schools today are learning so little and this affects society's mostly disadvantaged group, the poor, creating a real possibility that generations might get trapped in a low-learning cascade. The countries most affected by the global learning crisis also have some of the lowest levels of per-student expenditure on education. With global funding for education still falling short of current need, what options do such countries have to sustainably improve the quality of their education? Positive deviance is an asset-based approach that begins with the observation that communities are already fully endowed with capabilities to solve their social problems and need not always have to find extra resources for such solutions to emerge.

Systematic reviews of the existing evidence on how to improve learning in developing countries highlight the need to focus on assessing learning, using evidence to design and implement education policies, and aligning all the actors in the education systems to focus on maximizing learning gains for children (World Bank, 2018). Twaweza has chosen Positive Deviance (PD) as a strategy to unearth evidence-based ideas at community, school and teacher levels, with the aim of experimenting and bringing to scale what really works to improve children's learning outcomes in East Africa. The underlying thinking is that "some communities, schools and teachers in districts with consistently poor learning outcomes have devised strategies and practices that are enabling them to achieve better learning outcomes for their children, while using similar levels of resources".

We did an initial desk analysis of primary-level learning achievements in Uganda and it revealed that districts that consistently underperformed in the citizen-led UWEZO literacy and numeracy assessments were also consistently poorly performing in the national-level Primary Leaving Examination results since 2011. The question asked at this stage was whether some outlier public schools and teachers existed in these districts, who despite all their difficult circumstances, were consistently outperforming their peers? The answer was a resounding YES, and this initial analysis led to a list of eighty-eight "PD-Like" schools and one hundred and forty five "PD-like" subject teachers. A two-phase field-based mapping exercise cut down this list to the final list of ten PD schools and eight PD-subject schools.

An in-depth ethnographic inquiry was conducted involving these eighteen schools aimed at unearthing their unique strategies and practices that might explain the observed top performances. A variety of qualitative data collection methods were used, including personal interviews, detached and participant observations, direct interactions, videography and photography, group discussion and action dialogues, and a triangulation of all these techniques. According to Singhal, Buscell and Lindberg (2010) 'Solutions to intractable social problems are right there, with the community members, staring us (them) in the face'. In terms of school infrastructure needs, this inquiry reveals that some of the PD schools are in fact, extremely under-resourced than their under-performing neighbours. It would seem, after all, that regardless of how well the school is built and furnished, what really matters is what transpires during the teaching and learning process.

The inquiry unearthed a number of practices and behaviours used by these PD schools and teachers. These findings are synthesized into six main PD strategies – active involvement of communities in the life of their school, introduction of systematic work approaches and cultures that positively impact learning, designing and applying methods that target facilitating content mastery by the learners, supporting and motivating teachers and learners to achieve improved quality of the instruction and learning experiences, teachers deliberately prioritizing and attending to their learner's needs, and the deliberate utilization of existing formal institutions at the school to back up school innovations against potential interference.

Some of the PD practices unearthed, although positive and highly recommendable (desirable) for adaptation in other schools, directly conflict with existing official education policy positions. The PD schools currently implementing these practices gave strong reasons for adapting such practices. This study suggests the need to evaluate the viability of some education policies and their impacts on learning in schools, in particular the "class teacher" as opposed to "subject teacher" system used in primary schools.

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1.0 INTRODUCTION

Amidst the exciting global expansion of schooling which has registered unprecedented progress towards all children attaining a basic minimum education since the early 2000s, especially benefitting the formerly excluded poor, girls and rural communities, the "global learning crisis" today presents the biggest challenge to realization of the promise of education. Over 125 million school-going children did not acquire the most basic functional literacy or numeracy skills even after spending at least four years in school (UNESCO, 2013; World Bank, 2018), a clear indication that the learning crisis begins in the very early years of school. Most of these children live in the developing countries of Asia and Sub-Saharan Africa (SSA), regions with the large annual child population growth rates and low per-student education expenditure levels (Sajitha, et al., 2018). With global funding for education still falling short of current need, what options do such countries have to sustainably improve the quality of their education?

The concept of Positive Deviance traces its' roots from research conducted in the early 1990s to tackle childhood malnutrition in Vietnam. This approach to solving intractable social problems is premised on the observation that in every community, there exist ordinary people or institutions who have figured out better, sometimes extraordinary solutions than their neighbors to prevailing problems, without having access to extra resources (Pascale, Sternin & Sternin, 2010; Tufts University, 2010). These are the Positive Deviants. Describing the application of this concept to the malnutrition problem, Sternin, Sternin and Marsh (1998) reveal three unique components of the approach – well-nourished children in families and communities where there should ordinarily be none, use of culturally appropriate practices that were available to all, and other community members learning from and adopting the practices of the PDs.

"Positive deviance in nutrition describes young children who grow and develop adequately in poor families and communities, where a high number of children are malnourished and frequently ill..... These families have developed culturally appropriate positive deviant practices that enable them to succeed in nourishing and caring for their children in spite of poverty and an often high risk environment. These families are uniquely able to provide solutions to malnutrition to other poor families in their communities".

Two critical factors make the PD approach a naturally appealing course for developing countries in their quest to solve the learning problem. First, the emphasis is on identifying practices that are actually working in a particular context, with the intention to extend them to immediate neighboring communities existing in the same or a similar context. Second, PD practices are, by definition, already available to all the community members without need for extra resources – what in PD parlance is referred to as "hidden in plain view". This removes the all-too-familiar refrain highlighting resource insufficiency as the key constraint to improving learning.

Twaweza has chosen Positive Deviance as a strategy to unearth evidence-based ideas for improving children's learning outcomes at community, school and teacher levels in East Africa. Since 2016, Twaweza has been conducting positive deviance studies in primary education with two main goals. First, to unearth locally-relevant strategies and practices that some primary schools are using to achieve better learning outcomes; and second, to extend these strategies to the underperforming neighboring schools, thereby experimenting and bringing to scale what really works to improve children's learning. To reach these two goals, three research questions have guided this body of work. First, are there averagely-resourced public primary schools in consistently poorly performing districts of Uganda that have consistently achieved better, even top, performances than their neighbors? Second, what strategies and practices are these PD schools and teachers using that might explain their ability to consistently achieve and sustain better learning? And by extension, what has kept these strategies and practices effectively 'hidden in plain sight' from other schools in similar contexts? Finally, how can such strategies, practices and behaviours be scaled-up and replicated in a socially acceptable manner to other teachers, schools and communities?

Recently synthesized evidence of effective education interventions reveals some key considerations for improving learning in SSA (Conn, 2014; Evans and Popova, 2015; Snilstveit et al., 2015). First, a multi-level approach is required that combines at least two of five intervention levels – the child, household, school, classroom and system. Second, some interventions are more impactful on learning than others – improving teacher knowledge and pedagogical practices, providing extra instructional time and remedial opportunities, and community-based monitoring are some of the most effective. Third, critical attention must be paid to the uniqueness of each context as what works in one location may not always work in another. To date, available global evidence on the application of PD to improve education outcomes has revealed improved retention

of children in schools, improved grade completion, reduction and prevention of high school dropouts (Dura & Singhal, 2009; Lemahieu, Nordstrum & Gale, 2017).

This study was conducted in four sequential stages. A desk-based analysis of Twaweza's data on children's learning outcomes and the Uganda National Examinations' Board (UNEB)'s Primary Leaving Examination (PLE) results led to selection of a preliminary list of "PD-like" schools at the first stage. Field-based physical mapping of the schools was then done in the second stage[1], which culminated in the final selection of the eighteen schools that form the basis of this report's findings. In the third stage, we conducted an ethnographic inquiry into the strategies and practices of the selected schools aimed at uncovering the unique behaviors that might explain the observed better performances of PD schools and teachers. Six strategies were unearthed from this inquiry – active involvement of communities in the life of their school, introduction of systematic work approaches and cultures that positively impact learning, designing and applying methods that target facilitating content mastery by the learners, supporting and motivating teachers and learners to achieve improved quality of the instruction and learning experiences, teachers deliberately prioritizing and attending to their learner's needs, and the deliberate utilization of existing formal institutions at the school to back up school innovations against potential interference.

The fourth stage involved the conduct of validation sessions at which the unearthed strategies were validated and commitments made to adapt relevant practices by all the participating schools. The validation sessions also highlighted the critical roles to be played by head teachers in ensuring successful adaption of PD practices and the need to conduct sufficient sensitization of major players in the school communities in order to achieve sustainable adaption.

The PD approach demonstrates that real solutions to complex social problems exist in every community setting and can be replicated for the benefit of all community members (Sternin & Choo, 2000; Sternin, 2002). In the following section, we explain the data collection methods beginning with the procedure followed to select the study schools and then dwelling at great length on the actual conduct of the inquiry. Section three gives a detailed exposition of the unique PD school stories situating each school in its local context and revealing the unique practices unearthed. In section four, we discuss six thematic PD strategies that were synthesized after reflecting on the PD stories. This is followed by a brief reflection on the insights gleaned from the

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[1] The PD mapping process is explained at great length in a separate report.

validation sessions in section five and a discussion of implications on education policy of some of the unearthed practices in section six. Section seven concludes.

2.0 DATA COLLECTION METHODS

In order to answer the three PD questions posed earlier, an in-depth qualitative inquiry was undertaken. The first question was partly answered through desk research work that established the existence of PD-like schools and teachers. A comprehensive physical mapping exercise was then used to cut down on the numbers of these schools and teachers to feature in the in-depth inquiry. While a detailed separate report of the whole mapping process has been compiled, this section briefly highlights the two field-based mapping phases, and dwells at length on the conduct of the inquiry[2].

2.1 Positive deviance mapping exercise

The first phase started with a physical visit to each of the seven districts. These visits involved detailed collaborations with District Education Officers, core Primary Teacher Colleges (PTCs), Coordinating Centre Tutors (CCTs) and head teachers of the 88 PD-like schools and 118 PD-like subject schools (these had been selected earlier during the desk research analysis). The tools utilized at this stage, had been designed to collect more data existing at the schools and coordinating centres that could not be ascertained from the Uwezo and PLE data used earlier. Five thematic focus areas were emphasized at this stage to help be used to further cut down on the number of schools – head teacher characteristics, school resources, school type, community characteristics, and school performance over a longer time period. Each of these five areas is explained briefly below:

Head teacher characteristics: The quality of head teacher a school has is considered a key aspect for improving learning and driving change in schools (Levy et al., 2018). In this context we focused on the gender of the head teacher, and the period they had spent in this school as head teacher. Whereas there is no clear indication of whether female head teachers perform better (worse) than their male counterparts it would be quite important to establish whether or not the strategies and practices that head teachers utilized in their work differed along gender lines. On "period of stay" as head teacher, it is considered that the longer the period of stay in a school the more likely the

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[2] All data collection tools used for the mapping, inquiry and validation stages of this study are available on request.

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head teacher will be able to understand and influence the culture of the school and to achieve the learning goals the school sets.

School resources: School size (in terms of the total number of children enrolled) and the associated pupil-to-teacher ratios are considered critical variables for facilitating learning. Beyond a critical minimum number of pupils per teacher, evidence exists that suggests that when a teacher handles fewer children, each child will likely get more teacher attention and therefore an increased chance to learn better (Angrist & Lavy, 1999; Hanushek, 2006). The issue of school feeding programs for children is another critical aspect that was given thorough consideration. How did PD schools manage the complex issues that are associated with the provision of lunch for children – both for schools that provided lunch and those that did not? A final consideration under resources was the aspect of additional external support received by the school, e.g. NGO programs in the school, and old students making major contributions to the school. Any additional external support that was considered out-of-reach for a typical Ugandan public primary school would lead to the exclusion of such a school. This study therefore, was targeted at the typical public school in Uganda with all its' resource constraints. Schools that appeared to be more resourced than the norm were dropped.

School type: All schools considered in this study are public-aided primary schools. This notwithstanding, two school-level variations were given due consideration – whether the school was located in a rural or urban setting, and whether the school was officially running on a day or boarding program. On rural/urban location status, this variable is highly associated with important factors as school facilities, role models, additional support, socioeconomic environment, etc. On day/boarding status, all public primary schools running a boarding program in Uganda use private resources to fund the boarding aspect. Furthermore, children enrolled on the boarding program are in many aspects more advantaged than their day counterparts, making it unrealistic to expect similar opportunities for learning in schools that differ on this aspect. Therefore, schools running boarding programs were also dropped.

Community characteristics: A key community aspect that was given high consideration in this regard was the predominant socioeconomic activity of the area in which the school is located.

Major challenges are faced by schools located in areas where the main economic activities include sugar cane farming, maize and rice growing, fishing, stone quarrying, sand mining, etc. Previous studies have documented the exploitation of school-aged children as a source of cheap labour in such communities (Kabay, 2016). A school in such a locality that achieves exceptionally high performance must have devised unique strategies to overcome such hindrances affecting the learning in all the nearby schools.

School performance: Due consideration was given for each school's performance in the end-of-cycle PLEs for the six years, 2011 – 2016. Both the overall school-level aggregated and the subject-level performances were analysed. Using these analyses, school and subject-level performances were ranked for each district.

Using the above selection criteria, twenty "PD-Like plus" schools and seventeen "PD-Like plus subject" schools were selected. It is these thirty-seven schools that comprised the sample for the second phase of the physical mapping process. This phase involved a deeper dive into the thirty-seven school communities and engaged both the school-based and wider community members. Dialogues were held with teachers, head teachers, parents, local leaders, the community at large and the children themselves. These discussions centred on the local "PD-like plus" school and teachers, and how they were perceived both within the school and the wider community.

After returning from the field (second phase mapping), a brainstorming consultative session was held and narratives developed for each of the thirty-seven school communities. These narratives formed the basis for the final selection of the ten PD schools and eight PD subject schools that were involved in the in-depth inquiry.

Table 1: Timeline of PD research events and the stakeholders involved.

2016	2017			2018
Desk research	*Mapping 1*	*Mapping 2*	*PD Inquiry*	*Validation*
- Uwezo + UNEB data	- 88 PD-like schools - 118 PD-like subject schools	- 20 PD-like plus schools - 17 PD-like plus subject schools	- 10 PD schools - 8 PD subject schools	- 6 PD strategies - 18 study schools - 16 non-study schools - Other players

2.2 The Positive Deviance Inquiry

The inquiry was conducted in the eighteen target schools as explained above. It involved the participation of all the key stakeholders who, according to Singhal, Sternin and Dura (2009), constitute the key internal change agents that will demonstrate the social proof of what actually works to their peers. They included parents and other local community members (the "un-usual suspects"), members of the SMCs and PTAs, local council executives, school foundation body members, civil servants, head teachers and teachers. As is the norm with PD, the chances of adopting and implementing PD practices increase with the active involvement of the community in the self-discovery process. This process therefore, is critical to ensure community ownership and implementation of the unearthed strategies, as the members realize that they have within themselves the ideas, resources and energy to bring about change.

The PD implementation field guide (Tufts University, 2010) identifies five key steps in the PD approach – define, determine, discover, design and monitor. In this study, we have fully followed through the first three steps and partially completed the fourth, as is described below.

1. Problem definition: Through the conduct of open discussion and dialogues with the relevant communities, we characterized at depth the problem of low learning achievement at primary school level. Specific to each study area, we were able to get the local communities to identify the possible causes and, to share the challenges they had encountered during previous attempts to deal with the learning problem.

2. Determination of the presence of PD individuals or groups in the study communities was done first, through desk-based research where poorly performing districts were matched between two main data sources – UNEB and Uwezo. Then a detailed two-phase physical mapping exercise was done, which culminated into the identification of ten PD schools and eight PD subject schools.

3. The Unearthing or discovery of the uncommon but successful strategies, practices and behaviours was achieved through the conduct of an in-depth qualitative ethnographic inquiry that included the use of a number of research tools and activities, including personal interviews, participant and detached observations, direct interactions, focus group discussions, photography and videography, note taking, and triangulation. While school-based players were mostly engaged at the school, other players were engaged both within and outside the school premises.

4. The process of designing activities that will enable communities to practice the unearthed PD practices was started on in 2018. This involved the conducting of validation sessions at which all school community participants made actionable commitments to adapt the unearthed strategies of their choice and practices that are most relevant to their specific contexts. These participants included head teachers, SMC members, PTA members, Foundation Body members, District Education Officials, core PTCs, CCTs, teachers and parents. Supportive work will be required to ensure actual adaptation in the respective schools – an activity that is beyond the confines of this report. Plans to design, undertake and evaluate the causal impacts on learning of some of the unearthed PD practices are currently at formulation stage – a randomized field study will be conducted over the next five years to 2024.

5. **The Monitoring** of progress toward successful adaption of the unearthed PD strategies, practices and behaviours also falls beyond the scope of this report.

3.0 SCHOOL STORIES

The PD inquiry unearthed interesting stories that depict the unique but available paths that schools and teachers have taken in their efforts to improve learning. From these stories, particular strategies, practices and behaviours are identifiable which might explain the exceptional performances achieved. It is within these stories that the uniqueness of each PD school is revealed. We tell, in the best way we can, the engaging and captivating stories that situate each of these schools in its local context and give a comprehensive account of how it finds itself among the list of PD schools as inferred from the observations, analyses and dialogues that went on during the inquiry.

3.1 SCHOOL A: A rural day school that is deeply rooted in the community!

Originally established by the community and then taken over by government, school A is located in a rural setting neighbouring a stone quarry, fish landing site and largescale sugarcane plantations. Although Muslim founded, it accommodates and treats every member of the school and local community with respect regardless of their religious affiliations. With a total enrolment of 1088 pupils and 21 teachers, this school is led by a strong female head teacher and depicts high levels of teacher and pupil motivation and regular school and class attendance by both teachers and pupils. Understanding the local and historical context of this school, the head teacher and her leadership team have pursued a "strong local connection model" in which the school is deeply

immersed in its' immediate and extended community which play a unique ownership and support role that has over the years propelled the school to great achievements.

Village peasantry activities in the school communities

Starting from within the school, a strong "family" connection can be sensed from how the head teacher, teachers and pupils relate with each other – a very friendly and interactive atmosphere exists between and among these three key school-level players. Through arranging and conducting internal school-based improvement initiatives such as subject-level joint scheming and lesson planning, and targeted training sessions to address specific pedagogical needs, the head teacher guides and supports teachers to deliver quality instruction. Pupils too are shown support, love and care by their teachers through such practices as marking and correcting all their work, sitting them in groups to facilitate ease of interaction and enable the teacher to move around the class offering guidance to them in their groups, and providing safe storage cases where scholastic materials for children of lower primary classes are safely kept to minimize possibilities of their getting lost. In her additional role as a subject teacher, the head teacher consistently demonstrates exemplary

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performance for the other teachers to emulate – she keeps time, never misses any of her classes and strives to ensure her subject is one of the best performed subjects in the national primary leaving examinations (PLEs).

The strong internal connection explained above is supplemented by an equally strong connection between the school and other critical players in the local community. On a termly basis, parents are invited to school to engage with the respective teachers of their children in discussing the learning progress achieved by their children in a highly personalized setup between the parent, teacher and child. This is further reinforced by teacher visits to the families of the children they teach to appreciate the environment in which they live in their homes and advise parents on how they can help their children's efforts to learn during the time they are at home. In this school, end of term reports are picked jointly by both the pupil and their parent, thereby presenting a further opportunity to interact in a way that strengthens the connection and network between parents and their children's teachers.

The school also maintains very close relations with the local council leadership who play a key role of ensuring children are prevented from indulging in child labour activities such as sugar cane harvesting, stone quarrying and fishing instead of attending school. On issues relating to children's moral uprightness and discipline, the school has built strong connections with the religious bodies neighbouring the school. Religious leaders are regularly invited to speak to the children while at school, and also the school maintains children's attendance records at the nearby worship places to track children's attendances there. This school also maintains close contacts with its' old students, especially those who have gone on to become prominent personalities. These alumni are regularly invited back to give inspirational talks to the current children so the children can grow up looking up to their seniors – role model effect.

The one most important connection that facilitates the overall success of all the others discussed above is the one between the school and its governing bodies – the School Management Committee (SMC) and Parents Teachers Association (PTA). At this school all critical initiatives to be undertaken for the good of the school are first shared and discussed, and then planned and implemented with full involvement and support of the SMC and PTA. By working with the SMC and PTA, the school easily convinced the parents to contribute towards provision of lunch for the children, to support the establishment of a mini-boarding section for candidate children as they

prepare for final examinations, to establish good working relations with the district education office, and to reach out and learn from other top performing schools in the district. In addition to the other official roles of the SMC as defined by law, this SMC subdivided itself into three sub-committees each tasked with direct responsibility of overseeing a particular thematic area – academics, discipline and examinations. This in-depth involvement of the SMC in key areas for children's learning attainment provides a real incentive for all to achieve excellence.

3.2 SCHOOL B: A peri-urban day school strongly influenced by the foundation body.

This school is built on a small piece of land donated by the foundation body and located at the outskirts of a major town. The current head teacher has been at the school for the last eight years, and has been quite instrumental in turning around the school's fortunes, since it was historically not known for registering great learning achievements for its' children. The school has an enrolment of 906 pupils with a teacher population of 18.

Co-curricular activities

Started mainly as a school for nurturing local children in the dominant Islamic faith and teaching the formal education curriculum, the involvement of the foundation body has been a major feature of this school. For this reason, previous head teachers who had sought to detach the school from the strong connections to the Islamic faith also found it pretty hard to achieve academic success

since they usually ended up colliding with the SMC which has a significant number of members representing the foundation body.

On taking over the leadership of the school, the current head teacher quickly appreciated this dynamic and decided to adopt a model that would harmonise the interests of both the foundation body and the parents. She understood that in order to successfully address the challenges the school was facing – lack of feeding for children, understaffing, uncommitted teachers, and low parental engagement with the school – she needed to figure out how to make the SMC and PTA work together to benefit children's learning. By cultivating a close and cordial working relationship with the foundation body, she managed to convince the SMC and PTA to work together as one team. This helped significantly in ensuring that the school could agree on specific initiatives to undertake and to promote their actual implementation. Through this collaborative team approach that has included all key players, the local community has become highly involved in the life of the school and there are high levels of trust between the community and the school. Furthermore, the school runs a functional school feeding program, conducts remedial lessons for all classes, introduced a mini-boarding section for candidates, and teachers conduct joint scheming and lesson planning. Although the school lacks sufficient land that would be invaluable in enabling it to fully develop children's talents through various co-curricular activities, the school competes favourably with other top sports performing schools in the district. This is thought to be the result of the high levels of involvement of teachers and parents in the children's co-curricular activities and the cooperation between the school and neighbouring schools which are always willing to allow the school to use their sports grounds for their co-curricular activities.

Teachers appreciated their head teacher's management strategies, practices and behaviours which have enabled the school to reach its established staff ceiling, establishment of class meeting days and other informal interactions that have ushered in a cordial friendly working relationship with SMC, PTA, teachers, parents, the community and pupils.

3.3 SCHOOL C: An old rural and historically top performing school with strong direction and involvement of the foundation body.
Established in 1930, this is an old Catholic-founded rural primary school. With a total enrolment of 1039 children, 13 teachers and five classroom blocks this school is extremely under-resourced. The current head teacher has been in the school for three years, and is quick to emphasize her

gratitude to her predecessors. She notes that they made her job easy by establishing and maintaining an exemplary performance record for the school over the years passed.

The head teacher reserved her greatest praise however for the foundation body which, unlike in other schools, has for a long time exercised a great stake in the school – as is exemplified by the fact the parish priest doubles as the chairman of the School Management Committee and also heads the local parish academic committee.
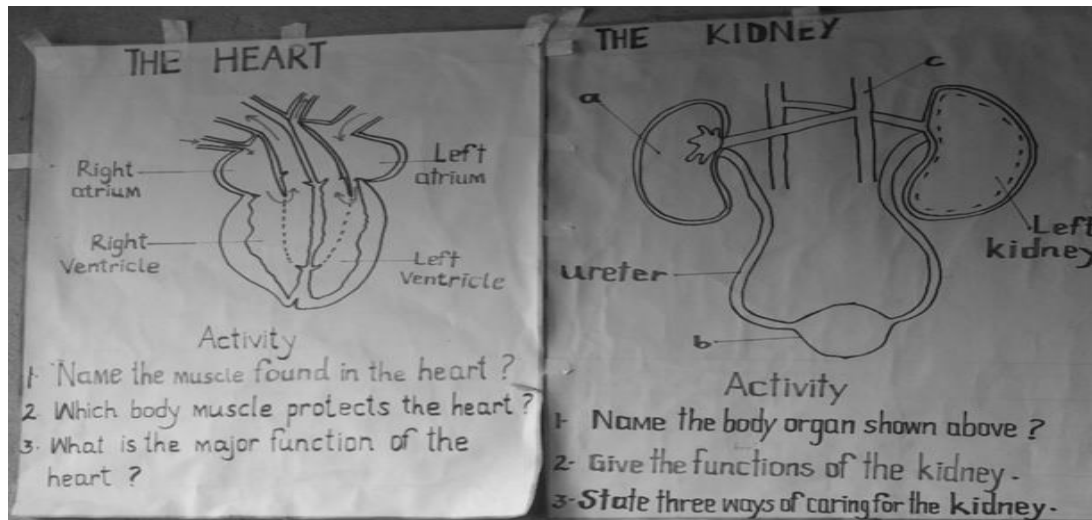
Classroom display

The story of this school is centred on the pivotal role the foundation body has played in transforming and keeping the school among the top performing schools in the district, never mind the extremely constrained resource environment it operates in. Indeed, the parish priest is leading efforts to ensure the school is granted "modal school" status for other neighbouring schools to emulate its' unique lessons. Even more importantly, this school provides a unique case study of how a school can continue to achieve great performances transcending a specific head teacher when a key school administrator gets transferred or retires. Because the foundation body has maintained an ownership grip on the school for such a long time, head teachers seem to fit in an existing working system that remains fully functional regardless of who actually occupies the position of head teacher. To achieve this, the school has over the years run a collaborative model that ensures the SMC and PTA proactively co-operate as relates to all school initiatives for the overall benefit of the school and to promote children's learning. For example, the "modal school" concept was first agreed upon by the SMC and PTA and a comprehensive plan of how to effect it

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discussed and agreed before implementation. They agreed to begin by experimenting with a modal stream in one year, and then on to a modal class in the next year and finally the modal school as a whole. Since many of such and other school-improvement initiatives require that the parents make some contributions (financial or otherwise), obtaining the full collaboration of the PTA has been key in assuring success of the various school initiatives – which have included provision of meals to children, participating in district-level assessment programs, conducting remedial lessons to review areas of particular difficulty for the children, etc. The use of this highly collaborative model, with full backing and active support of the parish priest in his dual capacities as priest and SMC chairman, has ensured parents and the local community feel valued as key players in the school, and fostered a high sense of local ownership of the school.

A particularly successful intervention in this school has been the "family school initiative". Under this initiative, each pupil is assigned to a specific teacher who acts as "the guardian parent" for this child while at school. This school-based guardian parent performs the responsibilities of the biological parent while the child is at school thereby fostering a family environment at school. This has allowed children to confide in their teachers regarding their academic and other life challenges, and thus obtaining counselling and other needed support and understanding. These teachers do everything they can to help the children overcome the difficulties they are facing especially those that are likely to affect their learning, including engaging with their biological parents where need be. This has greatly improved the teacher-pupil relationship and brought parents even closer to the schools.

Both the head teacher and her deputy lead by good example for other teachers to follow. Examples include such aspects as being available at school and in class teaching, conducting routine support supervision of teachers to make sure that teaching in all classes goes on smoothly, being sensitive to and creating an inclusive learning environment for children with learning difficulties, sharing challenges encountered with other teachers and jointly devising solutions, reaching out to parents of children who are absent from class and sharing this experience with the other teachers, facilitating sessions for joint scheming and lesson planning involving all teachers during the holidays well ahead of the new school term.

3.4 SCHOOL D: A school with a head teacher who chose to follow in the footsteps of her predecessor.

This is another rural catholic-founded school that has been in existence since 1946 and is fully built on church land. Despite its' previously deprived status, this school currently appears to be more resourced than many neighbouring schools – with a total enrolment of 1054 children, 20 teachers and seven complete classroom blocks. This fact ought to disqualify it from the list of less-resourced but top performing schools. However, there are unique PD lessons to be learned when focusing on its' transition path from a highly resource-deprived school to its current status.

The current head teacher has been at the school for the last three years. In her work, she has drawn great inspiration and guidance from her predecessor, who retired three years ago and still lives a short distance away from the school he rescued from stagnation and is still very proud to associate closely with. The former head teacher held that position for fourteen years (2001 – 2014) until his retirement, a fact that he admits greatly eased his efforts to turn around the school from its' previously poor performer to top performer status in the sub-county.

Meeting SMC members in the school Library

In similar fashion to the story of school C, the foundation body has historically played a key role in this school. Realizing the unique and influential position the foundation body held in the community, the previous head teacher decided to leverage the church's involvement in the school

by ensuring that parents joined hands with the school administrators in order to turn around the school's performance record. Working with the parish priest, the head teacher called for a parent's meeting at which a historical decision was taken to institute a PTA and to clearly define its' roles. Once the PTA was in place, a three-year development plan was discussed and agreed between the school, PTA, SMC and foundation body. This laid the foundation for all future progress and achievements. In this plan, key initiatives were agreed and a mechanism for ensuring their actualization was put in place. Two key objectives were clearly defined in the plan. First, to steadily eliminate the numerous failures at PLE that the school had been registering for a long time. It was agreed that the school would focus more on the children they expected were likely to fail the PLE exams rather than focusing on increasing the number of first grades. In practice, this meant that teachers did not adopt the detrimental practices of focusing their teaching to the top of the class, rather they would aim to ensure the children who are at the tail-end of the class did actually benefit from their teaching.

Second, to improve the infrastructure status of the school by constructing more classroom blocks to ensure no children continued to attend classes in the open air. It was agreed that the foundation body would help the head teacher in this regard by introducing him to some of its' international friends (catholic charity organizations) who could offer some financial aid for constructing more classrooms on the church land. The head teacher made all possible efforts to impress it upon these international friends to partner with him in his efforts to turn around the fortunes of the school. To demonstrate the commitment to improve the school, the head teacher appealed to the parents to make some financial sacrifices that would encourage the international friends to supplement their efforts. He requested for more land from the church which he used for planting food (maize) for the school so that children would have meals at school. In this way, the school successfully wooed the Great Africa Ventures and the Henry van Straubenzee Memorial Fund which contributed about 60% of the current infrastructural progress achieved by the school. This international support did not only stop at constructing classroom blocks, but also supply of text books, provision of seeds for planting, construction of a library block and a boarding section.

All along, the foundation body has maintained a strong grip on the school, mainly ensuring that the school remains accountable for children's learning and in the effective utilization of the support they get from the international friends.

The current head teacher found all these initiatives in place and her main job has been to ensure there is no decline in performance. In order to keep the school on track, she has endeavoured to set a good example in all aspects of her work – including being at school every day and never missing to teach her scheduled classes; actively participating in all class-level progress assessment meetings between parents, children and their class teachers; maintaining strong relationships with all her teachers; etc.

3.5 SCHOOL E: A school which dismissively underrated a native who had been appointed head teacher – leading to major transformations driven by the desire to prove himself in the community.

This is yet another old catholic-founded rural primary school whose top performances in the 1980s used to be a source of pride for the locals. Located in a deep rural setting, the local community is mostly comprised of peasant farmers who clearly have never forgotten the school's glorious past – they still vividly recall the head teacher who presided over those glorious years, and always refer to him as the only person who had ever done anything good in their school. With 975 children enrolled, four classroom blocks and 15 teachers, it is moderately resourced school.

The talk of the community at the time of the inquiry, was that the school had in the last few years, since 2014, managed to finally replace its' 1980s head teacher. However, this commendation of the current head teacher was never achieved easily. When he got promoted from deputy to full head teacher position, the whole school community sneered dismissively to the extent of suggesting that not much was to be expected from just a local boy. Both the teachers and the wider community members expressed contempt at this decision to promote a native to the post of school head teacher and indirectly set out to fail him by refusing to cooperate.

This context presented a serious challenge to the new head teacher, and he fully embraced it and set out to prove himself worthy of the task at hand. In order to alter the negative perceptions that greeted his appointment, the new head teacher embarked on winning the trust and cooperation of key players – teachers, parents, the wider community and the learners themselves. First, he secured the full support of the parish priest, who committed to fully collaborate with him in all his efforts and mobilizing the local community and teachers to join in this new effort to transform their school. To achieve the desired collaboration of the community, the head teacher made a bold pledge to the school community – that he would return the school to its' glorious past by

significantly improving performances in PLE and even better. He asked all the stakeholders to play their part and then hold him to account when the PLE results came.
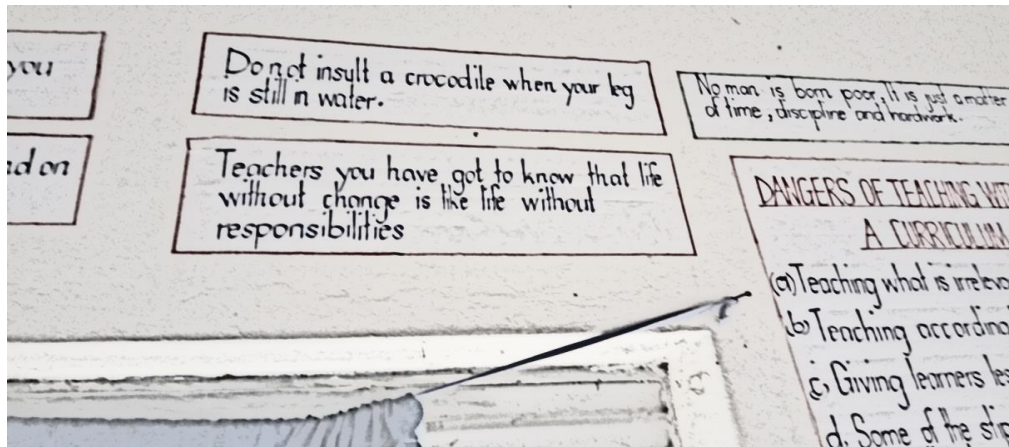
Head teacher's talking office

In those early days, he organized a series of parents' meetings at which he spelt out his vision for the school and requested for their full support of all the initiatives he was introducing. These meetings culminated in the rejuvenation of the Parents Teachers' Association (PTA) that would now work together with the SMC and the school's managers to transform the school. These kinds of meetings became more regular and extended beyond the parents to the wider local community. The head teacher used these meetings to sensitize the community about key issues that were affecting the school's learning performances – including children going hungry when at school, teachers having very low motivation, children lacking instructional and other key scholastic materials, poor staffing situation that was resulting in excessively overcrowded classes, abuse of school land by some neighbouring households that were using it as grazing land, etc.

At every end of term the head teacher issued two circulars – one to the parents and another to the community. Community circulars were read and discussed at community gatherings – such as church services, burial ceremonies, local council meetings, etc. This increasingly began to change the perception of the local community toward the head teacher and the school generally. The community became more responsive in supporting the school initiatives and slowly began to view the head teacher in good light. Leading by good example and introducing pedagogical improvement initiatives, the head teacher embarked on changing the negative perceptions and attitudes of the teachers. Some of the interventions introduced included discussing syllabus

coverage issues with teachers, lunch time open talks with teachers on issues affecting them, strict management of the teacher attendance register by the head teacher himself, fully involving teachers in managing school funds, conducting a scheming week with all teachers before the start of every new school term and recognizing and rewarding teachers' performances during school management meetings.

To crown it all, he introduced and effectively implemented a teacher appraisal system that was used to manage and track teacher performance on a termly and annual basis. The schools' PLE performances improved almost immediately getting even better every subsequent year such that the 2017 results exceeded the 1980s performances, and this further fuelled parental and community support to the school. This is how the talk of the community was transformed from being dismissive to conceding that the school had finally managed to replace the 1980s head teacher. With the benefit of hindsight, it is clear to see that the community was hungry for good performance for their local school and would support a head teacher who was focused on such a goal. However, they remained sceptical about the ability of a native-born head teacher to rise up to this challenge. The head teacher gives great credit to the parish priest who played a key role in convincing the key stakeholders to give him a chance to prove himself capable of transforming the school.

3.6 SCHOOL F: A school whose new head teacher transformed its' historically negative culture to achieve excellence.

Located near Uganda's border with Kenya, this is an under-resourced rural school with a head teacher who set out to alter its' negative history from his first day at the school in 2010. The local community is dominated by cross-border traders, some of whom engage in acts of smuggling goods across the international border. Before the current head teacher joined the school, it had built for itself an unenviable reputation in the community – including being known as a school that cheats exams, diverts school funds, misuses and sells off the food that parents contribute for feeding their children when at school, etc. This negative reputation has contributed much to distancing the community from the school.

After he had studied and understood this history of the school, the head teacher set out to transform it. First, he counselled teachers and pupils to believe that there was no need at all to indulge in any examination malpractices in order to pass national exams. He assured them he was going to fight

the culture of cheating exams at all levels, including in the non-candidate classes. He encouraged teachers to do their best to improve the quality of teaching so that the children would obtain maximum benefit. He also encouraged learners to study hard in order to achieve success and to forget about any possibility of cheating examinations for them during his tenure at the school. Engaging parents on the same issue, the head teacher requested that they back up his initiatives that would promote learning and increase the possibility of their children performing well in the PLEs and subsequent schools they join for secondary education. Some of the initiatives that were introduced included conducting early scheming and planning sessions with teachers before the beginning of the term, conducting remedial classes to clarify difficult concepts to learners, having teachers of lower classes teach in upper classes (especially the candidate class) to consolidate understanding, and requiring all the teachers to have their children attend in the same school they are teaching in.

A classroom of about 200 pupils

Concerning the use of UPE funds, the head teacher introduced an inclusive system in the budgeting and spending processes. This ensured that teachers and the SMC were fully involved in these decisions – ending all allegations of mismanagement of school funds that had characterized the school in previous years. To guarantee that the food contributed by parents for feeding their children would not be diverted or misused, he convinced the PTA to appoint one of the parents to

manage and oversee the food store – this system is still working well, and parents are now confident that the food they contribute is used to feed their children.

The head teacher then embarked on the task of building relations with key stakeholders that would help in the efforts of improving learning in the school. First, meetings with parents became more frequent – both class-level and general meetings. At these meetings, many issues were discussed that were key for improving the school's learning performances. Some specific school quality improvement initiatives were discussed and agreed upon – such as building more classrooms to ease on the overcrowding effects, involving parents in monitoring and assessing teacher performances, dissuading parents from involving their children in cross-border trade activities which were thought to be heavily associated with early dropping out of school, encouraging parents to regularly check their children's books, and facilitating teachers to conduct remedial classes. Second, through the local council meetings the head teacher appealed to the community to support efforts of ensuring all children of school-going age were enrolled in school and actually attended school regularly. To supplement this community effort, he closely monitored the attendance registers maintained at the school and followed up on cases of student absenteeism with the concerned parents and their local leaders.

Finally, the school also developed and maintains strong relations with its' founding body. The founding body is always informed of the initiatives the school undertakes, and in appreciation for the good performances the school has achieved in recent years the church constructed one classroom block for the school. The church is also involved in shaping the children's moral behaviours through the conduct of weekly Friday morning prayers.

3.7 SCHOOL G: New school with key stakeholders driving improvement initiatives.

This is a fairly new rural school that was started through a private collaboration between the church and the local community in 2003. It became a fully government-aided UPE school in 2005. With 1,518 pupils, 13 teachers and only four classroom blocks, this is a heavily under-resourced school attracting children from ultra-poor households. Most of the children joining this school in primary one have not had a chance to attend pre-school before. Only four classes attend lessons in classroom blocks as the other three grades hold classes in the open-air under trees, making their learning highly vulnerable to adverse weather. Over fourteen years down the road, the pioneer head teacher is still at this school and has been central to the transformation the school has undergone since its inception.

The existing high level of cooperation between the school and its' community is a major highlight for this school. The local leaders, the foundation body and the community generally maintain very close relations and have supported the school in various ways to ensure improved learning for the children. In order to encourage parents and schools to put in place arrangements for ensuring children have meals while at school, the sub-county leadership passed a bye-law mandating school feeding in all schools within the sub-county. Even though other schools in the sub-county have struggled to effectively implement this bye-law, this school has an effectively run school feeding program. Parents do contribute actual food to the school and those who cannot contribute actual food do pay the equivalent amount.
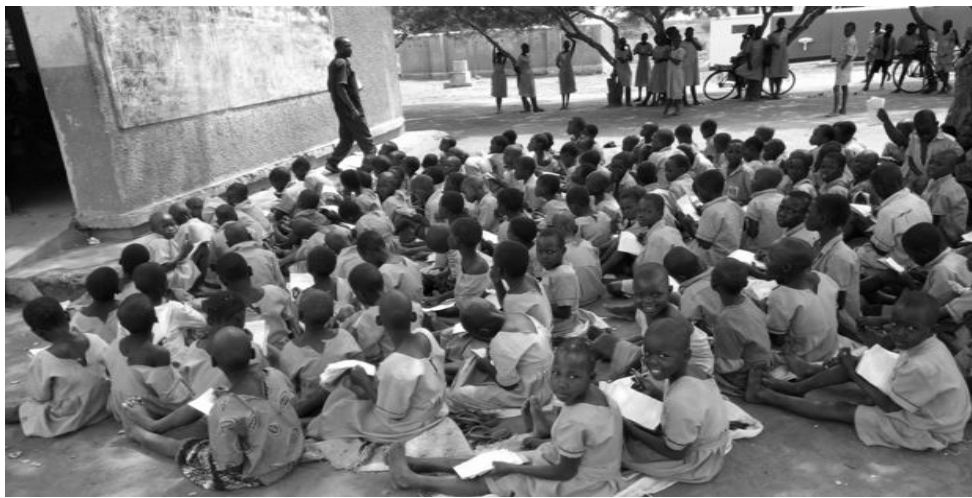
Under a tree but effectively learning

The school has also received tremendous support from the foundation body in form of land to cultivate their own food, further easing the potential difficulties they would have encountered in implementing the sub-county by-law. Over the years as the school has kept growing in student numbers, so has the size of school land that was made available by the church for food cultivation. Also through this close collaboration between the school and the foundation body, the church uses its' position to rally the parents on many aspects related to children's learning at this school. For example, the church continuously speaks out about critical education issues such as promoting girl child education, preventing and discouraging child labour, ensuring children attend school regularly, and discouraging early dropping out of school.

In its' efforts to improve children's English language abilities, the school and parents agreed to use English as the language of instruction in all classes, including lower primary grades. This is a

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clear departure from the official thematic curriculum policy which requires the local language to be used for instruction in the first three lower primary grades. Another departure from official policy at this school relates to the use of a subject-teacher rather than class-teacher system. These subject teachers move with their student cohort across grades thereby allowing the teacher to plan better on how to effectively cover the subject syllabuses and also to be fully accountable for their learning throughout to the last grade. Other school-level initiatives for achieving improved learning at this school include the conducting of continuous assessment and use of such assessment outcomes to guide remedial teaching; and the use of peer-led learning that puts children at the centre of the teaching and learning process and allows them to demonstrate mastery to their peers.

Finally, this school has over the years built a culture of respecting and highly valuing time. In all their endeavours at school, children, teachers, administrators and everyone associated with the school values timeliness and appreciates how important a resource time is. Classes start and end on time, breaks likewise, meals the same, etc. This teaches children to attach a very high value on time and therefore to never waste this resource.

3.8 SCHOOL H: Improving through a collective effort as everyone plays their key role.

This is a church founded school located in a deep rural village and serving a very poor community. Founded in 1956, it is one of the oldest primary schools in the district and attracts a very large student population – currently 1,445 pupils. With just 19 teachers, the school's pupil to teacher ratio of 76 is quite high. The school has about two acres of land it uses to cultivate food for feeding children and teachers when at school. Due to the extensive dry spells experienced this year, there have been no yields from the school farm. This has also been the story of most households in the community, which has made it difficult to feed their children when at school. The physical state of the school is also quite wanting – only five classroom blocks, and the one having the head teacher's office and the candidate class is in a very sorry physical state.

Throughout the six years he has been at this school, the head teacher has used the positive role model approach to promote desired positive teacher behaviours, such as being punctual at school and in class, coming to school regularly without fail, and maintaining positive and friendly relations with the children. Both the head teacher and his deputy continuously monitor the conduct of classes in the school by visiting and moving around classes as lessons are ongoing. This school also implements the school-family initiative through which each teacher is allocated about 45

children to mentor, support, counsel and guide as a guardian parent at school. Through this initiative, children freely share their learning and other private challenges with their guardian teachers who help them get over such hurdles that would have otherwise adversely affected their learning. To ensure the effectiveness of this initiative, teachers are given time off the time table to meet and interact with their "guardian" children as a group. Children are also free to approach their guardian teacher at any time when they need their advice and guidance on any matter affecting them. Generally speaking, in this school it is quite evident that a close relationship exists between teachers and their students.

Block that houses the head teacher's office

Because of the large class sizes, especially in the lower grades, some classes use two teachers at a time with the second teacher focussing on ensuring effective class control. In all classes, it was observed that teachers called each child by their name making them feel valued and thus greatly boosting their confidence. Also, teachers deliberately made extra effort to engage every child in the class. Activities such as rhymes, songs, and exercises for each completed lesson are used by teachers to achieve full engagement of all children in the learning process. When a child gave a correct response to a question, it was always followed by some positive appreciation from the whole class including the teacher. Teachers also made it a point to take a roll call during their lessons, and followed up this by reporting absent children to the head teacher who always follows

up with calls to the respective parents. Like in most other PD schools, this school utilizes continuous assessment as a diagnostic to identify difficult areas that teachers review when conducting remedial lessons.

At this school, class-level meetings between teachers and parents are held every term, and through these meetings, relevant issues affecting children's learning for a specific class are discussed and resolved. Likewise, regular meetings are held involving the SMC, PTA and parents. Issues of critical importance are discussed at these meetings, such as teacher absenteeism, parental roles in helping their children to improve learning, and decisions relating to school initiatives being proposed for implementation. Through such a meeting, a decision was made to use English as the language of instruction, even in lower primary classes – defying the official language of instruction policy recommended by the thematic curriculum. When such critical decisions are made at these meetings, the SMC then discusses them with the school leadership team and they agree on the implementation mechanisms.

In order to improve the quality of instruction in the classroom, this school encourages teachers to focus their efforts on achieving learning gains for the children. Some of the ways in which this is achieved include teachers reporting back to school a week early before the official opening of the term in order to jointly plan lessons and prepare schemes of work, use of locally meaningful and affordable instructional or demonstration materials, involving children in peer-led group work, teachers doing extra research to supplement the textbooks, and conducting continuous assessment or testing for diagnostic purposes through remedial lessons.

Just like in all the other PD schools above, the foundation body is heavily involved in the life of this school. Through persuasion and encouragement, the church continuously appeals to the teachers to do their best to shape the future of the children the community has entrusted to them. Likewise, the church utilizes every public occasion at which they are officiating to also appeal to parents and the community on matters critical to the education of their children, such as providing for their children so they can have lunch when at school.

3.9 SCHOOL I: A deep rural school with strong community ownership and a historical turning point.

Started by the parents of this community in 1985, this school serves a deeply rural and mostly poor community. The majority of the residents in the nearby villages are peasant farmers who mostly

grow sugar canes. With the majority of the children walking on bare feet and unable to afford the official school uniform, it is easy to understand the dire economic situation in their homes. The school has 640 pupils and 11 teachers, putting the average Pupil to Teacher Ratio at 58. Similar to other neighbouring schools in this community, this school greatly suffers from inadequate resources: Lessons for two classes are held in the open air, the teacher staffroom is located under a tree in the open air, lessons for one class are held in the half-roofed block that also doubles as a church, and children struggle immensely to find a seat on the very few old desks in their classrooms – leaving many to seat on the dusty bare floor while they attend lessons.

Although it is now a fully government-owned UPE school, the community and parents still consider this school their own and portray a great sense of responsibility for all that happens here. They demonstrate this ownership in various ways, such as considering it a basic requirement to educate their children in this school and not any other, holding teachers and the head teacher accountable to them on performance matters, and providing accommodation to the head teacher in the nearby vicinity of the school as a means of easing his work so as to effectively manage the school. As a culture at this school, the head teacher makes regular community visits through which he explains issues relating to education generally and those that are specific to the school. Likewise meetings involving the school administrators, teachers and the wider group of stakeholders are held frequently at the school. Finally, there is no friction in relations between the PTA and SMC of this school, as they work as one team to achieve continuous improvements in children's welfare when at school and monitoring teacher and head teacher commitment and overall performance.
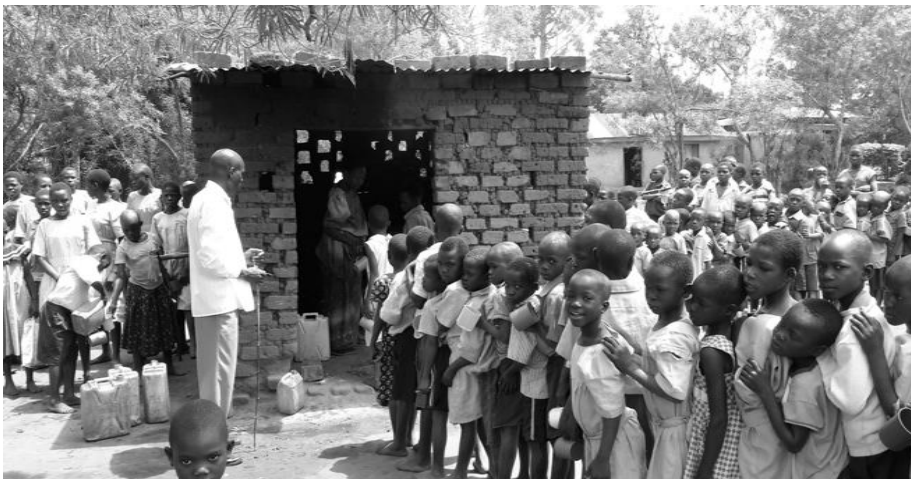
Pupils lining up for lunch at the kitchen

The year 2011 marked a major turning point in the school's performances in Primary Leaving Examinations (PLEs). Whereas PLE performances had not been all that impressive in the preceding years, 2011 was the year when the school had its' worst PLE results ever. This incensed all stakeholders of the school and led to accusations and counter accusations among them as they sought to apportion blame for the bad results. Ultimately, they resolved to abandon the finger pointing game and work together to improve performance. Together, they came up with several strategic proposals including feeding for all pupils, constituting an admissions committee that sieves all applicants and makes all admission decisions, and rewarding best performing pupils and teachers. Then head teacher (now retired) committed himself to lead the school's focused efforts to improve learning. In order to make his task manageable, the head teacher resolved to set a good example that would be emulated by all teachers and to involve key players at every stage and in every decision and activity he undertook to achieve the common school goal. Similar to what we observed in other PD schools, the head teacher of this school is also involved in teaching and uses this opportunity to model what he expects from the other teachers in the school. When he is not teaching, he visits other classrooms to supervise the other teachers and identify any issues that might require his intervention. More importantly, the head teacher has made a deliberate effort to develop and cultivate good relations with the important stakeholders of the school – parents, SMC, PTA, teachers, church and the children. This has made his task lighter and bought the school goodwill in many other spaces. Sure enough, the school immediately turned around the poor performance beginning in 2012 and has since been the envy of the district.

Several teacher-level practices were unearthed from this school: Although teachers do not reside near the school, they arrive very early to take learners through the revision sessions. They revealed that because they do not have any side jobs they are fully committed to their teaching job at this school. In class, teachers use real-life or familiar situations and examples to clarify concepts to learners. They also made it a point to always give homework exercises following each lesson so as to allow the learners reflect and practice on what they have learnt. Children in this school are given story books to read and share with the whole class about what they have read. Relatedly, teachers make it a point to get the text books into the hands of the children for them to use to improve their learning. Outside the classroom, teachers (and the head teacher) participated fully with the children in extracurricular activities – a practice that greatly contributes to developing close relations between learners and their teachers.

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In order to sustain the improvements in learning at the school-level, a few other practices are implemented at this school: All teachers conduct continuous assessment in form of exercises after every lesson and tests at intervals. These assessments are used diagnostically to identify areas that teachers review during remedial sessions. Second, in order to ensure that all children take porridge when at school all parents contribute three kilograms of maize per child per term. Additionally, the school utilizes its spare piece of land to grow maize every season so as to supplement what is contributed by parents. Third, the school has established its own culture regarding syllabus coverage. All teachers aim to cover each year's syllabus by end of second term. This allows them to use the majority of third term for review and this has worked well for this school. Fourth, all teachers with primary school-aged biological children are required to have their children enrolled in this school. This helps with ensuring these teachers give their best effort to teaching in this school and also monitor their fellow teachers to ensure each plays their part effectively. At the time of the study, each class had at least one child of a teacher. Finally, originating from its community roots, this school implements a social contract system between the community/parents and the teachers and head teacher. Whenever a new teacher or head teacher is deployed at this school, they must hold a "face the community" session. At this session, the community spells out and clarifies its expectations and the teacher/head teacher is free to accept or reject them. When they are rejected, then the teacher/head teacher is sent back to the deploying authority for redeployment elsewhere. If the expectations are agreed upon between the two parties, then the teacher/head teacher is allowed to commence their term at this school and must abide by the terms of the social contract or he will be expelled later.

In order to support all the above mostly school-based efforts, the parents and the wider community also played some key roles: First, parents are very responsive in attending and expressing themselves at school and class-level meetings. This has helped greatly in ensuring close and cordial relationships develop between parents and teachers. Parents do their best to make sure children attend school every day and are never diverted into providing cheap child labour in the family's sugarcane farm. Equally important is the role played by the church in shaping the moral character of the learners. On a weekly basis every Wednesday, the church conducts prayers at the school involving both the children and their teachers.

3.10 PD SUBJECT TEACHERS – prioritizing learner needs

In this inquiry, we also studied ten subject-teacher groups from eight non-PD schools to unearth the practices that might explain why these teachers consistently out-performed their peers (subject-level performance) in these otherwise below-average schools. We refer to these teachers as PD teachers – they use their unique strategies and practices to consistently out-perform their peers in the same school without having access to any additional resources that are beyond the reach of the other teachers. While some of the practices we unearthed were similar to those we had found being practiced by teachers in PD schools, a few others were new. We also unearthed some particularly subject-specific (as opposed to generic) practices that were being used by these PD teachers. In the following paragraphs we explain first the new practices, taking care to identify whether they are subject-specific or generic, and then briefly describe the teacher-level practices that are similar to what we had unearthed during the inquiry in PD schools.

In order to facilitate children's usage and mastery of the English language, PD teachers of English encouraged children to retell movie stories they had watched to the rest of the class, in English. They were also found to be the ones that mostly encouraged children to maximize library usage in order to develop a reading culture which would greatly benefit their performances in English language tests and exams. Likewise, organizing and encouraging participation in debates (whether class-level or school-level debates) was found to be a key interest activity for teachers of English language since they believed that debates improved children's self-esteem and their spoken language abilities.

Recognizing that many children fear mathematics as a subject, PD teachers of mathematics go out of their way from the start to portray a positive image of the subject to the children so as to arouse their interest to learn mathematics. These teachers explained that it was critically important for math teachers to assess the competence levels in their class and to try and pace the learning according to these levels. In order to ensure the class were at the same page with the teacher, they gave frequent exercises after every concept taught, rather than teaching two or three concepts and then testing all of them at once. The lessons are therefore well-paced and any challenges are diagnosed and corrected before it gets too late. For effective concept development therefore, PD math teachers give practice exercises immediately after a concept has been taught and only proceed to the next concept when sure the children have mastered the earlier concept. An example is one

of the addition operation in lower primary grades: first, addition "without carrying", and then "with carrying" only after confirming that the children have mastered the former.

PD teachers in non-PD schools were found to be driven by a high sense of desire for the learner to actually benefit from their instruction. They did not just come to class to fulfil a timetable requirement to teach, rather they made their effort count by improving each child's learning experience. These teachers were found to be using practices such as deliberate mixed ability/age grouping of children to facilitate child-level peer-to-peer learning benefits, endeavouring to repeat and clarify difficult concepts just in case some pupils had actually not understood, and always making themselves easily approachable and available for consultations by pupils so as to guide on any difficulties the children might be facing in the subject. Furthermore, some PD teachers ensured their learners received a diversified learning experience on difficult concepts by having other similar-subject teachers come to their class and teach the same concepts from an entirely different perspective. In addition to being highly beneficial for children's learning, this practice is great for developing a team spirit among teachers.

Although PD teachers were selected from poorly performing non-PD schools, we discovered a few similar practices to what was happening with teachers in PD schools. First, PD teachers were very highly regarded and their subjects loved by the learners. Some of the reasons we unearthed for this include their close and friendly relations with the children, their positive and encouraging attitudes towards learners when they failed to grasp concepts as opposed to putting them down, regular and punctual attendance and conduct of their classes, their ability to effectively plan and deliver the syllabus content within the allocated time with ample time for revision, and the use of real-life locally available materials and illustrations to clarify difficult concepts to learners.

Second, PD teachers were also very highly regarded and loved by their fellow teachers, mainly because of the peer support and development roles they played in the school. In one school we found that a certain PD teacher had introduced the lunch time "what went wrong" forum for teachers to share what had not turned out well during their class sessions. Teachers were using this forum to freely discuss and support each other on a variety of aspects, thus making it a practical teacher development forum which continuously improves the quality of instruction and learning in the classroom on a day-to-day basis. Other critical areas where PD teachers were found to be providing critical support to their peers include drawing lesson plans and schemes of work,

conducting research on various aspects of common interest to teachers and sharing with them, and filling-in for absent teachers who have emergencies to deal with.

Finally, PD teachers were using continuous assessment as a tool to diagnose problem areas that they reviewed during remedial classes. Even more, because PD teachers had developed greater subject and pedagogical knowledge drawn from the fact they mostly taught across grades and therefore researched their subject more deeply, they depicted more confidence about their work and brought an extra edge to children's learning experiences.

Theoretically therefore, this evidence potentially suggests that expanding the implementation of the PD teacher practices to the non-PD teachers in these non-PD schools might contribute to improving the overall performances of the schools.

4.0 SIX PD STRATEGIES

The success stories detailed in the preceding section reveal strategies, practices, and behaviours that might explain how the PD schools and teachers achieved and sustained the observed top performances. They include a number of players, some of whom would ordinarily be considered as "unusual suspects" in improving learning.

After deep reflection and synthesis of the stories, six thematic PD strategies emerge. First, in order to bridge existing connection gaps with their local communities, and increase interactions and support between teachers and parents, PD schools were specifically and deliberately involving their local communities in both academic and non-academic aspects of the school. Second, in order to adequately and sustainably deal with teacher commitment issues and the need to support learners to overcome challenges affecting their learning, PD head teachers introduced systematic approaches and initiatives that emphasized some strategic core values critical for improving learning, including promoting effort, demonstrating openness, emphasizing achievement and being empathetic.

Third, to effectively deal with poor subject-level performances and develop teacher responsibility for children's learning achievements, PD schools instituted and implemented specific procedures directly aimed at developing subject mastery by children. Fourth, PD schools recognized and acted

on the critical need to provide ongoing support to teachers to improve their craft by developing a supportive school-based environment that greatly improves the quality of instruction.

Fifth, PD schools are proactively seeking backup from formal structures existing at the school to prevent any possibilities of external forces derailing their focus on improving learning in their schools. Finally, as explained in the previous section PD teachers recognized a need to develop positive relations with their learners. In order to achieve this, they prioritized their learners' needs and worked on establishing positive connections that facilitate the teaching and learning process.

In the following section, we explain the five school-level strategies and elaborate through examples how they are being applied in the schools. We also highlight critical aspects that should be taken into consideration for successful adaptation of each strategy in other school settings.

4.1.1 Strategy one: Community involvement in PD schools

Involvement of the local community in both the academic and non-academic life of the school is a key strategy observed in all the PD schools. At varying degrees of involvement for each of the studied schools, parents, religious leaders, local council leaders, civil servants and other ordinary local community residents are playing key roles in improving learning in primary schools. The nature of involvement stretches from spontaneous actions taken by individuals in the community, such as reporting cases of school-aged children who are found working in sugarcane plantations or stone quarries during school time, to attending and actively participating in scheduled meetings that have been organized at the school or outside the school premises.

One critical feature for the success of this strategy is the active role played by the head teachers in promoting this involvement. PD head teachers actively opened the school doors to parents and went out of their way to engage with and encourage the community to join hands with the school in tackling the education challenges affecting their children's learning efforts. The head teachers fully understood and acknowledged their communities' hunger for excellent performance and their willingness to support their school, but also took it upon themselves to sensitize the communities on how they can make a positive contribution to learning. With such a conducive and welcoming school environment, parents utilized these opportunities to go to the schools and discuss their children's education issues with the head teacher and relevant class teachers through both self-initiated visits and regularly scheduled class-level or general parents' meetings.

By developing close relations with the community and with full support of the parents, most of the PD schools have managed to put in place feeding arrangements for the children to have lunch at school. Furthermore, parents are keen to play their support roles at home, such as providing the necessary scholastic materials and ensuring children attend school regularly. Some PD schools require parents to come with their children to school on the last day of the term to jointly pick up the child's end-of-term report card. Through this arrangement, parents can speak one-on-one and network with their child's teachers and be able to welcome them into their homes later to get a feel of the child's home environment and have more closer interactions aimed at improving the child's opportunities to learn. In this way, this strategy bridges the gap existing between homes (parents) and the school (teachers) thereby helping parents to get guidance on how they can effectively play their roles and help their children achieve better.

School foundation bodies were also found to be heavily involved in PD schools providing not only moral nurturing of the children, but also contributing more directly to improving learning through provision of land for the school to grow food crops for the children to have a meal at school, and involving children in reading the Bible/Quran during prayer services to improve their language and reading skills and to nurture more self-confident children. In some schools, the head teachers heavily relied on the goodwill of the foundation body toward the school and used its' influential position in the community to mobilize and speak to parents and teachers on critical education issues affecting their children's education, such as promotion of girl-child education in areas where child marriages are rampant, appealing to parents to contribute towards feeding for their children when at school, and encouraging teachers to be more diligent and to eliminate absenteeism.

As noted earlier, community involvement in the life of the school plays a key role of bringing the school closer to the community by establishing strong relations between teachers and parents. These relations are thought to be a key means of fostering teacher support by parents and commitment to their teaching tasks. In promoting this strategy, it is argued that care should be taken to prevent this involvement being seen, mainly by teachers, as a mission to find faults in their work. Furthermore, unscheduled interactions with parents should be structured in such a way that they do not lead to disruption of the ongoing school/class programmes.

4.1.2 Strategy two: Promoting effort, openness and achievement in PD schools

The above stories also reveal systematic efforts to introduce and embed unique cultures and values into schools that promote achievement, such as the culture of exerting effort by teachers and learners, managing in a transparent manner and creating a school environment that positively nurtures learning for all children. Again, a key feature for the success of this strategy is the complete devotion and commitment of the head teacher to live and promote such values in the school. Head teachers of all the study schools were found to lead by "setting a good example" both as administrators and teachers – a situation that can be best captured in the concepts of administrative and pedagogical leadership (Male & Palaiologou, 2015). For example, although head teachers are not mandatorily required to teach, all head teachers in the study schools were involved in teaching at least one subject and class, usually the candidate class. Also, they used soft persuasive appeal mechanisms to intrinsically motivate their teachers to give their best.

In describing their unique qualities, teachers in the study schools referred to their head teachers as friendly, understanding, patient, considerate, punctual and hard working. This positive peer leadership exhibited by the head teachers not only creates a strong moral imperative for the other teachers to follow their example, but also reduces the need for close supervision and frequent disciplinary actions. Similar descriptions were used by parents and ordinary community members who referred to the teachers and head teacher as caring and understanding of both their realities and need for their children to get a good education. The positive energy in the schools was rubbing-off to the community and they felt encouraged to make whatever little contribution they could to improve learning at their local school.

Direct involvement of teachers in planning, budgeting and actual spending of UPE grants was another prominent practice observed in PD schools. This high level of transparency in financial management activities at the school was thought to be critical in preventing conflicts that might derail the school from its' primary focus on learning. Finally, some PD schools established structures that mimic a family environment in the school, through which teachers are assigned children to mentor, support, guide and counsel as "guardian teachers". These schools realized that children face challenges that fall outside the norm of the classroom but with potentially significant impacts/consequences on their learning. Guardian teachers can listen and guide the children, and for some unique cases, take up and resolve the issues with the children's parents.

Although transparent use of capitation grants is critical, schools adapting this practice must guard against indecision arising from conflicting priorities being expressed by key players. If such conflicts appear, they could hinder progress in the school as spending decisions might take very long to be agreed. Second, the practice of fostering a family environment in the school is prone to abuse, especially as children may be taken advantage of in different ways. Also, the possibility that parents might misunderstand the intentions of instituting such an initiative in the school is real.

4.1.3 Strategy three: Children achieving mastery in PD schools

Another key thematic revelation from the above school stories is the realization of need to help learners achieve mastery. To realize this, PD schools have introduced practices targeting improvement of the teaching/learning process, development of learners' capabilities to query and discover, and influencing parenting decisions that might impact children's learning outside the school and classroom environment.

A highly prominent practice is that of teachers moving with a particular cohort of learners as they progress up the grades. Depending on the school, this practice took on a number of forms: a class teacher moving with their student cohort throughout the three lower primary grades; a set of teachers moving with their student cohort in grades four and five, or grades six and seven, or all the upper primary grades four to seven; and a subject teacher moving with their student cohort from primary four to seven. This practice is not only likely to lead to improved teacher-learner relationships but also increases the likelihood that teachers will design and implement effective learning remedies for all their students. When teachers have a longer exposure time with a particular group of students, they are likely to understand better how to efficiently engage them in the learning process, which will likely translate into more effective planning for and coverage of the overall syllabus content.

Additionally, teachers that move with their students as they progress through grades will face extra pressure to do research and adapt their teaching to the appropriate grade-level in which the children are currently enrolled. This pressure therefore, not only improves the teacher's capabilities, it also makes them more responsible and accountable for the actual learning achieved since they will not be able to blame future failures on other teachers – teachers develop strong attachment to their group of students and go out of their way to help them learn and achieve top performances in the

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national exams. On a separate note, this practice removes the monotony associated with teaching the same content to the same grade for many years which would, otherwise, effectively kill the teacher's initiative, desire and drive to grow in the profession.

Other practices being used to improve the teaching/learning process include using teachers of lower primary grades to conduct review lessons in upper primary classes thereby helping children revise what they learnt during the foundational years; using continuous assessment for formative purposes – to spot problem areas and guide remedial teaching sessions, not as a mere testing routine; teachers making full use of the school surroundings as a source of low-cost instructional materials to aid children's comprehension[3]; and requiring all teachers to enroll their primary school-going children in the same school where they teach – as a means to secure their commitment and effort.

To promote team work and develop other critical life skills and values among learners – such as capabilities to query and discover – teachers in PD schools systematically group learners and assign them group tasks. Through this practice, children learn to value their peers and discover their own capabilities to perform in a group setting, engage with, discover and create knowledge. This practice allows children to discover themselves and to be responsible for owning and transforming their learning experiences. Furthermore children learn to share their ideas, develop friendships, empathise, make decisions, support and respect each other's points of view. Finally, PD schools have realized that left to their own means parents will likely sabotage their children's efforts to learn – for example, through giving children a lot of work while at home which will frustrate their ability to do homework, revise their books, or even concentrate and focus when in class. Therefore, teachers are reaching out to sensitize and guide parents on how best to structure the home environment to facilitate rather than hinder their children's education.

To successfully replicate these practices in other school settings, a number of caveats warrant mentioning. First, teachers moving with a cohort of learners must guard against the temptation to single out, label and ignore slow learners as incompetent – which might result in the detrimental practice of teaching to the top of the class. Second, because most schools tend to assign their least qualified teachers to teach the lower primary grades, these teachers may lack the required

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[3] Examples include visiting nearby physical features, making improvised local instructional materials, conducting outdoor learning, talking walls and compounds, and maintaining school gardens.

confidence to teach in upper primary classes. In order for this practice to yield the desired results therefore, head teachers must take care to ensure lower primary teachers' pedagogical competences are continuously improved through in-service professional development training sessions. On the practice of giving group assignments to children, care must be taken to ensure teachers do not substitute student group work for their role of teaching – which would amount to teachers transferring their teaching responsibilities to the learners.

4.1.4 Strategy four: Teacher support and motivation in PD schools

The centrality of the teacher in facilitating better learning achievements also emerges as a unique theme in the above stories. It is clear that all key players in these PD school communities appreciate the need for teachers to be supported and motivated to perform and achieve improved learning for the children. The school-level support given to teachers in the study schools is predominantly focused on achieving continuous improvement in the quality of instruction in the classroom. These schools recognize that teachers come from different backgrounds and these affect the quality of teaching they are able to deliver. The critical background aspects these schools are responding to include the original motivations that attracted the teachers into the profession, the foundational stock of knowledge of relevant content they accumulated during their formative education years, the quality of teacher training programs they have had and how that plays out in terms of their practice and pedagogical skills in teaching, the experiences they have accumulated over the years in the profession, and the interactional effects of their individual or group values and attitudes on approaches to work.

Two unique practices were identified in the study schools. First, locally-organized and regularly held peer-led teacher professional development sessions at the school targeted at improving specific areas of need – including mostly preparation of comprehensive schemes of work and lesson plans, conducting assessments, handling teacher-learner relations, classroom management aspects, and teacher work ethics. Second, teacher mentoring and coaching through conducting of structured and comprehensive peer-led support supervision as a means of improving their classroom instructional practices. The study schools attached great importance to these practices as they have also acted as main avenues through which they have managed to foster good teacher relations as they learn and come to trust each other and work as one team – a feature that greatly helps in aligning the school to achieve its' overarching goal of improving learning.

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To successfully replicate the practice of conducting need-based teacher professional development sessions at the school requires the school to have teachers skilled in each of the identified need areas – a nontrivial requirement in some schools. It is the role of the school head teachers therefore, to identify and hone the unique abilities of all their teachers with this view of enabling all teachers to learn from all their internal stock of teaching abilities. Regarding peer-led support supervision, head teachers intending to replicate this practice in their school must guard against the enormous temptation to conduct supervision alone. Teachers need to be guided on how to overcome their areas of weakness, or else they might resent the supervision since it usually will degenerate into an exercise in fault finding. Therefore, careful integration of professional knowledge on supervision skills, subject knowledge, attitudes and willingness to guide, coach and mentor on the part of the head teacher or peer-supervisor are of great consequence for the successful replication of this practice.

On teacher motivation, the PD stories reveal simple and affordable teacher performance incentive practices[4]. PD schools are rewarding good performance of teachers through open recognition in the presence of all the key players at the school – SMC, PTA, students and fellow teachers. In some cases, head teachers go out of their way to buy and give some symbolic appreciation items to these teachers. This study discovered that the prevailing thinking behind teacher motivation in PD schools is that this is an intrinsic thing which may not be easily manipulated through extrinsic performance reward mechanisms. Therefore, schools use these simple recognition and reward mechanisms to appeal to or stimulate teachers' existing internal motivations to teach more effectively. Extra care is needed therefore in replicating these teacher motivation practices of rewarding good performers, especially where material rewards are involved. Although these rewards are mostly nominal, teachers take them very seriously and therefore it is critically important to ensure the mechanism of identifying teachers to be rewarded is fair and consistent. This too is a nontrivial requirement in many schools, and if the mechanism is seen as subjective it can lead to creation of rifts amongst the teachers which will likely erode their intrinsic motivation.

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[4] These mostly include the giving of simple gifts and official appreciation letters from the head teacher, the sub-county or district education office.

4.1.5 Strategy five: Proactive involvement of SMCs and PTAs in PD schools

Although SMCs and PTAs exist in all primary schools in Uganda, a key challenge faced by many schools relates to the effectiveness with which these structures play their roles and how, in practice, they relate with other key players at the school and in the community. While the overall management of primary schools in Uganda is the responsibility of the SMC (GoU MoES, 2008), school head teachers are the key players entrusted with the day-to-day running of schools. It is clear from the stories above that head teachers who develop and maintain strong relations with their SMC and PTA find it easier and convenient to effectively run the day-to-day operations of the school and successfully introduce initiatives that improve learning largely due to the proactive involvement of these two structures in the school.

Two practices exemplify the proactive involvement of the SMC and PTA in PD schools: In order to shield themselves from political pressure and possible interference in the operations of the school by local politicians, head teachers seek backing from the SMC and PTA by having them on-board early when planning to introduce initiatives to improve learning. A good and most common example is the introduction of feeding programs for children when they are at school. Since head teachers must seek support from parents in order to successfully introduce and run such a program, this opens up the possibility that local politicians will intervene and block the head teacher from asking parents to contribute resources toward such an arrangement – usually arguing deceptively that UPE means free education in all respects. In order to avoid this interference and possible confrontation, the SMC and PTA play the lead role in mobilizing and sensitizing parents on why such initiatives are needed and must be supported by all parents. With this kind of initiative and support, the chances that the politicians will seek to play cheap politics with such critical education matters are greatly reduced, since now they will likely appear to be opposing initiatives that have been originated and agreed by the parents themselves. This shield that the SMCs and PTAs provide to the school against negative external forces goes a long way in strengthening the authority and confidence of the head teacher as the executive head of the school.

A second practice is that of the SMC and PTA being directly involved in supervising and evaluating teachers and the school's general performances in all relevant respects – teaching, learning, welfare and co-curricular activities. Issues of teacher absenteeism from school or class are brought to the attention of the SMC and PTA, and such teachers are required to defend

themselves before these bodies. This has greatly bridged the accountability gap that is prominent in many schools where these structures are not playing such roles – usually these issues are left to the head teacher to resolve. The SMC and PTA in PD schools are fully involved in supervising and evaluating school and teacher-level performances. The involvement of these bodies in supervising schools has also resulted in schools realizing and responding to the need to conduct co-curricular activities.

Replicating the involvement of the SMC and PTA in the school's efforts to improve learning is also not that straightforward. Many times, members of these committees are not well sensitized about their roles and limits in dealing with the school. As such, some may harbor intentions that are non-beneficial to the school's learning agenda – such may include the desire to reap monitory benefits from their involvement in the school, intentions to fight or fail the head teacher or some teacher(s), etc. The fear of such potentially negative aspects of involving SMCs and PTAs in the active running of the school usually leads, in many schools, to teachers and head teachers frustrating the relations with these committees.

5.0 INSIGHTS FROM THE VALIDATION SESSIONS

Two sessions were held to reflect on and validate the strategies and practices discussed above[5]. Since the school-level participants at these sessions included both PD and non-PD school communities, the meetings aimed to achieve two critical objectives – validation and commitment to adapt the unearthed PD strategies and practices. All the PD strategies and practices discussed above were validated (some with more clarifications relating to "the how" of the actual practice) and schools made commitments to adapt those practices they found most compelling and relevant for their context. Five practices were selected as most appealing, for which commitments were made for adaptation by the participating schools – joint picking of end-of-term report cards by parents and their children, implementation of the guardian teacher initiative, holding regular peer-led and locally-organized teacher development sessions at the school, lower primary teachers conducting lessons in upper primary classes, and involving children in group-based learning activities or tasks.

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[5] Refer to the separate activity report of the proceedings at these validation sessions.

During the validation sessions, some general insights were shared with intent to either further enrich the PD practices or to facilitate more effective adaptation and replication of the same in other school settings. First, many of the unearthed PD practices were not entirely new to the participating schools, including the non-PD schools. What became clear though, was that the degrees to which the schools or teachers had achieved success with these practices differed greatly. This suggests that it is not enough to know about the PD practice and attempt to implement it, but to effectively adapt it to the specific context of the school is critical for achieving the goal of improved learning.

Second, it was observed that the school head teacher played a critical role in the success of every PD practice. In order to assure sustainability of these good practices in the school after such a head teacher has left, it is critical to institutionalize them, so they become part of the cultural set-up of the school and its' community. To achieve this, extensive sensitization is needed for all key players in the school and its' wider community, involving the foundation body, SMC and PTA, parents, teachers and pupils, the general local community and its' leadership.

6.0 EDUCATION POLICIES AND SOME OF THE DISCOVERED PD PRACTICES

This study also unearthed some practices that conflict with existing education policy positions in Uganda. Schools, in their desire to improve their performances in the very high-stakes end-of-primary examinations were resolute in their decisions to go against official policy on a number of aspects. First, we found that several schools did not implement the class teacher system. Teachers, especially of upper primary grades, were instead organized in subject teams and could therefore teach their speciality subject across grades. Schools justified this decision by explaining that it was harder to get a teacher to develop the desired content knowledge and pedagogical expertise necessary for all the subjects taught in any given class – especially the upper primary grades. They argued on the contrary, that teaching the same subject across classes meant that subject teachers developed deeper knowledge of their subject area and this was reflected through superior quality instructional delivery in the classroom.

Second, we found that some PD schools were holding back children in the penultimate grade forcing them to repeat the class (primary six) on grounds that they were not likely to perform well in the national-level primary leaving exams (PLEs). This contravenes the existing primary education policy of "automatic promotion" and may create a false impression of a top performing

school when in fact it is just average. Other available evidence has associated this practice with increasing the levels of dropout from school before completing the primary cycle (Kabay, 2016).

Third, some PD schools were not implementing the local language of instruction (LoI) requirement in lower primary grades (P1-P3). The main reason for this deviation from the policy requirement relates to the widely-held view by parents that instructing children in local language in lower primary grades put them at great disadvantage in the PLEs since most schools in cities were using English as the LoI throughout all primary classes.

Finally, we discovered that one of the schools selected as PD had for a long time managed to achieve good PLE results by attracting children from neighbouring private schools who continue to use it only as a UNEB examination centre for purposes of sitting the national end-of-cycle exams. Although this practice does not contradict any existing policy or regulation, the national-level PLE performance results for this school do not reflect a true picture of the quality of learning taking place in this school. In fact, the inquiry discovered that parents of this school had grown disgruntled about the fate of their school, which in their eyes, was in steep decline. We dropped this school from the list of PD schools covered in this report.

In conclusion, it is clear that the use of the very high-stakes PLEs as a basis for choosing PD schools is not entirely free of bias – as has been shown in the above discussion. In the prevailing circumstances, however, PLE results offered the only available school-based and widely acceptable option. Future PD studies will need to devise means of addressing this non-trivial issue. The findings of this inquiry therefore, must be interpreted carefully with this issue in mind.

7.0 CONCLUSION

The positive deviance (PD) approach to solving intractable social problems is premised on the observation that in every community, there exist ordinary people or institutions that have figured out better, sometimes extraordinary solutions than their neighbors to prevailing problems, without having access to extra resources (Pascale, Sternin & Sternin, 2010; Tufts University, 2010). They are the Positive Deviants - PDs. This ethnographic study was conducted in ten districts of Eastern Uganda and involved eighteen school communities. Through this inquiry, we set out to answer three questions: First, are there communities, schools and teachers that consistently achieve better learning outcomes for their children than their peers in the generally poorly performing districts?

Second, what strategies, practices and behaviours are these PDs using that might explain their success? Finally, how can the unearthed PD strategies and behaviours be best replicated in the neighbouring communities and schools?

To answer the three questions above, we identified ten consistently lowly-achieving districts by using both Twaweza's household-based Uwezo data on basic literacy and numeracy outcomes for Ugandan children aged between six and sixteen years, and the school-level performance data from the end-of-primary national examinations, the PLEs. A physical mapping process involving key players at local and district level was conducted to select the final list of schools to be involved in the inquiry. Although the use of the high-stakes PLE performance data introduces some unwanted selection biases – many children drop out of school before completing the final grade, some schools sieve children in upper primary grades in a bid to improve their PLE results, some parents (schools?) conduct special coaching for candidate students who are preparing to sit for the PLEs – these results are currently the only available school-based and nationally accepted measures of a school's overall performance.

The mapping process identified ten PD schools and eight PD-subject schools. The inquiry unearthed six overall PD strategies – teachers that prioritized and attended to learner's needs, communities and parents that are actively involved in their children's learning processes, head teachers that took the trouble to introduce and embed into their schools cultures and values that promote learning, schools that recognized the need and took steps to support both teachers and learners to overcome hurdles affecting their efforts, and schools that deliberately utilized existing formal institutions to back up their efforts and initiatives against potential interference. It is important to note that these PD strategies and the respective practices and behaviours embedded therein do not represent causal explanations of the observed performances in these schools – this study was never designed to achieve such a goal. In order to establish the causal impacts of these PD strategies, a separate randomized field trial on any or all of the discovered strategies will have to be designed, conducted and evaluated[6]. Validation sessions were conducted and two key insights on the potential for successful replication gleaned therefrom. First, the role of the school head teachers is critical for successful replication. There is need to secure their unconditional

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[6] Plans are currently underway to design, conduct and evaluate such a study involving schools from Busoga sub-region in Eastern Uganda.

commitment and support before introducing any PD strategy or practice for adaptation at the school. Second, when a PD strategy or practice has been successfully adapted it is important to target its' becoming part of the culture of the school. This therefore requires that extensive sensitization of all key players be done to secure their buy-in, understanding and support – key among these are the SMC and PTA, foundation body, parents, teachers, learners and the wider community in which the school exists.

We noted above in section six that some of the PD practices, although positive and highly recommendable (desirable) for adaptation in other schools, directly conflict with the official education policy positions. The PD schools currently implementing these practices gave strong reasons for adapting such practices, that it would be foolhardy to assume those practices are not contributing to improved learning in those schools. This study therefore suggests the need to evaluate the viability of some policy positions and their impacts on learning in schools, in particular the "class teacher" as opposed to "subject teacher" system used in primary schools.

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