

途上国においてポジティブ・ディビアンスは学習を改善できるか—ウガンダ農村部における事前調査結果と新型コロナウイルス感染症の影響への適応

Can Positive Deviance Improve Learning in Developing Countries? Baseline Findings and Adaptations to Counter COVID-19 Effects in Rural Uganda.

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ABSTRACT

発展途上国の多くの子どもたちは小学校に数年間就学するが、基礎的な読解力と計算力を習得することができず、持続可能な開発目標の第4目標の達成が危ぶまれている。混雑した教室と質の低い教授に代表されるように、これらの子どもたちの大多数の学習環境は困難を極めている。しかしながら、類似した学校やコミュニティの環境下においても、こうした困難にもかかわらず一貫してより良い学習成果を上げている子どもたちがいる—これをポジティブ・ディビアンスという。本稿は、近隣の学校のコミュニティに対してポジティブ・ディビアンスの行動様式を再現するランダム化社会実験の実施前に行った、ウガンダ農村部の150校の学校のコミュニティに対するベースライン調査の時点での教育の文脈を描写する。また、新型コロナウイルス感染症の世界的な流行によって起きた学校閉鎖の影響を軽減するために親と学校が行った実践についても論じる。調査の結果から、児童労働と親の無関与がブソガ地域における学校に外部要因として影響を及ぼしていること、教師は学校の質を改善するための教授法についての支

援を求めていることが分かった。その対策として、親と教師は学習を改善するためにより交流を増やし、有効な情報の共有をするという介入の提案を熱心に受け入れた。そして、学校閉鎖にも拘わらず、都市封鎖の間にもいくつかの学校は生徒が学習を継続できるような支援を続けることができた。学校閉鎖に対応するために、親たちは、直接的な学習支援の提供、子どもたちの社会情動的なニーズの優先、子どもたちのその他の実践的なライフスキルの向上への焦点化という3つの主な戦略を取ったことも判明した。

Many children in developing countries enroll in primary school for several years but fail to master the basics of reading and counting, representing a major threat to the achievement of SDG four. For most of these children, the learning environment is extremely difficult – characterized by classroom overcrowding and low-quality instruction. Yet in other similar schools and communities, children are consistently achieving better learning despite the odds – these are Positive Deviants (PDs). This paper describes, at baseline, the education context covering 150 school communities (SCs) in rural Uganda, prior to implementing a randomized social experiment that replicates behaviors of the PDs in neighboring SCs. We also describe the practices used by some parents and schools to mitigate the effects of school closures occasioned by the outbreak of the COVID-19 pandemic. We find that child labor and parental disengagement constitute the most pressing external challenges affecting schools in Busoga sub-region, and teachers expressed need for regular pedagogical support to improve instructional quality. Both parents and teachers strongly approved the proposal to increase interaction and sharing of actionable information to improve learning. Despite the closures, some schools reached out to their students providing support to keep them engaged with learning during the lockdown. To cope with school closures, parents adapted three main strategies – providing direct academic support, prioritizing children’s social-emotional needs, and focusing on development of children’s other practical life skills.

1. Introduction

The learning crisis affecting many developing countries remains a big challenge to their efforts to achieve SDG four by 2030. From their early days in school, many children require more than four years to acquire basic proficiency in reading and counting, leading to adverse knock-on effects on subsequent learning and future life opportunities (UNESCO, 2013; World Bank Group, 2018; Twaweza, 2019). Since 2010, Uwezo assessments of basic literacy and numeracy in East Africa have shown majority of grade three children are incompetent at grade-two tasks (Uwezo, 2017). These early learning setbacks persist and precipitate dropping out early.

Recent high-impact studies suggest a multi-

pronged approach to address this crisis, with interventions combining two or more levels – child, household, classroom, school, and system (Conn, 2014; Snilstveit et al. 2015). High-impact interventions include teacher quality improvement programs, community engagement and monitoring, and providing remedial learning.

In many developing countries however, the learning environment in schools is typified by overcrowded classes, uninterested teachers, and constrained budgets (Bashir, et al., 2018). What options then are available for these countries to sustainably improve education without access to large amounts of extra resources?

Positive Deviance (PD) is an asset-based approach to solving social problems. It begins from the observation that communities are already fully

endowed with capabilities to solve their social problems and need not always find extra resources for workable solutions to emerge (Pascale, Sternin & Sternin, 2010; Tufts University, 2010). PDs exist in every community. These are individuals or organizations that have figured out and successfully applied locally-relevant solutions to the problems affecting them without having access to extra resources. A recent inquiry covering PD schools in Eastern Uganda unearthed several PD practices on parental involvement and teacher support (Twaweza, 2019).

This paper describes findings from a baseline survey conducted in October and November 2019 at the start of a randomized field trial that is extending the unearthed PD strategies to other neighboring school communities (SCs) and measuring impacts on learning. Child labor and parental disengagement were cited as the most pressing external challenges faced by schools. Teachers expressed great need for support in key pedagogical areas such as developing instructional materials and handling mixed classes. We also found majority of schools in our sample were running initiatives targeted at addressing various aspects of the learning challenge, including pupil feeding programs, pre-school cohort arrangements, early grade reading programs, remedial classes, and community engagement sessions. Although only one in four parents was found to have above-primary education, most parents expressed confidence in their knowledge of how to support children's learning and reported high levels of engagement with children and the schools. Both teachers and parents expressed strong agreement with the view that sharing of actionable information between them would improve learning. Children's performances in basic literacy and numeracy tests were exceptionally low, with numeracy posting relatively higher competence levels followed by English literacy and then local language literacy.

Only 4% of third grade children achieved full competence in both English literacy and numeracy. Pre-school attendance was found to be strongly associated with higher competence levels, while grade repetition was not.

The global outbreak of the COVID-19 pandemic in early 2020 led to indefinite closures of schools. In Uganda, television and radio-based remote learning programs were rolled-out to keep children engaged with learning while at home. This situation rendered our randomized study unimplementable in the 'physical interaction' mode. We thus adapted a remote engagement strategy through information sharing via radio and mobile phones. The new strategy would mitigate the undesirable effects of COVID19 on children's academic, socio-emotional, and behavioral development while schools remain closed.

We conducted a phone-based survey of parents, teachers and headteachers to discover their actions to support children's continued learning.

2. Methodology

Data was collected at two points – PD baseline survey, October 2019, and phone-based rapid survey, August 2020.

2.1 PD baseline survey

Pre-intervention, we conducted a paper-based survey of 150 SCs. These SCs stemmed from the enumeration areas (EAs) visited during the 2015 Uwezo learning assessment which covered all the 112 districts in Uganda at the time, and identified the most attended primary school in each EA. These schools form the main sampling unit for this study.

At each school, we interviewed the headteacher and all teachers of the three lower primary classes and drew a random sample of thirty pupils from lower primary – ten from each class. We conducted

a head count of all children and teachers present on the day of the school visit. In the community, we interviewed one local council official and visited homes of the thirty sampled children. In each household, the head was interviewed, and assessed all the children aged 6-16 years using the Uwezo 2015 literacy and numeracy test pack.

The implementing NGO partnered with a local community-based organization (CBO) from each district to manage the survey. Following Uwezo's citizen-led model (Uwezo, 2017), each CBO identified and recruited four enumerators from the 30 SCs in each district, bringing the total number of volunteers to 600. Each CBO engaged three community coordinators (CCs), each overseeing survey activities in ten SCs. Training enumerators lasted four days. School visits were conducted over two days and community and household visits also another two days.

2.2 Phone-based rapid survey

In early March 2020, we began piloting the PD intervention in ten SCs – two from each of the five intervention districts¹. By late March, all schools had been closed indefinitely to minimize chances of accelerated transmission of COVID-19. To keep children engaged with learning while at home, the government of Uganda (GoU) introduced remote learning sessions via radio and television and distributed printed academic materials to children for private study. With media reports indicating high incidences of child labor, unwanted pregnancies and forced marriages in Busoga sub-region (Namata, 2020), school closures would likely precipitate a major school dropout problem in our intervention districts. To prevent this, a remote strategy to support parents keep children engaged with learning and lessen the academic, social-emotional, and behavioral side effects of school closures was designed. A rapid phone-based survey was conducted to unearth strategies and

practices being used by some parents and schools in Busoga to keep their children engaged with learning while at home. This data was collected from headteachers, parents and teachers from the ten pilot SCs.

A one-day hands-on training session was conducted, fully managed by the implementing NGO, and the software gadgets for data collection were used during training. Data was collected from 50 parents, 20 teachers and 10 headteachers. Each enumerator made a total of 16 phone calls lasting about 30 minutes each, recorded and uploaded the responses in survey CTO. This data was synthesized into insights that were used to design weekly radio talk shows targeting parents in Busoga sub-region.

3. Findings

We conduct descriptive analyses of key variables at baseline and during the rapid survey, and report the synthesized insights gained.

3.1 Insights from PD baseline data

Table 1 shows descriptive statistics of select variables from the baseline survey, delineated by district. Most headteachers cited child labor as the most critical obstacle to learning improvement in schools, followed by parental disengagement. Close to 70% and more than half of surveyed headteachers cited these two as key impediments to improving learning. To address these challenges, schools are engaging with communities, and running other school-based initiatives. We find 89% of the schools are running education quality improvement innovations, 85% provide lunch to pupils, and 55% run pre-school cohort programs. Headteachers ranked provision of better and actionable information to parents and tackling of teacher motivation and professional support needs as top priority areas for learning improvement.

Table 1

Descriptive statistics for selected variables from the baseline survey dataset

A. School variables (N=150)	All	Districts				
		BGR	IG-BG	KLR	LUU	MYG
<i>Headteachers</i>						
Age	48	47	49	48	48	48
Female	0.25	0.40	0.47	0.13	0.20	0.07
Years teaching	24	23	26	24	24	24
<i>Other details</i>						
Pre-school cohort	0.55	0.57	0.67	0.40	0.73	0.40
Lunch for pupils	0.85	0.57	0.90	0.90	0.93	0.93
Own water source	0.49	0.43	0.77	0.50	0.57	0.20
Education innovations	0.89	0.77	0.97	0.83	1.00	0.87
Pupil-teacher ratio	52	52	47	55	50	58
Pupils present (ratio)	0.72	0.73	0.74	0.71	0.62	0.78
Teachers present (ratio)	0.84	0.85	0.83	0.85	0.78	0.87
Child labor*	103	19	23	21	20	20
Disengaged parents	81	12	10	20	21	18
B. Teachers	592	107	138	109	118	120
Age	39	39	40	38	40	39
Female	0.84	0.81	0.92	0.79	0.84	0.80
Years teaching	15	14	17	13	15	15
Instructional materials	307	43	74	57	66	67
Mixed classes*	306	42	88	64	57	55
C. Household heads	4,071	785	840	829	802	815
H.hold head – age	43	43	42	43	44	43
H. hold head – female	0.31	0.32	0.40	0.20	0.29	0.32
H.hold head – education**	0.23	0.25	0.28	0.21	0.23	0.20
Income source – farming	0.84	0.87	0.66	0.91	0.89	0.87
H.hold assets – per capita	0.73	0.75	0.68	0.73	0.86	0.60
H.hold environment index	0.23	0.22	0.25	0.24	0.22	0.23
Private study hours	3.12	4.31	3.33	2.87	2.32	2.81
D. Children	12,429	2,251	2,397	2,624	2,663	2,494
Female	0.50	0.50	0.51	0.48	0.52	0.50
Mother – education**	0.15	0.16	0.21	0.11	0.15	0.13

Notes: Child labor* - child labor, marriages & absenteeism. Mixed classes* - mixed by age, ability levels, background, etc. Education** - above primary level.

Teachers identified two types of challenges affecting their work. First, those relating to the demands of the work and the support they get. Almost all teachers had extra formal responsibilities at the school in addition to teaching – including counseling, senior woman/man, welfare, music mistress, games master, etc. As a result, many teachers reported being overloaded. Teachers also highlighted lack of necessary instructional materials and difficulties in handling mixed classes as critical pedagogical challenges. Almost all teachers agreed to the idea of holding regular peer-led support sessions to address these needs. Second, challenges relating to quality of learners. Child indiscipline, home-related social-psychological hardships, and low motivation for learning were highlighted.

Just 23% of the 4,071 household heads

interviewed had above primary education. Over 84% of the households derive their livelihoods from farming. We construct the assets per capita index as the total number of select valuable items in the household divided by number of occupants, and the household environment index as the non-weighted average of seven indicators for the presence of a television, radio, electricity/solar, computer, vehicle, motorcycle, and bicycle in the household. We find that households have less than one valuable item per member of the household and each household has between one and two of the seven environment items.

We sought parents' views on four important areas for children's learning – parents' knowledge and actual involvement in supporting the children's efforts, level of engagement with the schools,

perceptions about school efforts, and whether they agreed with need for increased information sharing with schools. Most parents held strong positive views about their roles and contributions to learning. Four of every five respondents were confident they knew what to do to improve their children's learning, and about 90% rated themselves as involved in their children's learning process. About two thirds reported that they regularly held at-length discussions with other parents on education matters. Similar positive responses were given regarding regularity of checking children's books, frequency of engagement with teachers or schools, and attendance of meetings called at school. This positive outlook notwithstanding, all respondents agreed with the proposal for increased sharing of actionable information between schools and parents.

Table 2 reports percentages of children achieving reading (English or local language), numeracy and full (reading and numeracy) competence on Uwezo tests pitched at grade two of Uganda's primary

curriculum syllabus. Only 5% of P3 children in our sample achieved competence in English reading, raising steadily up the grades to 50% for P6 children. One in four P7 children was found incompetent at P2-level tasks. Preschool attendance is associated with higher competence levels for all grades, while grade repetition is not - except in P7. Only 5% of P3 children are competent in reading the local language – Lusoga, raising to 20% by P6 and 29% in P7. Again, preschool is associated with higher competence for all grades, and grade repetition is not. About one in four P3 children achieved competence in P2 numeracy tasks, raising fast to 70% in P6 and 84% in P7. Preschool attendance is associated with higher competence in the early grades, which association wears-off by P7. Only 4% of P3 children achieved full competence in numeracy and English literacy, raising to 43% in P6 and 71% in P7. Preschool attendance is associated with higher competence throughout all grades, and grade repetition with lower competence.

Table 2
Percentages of children achieving competence on P2-level uwezo tests

	N	P3	P4	P5	P6	P7
Reading – English						
Full sample	11,977	0.05	0.13	0.22	0.50	0.76
Pre-school	6,039	0.06	0.15	0.25	0.58	0.77
No pre-school	5,938	0.04	0.10	0.18	0.43	0.75
Repeating	2,565	0.04	0.07	0.18	0.47	0.82
Not repeating	9,412	0.06	0.15	0.23	0.52	0.75
Reading – Lusoga						
Full sample	11,977	0.05	0.07	0.09	0.20	0.29
Pre-school	6,039	0.06	0.08	0.11	0.24	0.32
No pre-school	5,938	0.04	0.05	0.08	0.16	0.27
Repeating	2,565	0.03	0.03	0.06	0.18	0.42
Not repeating	9,412	0.05	0.08	0.11	0.21	0.28
Numeracy						
Full sample	11,977	0.23	0.36	0.50	0.70	0.84
Pre-school	6,039	0.27	0.39	0.52	0.72	0.84
No pre-school	5,938	0.19	0.34	0.48	0.68	0.84
Repeating	2,565	0.22	0.39	0.49	0.73	0.82
Not repeating	9,412	0.23	0.35	0.51	0.69	0.84
Full competence						
Full sample	11,977	0.04	0.08	0.18	0.43	0.71
Pre-school	6,039	0.05	0.09	0.21	0.50	0.75
No pre-school	5,938	0.03	0.07	0.16	0.36	0.68
Repeating	2,565	0.03	0.04	0.15	0.40	0.76
Not repeating	9,412	0.04	0.09	0.20	0.44	0.71

3.2 Insights from phone-based rapid survey

Table 3 reports the mean values of household-level descriptive variables from the rapid survey delineated by district. Three of the four adults in the households can read and write. Of the five children, two are in lower primary, two in upper and

one in secondary. The three most prominent methods being used in the households to keep children engaged with learning during the period of school closures are revising notebooks, attending remote lessons on radio and tutoring of younger children by their elder siblings.

Table 3
Mean values for household variables from the rapid survey

	All (N=50)	BGR	IG-BG	KLR	LUU	MYG
Respondent – male	0.72	0.80	0.80	0.90	0.50	0.60
Adults at home	4	4	5	4	4	5
Adults – literate	3	2	4	2	2	4
School children at home	5	6	5	5	4	5
Lower primary	2	2	2	2	2	3
Upper primary	2	3	1	2	1	2
Secondary	1	1	2	1	1	0
Remote learning						
Revise notebooks	0.48	0.20	0.40	0.20	0.60	0.10
Radio lessons	0.44	0.30	0.40	0.20	0.60	0.70
Older siblings	0.32	0.40	0.40	0.50	0.20	0.10

We found that children were greatly affected by the economic hardships faced by their families during the lockdown period. First, parents prioritized ensuring survival and thus left children in homes on their own, resulting in their reckless wandering and increased vulnerability to sexual exploitation against girls and boys were used to provide cheap labor on sugarcane plantations and quarries. Second, many children were assigned home maintenance responsibilities thus completely diverting them from learning. Third, some children got traumatized by the increased incidences of domestic violence in homes, which left some feeling unwanted at home. With many families lacking access to radio and television sets, the remote learning model implemented by the education ministry left many children frustrated since they were unable to access the learning materials.

School closures and other COVID-19 lockdown measures left many parents without reliable sources of income making it difficult to sustainably provide for their families. Many children became rebellious and resisted being kept in lockdown at home. Being

uneducated, many parents found themselves unable to meaningfully support their children’s learning at home.

We found that some schools and teachers took steps to support their students’ continued learning during the period of school closures. However, they encountered challenges such as trying to convince children who had lost interest in continuing with learning, and difficulty to locate children who were involved in income generating activities to supplement their family incomes.

We found that parents’ support to children reflected three different strategies. First, some parents focused on helping children cope better with the social-emotional pressures they were facing. Continuously talking, encouraging, guiding, and monitoring children’s emotional states was used to reduce child frustration and despair. Second, other parents focused on providing direct educational support to keep children engaged with academic work. These tended to be educated parents who could also afford to provide the required learning support materials. Finally, other parents focused on

keeping children busy in other non-school related activities to develop other important practical life-skills. Such activities included household chores, making handicrafts, engaging in farming and other hands-on projects.

Teachers made several proposals to parents regarding how they can best support their children. They could reach out to seek help from nearby teachers and headteachers known to them, pay special attention to at-risk children by bringing them closer through regular friendly talk and guide sessions, make small sacrifices such as foregoing to listen to the radio for children to attend radio lessons, and plan and supervise children's time use at home.

Some schools and teachers provided support to their students to keep them engaged with learning. Focusing mainly on students in candidate classes schools would send short text messages guiding parents on issues such as where to access reading materials, and how to link up with teachers for additional support and guidance. Teachers would also visit their students' homes to support and report on their learning efforts. In trying to supplement the education ministry efforts, some schools photocopied and distributed the printed packages to their students, and gave additional reading materials, notes and homework tasks.

4. Discussion and conclusion

The baseline survey highlighted excessive child labor and parental disengagement as major challenges to achieving quality education in Busoga. Teachers indicated a great need for support in some important pedagogical spheres such as development of instructional materials, handling mixed classes, enforcing child discipline, and designing effective group learning activities. Against this backdrop however, parents portrayed an incredibly positive outlook suggesting that they

knew and were doing enough to support learning. The literacy and numeracy findings of this paper clearly depict the immensity of the problem however, replicating the low performances the region has registered in the past.

The breakout of a global pandemic and subsequent closure of schools shifted the responsibilities for children's continued learning from schools and teachers to parents. While the pandemic did greatly affect the economic means of many families in the sub-region, it also revealed to parents that they knew and were doing so little to support learning. Some schools took steps to support children to remain focused on learning. This led to increased teacher-parent interactions and will likely improve the quality of parental support to children's learning efforts beyond the school closure period. Since both schools and parents agreed with the proposal to increase such interactions through sharing actionable information, the steps taken by these schools will likely help in addressing the parental disengagement challenge after schools reopen.

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Notes

- 1 The five districts are Bugiri (BGR), Iganga-Bugweri (IG-BG), Kaliro (KLR), Luuka (LUU) and Mayuge (MYG).

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