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**UGANDA
END-TERM EVALUATION ON PROVISION OF ACCESSIBLE
LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND
HEARING IMPAIRMENT IN PRIMARY SCHOOLS
2015 - 2018**

THIS EVALUATION WAS SUBMITTED TO UNICEF BY:
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Abreviations and Acronyms

A Level   :   Advanced Level

ACDF   :   African Child Policy Forum

DHS   :   Demographic and Health Surveys

LwI   :   Leaners with Imapairments

NCDC   :   National Curricullum Development Centre

O Level :   Ordinary Level

PTC   :   Primary Teachers College

SDG   :   Sustainable Development Goals

SN   :   Special Needs

ToC   :   Theory of Change

UNESCO: United National Educational, Scientific and Cultural Organisation

UPE   :   Universal Primary Education

USE   :   Universal Secondary School

WHO   :   World Health Organisation

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EXECUTIVE SUMMARY

Uganda has embraced inclusive education and is committed to improving the inclusion of children with visual and hearing impairment in education. This is evident from the country's rich policies and the international conventions Uganda is signatory to. However, policy implementation remains weak and so there are still a number of gaps in the provision of education for children with disabilities, including those with Visual Impairment (VI) and Hearing Impairment (HI). It is, therefore, for this reason that UNICEF, together with the Government of Uganda, designed a project to provide Accessible Learning Materials for children with Visual and Hearing Impairment and address some of the gaps that exist. This report presents findings of the evaluation of this project.

The data for this evaluation was collected from eight of the 16 districts in which the project was implemented. From each district, one school was selected purposively to ensure inclusion of schools with visual and hearing-impaired learners. From each school the headteacher, teachers, Primary 4 and 6 children with visual and hearing impairment, Primary 4 and 6 children without impairment, parents, district officials, and teacher educators participated in the evaluation. In total, 173 respondents (92 males and 81 females) participated in the evaluation. Data was collected using interviews, focus group discussions, and lesson observations. In addition, documents were reviewed. Data analysis of qualitative data involved identification of themes while frequencies and percentages were derived for the quantitative data.

Key Findings:

Evaluation Objective One: *Determine the extent to which the project objectives were consistent with the priorities of the needs of children with disabilities, children without disabilities, teachers, parents and Disability Persons Organisations.* The project objectives were aligned to the national priorities as expressed in several Government of Uganda documents such as the Constitution of Uganda, and international commitments to which Uganda is a signatory. It has increased the numbers of children with HI & VI attending school and improved their participation in the learning processes. However, because the classes are large and teachers handling these children are few, the needs of these children may not be fully met.

Evaluation Objective Two: *Establish the extent to which the project realised its intended outcomes in light of the project's expected results, including a gender analysis on the use of accessible learning materials. Findings showed the project achieved a number of the set outcomes.* The project increased participation and interest of primary school children with visual and hearing impairments in school. This is evident from the increased number of children staying on in school. The project also improved awareness and support to children with disabilities by those without disabilities and it improved teacher support of learners with disabilities. In addition, the project involved a cross section of stakeholders, ensured availability of and accessibility to technologies and materials for schools and children with disabilities; availed technical support to schools and teachers; offered greater independence to children with disabilities and freed some family members to participate in other activities.

Evaluation Objective Three: *Extent to which the project results were efficiently delivered.* The findings showed that implementation strategies of the project were built around existing government structures such as the Ministry of Education and Sports (MoES), Coordinating Centre Tutors (CCTs) and district officials. This was meant to improve monitoring and support supervision to the teachers. However, monitoring and support supervision was weak partly because the project did not fully exploit the government structures, including the district/municipal education offices, Core Primary School Colleges (PTCs) and Coordinating Centre Tutors.

Evaluation Objective Four: *Establish the positive and negative long-term effects of the project intervention, whether directly or indirectly, intended or unintended, taking into account gender.* There is growing interest

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among teachers to specialise in Special needs Education and also increased support from children without impairments for children with impairments.

Evaluation Objective Five: *Analyse the sustainability mechanisms established by the project and make necessary recommendations on how to strengthen them*. The study established that in using Ministry of Education and Sports-established structures, the project has great potential to be institutionalised, thereby becoming more sustainable. Moreover, the project fills a real need in education and for the full exploitation of the benefits the intervention brings, the project ought to be rolled out to other districts and other subjects and classes. However, this next phase should deliberately plan to address the gaps and challenges registered in this last phase.

Lessons Learned: As a pilot project, there are a number of lessons that can be drawn from this which can inform the next phase of the project and the eventual roll-out throughout the country. The following are some of the lessons that can be drawn.

1. Effective ownership and implementation of the project requires better co-ordination with key stakeholders in the district, including SMCs, district/municipal education offices, PTCs and Coordinating Centre Tutors.
2. The cascade model can be effective when there is need to train large numbers of teachers at low cost. However, this model has weaknesses and to mitigate these, the trainers need close support and supervision and resources ought to be available for the school-based training sessions.
3. Continuity and effective implementation of such projects requires that teachers trained to implement the project are not transferred unless they are replaced with teachers of equivalent or better qualifications and competencies.
4. Longer term attitudinal changes among stakeholders in such projects require longer term lobbying and sensitisation.

Evaluation Recommendations:

These recommendations are given on each of these specific areas:

Objectives and Stakeholder Needs

R1: Broaden and strengthen stakeholder analysis to cater for the needs of key stakeholders – children with disabilities, teachers, parents, children without disabilities and Disability Persons Organisations.

R2: Build in clear strategies for monitoring and support supervision using existing government structures, including the district/municipal education offices, Core PTCs and Co-ordinating Centre Tutors.

Project Achievement of the Intended Outcomes

R3: Strengthen sensitisation and training of key stakeholders for improved service providers.

R4: Develop stronger, better and more systematic data collection and documentation strategies and practices for increased visibility and informed decision-making.

Project Efficiency

R5: Strengthen coordination and collaboration with existing systems and structures including schools, PTCs, Local Government District Offices, MoES and Disability Persons Organisations for better service delivery, school support and monitoring of the project.

Long-term Project Effects

R6: Exploit the goodwill that this project has created amongst key stakeholders to attract better and stronger support for the project.

Sustainability Mechanisms

R7: Strengthen and improve utilisation of local systems and the involvement of the MoES headquarters, district education offices, PTCs and teacher educators in the project.

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1.0 INTRODUCTION

According to the 2014 Uganda National Household Survey estimates, about 12.4% of Uganda's population are persons with disabilities. Despite these high numbers, only a few access and complete school (UNICEF, 2014). It is this gap in enrolment and completion that led UNICEF, together with the Ministry of Education and Sports, to introduce a project on accessible learning materials for children with visual and hearing impairment in primary schools. Since 2015, selected schools have been implementing this project with the aim of improving learning for visual and hearing-impaired learners. The project entailed provision of assistive technologies to schools, training teachers on how to use the technologies and provision of instruction materials. This report presents findings on the evaluation of this project. The report is structured into three main sections. Section one covers the contextual factors that informed the design of the project, Section 2 describes the methodologies, while the findings, conclusions and recommendations are presented in the remaining section.

1.1 Education In Uganda

Formal education was introduced in Uganda by the Christian missionaries in 1877. Since then, it has continued to retain some of its early characteristics. The 7-4-2-3 (that is, a 7-year primary cycle, a 4-year secondary O-level cycle, a 2-year secondary A-level and minimum of 3-to-5-year tertiary education cycle; with national examinations at the end of primary, secondary O- and A-level) school system is structured in a hierarchical manner. This is perhaps one of the reasons why Uganda's education is highly selective and pyramidal in nature (Aguti, 2003, p. 1). One of the major categories that do not have sufficient access to education is children with disabilities. The pyramidal structures mean that at each stage of national examinations the numbers reduce, and those mainly affected are children with disabilities (UNICEF, 2014).

1.1.1 Education Of Children With Visual And Hearing Impairment

Uganda has embraced inclusive education and is committed to improving inclusion of children with visual and hearing impairment in education. This is in line with Article 7 of the Convention on the Rights of Persons with Disabilities that obliges countries to take all necessary measures to ensure the full enjoyment of all human rights and fundamental freedom by children with disabilities. This has been through specific policies and guidelines, for instance, The White Paper on Education (1992) and the Constitution of the Republic of Uganda (1995), Article 30 (p29) of which states that, "All persons have a right to education." The Universal Primary Education (UPE) policy provides opportunities to all school-age children irrespective of disability and/or any other unique needs to get free education (UPE Guidelines, 1997). Similarly, the Children Act 2016, specifically Article 4(j), requires that every child is treated equally. The Disability Act, 2006 further shows government's commitment to providing education for learners with disabilities. Uganda has also committed herself to the implementation of Sustainable Development Goals (SDGs) 2030. In particular, SDG 4, which promotes inclusive and equitable quality education for all.

However, as ACPF (2011) assert, although Uganda has many enabling policies and laws aimed at protecting the interests of children and creating equal opportunities for disabled people, policy implementation is weak, and insufficient resources are made available to translate policies into services for disabled persons. Thus, despite government efforts, children with disabilities continue to face difficulties. Up to 71% of the children in primary schools face difficulties seeing without glasses while 36% experience problems with self-care (Moyi, 2012). WHO & UNICEF (2015) report that children with disabilities may be unable to go from home to school, see what is written on the blackboard, hear and understand the teacher, read the textbooks, use sanitation facilities, participate in sports and recreation, and interact with classmates. Similar findings were reported by UNESCO (2004 and 2010). Moyi (2012) calls this institutionalised discrimination, neglect and stigmatisation by schools and society. In addition, children with disabilities are enrolled in schools that are underfunded and lack educational materials (Kristensen et al., 2006). These

challenges are summarised in Box 1.

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Box 1: Gaps in education of learners with visual and hearing impairment
- Poor performance
- Low transition rate
- Inadequate numbers of teachers able to handle visual and hearing impaired learners
- Inadequate learning infrastructures
- Stigma
- Low completion rate
- Inadequate parental support to learners with disabilities.

</div>

In low- and middle-income countries, these challenges rob children with disabilities of opportunities to enjoy academic, social, and community participation (WHO/UNICEF, 2015). These are further complicated by the low valuation of education of children with disabilities by parents and society in general. Lack of parental support for schooling of children with disabilities can mean that these children are kept out or taken out of school.

There are several disturbing performance indicators of education of children with disabilities. Statistics from 2009 show that a total of 204,352 pupils with disabilities were registered countrywide; this is only 2.5% of the total enrolment in Ugandan primary schools. Of those that enrolled, only 6.5% completed primary school; implying that a large number of children with disabilities drop out of primary school and even fewer transit to secondary education. According to the UNESCO Institute of Statistics, Fact Sheet No. 40, February 2017 and using The Uganda Demographic and Health Surveys (DHS) Data of 2011, the proportion of children with disability of primary school age who are not attending primary or secondary school is 23%. For lower secondary school age, it is 33%. Primary completion rate for children with disabilities is 34%. Lower secondary completion rate is 10%.

1.2 Assistive Technologies And Their Role In Improving Access To School And Improving Learning Outcomes

According to the US Code of definitions 1401, assistive technology is defined as "... any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customised, that is used to increase, maintain, or improve the functional capabilities of a child with a disability". Whereas this definition is very broad and would demand careful choice of the right technology to employ, it is evident that assistive technologies have the potential to greatly improve the participation of children with disabilities in educational activities and also have potential to improve the quality of their learning outcomes.

According to Hersh (2007), assistive technology can be used to overcome the social, infrastructure and other barriers experienced by people with disabilities that prevent their full and equal participation in all aspects of society. Similarly, Carr, Gibson and Robinson (2001) have pointed out that assistive technology allows people to continue in their normal roles and meet their expectations of life despite their physical impairment and disability. However, the choice of the assistive technologies to adopt or adapt will depend on the nature of the disability and the subject to be taught. For example, texts in braille cannot be given to children with hearing impairment, but would be most appropriate for children with sight impairment

PROJECT SUMMARY

2.1 Project Description, Objectives and Expected Outcomes

The enormity of the problems experienced by children with disabilities in their bid to access education calls for concerted efforts. It is within this context that in 2015, UNICEF launched a project to provide accessible learning materials and digital technologies to aid teaching and learning of children with visual and hearing impairments and in turn improve learning outcomes for these children. This project is in line with UNICEF's work which is centred around promoting the rights and wellbeing of every child, with a focus on disadvantaged children such as those with VI and HI. The project is anchored on the Government of Uganda - UNICEF Country Programme Output 2: Basic Education, whose goal is: by end-2020, enhanced national capacity to increase equitable access, quality and sustainability of primary education that is inclusive and innovative to impart relevant knowledge and skills.

The use of assistive technology was expected to increase participation of children with visual and hearing impairments in primary schools and their transition into secondary education, improve accessibility, greater independence of children with disabilities and free family members to participate in other activities (WHO/UNIECF, 2012).

The project required collaboration with other stakeholders, especially schools and organisations already doing work with children with disabilities. Through consultations, 20 schools in 16 districts were identified as pilot schools and, as detailed in section 5.0, a number of activities were carried out so as to achieve the expected outcomes.

This project was expected to have the following outcomes:

a) An enabling environment for the use of Assistive Technology to ensure Inclusive Education and Access to Information by key stakeholders was strengthened.
b) Increased availability of resources to support inclusive education and access to information for persons with visual and hearing impairment and greater engagement on the part of key stakeholders – including Disabled Persons Organisations (DPOs), government representatives, teachers, information professionals and publishing companies – to promote greater usage.
c) Effective monitoring of the use of Assistive Technology to ensure Inclusive Education and Access to Information is mainstreamed.

It was, however, not very clear from the documentation available to the evaluation team how many teachers, teacher educators, community members and learners were to be reached, although according to UNPRPD R2 – Phase 2 Support Concept Note (n/d) the project created awareness among 477 (186 males and 291 females) government stakeholders, Disabled Persons Organisations (DPOs), parents and school communities, including children with disabilities. Fifty four teachers (27 males and 27 females) were trained and 600 learners (78 are learners with disability – 46 girls and 32 boys) reached. In addition, 51 participants, including publishers and 18 librarians, were also sensitised on the need to increase access to accessible learning materials for children with VI and HI.

2.2 Project Stakeholders

This project was meant to directly benefit primary school children with visual and hearing impairment. All the project activities were, therefore, geared towards this and in fact, the short-term impact was supposed to improve retention and enrolment of these children. To achieve this, a number of other stakeholders were to play various roles in the project design and implementation:

- Ministry of Education and Sports, Department of Special Needs
- Ministry of Ministry of Gender, Labour and Social Development and UNESCO.
- District Education Offices
- Disability Organisations
- Headteachers
- Teachers
- Parents
- Primary school pupils, especially those with visual and hearing impairment, and
- Publishers and librarians.

2.3   Project Activities and Timelines

According to MoEST, UNICEF & Enabling Services (November 2016), this project had six major activities which were to:

a)   Review curriculum-related materials for children who are blind, VI, Deaf and HoH through desk review and stakeholder consultations.

b)   In collaboration with UNICEF, MOESTS, NCDC and publishers, design/adapt materials for VI, Blind, HoH and deaf primary school children, align the materials to the syllabus/curriculum.

c)   Produce the materials in accessible formats, including audio and large print for the VI and video for HI using multi-media with accompanying teachers' guides.

d)   Pilot and refine the materials to ensure usability

e)   Train teachers in 20 project schools, stakeholders, CCTs, inspectors and tutors in using the materials.

f)   Train publishers in Uganda in the global standards & production of similar materials

The project is being implemented in 16 districts namely, Bugiri, Bukomansimbi, Gulu, Hoima, Iganga, Jinja, Kagadi, Kamuli, Kibale, Manafwa, Masindi, Mubende, Mukono, Nebbi, Arua and Soroti. Preliminary information indicates that this project has registered a number of outputs and outcomes. Nonetheless, its performance has not been independently audited nor has there been an independent effort to derive a summative and evidence-based assessment of the project relevance, effectiveness, sustainability and impact. Hence, there is need for systematic assessment of the entire project, including its design, the development of the learning materials, implementation of the project, challenges faced and outcomes and impact. It is this need that led to the appointment of Makerere University to evaluate the provision of accessible learning materials for children with visual and hearing impairments project.

The findings of this evaluation will bring in independent and external perspectives to inform the next phase of the project and future programming and roll-out. It is hoped that the evaluation will highlight procedural gaps and project future requirements, priorities and better ways of harnessing the use of assistive technology to support learning of visual and hearing impairment. This will, in turn, help in future planning and implementation.

2.4 Theory of Change (ToC)

This project was conceived with specific outcomes in mind. Activities to achieve these were designed and carried out with the expectation that this intervention would lead to improved learning outcomes for children. Figure 1, below, represents the theory of change that was employed in the intervention. The end-term evaluation will, therefore, be carried out to determine how far this theory of change yielded results.

The problem statement as given is consistent with assertions by Kristensen et al (2006), ACPF, (2011) and Moyi (2012) that although Uganda has many enabling policies and laws aimed at protecting the interests of children and creating equal opportunities for disabled people, policy implementation is weak and children with disabilities continue to face difficulties in schools. The project, therefore, set out to address a real problem and the activities outlined are relevant and appropriate.

The ToC also articulates the expected outcomes of the project that are consistent with the problem being addressed by the project. One of these outcomes is an enabling environment for the use of assistive technology, which, like in the use of all other ICTs, requires the right school-based, local and national policies; capacity building for teachers, headteachers and administrators; access to appropriate technologies; and the right administrative and management strategies. However, project activities are not fully articulated, but are implied and it is not entirely clear how the right administrative and management strategies will be ensured.
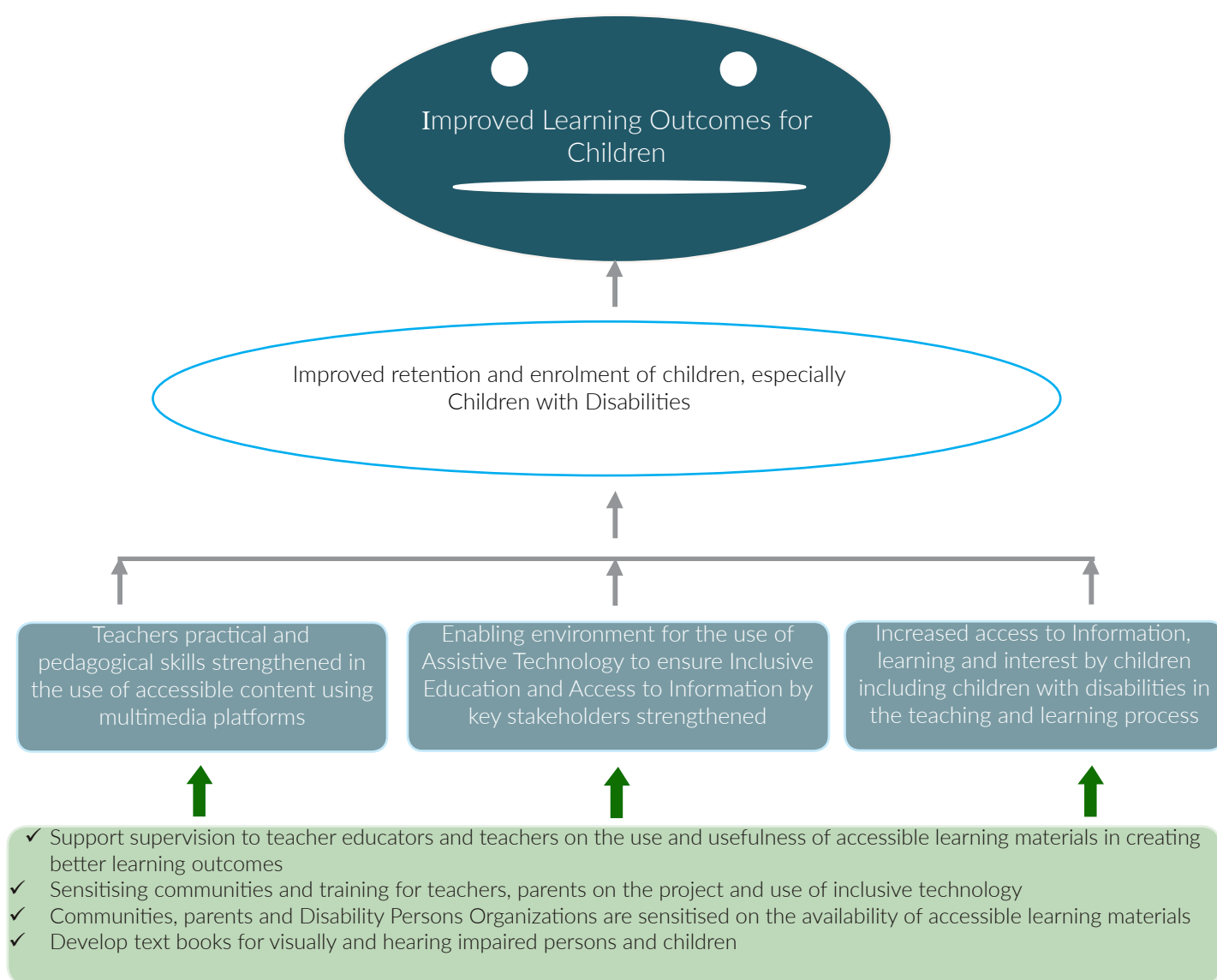
Figure 1: Theory of Change

Source: UNICEF Terms of Reference– Institutional Contract (p10)

3.0 PURPOSE AND SCOPE OF THE ASSIGNMENT

This evaluation was commissioned by UNICEF to take stock of the performance of the project, with a particular focus on its achievements, failures and future prospects, including an analysis of the factors contributing to that success or failure. Specifically, this evaluation:

1. Assessed the extent to which the Assistive Technology Project objectives were consistent with the priorities of the needs of children with disabilities, children without disabilities, teachers, parents and Disability Persons Organisations.
2. Established the extent to which the project realised its intended outcomes in light of the project's expected results, including a gender analysis on the use of accessible learning materials.
3. Assessed the extent to which the project results were efficiently delivered in regard to the implementation strategies that were used.
4. Determined positive and negative long-term effects produced by the project intervention, whether directly or indirectly, intended or unintended, taking into account gender.
5. Analysed the sustainability mechanisms established by the project and made necessary recommendations on how to strengthen the same.

Also, whereas the fifth TOR required examining sustainability mechanisms, after discussions with UNICEF, Kampala it was agreed that the evaluation would not cover a cost-benefit analysis.

The project on Assistive Technology is being implemented in 16 districts - Arua, Bugiri, Bukomansimbi, Gulu, Hoima, Iganga, Jinja, Kagadi, Kamuli, Kibale, Manafwa, Masindi, Mubende, Mukono, Nebbi and Soroti - spread throughout Uganda. This evaluation took place in eight randomly selected districts out of the 16, constituting 50% of the total pilot districts. This evaluation focused on the pilot phase period of between 2015 and mid-2018.

As mentioned earlier, the findings of this evaluation will bring in independent and external perspectives to inform the next phase of the project and future programming and roll-out. In particular, the findings of the evaluation will assist UNICEF, Government of Uganda – MoES, Disability Persons Organisations and other key stakeholders to understand the change (positive, negative, intended and unintended) that this project created on children with disabilities, including the spill-over effects to the regular learners. It is anticipated that the results of this evaluation will be utilised to scale up interventions on accessible learning materials for children with visual and hearing impairment and to inform advocacy efforts for an inclusive education system in Uganda. Since there is interest in starting up similar projects in the region, the results of this evaluation could also be utilised to inform the design of similar interventions.

4.0 EVALUATION METHODOLOGY

This evaluation adopted a mixed method approach. Mixed method permits a more complete synergistic utilisation of data than separate quantitative and qualitative (Creswell, 2013). The evaluators adopted mixed methods because of the complexity of the evaluation that required analysis of the consistency of the project objectives with the needs of the stakeholders to ascertain whether the project's intended outcomes were realised, the efficiency in implementation of the project, the effects (both negative and positive) and sustainability of the project. Mixed methods helped to obtain a comprehensive understanding of the project and also eased the validation of data collected using the two approaches.

4.1 Sampling Techniques
The researchers employed random, purposive and convenience sampling. This was due to the fact that the study population was heterogeneous and one sampling technique could not have given accurate results.

4.2 Sample

4.2.1. Selection Of Districts And Schools
In order to select the districts, the country was stratified into four regions, namely Central, Eastern, North/West Nile and Western/Albertine. The districts were stratified according to the regions as shown below.

i) Central: Mukono, Wakiso, Mubende, and Bukomansimbi
ii) Eastern: Jinja, Iganga, Bugiri, Manafwa, Soroti
iii) North and West Nile: Arua, Gulu and Nebbi
iv) Western/Albertine: Masindi, Hoima, Kagadi, and Kibaale

From each region, two districts were randomly selected. The eight selected districts were Arua, Bukomansimbi, Gulu, Hoima, Jinja, Masindi, Mubende and Soroti. By selecting from each region, the evaluation ensured geographical representation. Random sampling was used because preparation and implementation of the project started at the same time in all the districts. Therefore, to ensure all the districts had equal chances of being selected, random sampling was the best technique.

From each district, one school was purposively selected. This was to ensure inclusion of schools that had learners with visual and hearing impairments. The selection of just a few schools enabled an in-depth evaluation in these schools.

4.2.2. Selection Of Respondents

The participants for this evaluation included headteachers, teachers, children with visual or hearing impairment, children without impairments, parents, district officials, teacher educators and the consultants who designed and developed the materials (Enabling Services, Uganda/Kyambogo University).

a) Headteachers

Headteachers were selected using purposive sampling procedures. All the headteachers of the selected schools were picked to participate in the evaluation. Headteachers were selected because of their roles as managers of the schools and the immediate supervisors of curriculum implementation in schools. They provided information on the project as implemented in the school and highlighted the benefits accruing from the project as well as the challenges faced and how these could be mitigated.

b) Teachers

The teachers were stratified into 'Teachers trained to implement the project' and 'Teachers who were not trained teachers'. Thereafter, purposive sampling was used to select teachers who were trained and teaching Primary 4 and 6. Efforts were made to include both female and male teachers. Teachers were included in the evaluation because the project trained a number of teachers to specifically handle and support children with VI and HI. Teachers were, therefore, direct implementers of the project. In each school, two to three teachers were interviewed so as to establish how the project was implemented, how the learning materials were used and how the project influenced learning outcomes. Teachers were also very instrumental in highlighting challenges faced in class and sharing proposals on how best to grow the project.

c) Pupils

Selection of pupils was multilevel, starting with stratification according to class, then disability and lastly girls and boys. The process was as follows. Pupils were stratified into P. 4 class and P. 6 class. Then from each class, the pupils were stratified into learners with impairment (VI or HI depending on the category available in the school) and those without impairment. From each strata, six to eight children with visual or hearing impairment were purposively selected in order to ensure representation of both boys and girls.

From among learners without impairment, three boys and three girls were randomly selected for control purposes from among pupils of P4 and P6 for a separate focus group discussion. In addition, one child from each school was randomly selected from among those interviewed for further evaluation to build up their profiles.

Pupils with disabilities were included in the evaluation because they were the prime beneficiaries of this project since it was started to aid teaching and learning of children with VI and HI and in turn improve their learning outcomes. It was, therefore, critical to reach these them during the evaluation so as to establish what learning materials and accessible technologies were actually being used in their classes, their views about these resources and how the other children treat them.

d) Parents

Parents were purposively selected. All the parents of the children who were selected for further evaluation participated in the study. Parents are also major stakeholders in this project because of their immediate interest in the education and progress of their children. It was, therefore, crucial to talk to parents so as to gain a better understanding of the children, their progress at school, the challenges the children face and what they would want schools to do so as to support their children better.

e) District Education Officers

In each district, the education officer in charge of disability was purposively selected to participate in the study. Education officers are critical in planning, managing and overseeing all education activities in the district. Education officers in charge of disability were included in the study because they directly supervise and support schools and teachers as they provide education to children with disabilities. In the project design, these officials were also expected to supervise the implementation of this project. Education Officers were therefore vital sources of information on this project.

f) Primary Teachers Colleges

The Core Primary Teachers' Colleges (PTCs) located or serving the selected districts were included in the study. In each college, the Deputy Principal in Charge Outreach was purposefully included in the sample.

The selected schools and respondents are listed in Table 1.

Table 1: Schools and respondents that participated in the evaluation

School	H/teachers		Teachers		Parents		Pupils in FGD		Pupils in FGD (S/N)		District Officials		PTC		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Gulu PS	0	1	1	1	0	1	5	3	4	4	1	0	1	0	12	10
Eruba PS	0	1	1	0	0	2	4	4	3	5	0	1	0	1	8	14
Kasambya DAS	1	0	1	0	1	0	5	3	6	3	1	0	1	0	16	6
Misanvu PS	1	0	1	1	0	1	3	3	3	4	0	0	0	0	8	9
Kamurasi PS	0	1	1	1	0	1	4	4	6	2	1	0	0	0	12	9
St. Benaddette PS	0	1	3	0	0	1	4	4	3	5	0	0	0	1	10	12
Spire Road PS	1	0	4	1	0	1	4	4	4	4	0	2	1	0	14	12
Nakatunya PS	0	1	1	0	0	1	4	5	3	2	1	0	1	0	10	09
TOTAL	3	5	13	4	1	8	33	30	32	29	4	3	4	2	90	81

Gender was taken into account in the selection of the sample. Where the evaluation failed to include women, such as among the teachers and headteachers in some schools, it was due to the representation of men and women in those positions.

In addition, two national level officials from Kyambogo University and Enabling Services Uganda Ltd/ Disability Organisations were also interviewed giving, therefore, a total of 173 respondents (92 males and 81 females).

4.3 Data collection strategies and instruments

This evaluation employed the following data collection strategies:

1. Extensive and intensive auditing of secondary data so as to gather information on the design, development and implementation of the project. The documents analysed included project-specific and key policy documents. Document analysis provided information on enrolment of learners with Special Needs (SN), numbers of teachers, learners' performance and progress.
2. Survey questionnaires were used to gather information on the school profile, access to Information Communication Technologies (ICT) in the schools, management of the project, sustainability issues and challenges faced in the implementation of the project. See Appendix 1.
3. Interviews were used to collect data from education officers, headteachers, teachers and teacher educators. For each of these categories, an interview guide was constructed. The interview guide focused on specific issues and questions relevant to the category. Interviews were also held with parents or guardians and one child with impairment from each school so to build up detailed profiles of these children. See Appendices 2, 3, 4, 5 & 6. The interviews were recorded.
4. Focus group discussions (FGDs). These were used to collect data from the pupils. Two focus group discussions were held in each school. The questions focused on exploration of the learning materials and assistive technologies the learners have had access to, how these have been used in class and the learners' perspectives on the impact of these technologies on their own learning. For learners with hearing impairment, translation of an expert was sought. During the FGD, efforts were made to ensure both boys and girls were given opportunity to give their views. See Appendices 8 & 9 for the FGD guide.
5. Lesson observation. Teachers have been trained to access and use learning materials in different formats to teach children with hearing and sight impairments. One lesson from each school was observed in order to establish the learning materials being used, how they are used and how this influences learner participation and learning outcomes. See Appendix 7 for the Lesson observation guide.

4.4 Data Analysis

Analysis of qualitative data started with transcription of all the recordings. The transcripts were then read in order to identify codes. Thereafter the codes were grouped in order to derive meaningful themes and patterns according to the different evaluation questions set. The quantitative data was quantified in order to derive percentages and produce frequency. All this data was grouped and presented in relevant descriptive statistics.

4.5 Quality Control

The quality and accuracy of the data was assured through the following: first, three evaluators undertook this evaluation. This made it easy to harness the strength of each of the evaluators. It also ensured breadth and depth in data collection and analysis as part of quality control. During data collection, attention was paid to how the first few respondents answered the question. This enabled the evaluators to adjust unclear and ambiguous questions. In addition, the evaluators carefully checked the questions to ensure that they provided adequate data to the evaluation. Furthermore, there was continuous peer review by the consultants.

Secondly, all research assistants that were involved in this evaluation underwent orientation and training to ensure all were conversant with the objectives and methodology of the evaluation and in particular with the specific instruments that were employed.

Thirdly, the instruments designed were subjected to review by UNICEF and other key stakeholders. The feedback received was utilised to finalise the instruments. After data collection the draft evaluation report was shared with UNICEF and the key stakeholders for their review and input. The recommendations presented in this report were informed by the data gathered and feedback received from the key stakeholders.

4.6 Evaluation Planning Matrix

Table 2: Evaluation Planning Matrix

Evaluation Question	Data Collection Method	Source of Data	Indicators
1. Extent to which the project objectives were consistent with the priorities of the needs of children with disabilities, children without disabilities, teachers, parents and Disability Persons Organisations	Document review	- Project documents and policy documents	- Specific need being met
	Focus group discussions	- Children	
	Interviews	- Teachers - Headteachers - Parents	
2. Extent to which the project realised its intended outcomes in light of the project's expected results and including a gender analysis on the use of accessible learning materials	Document review	- Project reports	- Types of accessible learning materials distributed - No. of teachers trained - No. of children with VI & HI accessing the learning materials - No. of accessible technologies distributed and being used in schools
	Focus group discussions	- Children	
	Interviews	- Teachers - Headteachers - Parents - Teacher Educators	
	Lesson observation	- Teachers - Children	
	Survey Questionnaire	- Head teachers	

Evaluation Question	Data Collection Method	Source of Data	Indicators
3. Extent to which the project results were efficiently delivered in regard to the implementation strategies that were used	Document review	- Project reports	- Types of accessible learning materials distributed - No. of teachers trained - No. of children with VI & HI accessing the learning materials - No. of accessible technologies distributed and being used in schools
	Focus group discussions	- Children	
	Interviews	- Teachers - Headteachers - Parents - Teacher Educators	
	Lesson observation	- Teachers - Children	
	Checklist for assessment of technologies	- Technicians - Technologies	
4. Positive and negative long-term effects produced by the project intervention, whether directly or indirectly, intended or unintended taking into account gender	Document review	- Project documents including reports - Student records	- %age increase in no of parents, teachers & pupils with attitudinal changes - No of parents sending children with disabilities to school - Increased retention of children with VI & HI - Improved teacher competencies in identifying children with disabilities
	Focus group discussions	- Children	
	Interviews	- Teachers - Head teachers - Parents - Teacher Educators	
	Lesson observation	- Teachers - Children	
	Survey Questionnaire	- Headteachers	
5. Sustainability mechanisms established by the project and make necessary recommendations on how to strengthen the same	Document review	- Project reports	- No of other teachers trained using the cascade model adopted - Participation of district officials in M&E of project - Increased district budget allocation to support for children with disabilities
	Interviews	- Teachers - Headteachers - Parents - Teacher Educators	
	Lesson observation	- Teachers - Children	
	Survey Questionnaire	- Headteachers	

4.7 Ethical Concerns

This project is meant to make accessible educational materials available to primary school children, thereby achieving improved learning outcomes and equitable and inclusive education and its evaluation will involve children and adults. Informed consent was therefore vital and was sought from both adults and children participating in the evaluation. In the case of the children, informed assent was sought from

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care-givers and/or headteachers. In the report, actual names of the respondents are not used and instead pseudonyms are used. Appendix 10 provides samples of the different consent forms and the assent form. All participants were assured that the data gathered would be treated with a great deal of confidentiality and permission was sought to record the interviews and to take photographs.

Also, while handling children with HI and those hard-of-hearing, sign language interpreters were used to ensure maximum participation of these children.

The evaluation Team Leaders along with all the research assistants were involved in a training session before the evaluation. The training was meant to ensure a common understanding of the objectives of the evaluation, the code of conduct for all members of the team, methods and instruments to be used and issues of confidentiality and protection of respondents, especially children, during the evaluation. The team also obtained permission to visit schools from the Chief Administrative Officers and District/ Municipal Officers.

5.0 FINDINGS

This evaluation interrogated whether the *Assistive Technology Project is doing the right thing (relevance), and in the right way (effectiveness), using the right strategy with the least cost (efficiency and sustainability).* Data is presented under four main sub-headings: relevance of project objectives to the stakeholder needs; project achievements: outputs and outcomes; project efficiency and sustainability mechanism.

5.1 Relevance Of Project Objectives To Stakeholder Needs

One of the objectives of this consultancy was to assess the extent to which the project on Assistive Technology has addressed the needs of children with disabilities, children without disabilities, teachers, parents and Disabilities Persons Organisations. Findings showed that overall the objectives of the project were relevant to the needs of the different stakeholders. The project objectives were aligned to the national priorities as expressed in several Government of Uganda documents such as the Constitution of Uganda, Article 21, that guarantees the right to equality and freedom from discrimination and Article 30 the right to education; The Education White Paper 1992; Disability Act of 2006; The Education Act 2008; and the Second National Development Plan 2015/16 – 2019/20, among others. Moreover, Uganda is signatory to international commitments such as Sustainable Development Goals and the UN Convention on the Rights of Persons with Disabilities, 2006. All these documents emphasise putting in place programmes that target disadvantaged and marginalised groups.

These are the objectives that the project addressed:
1. Creating an enabling environment for the use of Assistive Technology to ensure inclusive education and access to information by key stakeholders.
2. Increased availability of resources to support inclusive education and access to information for persons with visual and hearing impairment and greater engagement on the part of key stakeholders.
3. Ensure effective monitoring of the use of Assistive Technology to ensure inclusive education and the mainstreaming of access to information.

By aligning its objectives to national priorities, the Project on Assistive Technology responded to real needs of the country and the different stakeholders.

Before this project, the selected primary schools did not have any assistive technologies to support learning for visual and hearing impaired learners. As one of the consultants explained, "We were working from a position of having no materials and we had to think of what could assist hearing and visual impaired learners." The project therefore entailed "thinking about design, usability, quality, graphics used, and sounds

among others" in order to develop materials, including audio and large print, for the VI and video for HI, using multi-media with accompanying teachers' guides in accessible formats.

To further ensure relevance of the project, the design and development of the technologies were done in collaboration with the needs of the stakeholders. The process of designing and adapting the technologies included agreeing on the equipment with UNICEF and piloting it with all the stakeholders (Project Report, 2016). This was a back and forth process. Feedback obtained during the pilot helped in ensuring alignment of the project to the needs of the stakeholders. For example, one of the consultants said, *"During the pilot, one girl watched the videos and told us they were flat and unattractive."* The pilot also showed that the sound in the video was poor and that not all the children understood the sign language. This was because of variation in the sign language used in the different parts of Uganda.

The piloting of the materials enabled the consultants to adjust them to meet the needs of the learners. According to officials from Kyambogo University and Enabling Services, improvements made to the materials included sound, colour, and language of signing. In order to address the challenges in variations in the sign language, the consultants worked with the Uganda National Association for the Deaf, teachers of learners with hearing impairment and some community members with hearing problems. This helped to validate the materials and ensured their relevance to the pupils, teachers and Disability Persons Organisations. Relevance to the needs of the children with disabilities was evident in the response of one of the learners during a FGD when she said, *"Before any kind of intervention was made I was home seated not attending any school."* Similarly, another reported, "Before these materials were brought, my family members would go to the garden; I would stay home and wish I was in school Now I am at school. When I go back home, I miss school." (Learner with visual impairment).

It was also clear from the schools that prior to the introduction of the project, teachers experienced difficulties handling learners with special needs. One of the headteachers explained, *"This project is a very good one which we have been yearning to have because when learners with visual impairment master the computer, handling them becomes easier. They can type their work and teachers can easily mark (their work)."* One of the teachers confirmed this saying, *"Work is easier especially with the embosser. It has also helped us to integrate the learners with sight impairment with the others with sight; the use of assistive technologies has made teaching easy."* Another added: *"When I came here in 2017, I got concerned and I was asking the person in charge, 'What do we do with the students who are not sighted?' I asked about the diagrams that we draw and they are not able to see. This project has eased our work."* These responses underscore the way in which the assistive technology has lessened the teachers' work while at the same time making learners with impairment feel part of the learning processes, thus, meeting the needs of learners and teachers.

The project also ensured that teachers were able to use the materials in order to meet the needs of children with disabilities by training them. The training was meant to help teachers:

1. Appreciate the use of adapted material;
2. Acquire basic computer skills;
3. Demonstrate how to accessing/manoeuvre materials from computers/hardware;
4. Plot the way forward for use of the materials in schools.

In all the project schools, teachers were trained on how to use the assistive technology before provision of the equipment to the schools. During the training teachers tried out the equipment that included "small Classmate laptops, Victor Reader Stratus, Victor Reader Stream (personal from one of the blind teachers), Plextalk" (Project Report, 2016). The trainings provided teachers with an opportunity to interact with the materials, but also enabled the consultants to receive further feedback on the effectiveness of the materials and teachers' ability to use them. One of the teachers in Gulu P. S. explained, "Yes, we received

training in the use of computers, Victor Reader, and the projector." The teachers were also trained on how to sensitise the parents. In addition, the trained teachers were expected to train other teachers in their schools. Findings showed that the training improved teacher practices, with more use of learner-centred approaches, and learners enjoyed using the equipment and materials.

In addition, to ensure easy access to the learning materials developed by both the teachers and children, the project is using Kolibri – an Open Source platform that enables teachers to share and access the learning materials developed. According to one of the teachers, "Accessing materials is now easy if for some reason we need to access the materials afresh."

The children with disabilities reported that the learning materials provided suited their needs and made learning possible, as they noted below during various FGDs:

> *"We have enough materials to help us, the visually impaired, to write. We also have recorders and can thus record a lesson and revise later on."*

> *"Children such as we that have various impairments are also accommodated at this school," noted another.*

> *"This school has text books and these are rarely found in other schools."*

Gender and Equity Considerations

Since the passing of the 1979 Convention on the Elimination of All forms of Discrimination against Women (CEDAW), the UN has emphasised the operationalisation of gender equality and equity in all its activities. In line with this, it was important to analyse the extent to which gender was taken into consideration in the implementation of the project. It is evident from the data that the project was cognisant of gender in the design and implementation. First, all participating schools were mixed (have boys and girls) so as to ensure that both girls and boys benefit from the project. See Figure 2 for enrolment of boys and girls in the schools sampled.
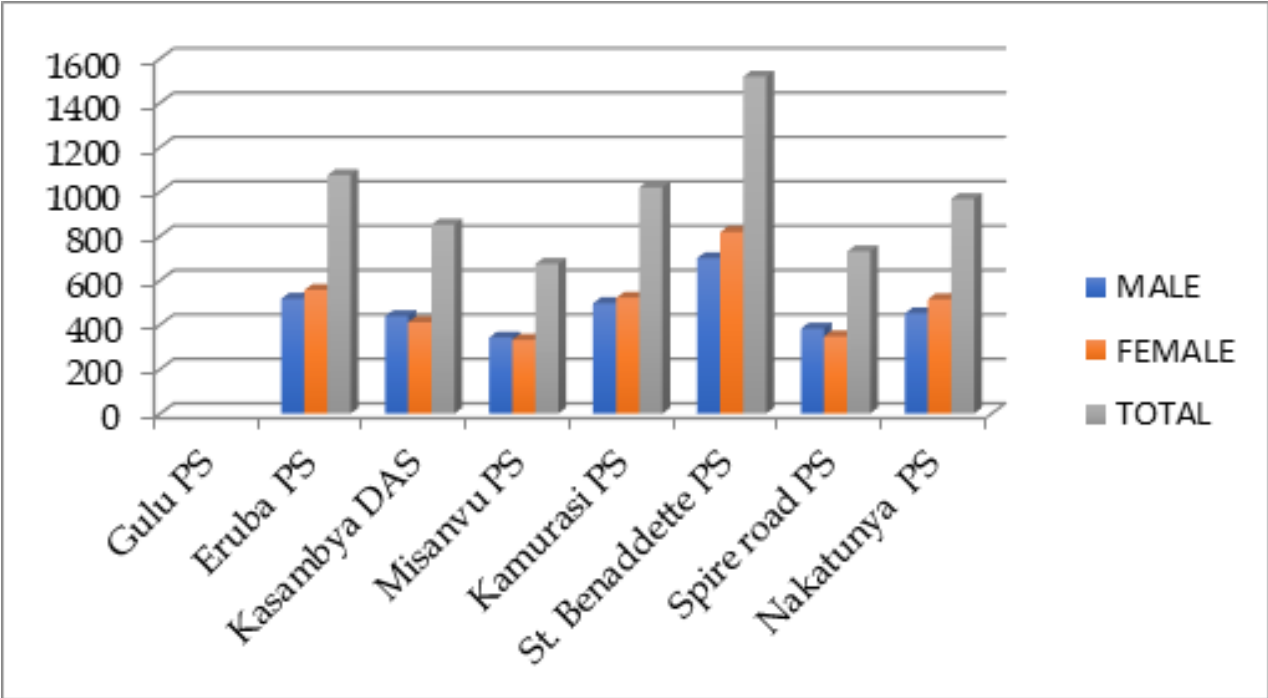
Figure 2: Enrolment of boys and girls in the sampled schools

As seen from Figure 2, the schools had nearly equal numbers of boys and girls although St. Bernadette, Eruba P. S., Kamurasi P.S, and Nakatunya P. S. had more girls than boys. And in terms of overall enrolment, St Bernadette had the highest numbers of pupils with 1,519 pupils (701 male and 818 females) while Misanvu PS had the lowest enrolment with a total of 675 pupils (343 males and 332 females).

Analysis of the number of boys and girls with impairment in the selected schools confirmed that both genders benefitted from the project (see Figure 3). The selected schools had a total of 261 VI children, 261 HI children and 2 children with both VI and HI.
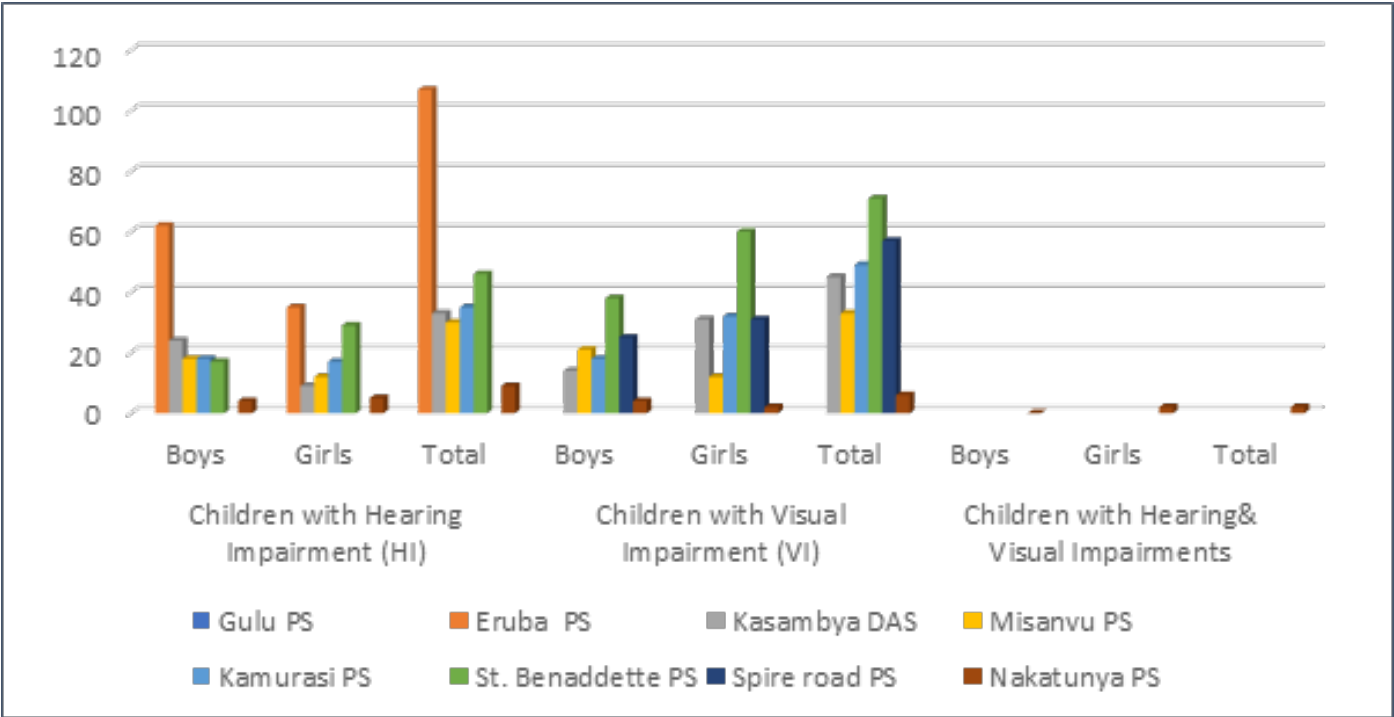
Figure 3: Children with hearing & visual impairments in sampled schools

Figure 3 shows more boys with HI than girls while there are more girls with VI enrolled in the schools. It was, however, difficult to ascertain whether this finding implies that there are more boys with HI and girls with VI in the population.

Second, in preparation for implementation, a total of 954 (582 females and 372 males) stakeholders and 60 teachers were trained and 78 learners with disability – (46 girls and 32 boys) were reached.

5.2 Project Achievement of the Intended Outcomes

This project was set up with three major desired outcomes:
1. Teachers' practical pedagogical skills strengthened in the use of accessible content using multimedia platforms.

2. Enabling environment created for the use of Assistive Technology to ensure inclusive education and access to information by key stakeholders.

3. Increased access to information, learning and interest by children, including children with disabilities in the teaching and learning process.

This section, therefore, addresses the extent to which the project realised its intended outcomes in light of the project's expected results and including a gender analysis on the use of accessible learning materials. This was done by examining how the project:

a) Increased participation and interest of primary school children with visual and hearing impairments in school.
b) Improved awareness and support to children with disabilities by those without disabilities.
c) Improved teacher support of learners with disabilities.
d) Ensured availability and accessibility of technologies and materials to schools and children with disabilities.
e) Provided technical support.
f) Offered greater independence of children with disabilities.
g) Freed family members to participate in other activities.

This section also highlights some of the weaknesses found with regard to the project achieving the intended outcomes.

Overall, findings showed that the project has been effective. Intended outcomes achieved included stimulation of learners' interest and participation in school in general and learning in particular; improved access to learning materials, and enhanced capacity of the teachers to handle learners with hearing and visual impairment. The project has enabled children who hitherto had no hope for education to go to school and learn. These are further explained in the next sub-sections.

5.2.1 Increased Participation And Interest Of Primary School Children With Visual And Hearing Impairments In School

Learners expressed that they now prefer being at school to remaining in their homes. They attributed this change of attitude to the introduction of the assistive technologies. During a FGD with learners with impairments (LwI), a pupil said, "We study well with these materials because before any kind of intervention was made I was at home seated and not attending any school." The learner now has reason to go to school. The intention of going to school is to learn, which they are able to participate in well due to the assistive technology. *"I never loved using the computer as much as I do now. When I go back home, I miss school. My family members go to the garden but I stay home and wish I was in school."* (Learner with visual impairment). Staying at home is no longer seen as an option.

With the assistive technologies, LwI are able to participate in class activities. In fact, teachers noticed that with the assistive technology, the children's participation during lessons increased compared to before the technology was introduced. One of the teachers interviewed said, *"... pupils' participation when using these technologies is higher than when they are not used, especially when using the projector and the laptops."* The teacher noted, *"In fact, it is like as if there is another teacher (in the class); so their attention and participation has increased."*
The devices are seen as 'co-teachers' because of the way the learning materials are presented. Learners are able to use these devices and learn as if a teacher is in front of them.

The general assessment made by many teachers points to the fact that participation by children with impairments has improved since the introduction of assistive devices. One of the teachers said, *"They now participate actively in class like sighted children. It has created learning opportunities for children with disability. Children with disabilities can actively participate in class by asking questions and responding to teachers because they understand and know they will be heard and understood."* Such participation means that the children can follow and understand what is being taught in class. This was also noted during lesson observation. The pupils were attentive in class and were able to answer the teacher's questions; they raised their hands and

waited for the teacher to pick on them. Pupils participate by answering questions asked by the teacher. The hearing-impaired pupil answered a question right.

The assistive technologies also had an impact on the level of participation of LwI in co-curricular activities. "While in school, children with disabilities also compete in singing competitions and, dance competitions such as the Kiganda dance. They also participate in poetry competitions. Two children who are blind usually participate in poetry competitions and another blind boy said he also competes very well in drumming. They listen to the teacher and memorise the poem" (Teacher). Another teacher from another school had this to say, *"Children with disabilities, especially those that have hearing impairment, also participate in sports such as runnin and netball, and have won several trophies. They also take part in theatre plays and act as mothers, spies, askaris and police officers."*

This is all to say that the participation of LwI improved to a level that is equal to that of children without impairments. The technologies levelled the ground for learning for children with impairments and made them equal learners with equal opportunities, allowing them to participate in learning in class with other learners. This was confirmed by the children during the FGDs. In the FGDs both for children with impairment and those without impairment, the pupils agreed that learning had become more enjoyable because of the assistive technologies and learning materials given to schools by this project.

It is not only assistive devices such as Classmate, Subwoofer or Victor Readers that are being appreciated, but hearing devices as well. Learners who are hard-of-hearing were given hearing devices and were now able to hear. *"We have just received hearing aids; in fact it is only been about two weeks and we really love school. This is because, before we could not hear some things, but now we hear every single thing and it is interesting,"* one beneficiary said. Those that cannot hear at all follow the signs relayed using the projector.

On the other end, teachers are aware of the learning needs of LwI and dedicate more time to helping catch up with other learners. As one of the children said, *"The relationship with our teachers is very good. In fact, teachers make an extra effort to explain to us that have various impairments so that we can move at the same pace as the rest of the children."* Their different learning needs are taken care of and this, too, contributes to them enjoying school.

If they can now understand what the teacher is teaching, they can interact with the teacher; they can answer questions from the teacher and ask questions in class.

Figure 4: A child with HI interacting with a teacher using sign language

It is important to note that the children with impairment expressed that not only that did they like coming to school, but they enjoyed it too because they are provided with learning materials that suit their needs, making learning possible and interesting, as they noted below during various FGDs.

> *"Children such as we that have various impairments are also accommodated at this school,"* noted another.

> *"This school has text books, and these are rarely found in other schools."*

They also enjoyed school because the environment was supportive of their needs. It provided them with the social and psychological support structures. "The school has a lot of children who help in directing us and we even play with them." The children feel part of the school and not strangers.

Based on the above background, teachers agreed that access to the learning materials, assistive technologies and the learning environment were the major contributing factors for the children with impairments to love school. The teachers noted a lot of enthusiasm in the children with impairments.

> *"Since we started using the assistive technologies, when you go to the classrooms you see the enthusiasm of these children; they are so eager to learn." (Teacher)*

> *"Children are always eager to learn; once they know you are going to use the assistive technologies in class, they are so excited. I wish you would go to class and see how excited they are." (Teacher)*

The assistive technologies and the learning environment, therefore, made learning interesting. A teacher had this to say, "Children enjoy lessons more because the Victor Reader and the projection of learning materials make learning interesting. Some of the children now view it as a game and enjoy it as fun; they think it's a film."
Another teacher said, "Whenever a teacher brings the learning aids, for example the laptops and the projector, the children are always attentive. If the teacher puts on the voice, they want to hear."

> *"When using these assistive technologies such as the laptops and projectors, pupils are more attentive during the lesson than when these assistive technologies are not being used. The pupils' participation when using these technologies is higher than when they are not used, most especially when using the projector and the laptops," a teacher noted.*
>
> *"Children's participation when using these technologies has increased, in fact, it is like as if there is another teacher, they sit like as if that's another teacher so their attention and participation has increased".*

The assistive devices are captivating for all the pupils, even the non-impaired ones.
As concerns how the devices affect learning outcomes, a teacher had this to say:

> *"The listening skills of children with visual impairment have highly developed because of the use of Victor Reader and computer. Their spellings have fairly improved and interaction with other learners has too. There is also progress in their typing skills."*

This indicates that there is improvement in the learning outcomes of the children with impairment. Teachers noticed improved performance of the children with the introduction of the assistive technologies and

learning materials. "Pupil performance has improved," said one teacher. Another teacher elaborated:

> *If I compare the normal children with those with visual and hearing impairments, I may say that those ones with impairments are better than those ones who are normal. For example, we have Amina (pseudo name); she uses one ear, but she is always the 2nd in class. Then we have John (pseudo name); he is totally blind and last term he was the 12th. In fact, they are good because we position them in the right place to ensure that they get everything that is being taught. And, the Victor Reader helped Emma so much."*

Even the children with impairments are happy to note improvements in their performance as one of them noted, "The hearing aid has helped me to perform better in class compared to the other terms because I used not to hear what the teacher was teaching, but now I can hear. With this, my performance has improved; I now beat the pupils without disability."

To find out whether the children with impairments think they are at par with those without impairment, during the FGD they were asked if they were interested in competing with other children. These were some of their responses:

> *"I am comfortable with studying and competing with the rest of the class. I want to stay and compete. I don't want to be isolated as if I am sick. They are my friends; I don't want to leave them."*

> *"Yes, we compete in running, reading, music, during revision especially between the normal and visually impaired children."*

> *"We also compete during class work and we sometimes emerge better than those that can see."*

The interview with the teachers confirmed the same. "Children with disabilities enjoy competing for example in class. Those that have visual or hearing impairment read very hard and if in one term they held the 6th position, then the next time they will take the 3rd position." One of the parents who participated in this evaluation explained with happiness that, "My daughter studies really well. In second term she performed very well. At my home, none of the children has ever been in the 3rd position and yet she brings such a good report each term. She tells me that they have technologies their teachers use in class and that is why she is able to understand what is being taught and pass well."

This is a sign that in the schools where assistive technologies and learning materials have been adapted to suit children with impairments, the children with impairments are able to participate in learning at par with their counterparts. The technologies levelled the ground for learning for children with impairments and made them equal learners. They could compete equally and achieve a lot according to their different capacities irrespective of impairment. Assistive technology therefore helped in combatting the institutionalised discrimination and neglect mentioned in the UNESCO report (2010) which contributed to low levels of schooling.

However, blind children need more time and patience in learning how to use braille. It was also noted that children with impairment are seated in class without taking into consideration individual challenges. Some could not see what was on screen due to problem of vision. Many children also crowded round one small Classmate, making it difficult for each to read.

In conclusion, high level results have been achieved in all the areas that affect improving inclusion of

children with visual and hearing impairment in education. When at school they are able to learn using the devices and learning materials are adapted to suit their different needs. As a consequence, they can actively participate in learning without any barriers. This makes them feel they are appreciated and facilitated equally with the pupils without impairment. Some of the barriers that would make them not want to go to school have, therefore, been dismantled.

Secondly, and based on the above, there is a noted improvement in learning outcomes such that the bright Lwl can perform better than some learners without impairment can. That means the devices assist the Lwl to bring out and develop their capabilities and be productive learners.

This is in line with the Uganda Government policy of improving inclusion of children with visual and hearing impairment in education, through designing interventions that focus, among others, on the need to create an environment where learners with special needs are expected to benefit from the education service provided.

5.2.2 Improved Awareness And Support To Children With Disabilities By Those Without Disabilities

This section discusses whether assistive technologies and learning materials have promoted closer relationship and collaboration between the children with impairments and children without impairments.

The assistive technologies and learning materials have promoted closer relationship and collaboration between the children with impairments and children without impairments. "We relate well with the children who have various disabilities such as visual and hearing impairment," said a child without impairment. The findings showed that the environment of the school was supportive of the needs of the learners with disabilities. It provided them with the social and psychological support structures as reported by one of the children. "The school has a lot of children who help us in directing and we even play with them." The children felt part of the school and not like strangers because the other children play with them

In the expression of the children when asked if the behaviour of their classmates towards them had changed since they started using these assistive materials:
 "Our classmates were very happy that we received hearing aids because we were able to communicate with them very well and we made more friends at school. Other children are supportive; they help us to understand the things we do not know. They help us a lot we want to stay and compete with them."
"I am interested in studying with them because they help to interpret for me and make me understand things I don't understand."

This means the social and psychological distance that existed between Lwl and those without impairment was narrowed, and in most cases, dismantled.

As children attend lessons together, they also learn the sign language from the projector. This provides the children without impairment a chance to learn sign language which they can then develop as they practice. So the children with hearing impairment become reachable and approachable as the communication gap is narrowed tremendously. The hearing impaired children are no longer taken as the other, but as the children say, "have become part of us".

We were able to note this during lesson observation. One could see learners imitating the signs (with concentration) as they watched the lessons. From school observation, we noted that some of the children without impairments have learnt sign language and are able to communicate with the children with hearing impairment. We also noted blind children being supported to walk around and play with those without impairment.

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The environment has promoted willingness to approach each other and seek to appreciate and understand the other's conditions and be able to communicate. In the final analysis, there is a sense of belonging and being available to help each other. So the children with hearing impairment become reachable and approachable as the communication gap is narrowed tremendously. Not only do they learn to communicate, but also to share. As one teacher said, "Even those children who are not visually impaired also wanted to use the machines, especially the Victor Readers, because they could listen." Children without impairment are also benefiting from the technologies especially the projector, laptop and the Victor Reader. The spirit of sharing promotes togetherness.

Hearing enhancement devices have improved the hearing capacity of the hard-to-hear children. Some are now able to hear what is said in and outside class. They can now   interact without barriers because they can now understand each other. As one of the pupils without impairment said, "Children in our class are happy that they received hearing aids because we can now easily communicate and play with us."

This evaluation confirmed that, as Hersh (2007) noted, assistive technology can be used to overcome the social, infrastructure and other barriers experienced by disabled people that prevent their full and equal participation in all aspects of society. Taking into account the SDG4 that stresses an inclusive education that provides an effective learning environment for all, the research noted that the project did well to introduce assistive technology and train teachers that provided an effective environment, the necessary change in attitude for the improved collaboration and mutual understanding between the children with impairments and the children without impairments. All the above provided ground for the achievement of what was planned – that is, an enabling environment for learning together without barriers due to impairment. Ultimately the right learning environment for children with impairment is created and enhanced.

However, whereas a lot has been achieved with regard to awareness and support to children with disabilities, it is all not rosy, as some children with impairments shared. One of them said, "When we were given glasses, the other children laughed at us and nicknamed us 'galimaso' meaning 'big spectacles' because the spectacles were very big." The problem was that the spectacles did not fit very well.

In another case, such expressions such as, "We do not study with the rest of the classes so sometimes we don't know what they do," indicate that the learning environment has not been made inclusive in some schools. Children with impairment are in the same school as those without impairment, but are put in different classes. As a result, some negative sentiments develop. Some of the children said, "Some children are not good to us; they tease and nickname us. I don't like studying and competing with them, and I wish we could be alone... There is nothing I like about competing with other children."

These expressions are of disappointment by pupils that found themselves in a non-conducive environment. This shows that children are sensitive to environmental and structural issues. It is important to note that administration plays an important role at this level. In most schools where there was the right environment, we noted that the headteachers took interest in and supported the programme. They provided the teachers with support and monitored the programme. This is in tandem with Article 24 of the Convention on the Rights of Persons with Disabilities (CRPD) and Goal 4 of the Sustainable Development Goals.

5.2.3 Improved Teacher Support To Learners With Disabilities

One of the major activities of this project was capacity building for teachers, teacher educators and the community. Some training was carried out. So, the evaluation sought to establish what training was carried out and its impact on the teachers' knowledge and skills to handle children with VI and HI.

Findings showed that trainings were conducted three times in selected PTCs at the regional levels.

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According to the Project Report, 2016, the first training was for three days and the last two five days each. A total of 83 in-service primary school teachers in 20 schools and 255 teacher educators, including district Inspectors of Schools and tutors, received training, while sensitisation led to awareness among a total of 954 stakeholders (582 females and 372 males) and 600 learners were reached (78 were learners with disability – 46 girls and 32 boys). In addition, publishers and librarians were sensitised on the importance of inclusive education and on the need to publish more accessible information and education materials for children with disabilities.

From the interviews, we were able to establish that at least two teachers per school were trained in the use of the assistive technologies. All of the teachers interviewed said that the training was useful, though "... the material which was put in the computers which we were trained in was not in line with the books which were given to us and which we are following in teaching. "

The teachers were trained in the use of assistive technologies. The support provided through the use of these technologies in teaching has promoted and developed greater interest in teaching and supporting learners. It was also reported that some of the teachers were recording their lessons using the Victor Reader for learners to use for revision. The technology is also helping in situations where some teachers do not know, for example, the sounds that must be taught. In these instances, a teacher can get those sounds using the machine, and it becomes easier for the teacher to teach. One teacher summarised it as follows:

> *If the teacher is going to explain something to those learners, when it's just projected there it becomes easy. Then it has even brought about class room control, when you are presenting something using those pictures ... all the learners' attention is there. .... it has even motivated the learners' performance...participation in the lesson because once they see there, they are motivated. ... most of these learners hate reading paper work but when its projected or it is put on the computer each learner is motivated to read from there. ... it has also helped a teacher to be motivated in terms of teaching, ... (and) it has even relieved the teachers (of) work, instead of reading for all those teams, you just place there.*

Other teachers noted that the training helped them develop positive attitudes towards these children.

From the lesson's observation, responding to the observation question, 'How are the teacher and pupils interacting or what is the teacher doing with the children?' It was observed that the teachers used the assistive devices to involve the learners in the lessons. Teachers were aware of the learning needs of the LwI and provided them with more time to enable them to catch up with other learners. As one of them said, "The relationship with teachers is very good. In fact, teachers make an extra effort to explain to us that have various impairments so that we can move on the same pace with the rest of the children".

On the one hand, this tells a lot about the preparation of the teachers. It shows that the preparation was adequate for the teacher to not only to be in class and teach, but also to understand the LwI and their different learning needs. On the other hand, this shows that the training improved the teachers' capacity to detect the learning needs of each pupil. This enabled them to build a good relationship that promotes confidence and trust.

According to the teachers, the training helped them learn the characteristics of children with special needs, how to identify them and how to help them learn effectively. These teachers can do proper screening and assessment and determine how to support pupils with disabilities. They also learnt how to handle children with disability and are teaching and encouraging their colleagues give the children attention. One of the children in one of the FGD said, "Teachers here know our challenges as children with visual and hearing

impairments and they endeavour to help us. Teachers are readily available whenever we need them. I also understand when they teach me in class"; which confirms the teachers' view that they are now able to support the children better. The teachers were clearly a lot more supportive to children with disabilities which motivates these children to engage in school activities. The teachers are able to handle all learners with different abilities within the same class.

They were trained in the use of assistive technologies, though all the teachers said that the training period was too short, especially taking into consideration that it was the first time for many of them to interface with computers.

The support provided through the use of these technologies in teaching, has promoted and developed in them greater interest in teaching and supporting learners. According to one of the teachers, "On the side of the teachers it has made their work easier especially now that we are using projectors in preparing. We have reduced on the traditional way of writing very many notes and in producing learning materials."

Class control and ensuring the children's attention is critical in ensuring learning takes place in the class. The evaluation established that the assistive technologies have also helped in classroom control by drawing the children's attention towards the lessons. Whenever a teacher brings the learning aids for example the laptops and the projector, the children are always attentive, …. They all keep quiet so that they can hear, it has even improved the listening skill because children want to hear the voice and sound which comes out of those machines (Teacher). This is a reflection of improved teacher practices. The district officials also confirmed improvement in the way teachers were handling learners, saying that teachers were now using more participatory methodologies and had better interaction with the learners. According to one of the officials, "I heard a testimony from a teacher who said that the training has helped them and their relationship with the children has improved greatly."

One of the headteachers also said,

> *"They now have the knowledge; they can now access information from the computer. The delivery of their lessons has improved. And I have seen great improvement in the teachers, particularly the male teacher, because he is always working on the computer and it has actually helped us a lot. We are using that very teacher to help other teachers and we see his level of performance has greatly improved after the introduction of the materials."*

One of the Outreach Tutors excitedly reported that he had found teachers and learners in one of the schools using the materials. He explained, "You know we have a problem in Uganda. They can give a school materials, but you find them packed. But I was happy to find that at Spire Road, the children had been given the materials."

Despite the positive outcomes mentioned above, there were some challenges with the project achieving the intended outcomes and these include the low numbers of teachers who were trained, inadequate competence of teachers in using the technologies, failure to distribute the materials to the PTCs, and the inadequate materials for the relatively high numbers of children with disabilities.

Findings showed that the numbers of teachers trained were very few compared to the number of learners with visual and hearing impairment in the selected schools as shown in the table below.   In all the schools visited, each of these teachers handles twenty or more children, which is too high for special needs class.

Table 3: Number of teachers trained in each school

Schools	Types of impairment	Total no. of learners with impairment	No. of teachers Trained	Teacher:Pupil Ratio
Gulu P/S	Visual	32		
Eruba P/S	Hearing	107	4	1:26.8
Kamurasi	Hearing and visual	84	3	1:28
Kasambya DAS	Hearing and visual	78	3	1:26
Misanvu Dem.	Hearing and visual	63	3	1:21
St. Bernadette	Hearing and visual	117	5	1:23.4

One of the learners without impairment explained, "The number of teachers teaching sign language in Eruba here is not enough; there is need to train teachers in sign language. If all of them knew sign language, it would be of great importance and improve the performance of those pupils."

Another learner with hearing impairment said, "Some teachers do not know sign language, let's speak the truth." Having very few teachers in the schools could lead to limited interaction between the teachers and learners with impairment. Table 3 gives the number of children with impairments and the corresponding number of trained teachers in the schools.

According to the findings, the district officials, headteachers and learners with impairment would have preferred a school where all the teachers have the knowledge and skills to use the materials and are able to appropriately instruct learners with visual or hearing impairment. The excerpts below capture some of these voices:

"All the classes have learners with hearing problems, but only few teachers were trained. It is better to train all the teachers "(District official)

"The other time the sign interpreter teacher was doing very well but currently … the sign interpreter is not doing well. We need better and knowledgeable teachers who can interpret sign language" (Learner with hearing impairment)

"I even know better than some teachers, so I go to the children with deaf impairment and I explain to them" (Pupil without Impairment)

"Only few teachers were trained on how to use the devices and those are the teachers who conduct the lesson. The rest have no idea. I would also request that more teachers be trained on how to use computers" (Headteacher)

"Training in using assistive technologies should be given to all teachers not just few" (Enabling Services).

'If the CCT was involved, he could have trained the different teachers in the schools" (Teacher educator

Additionally, many trained teachers expressed challenges in using the Victor Reader and in the maintenance of the equipment. For example, some of the teachers said they had challenges troubleshooting and finding the right interventions. Some did not understand why the projector kept on shutting down regularly. This has an impact on the use of the tools and how the teachers can appropriately take care of the equipment. According to the report by Global Disability Innovation Hub (GDI Hub) 2019 that provided support in the evaluation of the usability an assistive technology (AT) intervention in 20 Ugandan schools, many teachers did not use the Victor Reader because "the manual of the Victor Reader is recorded within the Victor Reader so they cannot revise the manual as accessing it requires that they know how to use the device."

It was also reported that although the PTCs were used as training venues, some were not provided with the study packages given to the teachers. Failure to provide PTCs with the materials meant they could not teach the teacher trainees how to use the assistive technologies. This in turn meant that PTCs would continue graduating teachers who are not able to use these assistive technologies to support learners with visual and hearing impairments.

Another area where the project did not meet the needs of the stakeholders is the adequacy of the materials that were provided. First the materials were too few for the visual and hearing impaired learners. For instance, in Eruba P. S. there were a total of 107 learners with hearing impairment from P.1 to 7. In Gulu Primary School there were 32. One of the learners reported, "Accessing computers has been very hard since the population is big. The computers are few and when you want to use them in your free time, it becomes very hard as you are to follow the allocated time period." (Learner with hearing impairment). Table 4 shows the numbers of learners with impairment in two of the selected schools.

Table 4: Number of children with hearing and visual impairments *

School	Children with Hearing Impairment (HI)				Children with Visual Impairment (VI)				Children with Hearing & Visual Impairments			
	Boys	Girls	Total	%	Boys	Girls	Total	%	Boys	Girls	Total	%
Eruba PS	62	35	107	10	0	0	0	0	0	0	0	0
Kasambya DAS	24	9	33	3.9	14	31	45	5.2	0	0	0	0
Misanvu PS	18	12	30	4.4	21	12	33	4.8	0	0	0	0
Kamurasi PS	18	17	35	3.4	18	32	49	4.8	0	0	0	0
St. Benaddette PS	17	29	46	3	38	60	71	5	0	0	0	0
Spire road PS	0	0	0	0	25	31	57	7.8	0	0	0	0
Nakatunya PS	4	5	9	1	4	2	6	0.6	0	2	2	0.2
Totals	143	107	260		120	168	261		0	2	2	

*Data for Gulu PS is not captured

Findings also showed that even the learners without impairment wanted to use these materials, further aggravating the inadequacy of the materials. One of the visually impaired learners reported, "My friend Joshua said he wished he was blind so that he also gets a chance to learn computer. So I told him that we did not want to be like this." Such comments call for careful planning before materials are distributed to schools because children are curious and want to explore any new technology available in schools. Leaving them out is perceived negatively.

Given the limited computer literacy among the teachers and equipment, the duration of trainings was inadequate (Final Report, 2016). Many of the teachers reported that the training duration was too short. This affected the ability of the teachers to effectively use the equipment.

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5.2.4 Availability And Accessibility Of Technologies And Materials To Schools And Children With Disabilities

For the first time, the selected schools received technologies and materials to support learners with disabilities. Figure 5 shows the assistive devices that were distributed to schools while figures 6 and 7 illustrate some of materials that were available at the different schools during the evaluation visits.

These Assistive Technologies have enabled teachers to support children better. "I also discovered that the assistive devices had a greater advantage of helping the teachers to assess the learners' level of hearing," commented a headteacher. The major aim of assistive technology is to assist learners with impairment in learning. This has been expressed in all the sub-headings of this section. The excitement children initially had when they got in contact with the technologies, the excitement in learning (even for children without impairment), the excitement to find that they (children with impairment) can now communicate with those without impairment are testimony to the success of the technology. Most important, is that the children are able to learn, thanks to the assistive technologies.

The memory card for storage of final reading materials

The Plextalk

The Victor Reader Stream

The Classmate laptop

LCD projector

Sub woofer
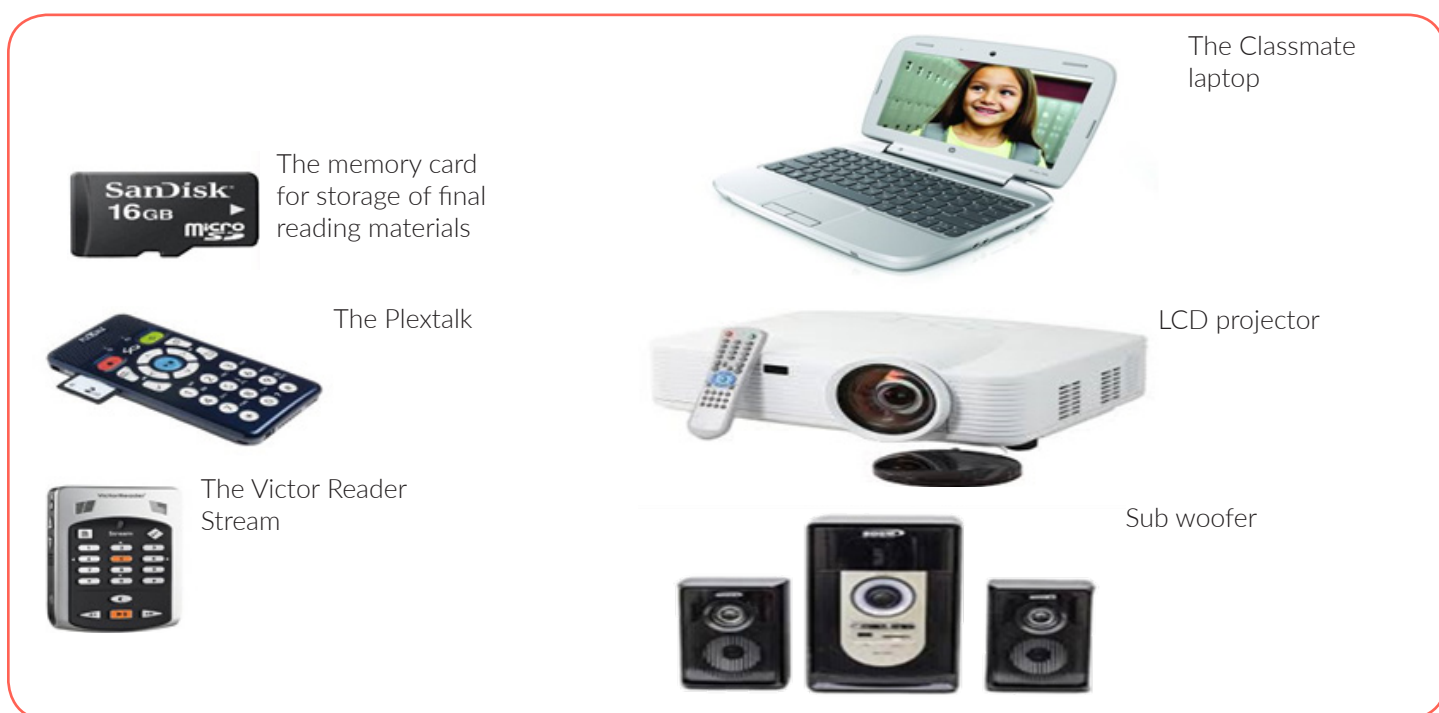
Figure 5: Assistive devices supplied to schools

Figure 6: Bag and cupboard for storing equipment at Gulu PS

Figure 7: Materials at Gulu PS

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However, findings showed that not all the schools received these materials. For example, Nakatunya did not receive the Victor Reader yet they have VI children, while Spire Primary School did not receive the projector. One of the teacher educators explained, "We received the technologies with learning materials suited for teaching English in P.4 and P. 6. However, for many schools, not all the equipment was received at once. They were brought in bits, starting with the solar system. Then the rest were brought in different orders. Some schools did not receive all types of equipment."

Findings also showed limited access of the accessible materials by the learners with visual and hearing impairment, as expressed by the children below:

"Recorders are still few for the visually impaired. There is only one and it was even faulty. Each visually impaired child needs to have a recorder."

"We do not have enough light in class. The classes are dark and for us who cannot see, we are completely left out."

"I think they should give us more computers because we only have one which is not enough."

"These materials are big thus not pocket/bag friendly so moving around with these big objects is hard."

"The glasses I received were very big, they were very uncomfortable I did not put them on. So I think they should reduce the size and give us our sizes."

In all the schools, the equipment and materials distributed were not adequate for the numbers of pupils (see table 5 which shows the numbers of learners and equipment distributed in some of the schools sampled).

Table 5: Number of learners and equipment available in each school

Schools	Impairment	Class P.4	Class P.6	Total No. learners with impairment	Laptops	Speakers	Victor Reader	Projector
Gulu P. S.	Visual	7	6	13	1		1	1
Eruba P.S	Hearing	16	21	37	2			1
Kamurasi	Visual	1	9	22	2		1	1
	Hearing	3	9					
St. Bernadette	Visual	10	35	64	2	2	1	1
	Hearing	9	10					
DAS	Visual	4	9	20	2	2	1	1
	Hearing	5	2					
Misanvu	Visual	4	9	24	2	2	2	1
	Hearing	9	2					

In all the schools the learners with impairment decried their inability to use the equipment when they needed to. They need the learning aids not only during lesson time, but also for revision and personal

studies. It is during this time of personal studies that the challenge becomes more expressed.

"We do not use the laptops and projectors and we don't know why yet we see them with the teachers."

"The learning materials like the textbooks are few yet we are many. Because we use them with the children without disability and they are many."

"We need to be taught how to use Braille. Because we don't see and because there are few teachers that can teach us, we end up straining our eyes so that they see the black board."

When I became Deputy Principal, I found those things already distributed. How they were distributed I don't know. But when I was interacting with one of the schools, I discovered that some of the equipment was delivered by UNICEF (Teacher Educator).

Ask them about it, ask the headteacher about this project. How are they using these materials? Is the performance of the children improving? Because for us we want to know so that if it's not doing well, we know what to do. If we are not informed, monitoring becomes a challenge. (District official).

"Our teachers once told us that the children that have visual impairment would get spectacles that would improve their eyesight. The teachers further told us books for those that were visually impaired had been sent, where we could write very big and easily visible letters. We have seen these books, but they have never been distributed to us."

Findings also showed that the distribution of the materials to schools was done without the knowledge of the district officials. Interview results with teacher educators and district officials showed lack of awareness about the distribution of the materials. As a result, some only learned about the distribution during their routine visits to schools. The excerpt below captured their views.

Although all the selected schools received the equipment and accessible materials, their use was affected by several factors, including the transfer of teachers who were trained to use the equipment, delay to repair faulty equipment and relocation of some of the equipment to other offices. For example, one of the DEOs was reported to have borrowed a computer from a school and by the time of this data collection had not returned it. In one school, the equipment was "in the hands of the headteacher and it was not being utilised well" while in another, the equipment had been locked in a box in the headteachers' office and was not easily accessible to both the teachers and learners. Similarly, in one school, none of the teachers in knew how to use the equipment and materials. One of the teacher educators narrated,

"They sent us to go and find out. In every centre we went the teachers told us they had not been trained in this equipment. In another school the equipment was locked in a metallic box. We asked if they knew what was contained in the box and they said they didn't know since it was locked. Shortly after our moving around the field and reporting, we sent it (the metallic box) back to them and said the tools have reached in the schools except in Aber primary school. We also informed them that the tools taken were not being used because teachers have not been trained. They told us that the trainers would be sent. Since then, they have not involved us so I do not know whether training took place. (Teacher Educator)

This finding shows that although schools were provided with the accessible materials, many challenges hindered their effective use. This is further discussed under 5.2.3.

5.2.5 Stakeholder Involvement and Technical Support

a) Stakeholder Involvement

As mentioned in section 2.2, this project had many stakeholders, some of whom were expected to play very active roles in the design and implementation of the project. Although the stakeholder participation is discussed across the findings, the following table gives a summarised picture of the stakeholder involvement in the project as established in the study:

Table 6: Stakeholder involvement in the project

Stakeholders	Participation in the Project
Ministry of Education & Sports, Special Needs Department	Was involved in the design discussions, provided oversight and overall supervisory role in the implementation of the project.
Ministry of Ministry of Gender, Labour and Social Development	Chaired the Policy Board and Management Committee (PBMC) and by start of the study, (according to UNPRPD R2 – Phase 2 Support Concept Note n/d) had conducted 8 meetings. The PBMC was composed of representatives from United Nations Agencies and Programmes, Disabled Persons' Organisations (DPOs), Government Agencies and other relevant implementing bodies and publishing companies and was critical in partnership building
District Education Offices	Had minimal participation. See sections 5.4.3, 5.5 and 6.3 where this is discussed further
Disabled Persons' Organisations (DPOs),	• Participated in the Policy Board and Management Committee meetings • Were consulted when the study materials were piloted. Uganda National Association for the Deaf were specifically involved in ensuring the sign language used was appropriate.
Headteachers	• Participated in the sensitisation and training workshops that were held. • Are managers of schools and the most immediate supervisors of school teachers and it was evident they were actively involved in the implementation of the project at school level, supervised and provided support to the teachers.
Teachers	• The project trained a number of teachers to specifically handle and support children with VI and HI. • Teachers were therefore direct implementers of the project.
Parents	• Provide the most immediate home based care and support to children • Parents also sent their children to school
Primary School Pupils	• This project targeted primary 4 and 6 pupils with visual and hearing impairments • Children were the direct beneficiaries and they attended school, used the assistive technologies and the learning materials that had been adapted for their use • Other children without impairments also reported having benefited from the assistive technologies

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b) Technical Support

This is the weakest component of this project. Technical support was not built into the project plan, one of the consultants reported. Findings showed that when the equipment and materials were distributed to the schools, the consultant installed them, oriented the teachers and provided the technical support.

To ease technical support, the consultant created a WhatsApp group in which all the teachers using the equipment and materials were included. By the time of this evaluation this WhatsApp group was still active. Use of WhatsApp eased and quickened communication but was not helpful when equipment broke down. Many times, even with instructions on WhatsApp, the teachers were not able to troubleshoot and repair the equipment.

The distance between the people providing the technical support and location of the schools further delayed technical support. In fact, as one of the consultants explained, "When equipment at schools fails to work, it is not repaired quickly." In one of the schools, a computer that had been taken the previous term for repair had not been returned. Moreover, the respondents also reported the high costs of repairing broken down equipment. One of the head teachers explained, "…we often pay 50,000/= each time someone comes to check. The challenge in maintaining the devices i.e the absence of a technician has resulted into loss of some programmes. It has been expensive to maintain a technician each time he comes around to check on the gadgets."

Moreover, findings showed that the consultants were no longer part of the consultancy firm that designed, distributed and installed the accessible materials in the school. However, by the time of this evaluation the technical support was still being provided by the same team. One of the consultants explained, "I had a contract of 12 months and it ended but I was asked by UNICEF to continue providing support and an MoU was signed between UNICEF and Kyambogo University. I am not paid; it is voluntary. Up to now we are still called when our contract expired long time ago. The MoES had said they would build the capacity of one person. He should do the work but he appears less interested."

5.2.6 Offering Greater Independence To Children With Disabilities

Children with disabilities face challenges in managing their lives without support. Most parents used to have challenges in managing such children. As such they were secluded from society, and most of the times hidden in houses and not allowed to participate in social life and education. The learning aids offer greater independence to children with impairment. They give us hearing aids which we use to hear and we even go with them home; we only remove them when we are going to sleep and to bathe. The hearing aids help us to hear sounds even when we are at home. The hearing aid helps me to listen to music. I like music so much so when I am putting it on, I listen to some music and I become happy. The hearing aids helps me to hear vehicles. For example, when I am crossing the road and I hear the sound of a moving car, I do not cross until it passes. We can even learn a lot from conversations in our communities and at home because we always have our hearing aids on." Independence here means that with the support of the assistive technologies (such as hearing and seeing devices), children are able to participate in life without looking for support from parents and other persons. Therefore, they are able to learn, to listen, to walk and to communicate. "Learners have been taught how to use the laptops and Victor Readers. They can use them on their own whenever they need them. Learners with low vision, are now able to see each word on the projector. Those who are blind are using a Victor Reader because even on the Victor Reader, there are recorded notes…. He takes it to class and records the lessons, then in his free time he listens to them and writes down what he is hearing, he takes to the teacher to mark and correct." (Teacher) This offers the pupils greater independence.

These materials can complement the teacher's efforts and also encourage learners to explore more on their own because there is a limit to what the teacher can teach, but once the pupils have access to

this information here, then they can do independent exploration. As such, pupils are able to learn using assistive technology even in the absence of a teacher.

5.2.7 Freeing family members to participate in other activities

Taking care of children with disabilities can be taxing and there have been fears that this can occupy most of parents' time, leaving very little time to work and to take on other activities that would benefit families. ("Parents used to lock up children in the houses while they go for work and other daily activities," said a teacher). However, the introduction of the assistive technologies and the accessible learning materials has encouraged more parents to take children with HI and VI to school. As one teacher says, "But parents are now encouraged to take their children to school so as to avoid these particular children with impairments becoming a burden to their families and the community." Parents confirmed this: "As a parent, when I go to school and my child takes out her reading notes and reads for me on her own without any help from the teacher, this encourages me and it pushes me not to make her miss out on school when the next term starts." Since these children now go to school, parents can more freely go to work without worrying about what is happening to the children the way they used to.

In some schools visited, children with VI and HI are accommodated at school. This relieves parents even more, as one of the teachers explained:

> *"You know some parents in villages, if a parent gives birth to a child with a disability, they put them in the house; they lock them in the bedrooms because they do not want other people to see them. So if we find out that there is such a child, we go and talk to the parent and then the parent brings the child here. Parents feel relieved and supported because all children with disabilities stay here at school during school time."*

Parents trust and know that their children are learning. For that matter, they willingly send them and help them get to school. They appreciate that with the training, the children learn to do many things on their own and are able to do so more or less independently. This provided them with relief, but also indicated a better possible future for their children

5.3 Project Efficiency

The evaluators were unable to access the full proposal for this project and the budget. Therefore, efficiency, especially value for money, was derived from the cost savings that were evident in the data. It was not possible to establish delivery of activities on budget and against agreed plans. In addition, it was difficult to attach monetary value to some of the intangible benefits from the project. Nonetheless, there are indicators that showed efficiency as shown below.

5.3.1 Use Of Government Structures To Support Monitoring

The findings showed that the implementation strategies of the project were built around the existing government structures such as MoES, CCT and district officials. This was meant to improve monitoring and support supervision to the teachers, a component that is relevant to Project Objective 4 - Effective monitoring of the use of assistive technology to ensure inclusive education and access to information mainstreamed. One of the teacher educators who participated in the monitoring explained:

> *In 2018 I was selected to carry out support supervision on special needs centres and find out to what extent are they using the equipment to support education. In Gulu there were two centres (Gulu Primary School and Gulu Prisons Primary School). We also came to Arua where we went to Eruba Primary School, where there is a special unit for hearing impairment. In Gulu there is a special unit for mentally retarded children and at Gulu Primary School there is a unit for the blind. Then when we went to Aber in Oyam district, there is a centre there for the blind. We were told that UNICEF*

brought some things (special needs equipment). In the schools where we went, we found a very big box like the ones that are given out for the early grade childhood equipment (Teacher Educator).

Using existing structures saved on cost because monitoring of the Assistive Technology Project was incorporated into the activity plan of the CCTs and the district officials. In this way, the CCTs and district officials were able to monitor the project activities while carrying out general monitoring and supervision of school activities. Because CCTs were able to combine monitoring of the project activities with their usual activities, savings were made on fuel and transport-related costs.

Aside from collaborating with district officials and teacher educators to ensure buy-in and sustainability, the project also maximised project benefits by tapping the skills from the Ministry of Education and Sports, the Primary Teachers' Colleges and district officials. Moreover, one of the consultants joined Kyambogo University, a government institution that oversees the training of primary school teachers. This also meant continued support of the PTCs and implementing schools. These too saved on cost of hiring staff to provide support.

5.3.2 Use of PTCs as Training Venues
In preparation for project implementation, training sessions were undertaken at the Primary Teachers' Colleges. This meant that the project only spent on meals and stationery. Moreover, the training of teachers represented long-term gains that outweigh the minimal cost incurred during training. This is because the trained teachers would remain in the schools and even train other teachers in their schools.

5.3.3 Cheaper Communication
The creation and use of a WhatsApp group that brings together all the participating teachers and includes the consultants, UNICEF staff and Ministry of Education officials offers cheap and real-time support for the teachers and the consultants. This platform is being used to ease communication, sharing of information, reporting challenges being faced and to provide support to teachers and to one another. This represents value for money and efficiency.

The findings also showed that implementing schools used smart mobile phones to send instant text messages to the consultants and to each other. This is another cost-effective way to cut down costs of telephone calls and movement from one school to another.

5.4 Long-term Project Effects
This evaluation also sought to determine positive and negative long-term effects produced by the project intervention, whether directly or indirectly, intended or unintended, taking into account gender.

5.4.1 Positive Intended Effects
There are several positive effects of this project. First it was clear that the teachers' practices had improved, particularly, teachers reported being able to identify other children with learning disabilities. For example, when the Victor Reader is used, a teacher can identify other children who may be hard-of-hearing simply by observing the children as they listen to the Reader. Teachers have learnt how to ask questions differently to cater for the child's specific disability. For example, "If the question is 'name part x' and part x is the eye-lid, we say instead 'What is the use of the eyelid?' We change it such that it's also related." (Teacher).

Among the children with and without disabilities positive effects of the project included improved self-esteem among the children. When inclusive education was introduced using the assistive technology, the children with disabilities felt that they were also being considered and their needs recognised and planned for. This project helped reduce stigmatisation of children with disabilities. In addition, sighted children comfortably learned with those with sight impairments. As one of the head teachers explained, "Isolation

and stigmatisation has been minimised and good relationships have been developed amongst learners by way of participation, knowledge sharing e.g. during group work." On the other end, children in inclusive schools treated their schoolmates who have disabilities well and they are friendly to them which makes them love being at school because they do not feel different from others.

The project also resulted in improvement in the learning environment. For example, the project provided schools with solar systems to service and power the devices. The solar lighting also improved security. The availability of light also gave children an opportunity to stay on and study long after dark and to report early in the morning to study. Ultimately, in some schools like at Nakatunya, "availability of lighting increased teacher - pupil hours of contact and it was manifested in the 2018 results when the school passed 10 puipils in Division 1, 59 in Division 2, 08 in Division 3, 09 in Division 4, and 1 with un-registered results," commented a headteacher.

Thirdly, the project had positive effects on the community. The project changed the attitude of parents and the community towards children with disabilities. Before the intervention of the project, parents seemed not to care about children with disabilities (visual or hearing impairments) as some of them saw these children as a burden. As a result of the project, the community became more open-minded about accepting children with disability and having them go to school to attain education. As a result, enrolment of children with visual and hearing impairments increased. One of the teachers explained, "When parents come and see the learning aids and assistive devices teachers use to help children with disabilities, they bring more of these children to the school." Although it was difficult to determine the exact dropout rates of the children with disabilities, teachers and headteachers reported a reduction in dropout rates for children with disabilities because they are encouraged, supported and helped to stay in school. One of the teachers, for example, said, "Around the schools here, I think our school has the most children with disabilities and special needs. I think the community is aware that there is support here, bearing in mind that sensitisation and education were made, so most of the children are brought to us here."

The project has ensured the retention of children with disabilities in school. By provision of these technologies, the children with disabilities feel recognised and wanted. It has got them interested in learning.

5.4.2 Unintended Positive effects
The evaluation also showed effects of the project that were not originally intended. Overall, the project had positive unintended effects on project beneficiaries especially the learners, teachers and parents.

a) Growing interest among teachers to specialise in Special Needs Education
As Uganda continues to promote inclusive education, it is important that more and more teachers are trained in special needs education. This evaluation revealed that the project has sparked interest in training in special needs. As one district official said, "Some teachers have picked interest in going for training; so far, we have two teachers who have enrolled for a Diploma in Special Needs Education. They see a future in such a vocation." (District official).

b) Improved support from learners without hearing impairment
By improving the peer-to-peer relationship among the pupils, there was more support to learners with impairment by those without. The closer interaction between learners with and without impairment shows that the barriers between the two has been broken. There is recognition by the learners without impairment that the children with impairments are as capable as them, and sometimes know more than they do. One of the teachers explained:

"The children with hearing and without always come together to learn and are helping each other." Another teacher said: "Many times when they are called to learn computer, especially for the deaf who cannot capture things properly, the hearing end up helping them to interpret and repeat whatever steps teachers have been telling them, which means they are enjoying and learning together."

The learners also confirmed the teachers' responses of better support as seen from these quotes:

"Like my friend Gordon that I had talked about, he knows a lot of mathematics so I go to him and he explains to me and I know social studies and if he comes to me I also explain to him; that's how we compete."

"But some teachers come to class and read throughout and go out. I take my book and give them and they copy and I explain to them."

"When the teacher is in class my friend reads for me and when she has something, she shares with me, she is called Aber Angel."

Observation in a class with pupils with visual impairment confirmed this support. The sighted learners read for the visually impaired learners things that were written by the teacher on the chalkboard. Secondly, the improved participation in class in turn improved the performance of children with impairment. One of the district officials explained, "What really impressed me was the performance of the candidates in 2018. One of them was the best in PLE; she scored Aggregate 24 and that was a very big achievement. All these years nothing like that had happened. It has to be improved so that we have more of them performing well." (District official).

This evaluation also sought to determine positive and negative long-term effects produced by the project intervention, whether directly or indirectly, intended or unintended, taking into account gender. In summary, it can, therefore, be said that the project registered a number of positive effects including:

i)   Teachers are able to identify other children with learning disabilities. For example, when the Victor Reader is used, a teacher can identify other children who may be hard-of-hearing simply by observing the children as they listen to the Reader.

ii) Teachers have learnt how to ask questions differently to cater for the child's specific disability. For example, if the question is, "Name part x and part X is the eyelid, we say, instead, 'What is the use of the eyelid?'"

iii) Children's self-esteem has been boosted. After inclusive education was introduced using the assistive technology, the children with disabilities begun to feel that they were also being considered and their needs recognised and planned for. This also helped reduce stigmatisation of children with disabilities.

iv) Sighted children are comfortable to learn with those with sight impairments. "Isolation and stigmatisation has been minimised and good relationships have been developed amongst learners by way of participation and knowledge sharing e.g during group work." Also, children in inclusive schools treat their schoolmates who have disabilities well and they are friendly to them, which makes them love being at school because they do not feel different from others.

v)   Lighting provided by the solar system was purposely to service and power the devices, but it also improved security in some of the schools because there was no power in some of these schools

before. The availability of light also provided the children with an opportunity to stay on and study long after dark and to report early in the morning to study. Ultimately, in some schools like at Nakatunya, "availability of lighting increased teacher-pupil hours of contact and it was manifested in 2018 results when the school passed 10 in Division 1, 59 in Division 2, 08 in Division 3, 09 in Division 4, and 1 with un-registered results," commented a headteacher.

vi) It has brought about attitude change, given the fact that the community in which the project is being implemented is now more open-minded about accepting children with disability and having them go to school to attain education. The community around the schools are now able to bring their children and have learning take place.

v) The project changed the parents' and the communities' attitude towards children with disabilities. Before the intervention of the project, parents seemed not to care about children with disabilities (visual or hearing impairments) as most of them saw these children as a burden to the community, but after receiving the devices for the disabled children, most schools organised PTA meetings and sensitised the parents in order for them to know that the school had now acquired devices for the disabled children and how these devices could ease their children's learning.

The project has led to an increment in enrolment levels, especially for children with visual and hearing impairments. When parents visit schools and see the learning aids and assistive devices teachers use to help children with disabilities, they bring more of these children to the school. There has also been a reduction in dropout rates for children with disabilities because they are encouraged, supported and helped to stay in school.

vi) It has ensured the retention of children with disabilities in school. By provision of these technologies, the children with disabilities feel recognised and wanted. It has got them interested in learning.

5.4.3 Unintended negative effects
Though not directly resulting from the project, reorganisation and streaming learners into different classes by schools has a negative impact on the learners with impairment. Many times the learners without impairment are transferred to another class because of their good performance; this often leaves the learners with impairment in classes for 'weak learners'. One of them explained,

> *I have a friend in P.7 class who used to help me read... if the teacher has written something on the blackboard he can read it for me. And he used to help me with tough questions. He also helped me to carry my braille machine. His name is Samuel. But Samuel was moved to White. He was bright so they moved him. White is for students with first grade. Now I do not have anybody in my class doing these things for me.*

This finding showed that learners with impairment had to continuously look for friends who can help them each time the school reorganises the learners.

Secondly, both teachers and pupils said that the Victor Reader is complicated to use, creating frustrations with technology. "It is very challenging to navigate because it has very many functions. Sometimes you may find a learner has recorded a lesson then when they wanted to use it, they instead they instead erased what they had recorded," commented a teacher. Teachers also said that they experienced challenges with the laptop that goes off during lessons.

Children expressed a concern that the assistive technologies and materials are slow and thus delay them. They think more time should be given to them to perform the same task as the non-impaired pupils.

Some parents did not like the materials that were given to children with disabilities. For example, they say the spectacles will make their children completely blind. This is a prejudice that is found in communities and needs to be dealt with.

From the perspective of the district, there were also some gaps. For the project to be sustainable within the decentralised Ugandan system, the local governments need to be involved in the project before it winds up. In order for the district to take charge of the project, they need to be trained and provided with the instruments for monitoring and supervision. There is insufficient knowledge about the project among the district officials who were not trained and there is no proper alignment of power with regard to who reports to who and at what level. There is also no comprehensive monitoring tool presented to the district for the project.

5.5 Sustainability Mechanisms
Whenever projects are designed, it is always vital that issues of sustainability are built in so as to fully exploit all the benefits and potentials accruing from a specific project.

Elements such as improvements in teaching and support by learners without impairment are the most durable elements of the project. So far, teaching using the equipment and materials have made learning fun. The presence of teachers who are trained to use the materials in schools also provides a strong basis for continuity. However, teachers will require continuous training in order to refresh their knowledge and skills of using the materials and more teachers need to be trained in each school.

The project's involvement of the MoES headquarters, districts and teacher educators eases support to the schools. But this needs strengthening since the findings showed that some of the district officials and teacher educators appeared uninformed about the distribution of the equipment and materials to schools. In one of the districts while the Deputy Principal (Outreach) was aware of the distribution and participated in monitoring, the district officials were not. Some heard about the availability of the materials during this evaluation. Such district officials did not monitor or ask for the materials during their routine supervision. For example, when asked about the equipment and materials, one of the district officials answered, "Anyway I don't have any information on that. I have called for a special needs meeting with them; maybe I will find out on Friday."

This lack of involvement of the district officials and CCT has weakened monitoring of the project in some of the districts. In the words of one of the education officers, "For any project to be effectively started and eventually supervised and or monitored by the Municipal or District Education Office, it is vital that the office be involved in the project design and implementation."

Furthermore, the evaluation did not find sufficient evidence on potential continuity of distribution of more equipment to improve on the numbers in schools. In addition, transfer of teachers without consideration of their roles in the preparation of learners with impairment is likely to affect sustainability.

6.0 CONCLUSIONS

Uganda has embraced inclusive education and is committed to improving inclusion of children with visual and hearing impairment in education and this is evident from the rich policies in the country and the international conventions Uganda is signatory to. However, policy implementation remains weak and so there are still a number of gaps in the provision of education for children with disabilities, including those with VI and HI.
It is, therefore, evident that this project, Provision of Accessible Learning Materials for Children with Visual and Hearing Impairment in Primary Schools in Uganda, is an intervention that fills a real need in education. For full exploitation of the benefits the intervention brings, the project ought to be rolled out to other

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districts and other subjects and classes. However, this next phase should deliberately plan to address the gaps and challenges registered in this last phase.

6.1 Relevance of Project Objectives

This project was designed to meet specific stakeholder needs and address some of the gaps that exist with regard to the provision of education to children with disabilities. The evaluation found evidence that the project is indeed relevant and is aligned to the needs of the country and community. Teachers were trained in the use of accessible technologies and relevant accessible technologies and learning materials were provided. It has also improved participation of the learners with impairment in the learning processes in the selected schools and from the enrolment figures gathered from schools, it is evident that the number of children with HI & VI attending school is increasing. Ultimately the project was relevant to the stakeholders' needs that had been identified and as shown in the findings met most of these. However, because the classes are large and the teachers handling these children are few, the needs of these children may not have been fully met. Issues of staffing in schools will, therefore, need to be addressed. In addition, uncoordinated transfer of teachers and lack of or inadequate continuous professional development for teachers all require persistent efforts in order to minimise their consequences on the quality of teaching and learning.

6.2 Effectiveness

This project was set up to meet three major outcomes and from the data gathered, it is evident that to a large extent the project outcomes were achieved. In each of the participating schools, at least two teachers were trained, thereby strengthening these teachers' practical pedagogical skills in the use of accessible content using multimedia platforms. Through the sensitisation that was carried out among the communities and district officials and through the project's involvement in the design of some policies, an enabling environment for the use of assistive technology was created, particularly in the schools. This project also increased access to information, learning, participation and interest by children, including children with disabilities in the teaching and learning process.

The project also increased access to relevant and appropriate learning materials for English language. These materials can also be assessed using Kolibri – an Open Source platform that enables teachers to share and access the learning materials developed. The evaluation indicates that in the schools where the project was implemented, these were supplied and that the materials captured the interest of both the children with impairments and those without impairments. However, the materials were too few for the number of learners in the schools. Also, since the project focused on providing materials for English language, other subjects were not covered.

Whereas the project provided some accessible technologies including laptops, projectors and Victor Readers, these are still inadequate due to the large number of children in the schools. ICT access in schools is also limited although a few schools may have received equipment through other projects. This, therefore, requires closer collaboration and coordination of projects so as to fully exploit potentials from all such projects.

6.3 Project Efficiency

Implementation strategies of the project were built around the existing government structures such as MoES, CCTs and district officials. This was meant to improve monitoring and support supervision of the teachers. However, monitoring and support supervision was weak partly because the project did not fully exploit the government structures, including the district/municipal education offices, Core PTCs and Coordinating Centre Tutors.

Communication is key in project implementation so, although initially there was not a very efficient

strategy for communication, a WhatsApp group was later created, bringing together teachers, Consultants, UNICEF staff and MoES officials. This platform offers cheap and real-time support for the teachers and the consultants. It could even be considered the beginnings of building a community of practitioners in the use of accessible technologies and learning materials.

6.4 Sustainability

This project, as mentioned earlier, was set up to meet an existing need to improve learning outcomes of children with disabilities. The project also succeeded in sensitising a number of stakeholders, providing accessible technologies and learning materials and generating interest amongst headteachers, teachers and pupils in the project schools. The project, therefore, has potential to be sustainable because of these elements, particularly in the schools where it is currently being implemented However, because of inadequate involvement of the District Education Offices, support to this project, even within existing schools, may be difficult beyond the project life. There are cost implications to rolling this out to other schools and other subjects. Sustainability and roll-out of the project would therefore require more effort and resources in provision of accessible technologies and learning materials, sensitisation and training of stakeholders and robust support supervision and monitoring by the local government.

7.0 LESSONS LEARNT

As already highlighted in the report, this project registered a number of successes but as a pilot project, there are a number of lessons that can be drawn from this which can inform the next phase of the project and the eventual roll-out throughout the country. The following are some of the lessons that can be drawn.

1. Effective ownership and implementation of the project requires better coordination with key stakeholders in the district, including SMCs, district/municipal education offices, PTCs and Coordinating Centre Tutors.
2. The cascade model can be effective when there is need to train large numbers of teachers at a low cost. However, this model has weaknesses and to mitigate these, the trainers need close support and supervision and there ought to be resources for the school-based training sessions.
3. Continuity and effective implementation of such projects requires that teachers trained to implement the project are not transferred unless replaced with teachers of equivalent or better qualifications and competencies.
4. Longer term attitudinal changes among stakeholders in such projects require longer term lobbying and sensitisation.

8.0   LIMITATIONS TO THE EVALUATION

Whereas the Evaluation Team endeavoured to carry out this evaluation in an ethical and thorough manner, the evaluation had a few limitations:

1. The 20 schools of this pilot project were scattered across a large geographical area. It was, therefore, not possible to visit all these schools even though they were few. Only eight schools were visited, implying it is possible for the team to have missed some nuanced observations that would have made

the report richer.

2. Some of the officials that the team had expected to provide vital information were reluctant to talk about the project, so the team could have missed vital information that could have informed this evaluation better.

3. The evaluation did not access some documents that would have helped the team understand and appreciate the project better and ultimately carry out an efficiency analysis. For example, the team did not have information on the total cost of the project and specifically what it cost to purchase, install and deliver the equipment supplied to school. Perhaps another evaluation can be commissioned to examine in detail the value-for-money of this project.

Nevertheless, the team is convinced, this report can inform further decision-making regarding rolling out or expanding the project.

9.0 RECOMMENDATIONS

This project had specific objectives. It set out to meet specific stakeholder needs, adopted specific implementation strategies and registered a number of intended and unintended outcomes. Arising from the data collected and conclusions, this evaluation makes a number of recommendations on:

- The extent to which the project objectives were consistent with the priorities of the needs of children with disabilities, children without disabilities, teachers, parents and Disability Persons Organisations.
- The extent to which the project realised its intended outcomes in light of the project's expected results and including a gender analysis on the use of accessible learning materials.
- The extent to which the project results were efficiently delivered in regard to the implementation strategies that were used.
- Positive and negative long-term effects produced by the project intervention, whether directly or indirectly, intended or unintended, taking into account gender.
- Sustainability mechanisms established by the project and make necessary recommendations on how to strengthen the same.

These recommendations are given on each of these specific areas. Whereas the recommendations were initially derived from the findings and sentiments of those interviewed, the draft recommendations were later shared with key stakeholders at both national and regional meetings and it was generally accepted that these recommendations would provide sufficient ground for further discussion and decision-making regarding expanding the project.

These recommendations would require the commitment and involvement of the MoES, local governments, other education providers, and UNICEF for both funding and implementation. In the short-run, UNICEF could continue supporting schools, but gradually, the local governments and the MoES, through the Special Needs Education Department, needs to deliberately plan, seek out other partners and budget for the expansion and national roll-out of the project.

9.1 Objectives and Stakeholder Needs

Objective	Recommendation	Action Points
The extent to which the project objectives were consistent with the priorities of the needs of children with disabilities, children without disabilities, teachers, parents and Disability Persons Organisations	R1: Broaden and strengthen stakeholder analysis to cater for the needs of key stakeholders – children with disabilities, teachers, parents, children without disabilities and Disability Persons Organisations R2: Build in clear strategies for monitoring and support supervision using existing government structures including the district/municipal education offices, Core PTCs and Coordinating Centre Tutors	- Extend materials adaptation and provision of accessible technologies to other subjects and classes as well - Increased mobilisation and sensitisation of parents and community leaders for better learner support and better community support of the initiative - Provide for children with both VI and HI

9.2 Project Achievement of the Intended Outcomes

Objective	Recommendations	Action Points
Establish the extent to which the project realised its intended outcomes in light of the project's expected results and including a gender analysis on the use of accessible learning materials	R3: Strengthen sensitisation and training of key stakeholders for improved service providers R4: Develop stronger, better and more systematic data collection and documentation strategies and practices for increased visibility and informed decision-making	- For ownership and support, train and clearly articulate the roles and responsibilities of headteachers and SMCs in the provision and maintenance of accessible learning materials and digital technologies for the VI and HI - Plan for longer and regular sensitisation, orientation and training for teachers; and where the cascade model is adopted, plan and budget for closer support to trainers - Mobilise and train teacher educators, CCTs and District/Municipal education officials for better school and teacher support - Using an incremental strategy, avail all key textbooks used in the primary schools in accessible format - Develop guidelines for teachers on how to handle children with various disabilities

9.3 Project Efficiency

Objective	Recommendations	Action Points
Assess the extent to which the project results were efficiently delivered with regard to the implementation strategies that were used	R5: Strengthen coordination and collaboration with existing systems and structures including schools, PTCs, Local Government District Offices, MoES and Disability Persons Organisations for better service delivery, school support and monitoring of the project	- Liaise with MoES and Local Governments so that teachers trained to implement a specific project are not transferred without equivalent replacements. - Clearly articulate the roles and responsibilities of the major stakeholders including SMCs, district/municipal education offices, Core PTCs and Coordinating Centre Tutors

9.4 Long-term Project Effects

Project	Recommendations	Action Points
Determine positive and negative long-term effects produced by the project intervention, whether directly or indirectly intended or unintended taking into account gender	R6: Exploit the goodwill that this project has created amongst key stakeholders to attract better and stronger support for the project	- Carefully document and publish project outcomes - Clearly articulate the roles and responsibilities of the major stakeholders including SMCs, district/municipal education offices, Core PTCs and Coordinating Centre Tutors

9.5 Sustainability of Project

Objective	Recommendations	Action Points
Sustainability mechanisms established by the project and make necessary recommendations on how to strengthen the same	R7: Strengthen and improve utilisation of local systems and the involvement of the MoES headquarters, district education offices, PTCs and teacher educators in the project	Lobby MoES to require districts and SMCs to budget for technical support and maintenance of the digital technologies supplied Diversify technical support to include school-based and district-based technical support Plan for longer and regular sensitisation, orientation and training for teachers; and lobby for retention of these teachers in the schools Lobby for provision of accessible materials and digital technologies used in the primary schools to the teacher-training institutions for the sensitisation and training of pre-service teachers

9.6 Areas For Further Investigation

This was an evaluation of a specific project. However, a number of issues have come up and the team recommends further investigations and studies on:

- Socio-cultural factors influencing community support of children with disabilities.
- Whereas this project utilises assistive technologies, there is need for specific studies that explore the role and contribution of specific technologies in enhancing learning outcomes.
- This evaluation indicates that participating in this project is influencing teachers' methods of teaching. There is need to investigate this further to determine the extent of the impact of this project on teachers' methods of teaching.

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APPENDICES

Appendix 1: School Survey Questionnaire

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

SCHOOL SURVEY QUESTIONNAIRE

My name is _____ and I am here on behalf of College of Education & External Studies Makerere University. The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions.

We therefore invite you to respond to a few questions that we have here. The information you give will help us assess how effective the project has been so far and to plan for strategies to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality.

Thank you for taking time to do this.

INSTITUTIONAL PROFILE

NAME & ADDRESS OF INSTITUTION ....
....
NAME & ADDRESS OF COORDINATOR OF THIS PROJECT ....
....

BRIEF ABOUT THE INSTITUTION

1. Give a brief about your institution e.g. history, ownership

2. Please provide information on pupil population in this school

    a) Total SCHOOL pupil populations
      Boys _____   Girls_____   Total _____

    b) Total CLASS pupil populations

Class	Boys	Girls	Total
P.1			
P.2			
P.3			
P.4			
P.5			
P.6			
P.7			

    c) Children with hearing and/or visual impairments in the school

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Class	Children with Hearing Impairment			Children with Hearing Impairment			Children with Hearing& Visual Impairments		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
P.1									
P.2									
P.3									
P.4									
P.5									
P.6									
P.7									

d) Are there any Class 4 children with hearing and/or visual impairment who may have stopped coming to school since the project started? YES   NO

i)   If NO skip to question e)

ii)   If YES, please provide numbers in the table below

Children with Hearing Impairment			Children with Visual Impairment		
Boys	Girls	Total	Boys	Girls	Total

iii)   Why do you think these children stopped coming to school?
....
....

e) Are there any Class 5 children with hearing and/or visual impairment who may have stopped coming to school since the project started? YES   NO

i)   If NO skip to question f)

ii)   If YES, please provide numbers in the next table

Children with Hearing Impairment			Children with Visual Impairment		
Boys	Girls	Total	Boys	Girls	Total

iii)   Why do you think these children stopped coming to school?.
....
....

f) Are there any Class 6 children with hearing and/or visual impairment who may have stopped coming to school since the project started? YES   NO

i)   If NO skip to question g)

ii)   If YES, please provide numbers in the table below

Children with Hearing Impairment			Children with Visual Impairment		
Boys	Girls	Total	Boys	Girls	Total

ii) Why do you think these children stopped coming to school?
....

....

g) Are there any Class 7 children with hearing and/or visual impairment who may have stopped coming to school since the project started? YES   NO

    i)   If NO skip to question 3

    ii)   If YES, please provide numbers in the table below

Children with Hearing Impairment			Children with Visual Impairment		
Boys	Girls	Total	Boys	Girls	Total

    iii)   Why do you think these children stopped coming to school?

....

....

3. Please provide information on staff population in this school

    a) Total SCHOOL staff population
       Male _____   Female _____   Total _____

    b) Total Class 4 staff population
       Male _____   Female _____   Total _____
    c) Class 4 teachers handling children with disabilities

Children with Hearing Impairment			Children with Visual Impairment		
Male	Female	Total	Male	Female	Total

    d) Total Class 5 staff population
       Male _____   Female _____   Total _____

    e) Class 5 teachers handling children with disabilities

Children with Hearing Impairment			Children with Visual Impairment		
Male	Female	Total	Male	Female	Total

    f) Total Class 6 staff Populations
       Boys _____   Girls_____   Total _____

    g) Class 6 teachers handling Children with Disabilities

Children with Hearing Impairment			Children with Visual Impairment		
Male	Female	Total	Male	Female	Total

    h) Total Class 7 staff population
       Male _____   Female _____   Total _____

    i) Class 7 teachers handling children with disabilities

Children with Hearing Impairment			Children with Visual Impairment		
Male	Female	Total	Male	Female	Total

4. a) Do the teachers handling these children with hearing and/or visual impairment have formal or non-formal training in handling children with these disabilities? For example through seminars, workshops, certificate, diploma training

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etc

YES   NO

b) If Yes, provide details of the training they have received

....
....
....

c) If NO, how are they coping?

....
....
....

5. Apart from activities related to this particular project, what else is the school doing to support teachers teaching hearing and/or visual impairments?

....
....

PLE RESULTS 2016, 2017 & 2018

Please provide a summary of PLE results in the last THREE years by filling in the following table

GRADE	2016			2017			2018			TOTALS		
	F	M	Total	F	M	Total	F	M	Total	F	M	Total
1												
2												
3												
4												
TOTALS												

BRIEF ABOUT ICT ACCESS IN THE INSTITUTION

6. Please provide information on ICTs availability in this school

    a) How many of the following ICTs do you have in this school. (Please tick ☐)

	ICT	Numbers
	Computers	
	Laptops	
	Tablets	
	Data Projectors	
	Others (Specify) _____ _____	_____ _____

    b) Which of these ICTs are being used by children with hearing and sight impairments? (Please tick ☐)

	ICT	Used by children with hearing impairment		Used by children with sight impairment	
		YES	NO	YES	NO
	Computers				
	Laptops				

	Tablets				
	Data Projectors				
	Others (Specify)	_____ _____ _____	_____ _____ _____		

MANAGEMENT AND ADMINSTRATION

Please identify and give brief description of the roles and responsibilities of all those involved in the administration and management of this project

COURSE SUSTAINABILITY

Do you think this project is sustainable? Explain

How do you think these services can be sustained beyond the pilot/project phase?

CHALLENGES

What challenges has your institution faced in its involvement with this project?

What are your recommendations on improving development and implementation of this project?

THANK YOU

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Appendix 2: Interview Guides for District Education Officials

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

INTERVIEW GUIDES FOR DISTRICT EDUCATION OFFICIALS

My name is _____ and I am here on behalf of Makerere University.

The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions.

We therefore invite you to respond to a few questions that we have here. The information you give will help us assess how effective the project has been so far and to plan for strategies to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality.

Respondent	Name: ....Position............................ Gender: ....Age......................................
Region / District	County Sub county
Village / Community	Institution Name
Title/Position	Date of interview
Interview start time	
Duration of interview	
Name and signature of Research Assistant	
Name and signature of supervisor	

1. Do you have schools in your catchment area implementing the project on the accessible learning materials for children with visual and hearing impairments? List schools
2. Did you receive training on the usage of accessible learning materials in a classroom for learners with disabilities? (Probe for type of training and when this took place)
3. How did you use the knowledge and skills gained from the training? (Probe for their ability to support teachers on use of accessible learning materials to improve the teaching and learning achievements in inclusive schools environment)
4. Have you participated in supporting teachers in the schools nearby (Probe for training, visits to schools)
5. Would you say this project has changed your teacher support and supervision practices (Probe for changes in methods used, support to teachers attitude towards persons with disabilities
6. What is your overall assessment of the implementation of this project so far? (Probe for successes and weaknesses in improving learning outcomes)
7. Do you think the performance of the children in these project schools has improved since the introduction of the project?
8. If asked to introduce this project in another school, what would you do differently? (Probe changes in design, implementation strategies, community involvement)
9. What challenges were met in planning and designing the project?
10. What were the project outputs and outcomes and how far did these meet the needs of the stakeholders (children, teachers and teacher educators)?
11. Do you have other comments or suggestions on how teachers can be trained and /or helped to teach children with visual and hearing impairments?

THANK YOU

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

INTERVIEW GUIDES FOR HEADTEACHERS

My name is _____ and I am here on behalf of College of Education & External Studies Makerere University. The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions.

We therefore invite you to respond to a few questions that we have here. The information you give will help us assess how effective the project has been so far and to plan for strategies to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality.
Thank you for taking time to do this.

Respondent	Name:...Gender:...................Age:.................
Region / District	County / Subcounty
Village / Community	School name and code
School type	Date of interview
Interview start time	Duration of interview
Name and signature of Research Assistant	
Name and signature of supervisor	

1. When did the project on improving learning for children with disabilities start in this school?
2. Was it your choice to participate in the project? Probe for reasons
3. Describe for me how you have implemented the project in this school
4. Has your school developed learning materials for children with disabilities? (probe for development of independent or supplementary learning materials)
5. Has your school received learning materials for children with disabilities? (Probe for accessibility quality and quantity of materials for both hearing and sight impairments)
6. Would you say the project has improved the learning outcomes of the children with the two impairments? (Probe for examples of improvements)
7. What is your overall assessment of the implementation so far? (Probe for successes and weaknesses)
8. In your view, has the project created learning opportunities for children with disabilities using innovative technology, enhanced learning and inclusive education approaches in general (Probe for access to learning materials, participation in class activities)
9. How many teachers from this school received training on usage of accessible learning materials?
10. What have been the effects of the training on performance of the teachers? (Probe for their ability to produce learning materials in formats accessible to children with special needs, and for the teachers ability to support the children)
11. Was the school community and those around the school trained? If so what are the noticeable effect of that training on the community? (Probe for who were trained and for knowledge and understanding on the use and availability of accessible learning materials and perceptions on education of children with hearing and sight impairments).
12. If this project is to continue, what would you advise the implementers on the changes to make? (Probe changes in design, implementation strategies, community involvement)
13. What challenges were encountered during the project implementation and how can these be mitigated against for better project results?
14. Any other comments you would want to make concerning helping children with hearing and/or visual impairment learn?

Thank you

Appendix 4: Interview Guides For Teachers

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

INTERVIEW GUIDES FOR TEACHERS

My name is _____ and I am here on behalf of Makerere University.

The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions .

We therefore invite you to respond to a few questions that we have here. The information you give will help us assess how effective the project has been so far and to plan for strategies to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality.

Respondent	Name:.....................Gender:.....................Age:.....................
Class	Class:.......................................Pupils:....................................... Total:.................. Female: ....Male:......................... Visual Impairment: Female:................Male:..................... Hearing Impairment: Female:...................Male:...................
Region / District	County / Subcounty
Village / Community	School name and code
School type	
Date of interview	Interview start time
Duration of interview	
Name and signature of Research Assistant	
Name and signature of supervisor	

1. How many children are in your class (P4 or P6), and how many of them have hearing and/or sight impairments
2. What is the general performance of the children in your class (Probe for performance of children with disabilities and performance of children without disabilities)
3. Was it your choice to participate in the project? Probe for reasons
4. Did you receive training to use the supplementary learning materials (Probe for type of training, length and usefulness of the training)
5. Did you receive training in the use of the assistive technologies (Probe for type of training, length and usefulness of training)
6. How many teachers from this school received training on usage of accessible learning materials?
7. What have been the effects of the training on performance of the teachers? (Probe for their ability to produce learning materials in formats accessible to children with special needs, and for the teachers ability to support the children)
8. Was the school community and those around the school trained? If so what are the noticeable effect of that training on the community? (Probe for who were trained and for knowledge and understanding on the use and availability of accessible learning materials and perceptions on education of children with hearing and sight impairments).
9. Describe for me how you have implemented the project in this school (Probe for use of learning materials and assistive technologies and how these are used)
10. Has your school developed learning materials for children with disabilities? (Probe for development of independent or supplementary learning materials)
11. Has your school received learning materials for children with disabilities? (Probe for type, accessibility, quality and quantity of materials for both hearing and sight impairments)
12. Do you have access to the assistive technologies (Probe for type of technologies available, skills for use &

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usability of the technologies)

13. Would you say the project has improved the learning outcomes of the children with the two impairments? (Probe for examples of improvements)
14. What is your overall assessment of the implementation so far? (Probe for successes and weaknesses)
15. In your view, has the project created learning opportunities for children with disabilities using innovative technology, enhanced learning and inclusive education approaches in general (Probe for access to learning materials, participation in class activities)
16. If this project is to continue, what would you advise the implementers on the changes to make? (Probe changes in design, implementation strategies, community involvement)
17. What challenges were encountered during the project implementation and how can these be mitigated against for better project results?

Thank you

Appendix 5: Interview Guides For Teacher Educators

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

INTERVIEW GUIDES FOR TEACHER EDUCATORS

My name is _____ and I am here on behalf of Makerere University.

The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions.

We therefore invite you to respond to a few questions that we have here. The information you give will help us assess how effective the project has been so far and to plan for strategies to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality.

Respondent	Name: ....Gender ....Age.........................
Region / District	County/ Sub county:
Village / Community	Institution Name:
Title/Position	
Date of interview	Interview Start time: Duration of interview
Name and signature of Research Assistant	
Name and signature of supervisor	

1. Do you have schools in your catchment area implementing the project on the accessible learning materials for children with visual and hearing impairments? List schools

2. Did you receive training on the usage of accessible learning materials in a classroom for learners with disabilities? (Probe for type of training and when this took place)

3. How did you use the knowledge and skills gained from the training? (Probe for their ability to educate teacher trainees on use of accessible learning materials to improve the teaching and learning achievements in an inclusive school environment)

4. Have you participated in supporting teachers in the schools nearby (Probe for training, visits to schools)

5. Would you say this project has changed your teaching practices while training teachers (Probe for changes in methods used, support to teacher trainees & attitude towards persons with disabilities

6. What is your overall assessment of the implementation so far? (Probe for successes and weaknesses in improving learning outcomes)

7. Do you think the performance of the children in these project schools has improved since the introduction of the project?

8. If asked to introduce this project in another school, what would you do differently? (Probe changes in design, implementation strategies, community involvement)

9. What challenges were met in planning and designing the project?

10. What were the project outputs and outcomes and how far did these meet the needs of the stakeholders (children, teachers and teacher educators)?

11. Do you have other comments or suggestions on how teachers can be trained and /or helped to teach children with visual and hearing impairments?

Thank you

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END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS
INTERVIEW GUIDES FOR PARENTS

My name is _____ and I am here on behalf of Makerere University.

The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions.

We therefore invite you to respond to a few questions that we have here. The information you give will help us assess how effective the project has been so far and to plan for strategies to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality.

Respondent	Name:.........................Gender:......................Age........................
Pupil	Class:.......................................Pupils:.. Total:.................. Female: ....Male:.......................... Visual Impairment: Female:...............Male:...................... Hearing Impairment: Female:...................Male:......................
Region / District	County / Sub county
Village / Community	School Name and Code:
School type	Date of Interview
Interview start time	
Duration of interview	
Name and signature of Research Assistant	
Name and signature of supervisor	

1. Can you tell us a little about your son/daughter? (Probe for interests, likes and dislikes, strengths and weaknesses)
2. What is the general performance of children with visual and hearing impairments? (Probe for performance in class, in the tests and in end of term examinations and performance of children without disabilities)
3. What is the general performance of your child? (Probe for performance in class, in the tests and in end of term examinations and performance of children without disabilities)
4. What challenges do you think children with visual and hearing impairments face while in school?
5. How have you helped your son/daughter stay in school despite these challenges?
6. How has the school helped your son/daughter stay in school and learn better?
7. Has your school received learning materials for children with disabilities? (Probe for type, accessibility, quality and quantity of materials for both hearing and sight impairments)
8. Has the school given children with visual and hearing impairments any special learning materials and/or assistive technologies to support their learning? (Probe for types and/or titles of learning materials given or technologies given)
9. Did you or any other parent receive training in using the special supplementary learning materials to support pupils' learning? (Probe for who were trained and for knowledge and understanding on the use and availability of accessible learning materials and perceptions on education of children with hearing and sight impairments).
10. Do you or any of the other parents have access to any assistive technologies that is being used to help children with visual and hearing impairments learn? (Probe for type of technologies available, skills for use &

usability of the technologies)

11. Do you or any of the other parents have any special learning materials that your child uses to learn? (Probe for type and how the child uses the learning materials)
12. Are you aware of any project in this school that is helping children with visual and hearing impairments learn? (Probe for details on the project and how it works)
13. In your view, has that project helped the children learn? (Probe for details on how the project has helped children with access to learning materials, increased participation in class, retention in school etc)
14. If this project is to continue, what would you advise the implementers on the changes to make? (Probe changes in design, implementation strategies, community involvement)
15. Do you have any other comment or suggestion to make on how children with visual and hearing impairments can be helped to learn better as pupils?

<div align="center">Thank you</div>

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Appendix 7: Lesson Observation Guide Template

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

LESSON OBSERVATION GUIDE TEMPLATE

My name is _____ and I am here on behalf of College of Education & External Studies Makerere University. The Ministry of Education and Sports in partnership with UNICEF is implementing a project on Provision of accessible learning materials for children with visual and hearing impairment in primary school. This project is meant to help improve learning outcomes for these children and increase their participation in primary school and transition into secondary education. Now, the MoES with support from UNICEF has commissioned College of Education & External Studies, Makerere University to carry out an end-term evaluation of this project so as to develop a knowledge base and also inform future interventions.

We are here to observe you teach. We have not come to assess you as a teacher and there will no marks awarded for this lesson. We are here to find out how the project on provision of accessible learning materials has helped you in teaching children with hearing and visual impairments. Whatever you do or say during this lesson will be handled with a great deal of confidentiality and the information gathered here will not be used against you or against the children in your class. Thank you for taking time to do this.

School name and code	
School type	
Class	
Pupils	Numbers: Total:................ Female: ....Male:................................ Visual Impairment: Female:...............Male:........................... Hearing Impairment: Female:..................Male:...........................
Region / District	County / Sub county
Village / Community	Date of Interview
Interview start time	Duration of Interview
Name and signature of Research Assistant	
Name and signature of supervisor	

1. Types of learning materials available in the class (Please take pictures of materials available in the class)

Material	Availability	
	YES	**NO**
Charts on the wall		
Text books		
Children's work		
Photographs		
Actual objects List the actual objects _____ _____		
Whiteboard		
Blackboard		

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Equipment (specify equipment available) _____ _____		

2. Are there any displays in the class and do these cater for the children with visual and hearing impairments?

       YES   NO

    a) List displays that cater for children with visual impairments
    ....
    ....
    b) List displays that cater for children with hearing impairments
    ....
    ....

3. Teachers' use of assistive technologies and accessible learning materials
    a) List ALL the Assistive Technologies the teacher is using in this class
    ....
    ....

    b) Comment on how the assistive technologies were used in this class
    ....
    ....
    c) List ALL the accessible learning materials the teacher has used in this class
    ....
    ....
    d) Comment on how the teacher has used the accessible learning materials in this class
    ....
    ....

4. Pupils' involvement in class. List different ways in which pupils are participating in class (e.g. responding to teachers' questions, who responds, pupils' involvement in group/pair work etc)
    i.   ....
    ii.   ....
    iii.   ....
    iv.   ....

5. Pupil – pupil interaction. How are pupils interacting one with another? (e.g. pupils talking to one another, working in pairs, working in groups etc)
    i.   ....
    ii.   ....
    iii.   ....
    iv.   ....

6. Teacher – pupil interaction. How are the teacher and pupils' interacting? (what is the teaching doing with the children)
    i.   ....
    ii.   ....
    iii.   ....
    iv.   ....
    v.   ....

7. Rewards and sanctions used in class
    a) What rewards is the teacher using in this class?
    i.   ....
    ii.   ....
    iii.   ....

b) What sanctions is the teacher using in this class?
   i. ....
   ii. ....
   iii. ....

8. Challenges a teacher is facing handling children with hearing and visual impairment
   a) List challenges that is the teacher is facing handling children with hearing impairment
      i. ....
      ii. ....
      iii. ....

   b) List challenges that is the teacher is facing handling children with visual impairment
      i. ....
      ii. ....
      iii. ....

9. Describe the sitting arrangement in this class

      ....
      ....
      ....

10. Any other observations. Please indicate here any other observations you would like to make concerning this lesson.
    i. ....
    ii. ....
    iii. ....

Thank you

Appendix 8: Pupils' Focus Group Discussion

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

PUPILS' FOCUS GROUP DISCUSSION

Please take time answer the following questions. Your answers are meant to help us gather information about your learning as a pupil with visual or hearing impairment. The information you give will help us assess how effective the project has been so far and to plan for ways to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality. Your answers will not be given to anybody else and will be used strictly for writing the report. Your identity will be kept confidential.

School name and code	School type
Pupils in the FGD	Numbers:....................Total:............................ Female:........................ Visual Impairment: Female: .... Male: .... Hearing Impairment: Female: .... Male: .... Children without impairments: Female .... Male ....
Region / District	County / Subcounty
Village / Community	Date of interview
Interview start time	Duration of interview
Name and signature of Research Assistant	
Name and signature of supervisor	

1. How long have you been in this school?
2. What do you like about this school?
   (Probe for how teaching is done, infrastructure, relationship with other children...)
3. What materials do your teachers give you during the lessons?
   (Probe for access to learning materials and to digital technologies and how the teachers are using the materials and whether they learn better when the teachers use those materials)
4. What do you like about the materials and what don't you like
   (robe for ease of use, accessibility whenever needed)
5. How can the learning materials or the digital technologies be made better? (Probe for improvement in learning materials and the digital technologies)
6. Is there any help you would still need that is not provided?
7. What do your parents/guardians say about you ever since you received these materials?
   (Probe interest in learning and performance)
8. Are other children in your class also using these learning materials and do you think they are benefiting?
   (Probe for the involvement of other children in the lessons and in the use of these materials; and for benefits of these learning materials to the other children)
9. Has the behaviour of your classmates towards you changed since you started using these materials? Mention and explain.
10. What do you say about going to school and learning ever since you received these materials? Has it helped you to like school and learning?
11. Are you interested in competing with other children?
12. Do you have any other comment or suggestion to make on how you can be helped to learn better as a   pupil with visual or hearing impairment?

Thank you

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL AND HEARING IMPAIRMENT IN PRIMARY SCHOOLS

PUPILS' FOCUS GROUP DISCUSSION

CHILDREN WITHOUT VISUAL & HEARING IMPAIRMENTS

My name is _____.   We know that your school received some learning materials and some equipment to help children with visual or hearing impairment learn. Since these children are your classmates and friends, we want to find out how you think the learning materials and equipment has helped them. The information you give will help us assess how effective the project has been so far and to plan for ways to make the project even more effective. Your honest response to the questions here will therefore be very helpful and will be handled with a great deal of confidentiality. Your answers will not be given to anybody else and will be used strictly for writing the report. Your identity will be kept confidential.

School name and code			
School type			
Pupils in the FGD	Class	Female	Male
	P4		
	P6		
Region / District	Numbers: Total: _____ Female: _____ Male: _____		
County / Subcounty	Village / Community		
Date of interview	Interview start time		
Duration of interview			
Name and signature of Research Assistant			
Name and signature of supervisor			

1. How long have you been in this school?
2. What do you like about this school?
   (Probe for how teaching is done, infrastructure, relationship with other children…)
3. What materials do your teachers give you during the lessons?
   (Probe for access to learning materials and to digital technologies and how the teachers are using the materials and whether they learn better when the teachers use those materials)
4. What do you like about the materials and what don't you like?
   (Probe for ease of use, accessibility whenever needed)
5. Are the teachers in your class using the learning materials meant for children with hearing and visual impairment? (probe for how the learning materials are being used)
6. Are other children in your class also using these learning materials and do you think they are benefiting?
   (Probe for how the children without disabilities are using these learning materials and technologies, the involvement of other children in the lessons and in the use of these materials; and for benefits of these learning materials to the other children)
7. If you are not using these learning materials, would you like to also use them? If yes, why? If no, why not?
8. Do you think these learning materials or the digital technologies can be made better? (Probe for

improvement in learning materials and the digital technologies)

9. Is there any help children with visual and hearing impairment would still need that is not provided?
10. What do your parents/guardians say about children with disabilities since you received these materials? (Probe interest in learning and performance)
11. Has the behaviour of your classmates towards children with visual and hearing impairment has changed since you started using these materials?
Explain.
12. Do you think children with visual and hearing impairments enjoy coming to school more ever since your school received these materials? Has it helped them like school and learning?
13. Are you interested in competing with other children?
14. What about the children with visual and hearing impairment, do you think they are interested in competing with other children? (Probe for examples)
15. Do you have any other comment or suggestion to make on how children with visual and hearing impairments can be helped to learn better as pupils?
16. What about you, do you have any other comment or suggestion to make on how children can be helped to learn better as a pupil?

Thank you

INFORMED ASSENT FORM FOR PUPIL FOCUS GROUP

(To be signed by the Headteacher or his/her representative)

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

About the research

- ✓ We are evaluating the provision of accessible learning materials for children with visual and hearing impairments in primary schools in Uganda
- ✓ We want to find out how well this project has worked
- ✓ We want to understand what can be done to improve the provision of learning materials to children with hearing and visual impairments and what else could be done to support these children

Who are we?

- ✓ The MoES with support from UNICEF has commissioned the College of Education & External Studies Makerere University to carry out the end-term evaluation of this project
- ✓ The research team is being led by Dr. Jessica Norah Aguti, College of Education & External Studies who can be reached on 0772467182 or by email agut@cees.mak.ac.ug

How will we carry out the research?

- ✓ By talking to you and other individuals and asking a number of questions we have prepared for you.
- ✓ We may take a few pictures/video clips of this interview. We will use them to support our analysis and may include some of them in our final reports.

Can the child change his/her mind about taking part or answering any of the questions?

- ✓ Yes, of course. The child can change his/her mind or leave the room anytime they want. He/she can also skip any questions they don't want to answer. There will be no consequences if they decide to withdraw for any reason.

Can a child refuse to be photographed and/or filmed?

- ✓ Yes, of course. A child can refuse to be photographed and/or filmed for any reason. There will be no consequences for the child.

Will the child's name be used for any purpose?

- ✓ No, we will not use the child's name for any purpose.

Will the child's images be used for any purpose?

- ✓ In case of images: Maybe. We might use the child's image in our final reports. But we will not do this without your assent.

Is it confidential?

- ✓ Yes. We will not tell anybody what the child said.

Can I get more information?

- ✓ Yes, of course. Contact............................on number: ....or
  e-mail...Or talk to any staff member.

Remember: There are no right or wrong answers. We are simply interested in hearing about your opinions and experiences.

INSTRUCTIONS: Please fill out this form, sign it and give back to the researcher(s).
Mark your answer with an X or a   .

I ☐ agree / ☐ disagree to take part in the Inclusive Evaluation project.

I ☐   agree /☐ disagree to be photographed and/or filmed for the Inclusive Evaluation project.

I ☐   agree / ☐disagree that my image and/or video clips can be used for the Inclusive Evaluation final reports.

My name:...

Today's date:...

Please sign here:..

Name & signature of research staff:...

INFORMED ASSENT FORM FOR PUPILS PROFILES

(To be signed by parents/guardian)

END TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

About the research

- ✓ We are evaluating the provision of accessible learning materials for children with visual and hearing impairments in primary schools in Uganda
- ✓ We want to find out how well this project has worked
- ✓ We want to understand what can be done to improve the provision of learning materials to children with hearing and visual impairments and what else could be done to support these children

Who are we?

- ✓ The MoES with support from UNICEF has commissioned the College of Education & External Studies Makerere University to carry out the end term evaluation of this project
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- ✓ By talking to you and other individuals and asking a number of questions we have prepared for you.
- ✓ We may take a few pictures/video clips of this interview. We will use them to support our analysis and may include some of them in our final reports.

Can the child change his/her mind about taking part or answering any of the questions?

- ✓ Yes, of course. The child can change his/her mind or leave the room anytime they want. He/she can also skip any questions they don't want to answer. There will be no consequences if they decide to withdraw for any reason.

Can a child refuse to be photographed and/or filmed?

- ✓ Yes, of course. A child can refuse to be photographed and/or filmed for any reason. There will be no consequences for the child.

Will the child's name be used for any purpose?

- ✓ No, we will not use the child's name for any purpose.

Will the child's images be used for any purpose?

- ✓ In case of images: Maybe. We might use the child's image in our final reports. But we will not do this without your assent.

Is it confidential?

- ✓ Yes. We will not tell anybody what the child said.

Can I get more information?

- ✓ Yes, of course. Contact.............................on number: ....or e-mail...Or talk to any staff member.

Remember: There are no right or wrong answers. We are simply interested in hearing about your opinions and experiences.

INSTRUCTIONS: Please fill out this form, sign it and give back to the researcher(s). Mark your answer with an X or a ☐.

I ☐   agree /☐ disagree to take part in the Inclusive Evaluation project.

I ☐   agree /☐ disagree to be photographed and/or filmed for the Inclusive Evaluation project.

I ☐ agree / ☐ disagree that my image and/or video clips can be used for the Inclusive Evaluation final reports.

My name:..

Today's date:...

Please sign here:...

Name & signature of research staff:...

INFORMED CONSENT FORM FOR DISTRICT EDUCATION OFFICIAL

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

About the research

- ✓ We are evaluating the provision of accessible learning materials for children with visual and hearing impairments in primary schools in Uganda
- ✓ We want to find out how well this project has worked
- ✓ We want to understand what can be done to improve the provision of learning materials to children with hearing and visual impairments and what else could be done to support these children

Who are we?

- ✓ The MoES with support from UNICEF has commissioned the College of Education & External Studies Makerere University to carry out the end term evaluation of this project
- ✓ The research team is being led by Dr. Jessica Norah Aguti, College of Education & External Studies who can be reached on 0772467182 or by email agut@cees.mak.ac.ug

How will we carry out the research?

- ✓ By talking to you and other individuals and asking a number of questions we have prepared for you.
- ✓ We may take a few pictures/video clips of this interview. We will use them to support our analysis and may include some of them in our final reports.

Can I change my mind about taking part or answering any of the questions?

- ✓ Yes, of course. You can change your mind or leave the room anytime you want. You can also skip any questions you don't want to answer. There will be no consequences if you decide to withdraw for any reason.

Can I refuse to be photographed and/or filmed?

- ✓ Yes, of course. You can refuse to be photographed and/or filmed for any reason. There will be no consequences for you.

Will my name be used for any purpose?

- ✓ No, we will not use your name for any purpose. No one reading about the project will know who you are.

Will my images be used for any purpose?

- ✓ In case of images: Maybe. We might be using your image in our final reports. But we will not do this without your consent.

Is it confidential?

- ✓ Yes. We will not tell anybody what you said.
- ✓ We would also like to ask you not to share what you said with anyone.

Can I get more information?

- ✓ Yes, of course. Contact…………………………on number: ……………………………or e-mail……………………………………………Or talk to any staff member.

Remember: There are no right or wrong answers. We are simply interested in hearing about your opinions and experiences.

INSTRUCTIONS: Please fill out this form, sign it and give back to the researcher(s).
Mark your answer with an X or a ☐.

I ☐ agree /☐ disagree to take part in the Inclusive Evaluation project.

I ☐ agree /☐ disagree to be photographed and/or filmed for the Inclusive Evaluation project.

I ☐ agree / ☐ disagree that my image and/or video clips can be used for the Inclusive Evaluation final reports.

My name:………

Today's date:……

Please sign here:……

Name & signature of research staff:……………………………………………………………………………………………

INFORMED CONSENT FORM FOR HEADTEACHERS

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

About the research

- ✓ We are evaluating the provision of accessible learning materials for children with visual and hearing impairments in primary schools in Uganda
- ✓ We want to find out how well this project has worked
- ✓ We want to understand what can be done to improve the provision of learning materials to children with hearing and visual impairments and what else could be done to support these children

Who are we?

- ✓ The MoES with support from UNICEF has commissioned the College of Education & External Studies Makerere University to carry out the end term evaluation of this project
- ✓ The research team is being led by Dr. Jessica Norah Aguti, College of Education & External Studies who can be reached on 0772467182 or by email agut@cees.mak.ac.ug

How will we carry out the research?

Evaluation on Provision Of Accessible Learning Materials For Children With Visual And Hearing Impairment In Primary Schools

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- ✔ By talking to you and other individuals and asking a number of questions we have prepared for you.
- ✔ We may take a few pictures/video clips of this interview. We will use them to support our analysis and may include some of them in our final reports.

Can I change my mind about taking part or answering any of the questions?

- ✔ Yes, of course. You can change your mind or leave the room anytime you want. You can also skip any questions you don't want to answer. There will be no consequences if you decide to withdraw for any reason.

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Will my name be used for any purpose?

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Will my images be used for any purpose?

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Is it confidential?

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My name:...

Today's date:..

Please sign here:..

Name & signature of research staff:...

INFORMED CONSENT FORM FOR PARENTS

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

About the research

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My name:...

Today's date:...

Please sign here:..

Name & signature of research staff:...

INFORMED CONSENT FORM FOR TEACHER EDUCATORS

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

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How will we carry out the research?

Evaluation on Provision Of Accessible Learning Materials For Children With Visual And Hearing Impairment In Primary Schools

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Evaluation on Provision Of Accessible Learning Materials For Children With Visual And Hearing Impairment In Primary Schools

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INFORMED CONSENT FORM FOR TEACHERS

END-TERM EVALUATION ON PROVISION OF ACCESSIBLE LEARNING MATERIALS FOR CHILDREN WITH VISUAL & HEARING IMPAIRMENT IN PRIMARY SCHOOLS

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Evaluation on Provision Of Accessible Learning Materials For Children With Visual And Hearing Impairment In Primary Schools

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