LEONARD CHESHIRE DISABILITY INTERNATIONAL (LCDI), LEONARD CHESHIRE DISABILITY AND INCLUSIVE DEVELOPMENT CENTRE (LCC), LCD REGIONAL OFFICE FOR EAST AFRICA (ENARO)

GIRLS' EDUCATION CHALLENGE

PIONEERING INCLUSIVE EDUCATION STRATEGIES FOR DISABLED GIRLS IN THE LAKE REGION IN KENYA

DRAFT REPORT

ANALYSES OF THE COMPARATIVE SURVEY ASSESSING THE EFFECTIVENESS OF THE LEONARD CHESHIRE DISABILITY INCLUSIVE EDUCATION INTERVENTION

December 2016

Abbreviations

CWD	Children with Disabilities
DEO	District Education Office
DFID	Department for International Development
DPO	Disabled People's Organisation
ECD	Early Childhood Development
FGD	Focus Group Discussion
GEC	Girls' Education Challenge
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IT	Information Technology
IE	Inclusive Education
KAP	Knowledge, Attitudes and Practices
LCD	Leonard Cheshire Disability
LCDIDC	Leonard Cheshire Disability and Inclusive Development Centre
MoE	Ministry of Education
MoU	Memorandum of Understanding
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PM	Project Manager
PO	Project Officer
S.D.	Standard Deviation
SDC	School Development Committee
SEN	Special Education Needs
SNE	Special Needs Education
TOTs	Trainers of teachers
UCL	University College London
UNCRPD	UN Convention on the Rights of Persons with Disabilities
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organisation

Foreword

This report was prepared by Dr Mark Carew, Ms Marcella Deluca, and Dr Maria Kett, Leonard Cheshire Disability and Inclusive Development Centre, University College London.

Data were collected by the Inclusive Education project team, Leonard Cheshire Disability East Africa Regional Office.

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Summary

Leonard Cheshire Disability (LCD) received funding from the UK Department for International Development Girls' Education Challenge fund to implement an Inclusive Education (IE) programme aimed at addressing barriers to education – including gender barriers – and ensuring that 2,050 girls with disabilities in 50 primary schools in five districts in the Lake Region, Western Kenya, receive a full, quality and inclusive primary education.

This programme entails a partnership between research and practice in order to better understand and address these barriers. The results presented here are taken from a pre- and post-intervention research study aimed at teachers – a component of a larger research study, which forms a part of the overall programme intervention. As teachers are crucial to the effective delivery of education, a pre-and post-intervention survey on Knowledge, Attitudes and Practice (KAP) of teachers around disability and inclusive education was undertaken to measure the effectiveness of teacher training for 130 teachers in selected project schools in the five districts.

Part 1 of the report briefly describes the background to the study, the methodology, and limitations pertaining to the comparative analysis. Further information on the research can be found here http://www.ucl.ac.uk/leonard-cheshire-research/research/publications/documents/2015/GEC_KAP_REPORT_survey_for_trainers_of_trainers_and_teachers.pdf

Part 2 of this report provides descriptive analyses of TOTs and teachers across the intervention period. These examined prior experience, perceived ease, and preparedness of the TOTs and teachers to educate students with different types of impairments in 2014 and 2016. Additionally, TOT and teacher beliefs about gender and disability were examined at both times.

Part 3 of this report examined whether the LCD IE intervention could shift TOT and teacher knowledge, attitudes and practices toward students with disabilities. As such, we conducted inferential analyses to establish the overall effectiveness of the intervention on knowledge, attitudes and practices. Specifically, we assessed the impact of the intervention on:

Teacher Knowledge (i.e. beliefs about inclusive education); Attitudes (i.e. negative emotions about educating students with a disability); and Practices (willingness to adopt inclusive education practices); Concerns (Self-focused, Other-focused); Perceptions of barriers (School-based, Environmental, Parental attitudes, Financial Costs, Lack of teacher expertise).

Part 4 of the report provides an account of qualitative data in order to provide comprehensive insight into the processes of change underpinning the impact of the

intervention on TOTs and teachers. Focus was placed on key elements of inclusive education and the perceived helpfulness of a classroom assistant

Part 5 of the report provides a summary of findings and conclusions.

The results of the survey provide a rich picture of the situation in the schools where the LCD project was implemented but represent just one step towards developing a better understanding of the situation regarding education for girls with disabilities in the Lakes Region. They show how teachers' knowledge, attitudes and practices can potentially impact on the education of girls with disabilities; as well as help identify the areas or issues that the programme could specifically address, for example, through adapting the in-service teaching training programmes.

Our findings suggest that the LCD IE in-service intervention may be a useful tool to improve teacher knowledge and attitudes among participants who are generally open to inclusive education. Moreover, the intervention may be particularly effective as part of a multi-faceted approach designed to address the self-focused and other-focused concerns held by teachers, which these findings also suggest may pose a particular challenge to implementing inclusive education. Additionally, the intervention is also able to improve teachers' perceived teaching self-efficacy and attenuate perceived barriers to educating a child with disability in the classroom.

In light of the empirical information gathered, we believe that the LCD inclusive education intervention has had a positive impact on participating TOTs and teachers in the Lakes province in Kenya, and thus may have broader application in other similar national and international contexts – if additional resources are made available.

Results show that LCD in-service teacher training is effective in increasing teachers' confidence and capabilities to teach children with disabilities; as teachers become more aware about inclusion they also become more aware of the gaps and need for specific resources and other requirements.

Implications of the findings:

1) There is a need to be more targeted in teacher training, for example, more work is needed around assessment of children with disabilities (especially those with learning difficulties);

2) There is a need to address the exclusion of children with most severe disabilities;

3) There is a need for additional resources, including classroom assistants, allowances, teaching and learning materials;

4) Teacher training on IE should be harmonised and standardised (taking into account local context).

Recommendations

- The Kenyan Government should implement, resource and plan for new IE policy
- Any training of teachers (or other related staff) must make clear that successful inclusion relies on many components of IE which must all be combined to ensure meaningful inclusion
- Further training should be provided on working with children with specific impairments (e.g. epilepsy or multiple disabilities)
- There needs to be greater links, exchange of information and support between teachers and parents/caregivers to ensure better continuity and provision for the child
- There needs to be improved assessment of children to identify specific impairments, linked to improved awareness, use and delivery of individual education plans (IEPs). This could be part of pre-service teacher training, with regular updates in-service

1. Introduction

The overall goal of the DFID-funded GEC project 'Pioneering Inclusive Education Strategies for disabled girls in Kenya' was to address physical, cultural and social barriers to education for girls with disabilities, and to ensure that 2,050 disabled girls in 50 primary schools in in Lake Region receive a full, quality and inclusive primary education.

This is a 45-month programme which is implemented in 50 schools in five districts in the Lake Region (Mbita, Migori, Kisumu East, Kuria East and Siaya) and is composed of both research and programme components. The research component offers the possibility to gather evidence which can be fed back to improve delivery, highlight gaps and challenges, as well as develop hypotheses for further research.

The previous research components of this project can be found here http://www.ucl.ac.uk/leonard-cheshire-research/research/publications/publications/topic/education.

Attitudinal survey

A component of the GEC research was a survey to measure the knowledge, attitudes and practices (KAP) of teachers to establish pre- and post-intervention (in terms of project activities) knowledge, attitudes and practices around inclusion of children with disabilities. The KAP survey will compare results from a total of 130 teachers in the participating project schools in the five districts. The sample comprised 30 teachers who will go onto become trainers and 100 teachers, all of whom who were subsequently trained in IE as part of the project.

The survey questionnaire was developed by the Leonard Cheshire Disability and Inclusive Development Centre, based upon previous work in the field, and was administered to selected identified teachers before they underwent training. The sample is therefore composed of:

1. **30 teachers who are the 'trainers of teachers' (TOTs) from schools selected for the LCD Inclusive Education Programme.** These are teachers who have previously undergone special needs training through the government system and were pre-selected by the district education office. During the training the TOTs were led through various strategies to ensure participation of all learners in every learning environment, using an IE training manual[1] which covered subjects ranging from concepts and contexts in special education and inclusive education; identification of learners with special needs and disabilities; child-centred approaches in learning; and classroom management and educational resources. Given the focus of the project, gender sensitive pedagogy was emphasised to

[1] Developed by LCD in collaboration Maseno University for previous work on IE.

strengthen their knowledge on issues that specifically affect girls with disabilities. Following this training, during the course of the GEC project, the TOTs trained a further 570 teachers on IE. The survey team interviewed these 30 TOTs as part of the KAP survey on 20 April 2014, before the training session on IE started and then again on 6- 7 September 2016 six months prior to the end of the project activities.

2. **100 teachers in the five districts (Mbita, Migori, Kisumu East, Kuria East and Siaya).** The survey team interviewed 20 teachers per district as part of the KAP survey on 4 May 2014, before the training session on IE started and then again on 6-7 September 2016 prior to the end of the project activities.

Methodology

For information on the methodology please see the Pre-Intervention KAP report http://www.ucl.ac.uk/leonard-cheshire-research/research/publications/documents/2015/GEC_KAP_REPORT_survey_for_trainers_of_trainers_and_teachers.pdf

Survey questionnaires

Of the 130 participants who completed the pre-intervention KAP (i.e. 2014), the majority (*N* = 123) participated in the post-intervention KAP (i.e. 2016). Of these, 30 were TOT's and 93 were teachers. Table 1 displays the number of TOT's and teachers by district in the matched comparative sample (i.e. participants who completed the KAP in 2014 and 2016).

Table 1. District information for the TOT and teacher matched comparative sample.

	***N* TOTs**	**% TOTs**	***N* Teachers**	**% Teachers**
Kisumu	7	23.3	16	17.2
Kuria	5	16.7	20	21.5
Mbita	6	20.0	17	18.3
Migori	6	20.0	20	21.5
Siaya	6	20.0	20	21.5
Total	30	100.0	93	100.0

The total number of valid teachers questionnaires used in the comparative analysis is then **123 (i.e. 30 TOTs and 93 teachers)**.

Limitations Pertaining to the Comparative Analysis

Lack of Control Group

The evidence for the effectiveness of the intervention presented in this report is currently indirect. That is, as the present study lacked a comparison control group, we are presently unable to conclude with absolute certainty that any changes over time observed in the sample are due to the Leonard Cheshire Disability Inclusive Education intervention, versus another factor.

Notwithstanding, we suggest that the context of study[2] makes it likely that the changes observed in the sample are due to the Leonard Cheshire Disability Inclusive Education intervention. We know of no other factor at the societal or school level that could account for the changes observed in the sample. Moreover, when controlling for teaching experience the findings remain largely unchanged, suggesting that simple accumulation of teaching experience cannot explain the changes observed.

We are currently analysing other sources of GEC data which will contribute to our assessment of the inclusive education intervention.

Unequal Numbers of TOTs and Teachers

In our matched comparative sample, there were roughly three times as many teachers, compared to TOTs. Naturally, this is because there are less TOTs at schools than teachers. However, unequal group sizes when making inferential comparisons using ANOVA can pose a threat to a key assumption of the model, namely the assumption of equality of variance across groups (i.e. that the distributions of scores on each measure are homogenous between groups).

We have tested for this assumption and reported it where violated (in footnotes), finding only two instances where the assumption was not met. It is also important to note that we find general effects of our intervention (i.e. across TOTs and teachers) that would not be impacted by the disparity in group size.

A Note on Practical Significance

The effect sizes observed in this study regarding the variables on which the intervention had an overall impact (i.e. across TOTs and teachers) were all medium to large in size (range: partial η^2 = .100 to .176). That is, the magnitude of findings observed were medium to large, which suggests that the findings have practical significance for the wider population that the sample is drawn from.

[2] Participants were not familiar with the evaluative goals of the project (generally, but also in terms of the KAP assessment and its measures).

Group differences between TOTs and teachers (i.e. in knowledge, self-focused concerns and perceived teaching self-efficacy) were all medium to large in size (range: partial η^2 = .065 to .129). The exception is other-focused concerns, in which the group difference between TOT and teachers was small in size (partial η^2 = .038)

One significant interaction was observed, namely that teachers and not TOTs experienced a reduction in negative emotions about educating a child with a disability. This effect was medium in size (partial η^2 = .059), suggesting that the intervention was not as effective at addressing negative emotions (attitudes) among teachers, as it was at shifting beliefs about inclusive education (partial η^2 = .159). However, both effect sizes are suggestive of practical significance in larger populations.

2. Descriptive analyses

The aim of this comparative analysis was to assess the impact of the Leonard Cheshire Disability Inclusive Education (IE) intervention on teachers' knowledge, attitudes and practices (KAP) in the Lake Region in Kenya toward educating children with disabilities.

Analyses proceeded along four lines:

1) Characteristics of the matched sample (i.e. TOTs and teachers who took part in both the 2014 and 2016 KAP).
2) Descriptive analyses of TOT and teachers across the intervention period. These examine prior experience, perceived ease, and preparedness of the TOTs and teachers to educate students with different types of impairments in 2014 and 2016. Additionally, TOT and teacher beliefs about gender and disability are examined at both times.
3) Our primary focus and interest was to examine whether the Leonard Cheshire Disability IE intervention could shift TOT and teacher knowledge, attitudes and practices toward students with disabilities. As such, we conducted inferential analyses (i.e. with intention to inform wider contexts) to establish the following:

    i) The overall effectiveness of the intervention on knowledge, attitudes and practices.
    ii) Group differences in knowledge, attitudes and practices between TOTs and teachers.
    iii) Whether there was an interaction between the intervention and group (TOT or Teacher) on knowledge, attitudes and practices.

    Specifically, we therefore assessed the impact of the intervention on teacher:

    - Knowledge (i.e. beliefs about inclusive education),
    - Attitudes (i.e. negative emotions about educating students with a disability), and
    - Practices (willingness to adopt inclusive education practices).

    As well as their:

    - Concerns (Self-focused, Other-focused).
    - Perceived teaching self-efficacy
    - Perceptions of barriers (Environmental, Negative parental attitudes, Lack of teacher expertise).

4) Finally, we collected and analysed qualitative data in order to provide comprehensive insight into the processes of change underpinning the impact of the intervention on TOTs and teachers.

Characteristics of the Matched Sample

Of the 30 TOTs present in the matched comparative sample, half were male (*N* = 15, 50.0%) and half were female (*N* = 15, 50.0%). The age of TOTs ranged between 28 and 57 years (*M* = 43.17, *SD* = 7.05) and almost all were married (*N* = 28, 93.3%). The most frequent levels of education reported were completion of college (*N* = 16, 53.3%) and completion of university (*N* = 12, 40.0%). All TOTs reported that their education included content related to disability (*N* = 30, 100.0%).

Of the 93 teachers, 52 were male (55.9%) and 41 were female (44.1%). The age of TOTs ranged between 28 and 57 years (*M* = 43.17, *SD* = 7.05) and most were married (*N* = 82, 88%). The most frequent levels of education reported were completion of college (*N* = 62, 66.6%) and completion of university (*N* = 19, 20.4%). Two-thirds of teachers reported that their education included content related to disability (*N* = 62, 66.6%).

Training

Of the 30 TOTs, almost all reported being trained in special needs education (2014 *N* = 29, 96.7%; 2016 *N* = 30, 100.0%).[3] Moreover, in 2014, over two-thirds (*N* = 21, 70.0%) had taken a further training course, while in 2016, this number had increased to almost all TOTs (*N* = 29, 96.7%).

Almost all TOTs who had undertaken additional training reported that their courses included content related to disability (2014 *N* = 20, 95.2%, 2016 *N* = 28, 96.6%). Additionally, in 2014, two-thirds said their course included content about gender (*N* = 14, 66.7%), but 2016 this had increased to almost all TOTs (*N* = 27, 93.1%).

Of the 93 teachers, only a quarter reported being trained in special needs education in 2014 (*N* = 23, 24.7%). By 2016 this had increased to just under half of teachers (*N* = 42, 45.2%). Furthermore, in 2014, just over half (*N* = 49, 52.7%) had taken a further training course, while in 2016, this number had increased to almost all teachers (*N* = 86, 92.5%).

In 2014, under two-thirds of teachers who had undertaken additional training reported that their courses included content related to disability (*N* = 29, 59.2%). In 2016, this had increased to almost all teachers (*N* = 82, 95.3%). Additionally, in 2014 three quarters said their course included content about gender (*N* = 36, 73.5%), but in 2016 this had increased to almost all teachers (*N* = 77, 93.9%).

[3] One TOT did not answer this question in 2014 (i.e. pre-intervention).

Teaching Experience

The length of teaching experience reported by TOTs in 2014 ranged between six and 35 years (*M* = 18.97, *SD* = 7.37). Naturally, in 2016, the average length of teaching experience reported by TOTs had increased by two years (*M* = 20.97, SD = 7.67). In 2014 the average length of time TOTs had spent teaching at their school was (*M* = 7.68, *SD* = 4.64), while in 2016 this was higher (*M* = 9.27, *SD* = 4.82).

The length of teaching experience reported by teachers in 2014 ranged between two and 35 years (*M* = 18.42, *SD* = 9.52). Unsurprisingly, in 2016, the average length of teaching experience reported by TOTs had increased by approximately 2 years (*M* = 19.91, SD = 10.05)[4]. In 2014 the average length of time teachers had spent teaching at their school was (*M* = 6.02, *SD* = 5.02), while in 2016 this was higher (*M* = 7.99, *SD* = 5.38)[5].

There was no significant difference in the length of teaching experience reported by TOTs or teachers in 2014 or 2016 (range *p* = .549 to .749).

Type of Provision

Nearly three quarters of TOTs taught a mainstream class only in 2014 (*N* = 22, 73.3%). A minority taught a mainstream class and at least one other type of provision (special unit or a resource unit (*N* = 5, 16.7%). Lastly, using open-ended responses, three TOTs (10%) stated that they were teaching an “inclusive class only”.

In 2016, the number of TOTs teaching mainstream classes only had fallen below two thirds (*N* = 19, 63.3%). A third of TOTs (33.3%) were now teaching a mainstream class and at least one other type of class (i.e. a resource unit, special unit, or an inclusive class). Additionally, one TOT (3.3%) stated that they taught an inclusive class only.

Nearly all teachers taught only mainstream classes in 2014 (*N* = 88, 94.6%). One teacher (1.1%) stated that they taught a special unit only and three (3.2%) taught a mainstream and another type of class (i.e. resource unit or a special unit). Additionally, one (1.1%) teacher stated that they taught a mainstream class and at an “orphanage”.

[4] Strictly speaking, mean number of years of teaching experience has increased by 1.5 years from 2014 to 2016. Additionally, both the lower and upper limit range of teaching experience in 2016 (3 years to 38 years) has not increased by the expected 2 years. This suggests that some teachers may not have accurately reported their teaching experience. However, as the mean increase in years of teaching experience approximates 2, the vast majority of teachers have likely given accurate responses.

[5] Increases of 1.5 years for current school teaching for TOTs and teachers from 2014 to 2016 suggests, similar to the above, that a minority have not reported teaching years in their current school accurately.

In 2016, the number of teachers teaching only mainstream classes had fallen to three-quarters (*N* = 70, 75.3%).Two teachers (2.2%) now taught special units only and nine (9.6%) taught a mainstream class and at least one other type of class. Twelve (12.9%) stated that they taught a mainstream class and an "inclusive class" using open-ended responses.

Table 2 displays the total number of TOTs and teachers currently deliver each type of provision, broken down by gender.

Table 2. Type of provision currently delivered by TOTs and teachers by gender.

Type of provision	Pre-intervention (2014)			Post-intervention (2016)		
TOT	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**
Mainstream	15	12	**17**	16	13	**29**
Resource unit	2	1	**3**	1	2	**3**
Special unit	1	0	**1**	0	2	**2**
Other	2	1	**3**	6	2	**8**
Teacher	**Males**	**Females**	**Total**	**Males**	**Females**	
Mainstream	48	40	**88**	49	38	**87**
Resource unit	2	0	**2**	3	4	**7**
Special unit	2	0	**2**	0	4	**6**
Other	0	0	**0**	6	5	**11**

Note. **TOT *N* = 30, Teacher *N* = 89.**

TOTs and teachers were also asked the type of provision they had taught in the past and for how long:

- All TOTs (*N* = 30, 100.0%) and nearly all teachers (*N* = 92, 98.2%) reported having taught mainstream classes. There was no significant different in duration of years taught between TOTs (*M* = 15.93, SD = 8.18) and teachers (*M* = 17.13, *SD* = 10.80, *p* = .586)

- Three TOTs (10%) had taught in resource units, while ten teachers had (10.8%). The three TOTs had taught in resource units for three years each, while the average length of teaching time for teachers was 7.5 years (*SD* = 8.64).

- Four TOTs (13.3%) and five teachers (5.4%) had taught in special units previously. The average length of special unit teaching for TOTs was 8.5 years (*SD* = 3.11), while for teachers it was 4 years (SD = 1.94).

- Five TOTs (16.7%) and two teachers (2.2%) had taught in special schools previously. The average length of special school teaching for TOTs was 5.2 years (*SD* = 3.11), while for teachers it was 1.6 years (*SD* = 1.94).

- Seven TOTs (23.3%) and eight teachers (8.6%) had taught another type of provision previously. The average length of other provision for TOTs was 7.3 years (*SD* = 4.32), while for teachers it was 5.8 years (*SD* = 4.04). Six respondents stated this type of provision was an inclusive or integrated class[6].

Present and Past Experience Teaching Students with Disabilities

In 2016, TOTs and teachers were asked to report whether they were currently teaching and/or had previous experience in teaching any students identified as having disabilities, by type of disability.

Nearly all TOTs (*N* = 29, 96.7%) and the majority of teachers (*N* = 84, 90.3%) reported having current or previous experience with students with **visual impairments** in the classroom.

The majority of TOTs (*N* = 27, 90%) and teachers (*N* = 81; 87.1%) reported having current or previous experience with students with **hearing impairments** in the classroom.

The majority of TOTs (*N* = 27, 90%) and teachers (*N* = 80; 86%) reported having current or previous experience with students with **intellectual disabilities** in the classroom.

All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 86, 92.5%) reported having current or previous experience with students with **learning difficulties** in the classroom.

Almost all TOTs (*N* = 29, 96.7%) and the majority of teachers (*N* = 83, 89.2%) reported having current or previous experience with students with **speech and language disorders** in the classroom.

Almost all TOTs (*N* = 29, 96.7%) and the majority of teachers (*N* = 75, 80.6%), reported currently having current or previous experience with students with **epilepsy** in the classroom.

All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 88, 94.6%) reported having current or previous experience with students with **physical disabilities** in the classroom.

[6] It is clear that some of respondents did not understand the word provision. For the TOTs and teachers who indicated Inclusive and Integrated Provision, they simply meant teaching children with disabilities in regular schools.

All TOTs (*N* = 28, 93.3%) and the majority of teachers (*N* = 75, 80.6%) reported having current or previous experience with students with **health problems** in the classroom.

Just over half of TOTs (*N* = 16, 53.3%) and teachers (*N* = 50, 53.8%) reported having current or previous experience with students with **multiple disabilities** (e.g., in the class.

Just over a third of TOTs (*N* = 11; 36.6%), and one fifth of teachers (*N* = 19; 20.5%), reported having current or previous experience with students with **other disabilities** in their mainstream class.

Perceived Ease of Teaching Students with Disabilities

Perceived ease of teaching students with disabilities with a number of impairment types was measured on a four-point Likert scale (1 = *Extremely difficult*; 4 = *Extremely easy*) with a further option for participants to specify that they had *no experience* teaching students with each impairment type.

To investigate the change in perceived ease of teaching students with disabilities among the sampled population descriptive comparisons were ran (i.e. without intent to generalise the findings to a wider population). These compared TOT and teacher perceived ease ratings for each impairment type between the 2014 and 2016 KAP, but only among those respondents who reported experience teaching students with each disability type in 2016[7].

To facilitate such comparisons, and to avoid losing unnecessary data, where TOT and teachers reported "*no experience*" with each impairment type in 2014, their responses were recoded to match the scale midpoint (i.e. perceptions neither of ease or difficulty; 2.5). In 2016, if participants still reported no experience with an impairment type, they were excluded from that analysis.

1. In 2014, both TOTs (*M* = 2.24, *SD* = 0.74) and teachers (*M* = 1.99, *SD* = 0.60) reported that teaching students with **visual impairments** was somewhat difficult on average. In 2016, both TOTs (*M* = 2.34, *SD* = 0.55) and teachers (*M* = 2.18, *SD* = 0.73) reported that such teaching was slightly easier.

2. In 2014, both TOTs (*M* = 2.20, *SD* = 0.55) and teachers (*M* = 1.86, *SD* = 0.66) reported that teaching students with **hearing impairments** was somewhat difficult on average. In 2016, both TOTs (*M* = 2.43, *SD* = 0.82) and teachers (*M* = 2.24, *SD* = 0.73) reported that such teaching was slightly easier.

[7] However, the total number of TOTs and teachers who have given a rating of perceived ease (vs. reported no experience) does not match the total number of respondents who have reported having past or current experience teaching students with each impairment type. This suggests that not all participants may have responded accurately to this set of questions.

3. In 2014, both TOTs (*M* = 2.09, *SD* = 0.74) and teachers (*M* = 1.93, *SD* = 0.75) reported that teaching students with **intellectual disabilities** was somewhat difficult on average. In 2016, both TOTs (*M* = 2.34, *SD* = 0.90) and teachers (*M* = 2.02, *SD* = 0.89) reported that such teaching was slightly easier.

4. In 2014, both TOTs (*M* = 2.47, *SD* = 0.90) and teachers (*M* = 1.93, *SD* = 0.65) reported that teaching students with **learning disabilities** was somewhat difficult on average. In 2016, both TOTs (*M* = 2.83, *SD* = 0.79) and teachers (*M* = 2.23, *SD* = 0.70) reported that such teaching was slightly easier.

5. In 2014, both TOTs (*M* = 2.37, *SD* = 0.85) and teachers (*M* = 2.02, *SD* = 0.71) reported that teaching students with **speech or language disorders** was somewhat difficult on average. In 2016, both TOTs (*M* = 2.53, *SD* = 0.94) and teachers (*M* = 2.33, *SD* = 0.72) reported that such teaching was slightly easier.

6. In 2014, TOTs (*M* = 2.83, *SD* = 0.98) reported that teaching students with **epilepsy** was somewhat easy on average while teachers reported that it was somewhat difficult (*M* = 2.39, *SD* = 0.79). In 2016, both TOTs (*M* = 3.03, *SD* = 0.81) and teachers (*M* = 2.73, *SD* = 0.82) reported that such teaching was slightly easier.

7. In 2014, both TOTs (*M* = 3.30, *SD* = 0.60) and teachers (*M* = 2.80, *SD* = 0.75) reported that teaching students with **physical disabilities** was somewhat easy on average. In 2016, both TOTs (*M* = 3.37, *SD* = 0.76) and teachers (*M* = 3.07, *SD* = 0.74) reported that such teaching was slightly easier.

8. In 2014, TOTs (*M* = 2.62, *SD* = 0.94) reported that teaching students with **health problems** was somewhat easy on average while teachers reported that it was somewhat difficult (*M* = 2.15, *SD* = 0.70). In 2016, TOTs reported that such teaching was slightly more difficult (*M* = 2.59, *SD* = 0.82), while teachers (*M* = 2.56, *SD* = 0.80) thought it was slightly easier.

9. In 2014, TOTs (*M* = 1.80, *SD* = 0.73) and teachers (*M* = 1.90, *SD* = 0.71) reported that teaching students with **multiple disabilities** was somewhat difficult on average. In 2016, TOTs reported that such teaching was slightly easier (*M* = 2.05, *SD* = 0.95), while teachers (*M* = 1.67, *SD* = 0.71) thought it was slightly more difficult.

10. In 2014, TOTs (*N* = 14; *M* = 2.29, *SD* = 0.51) reported that teaching students with **other disabilities** was somewhat difficult on average, while teachers (*N* = 8; *M* = 2.63, *SD* = 0.58) reported that it was somewhat easy. In 2016, TOTs reported that such teaching was slightly easier (*M* = 2.71, *SD* = 1.06), while teachers' opinions (*M* = 2.63, *SD* = 0.74) stayed the same.

In summary, in 2016, **TOTs and teachers reported more perceived ease of educating students with most impairment types**, compared to 2014.

Perceived Preparedness to Teach Students with Disabilities

Teachers were asked to rate the extent to which they thought their previous training helped them deal with students with disabilities effectively for a number of impairment types. Responses were measured on a four point Likert scale (1 = *Not at all*, 4 = *A lot*) with a further option to specify that *no training* had occurred.

To investigate the change in perceived preparedness of teaching students with disabilities among the sampled population of teachers descriptive comparisons were ran (i.e. without intent to generalise the findings to a wider population). These compared TOT and teacher perceived preparedness ratings for each impairment type between the 2014 and 2016 KAP, but only among those respondents who reported having received training teaching students with each disability type in 2016.

To facilitate such comparisons, and to avoid losing unnecessary data, where TOT and teachers reported "*no training*" with each impairment type in 2014, their responses were recoded to match the lowest scale anchor (i.e. perceptions that training had not prepared them at all; In 2016, if participants still reported no training with an impairment type, they were excluded from that analysis[8].

1. The majority of TOTs (*N* = 29, 96.7%) and teachers (*N* = 88, 94.6%) reported receiving training on teaching students with **visual impairments.** In 2014, TOTs (*N* = 29; *M* = 3.24, *SD* = 0.74) on average reported that this training had prepared them quite a lot to teach students with visual impairments, while teachers (M = 2.07, SD = 1.00) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.31, *SD* = 0.66) and teachers (*M* = 2.90, *SD* = 0.78) reported higher levels of preparedness from their training.

2. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 89, 95.7%) reported receiving training on teaching students with **hearing impairments.** In 2014, TOTs (*M* = 3.03, *SD* = 0.76) on average reported that this training had prepared them quite a lot to teach students with hearing impairments, while teachers (M = 1.92, SD = 0.84) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.20, *SD* = 0.61) and teachers (*M* = 2.94, *SD* = 0.77) reported higher levels of preparedness from their training.

3. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 88, 94.6%) reported receiving training on teaching students with **intellectual disabilities.**

[8] Where there are discrepancies between number of TOTs and teachers reporting training and giving preparedness ratings, this is due to missing data in the latter in either 2014 or 2016.

In 2014, TOTs (*M* = 3.20, *SD* = 0.71) on average reported that this training had prepared them quite a lot to teach students with intellectual disabilities, while teachers (M = 2.15, SD = 0.93) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.30, *SD* = 0.70) and teachers (*M* = 2.88, *SD* = 0.84) reported higher levels of preparedness from their training.

4. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 92, 98.2%) reported receiving training on teaching students with **learning disabilities.** In 2014, TOTs (*M* = 3.28, *SD* = 0.65) on average reported that this training had prepared them quite a lot to teach students with learning disabilities, while teachers (M = 2.42, SD = 0.98) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.52, *SD* = 0.71) and teachers (*M* = 3.15, *SD* = 0.71) reported higher levels of preparedness from their training.

5. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 90, 96.8%) reported receiving training on teaching students with **speech or language disorders.** In 2014, TOTs (*M* = 3.14, *SD* = 0.80) on average reported that this training had prepared them quite a lot to teach students with speech or language disorders, while teachers (M = 2.02, SD = 0.86) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.36, *SD* = 0.68) and teachers (*M* = 3.02, *SD* = 0.75) reported higher levels of preparedness from their training.

6. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 86, 92.5%) reported receiving training on teaching students with **epilepsy.** In 2014, TOTs (*M* = 3.03, *SD* = 0.76) on average reported that this training had prepared them quite a lot to teach students with epilepsy, while teachers (M = 1.91, SD = 0.97) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.53, *SD* = 0.63) and teachers (*M* = 3.15, *SD* = 0.69) reported higher levels of preparedness from their training.

7. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 91; 97.8%) reported receiving training on teaching students with **physical disabilities.** In 2014, TOTs (*M* = 3.27, *SD* = 0.64) on average reported that this training had prepared them quite a lot to teach students with physical disabilities, while teachers (M = 2.31, SD = 0.94) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.63, *SD* = 0.49) and teachers (*M* = 3.39, *SD* = 0.59) reported higher levels of preparedness from their training.

8. All TOTs (*N* = 30, 100%) and the majority of teachers (*N* = 81, 87.1%) reported receiving training on teaching students with **health problems.** In 2014, both TOTs (*M* = 3.00, *SD* = 0.80) and teachers (*M* = 2.27, *SD* = 1.10) on average reported that this training had prepared them quite a lot to teach students with physical disabilities. In 2016, both TOTs (*M* = 3.34, *SD* = 0.72)

and teachers (*M* = 3.20, *SD* = 0.84) reported higher levels of preparedness from their training.

9. The majority of TOTs (*N* = 24, 80%) and almost three quarters of teachers (*N* = 67, 72%) reported receiving training on teaching students with **multiple disabilities.** In 2014, TOTs (*M* = 2.57, *SD* = 0.93) on average reported that this training had prepared them quite a lot to teach students with multiple disabilities, while teachers (*M* = 1.83, *SD* = 0.99) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 2.90, *SD* = 0.83) and teachers (*M* = 2.89, *SD* = 1.11) reported higher levels of preparedness from their training.

10. Just under than half of TOTs (*N* = 13, 43.3%) and just under a quarter of teachers (*N* = 21, 22.6%) reported receiving training on teaching students with **other disabilities.** In 2014, TOTs (*M* = 2.25, *SD* = 1.42) on average reported that this training had prepared them quite a lot to teach students with multiple disabilities, while teachers (*M* = 1.42, *SD* = 0.90) reported that their training had prepared them a little bit. In 2016, both TOTs (*M* = 3.08, *SD* = 0.79) and teachers (*M* = 3.08, *SD* = 0.79) reported higher levels of preparedness from their training.

In summary, in 2016, **TOTs and teachers reported more perceived preparedness to educate students with all impairment types**, compared to 2014.

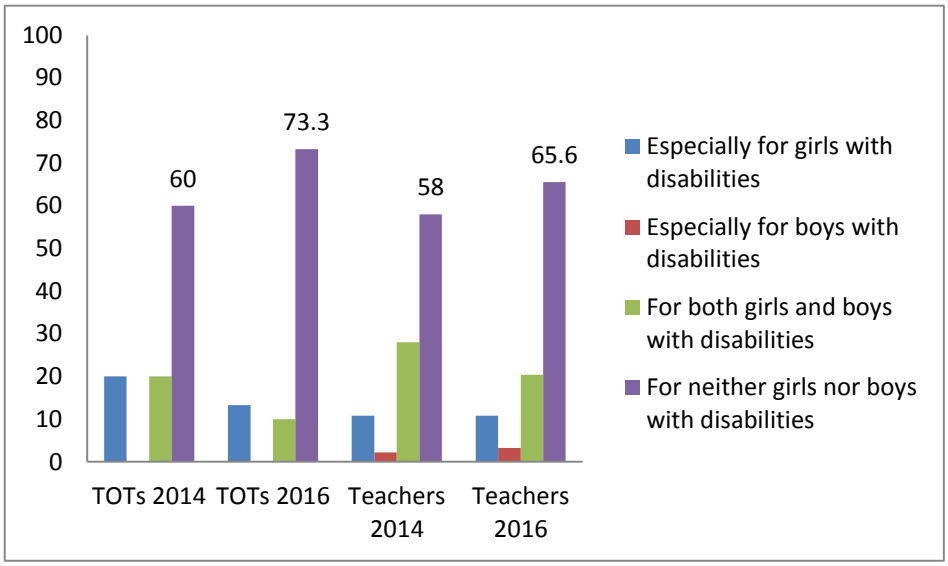
Gender and Disability

The next section in the questionnaire asked TOTs and teachers to respond to a set of statements about respondents' beliefs around gender and disability. Respondents rated their level of agreement on a scale to a series of four statements concerning girls and boys with disabilities:

1. In 2014, just under two-thirds of TOTs (*N* = 18, 60.0%) stated that **school is an unsafe place** for neither girls nor boys with disabilities. In 2016, more TOTs (*N* = 22, 73.3%) believed that school is an unsafe place for neither girls nor boys with disabilities.

   In 2014, over half of teachers (*N* = 54, 58.1%) stated that **school is an unsafe place** for neither girls nor boys with disabilities. In 2016, more teachers (*N* = 61, 65.6%) stated that school is an unsafe place for neither girls nor boys with disabilities (see Figure 1).

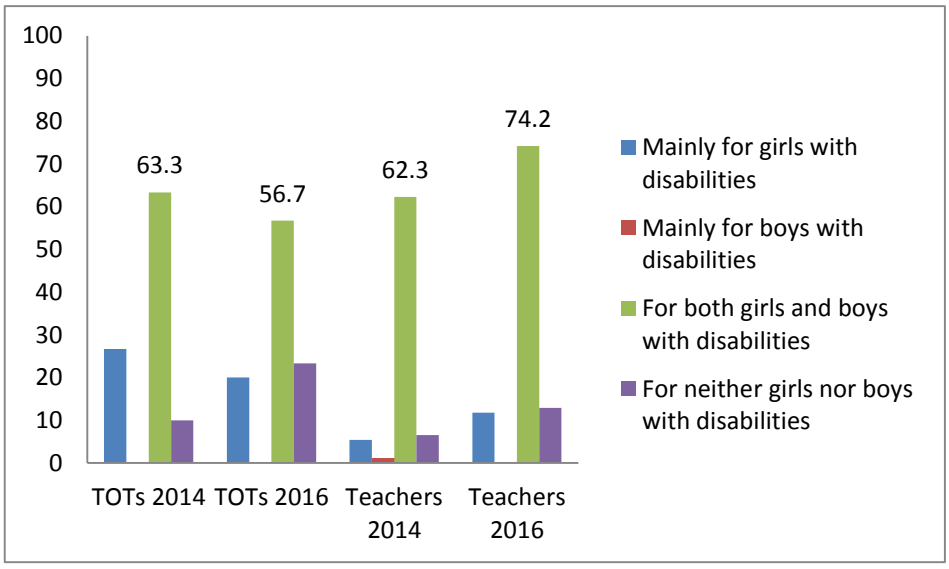
Figure 1. School is an unsafe place…according to TOTs and teachers.



2. In 2014, just under two-thirds of TOTs (*N* = 19, 63.3%) stated that being **victims of bullying at school** is a risk for both girls and boys with disabilities. In 2016, less TOTs (*N* = 17, 56.6%) stated that being victims of bullying at school is a risk for both girls and boys with disabilities.

   In 2014, the majority of teachers (*N* = 78, 83.9%) stated that **being victims of bullying at school** is a risk for both girls and boys with disabilities. In 2016, less teachers (*N* = 69, 74.2%) stated that bullying is a risk for both girls and boys with disabilities (see Figure 2).

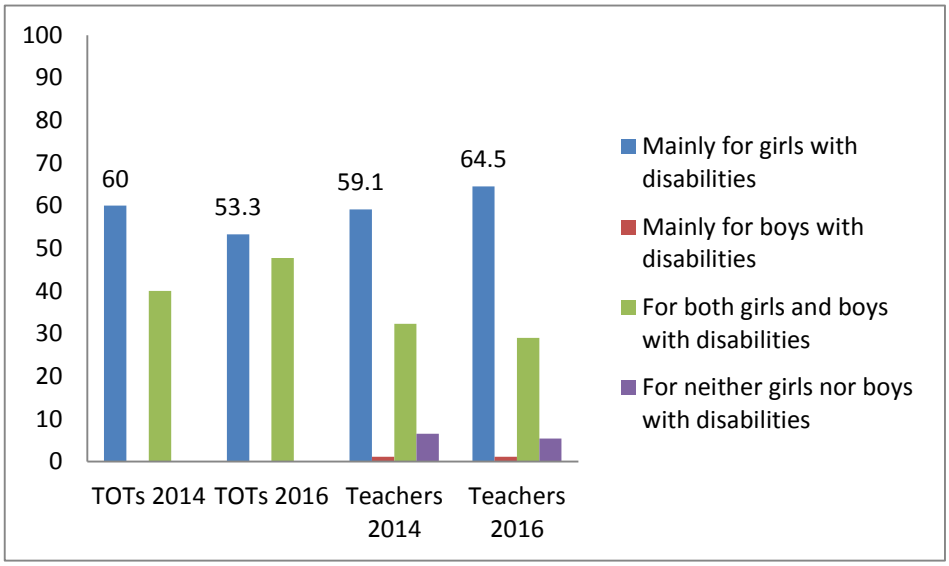
Figure 2. Victims of bullying at school… according to TOTs and teachers.



3. In 2014, just under two-thirds of TOTs (*N* = 18, 60.0%) stated that being **victims of physical and/or sexual abuse during journey to school** is a risk mainly for girls with disabilities. In 2016, less TOTs (*N* = 16, 53.3%) stated that being victims of physical and/or sexual abuse during journey to school is a risk mainly for girls with disabilities.

   In 2014, over half of teachers (*N* = 55, 59.1%) stated that **being victims of physical and/or sexual abuse during journey to school** is a risk mainly for girls with disabilities. In 2016, more teachers (*N* = 60, 64.5%) stated that being victims of physical and/or sexual abuse during journey to school is a risk mainly for girls with disabilities (see Figure 3).

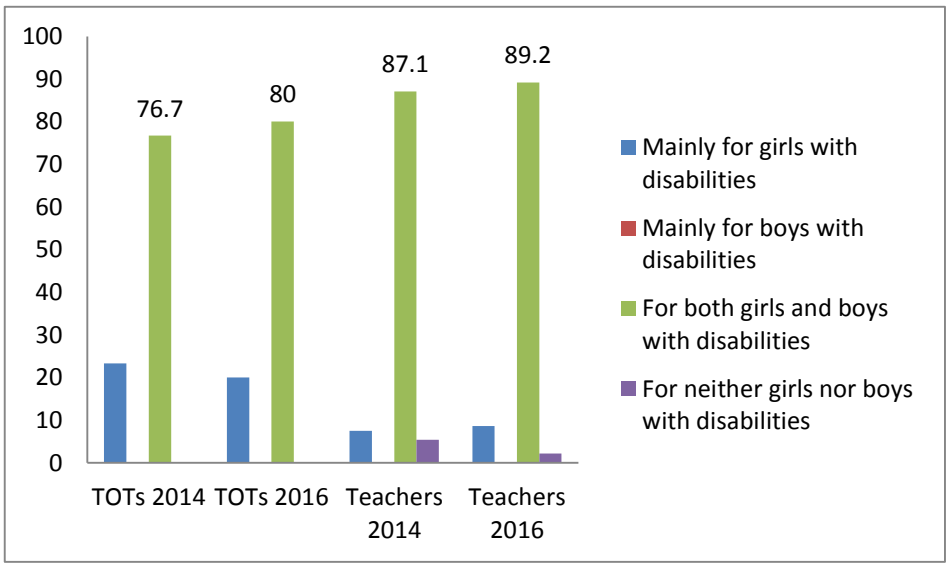
Figure 3. Victims of physical and/or sexual abuse … according to TOTs and teachers.



4. In 2014, just over three quarters of TOTs (*N* = 23, 76.7%) stated that a **lack of accessible toilets in the school** would be a problem for both girls and boys with disabilities. In 2016, more TOTs (*N* = 24, 80.0%) stated that a lack of accessible toilets in the school would be a problem for both girls and boys with disabilities.

   In 2014, the majority of teachers (*N* = 81, 87.1%) stated that a **lack of accessible toilets in the school** would be a problem for both girls and boys with disabilities. In 2016, more teachers (*N* = 83, 89.2%) stated that a lack of accessible toilets in the school would be a problem for both girls and boys with disabilities (see Figure 4).

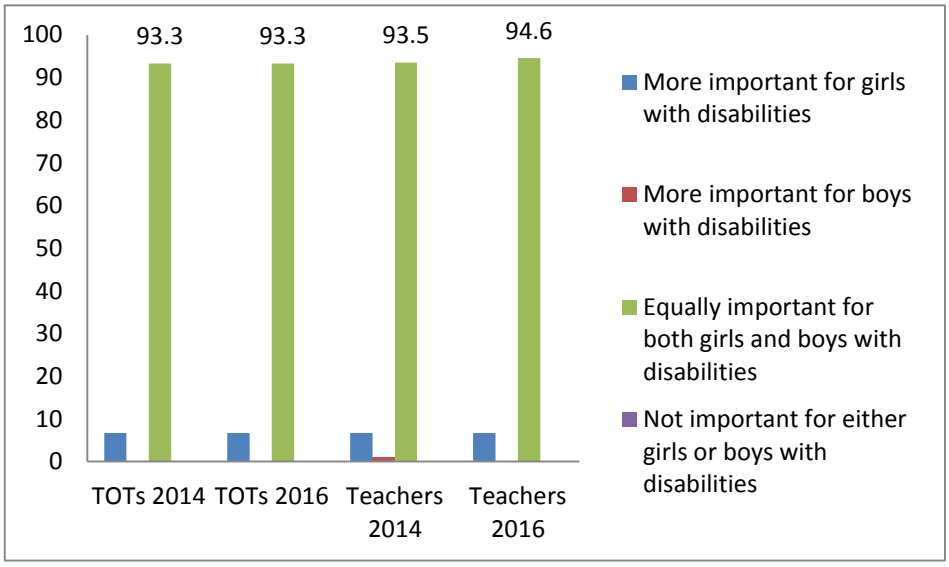
Figure 4. Lack of accessible toilets in the school… according to TOTs and teachers.



5. In 2014, the majority of TOTs (*N* = 28, 93.3%) believed **education is important for** both girls and boys with disabilities. In 2016, the same number of TOTs (*N* = 28, 93.3%) believed education is important for both girls and boys with disabilities.

   In 2014, the majority of teachers (*N* = 87, 93.5%) believed **education is important** for both girls and boys with disabilities. In 2016, more teachers (*N* = 88, 94.6%) believed education is important for both girls and boys with disabilities (see Figure 5).

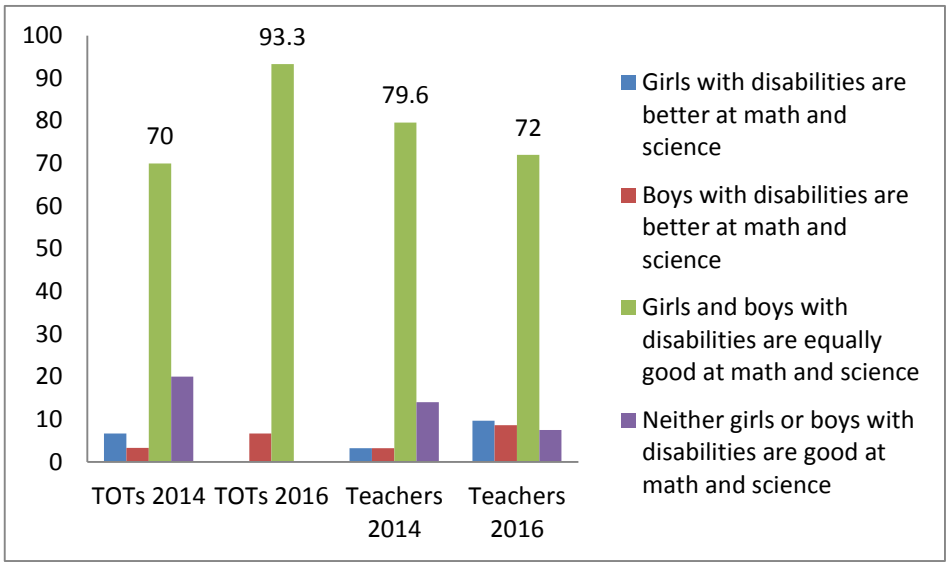
Figure 5. Education is important for… according to TOTs and teachers.



6. In 2014, just under three quarters of TOTs (*N* = 21, 70.0%) believed that girls and boys with disabilities are equally **good at math and science.** In 2016, more TOTs (*N* = 28, 93.3%) believed education is important for both girls and boys with disabilities (see Figure 26).

   In 2014, the majority of teachers (*N* = 74, 79.6%) believed that girls and boys with disabilities are equally **good at math and science**. In 2016, less teachers (*N* = 67, 72.0%) believed that girls and boys with disabilities are equally good at math and science (see Figure 6).

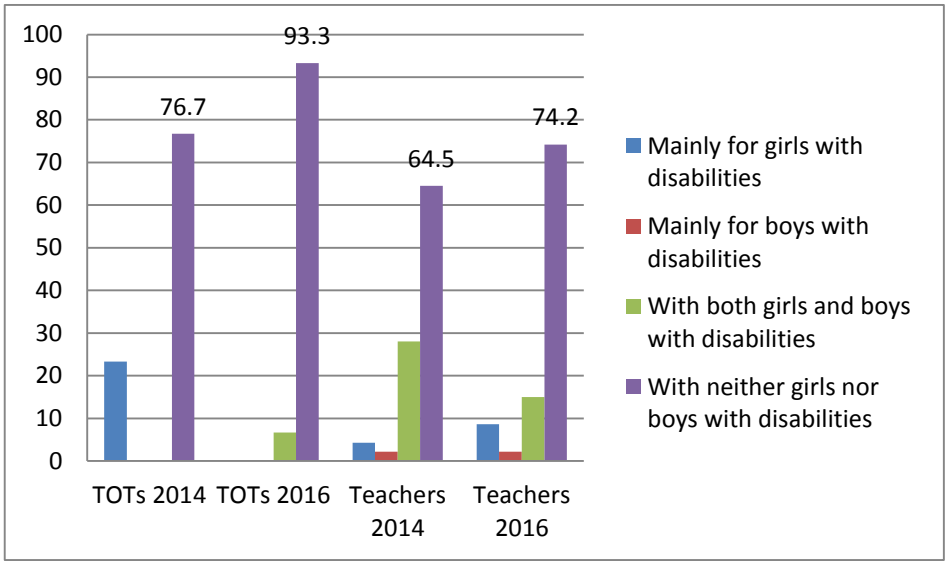
Figure 6. I believe that…math and science…according to TOTs and teachers.



7. In 2014, just over three quarters of TOTs (*N* = 23, 76.7%) stated that they **would feel uncomfortable talking about sex and reproductive health** with neither girls nor boys with disabilities. In 2016, more TOTs (*N* = 27, 90.0%) stated that they would feel uncomfortable talking about sex and reproductive health with neither girls nor boys with disabilities (see Figure 27).

   In 2014, just under two-thirds of teachers (*N* = 60, 64.5%) stated that they would **feel uncomfortable talking about sex and reproductive health** with neither girls nor boys with disabilities. In 2016, more teachers (*N* = 69, 74.2%) would feel uncomfortable talking about sex and reproductive health with neither girls nor boys with disabilities (see Figure 7).

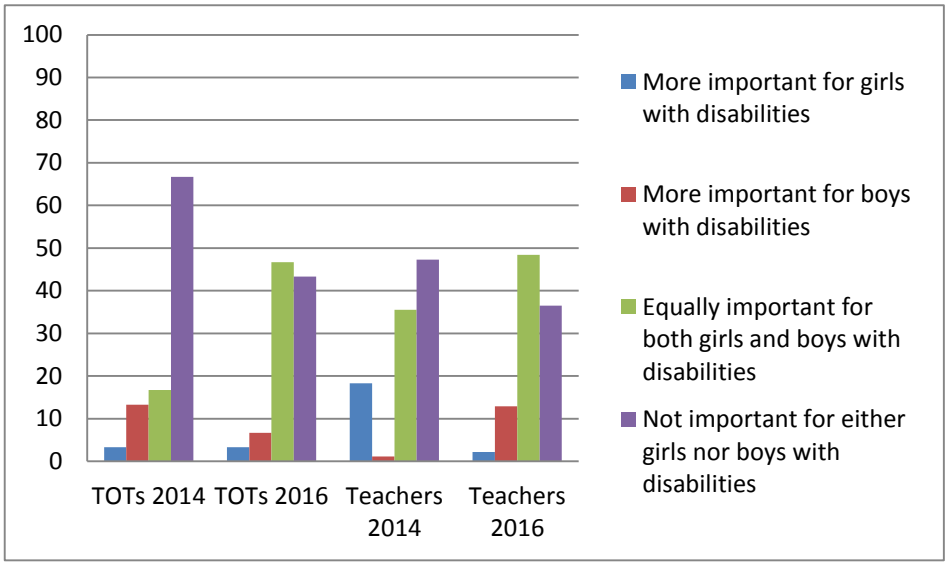
Figure 7. I would feel uncomfortable talking about sex…according to TOTs and teachers.



8. In 2014, just over two-thirds of TOTs (*N* = 20, 66.7%) stated that **parents think education is important** for neither girls or boys with disabilities. In 2016, just under half of TOTs (*N* = 14, 47.7%) stated that parents think education is equally important for girls and boys with disabilities.

   In 2014, just under half of teachers (N = 44, 47.3%) stated that **parents think education is important** for neither nor girls or boys with disabilities. In 2016, just under half of teachers (N = 45, 48.4%) stated that parents think education is important for neither nor girls or boys with disabilities (see Figure 8).

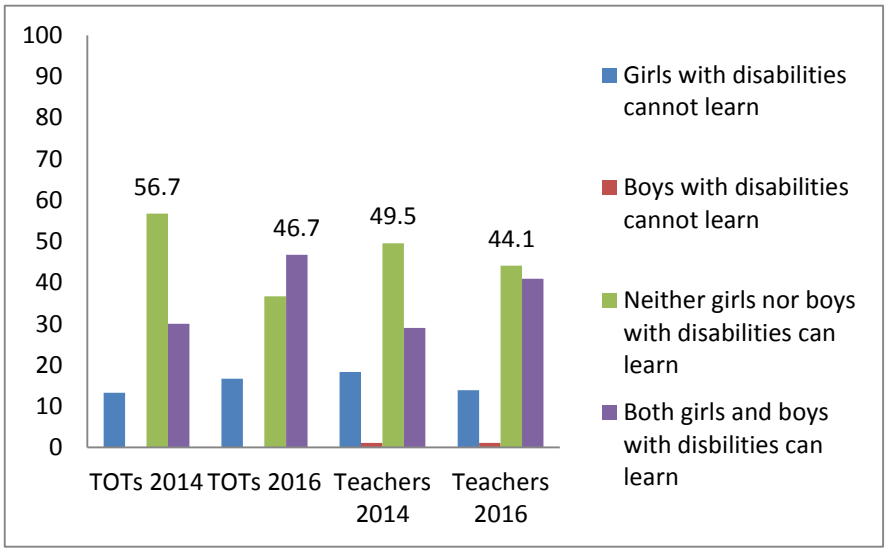
Figure 8. Parents think education is important…according to TOTs and teachers.



9. In 2014, just over half of TOTs (*N* = 17, 56.7%) stated that **parents generally think** that neither girls nor boys with disabilities **can learn**. In 2016, just under half of TOTs (*N* = 14, 47.7%) stated that parents generally think that both girls and boys with disabilities can learn.

   In 2014, just under half of teachers (N = 46, 49.5%) stated that **parents generally think** that neither girls nor boys with disabilities **can learn**. In 2016, less teachers (N = 41, 44.1%) stated that parents generally think that neither girls nor boys with disabilities can learn (see Figure 9).

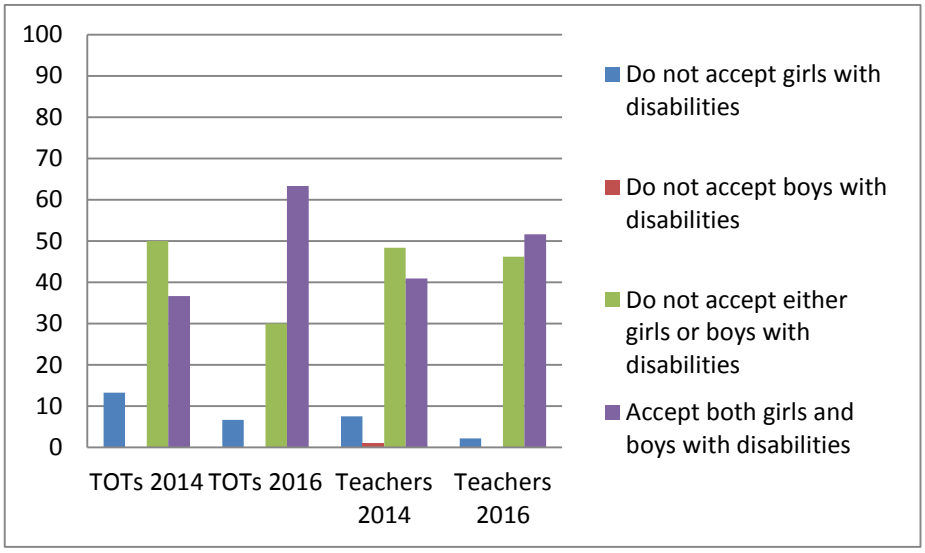
Figure 9. Parents generally think…can learn…according to TOTs and teachers.



10. In 2014, half of TOTs (*N* = 15, 50.0%) stated that **non-disabled children generally accept** neither girls nor boys with disabilities. In 2016, just under two-thirds of TOTs (*N* = 19, 63.3%) stated that non-disabled children accept both girls and boys with disabilities.

    In 2014, just under half of teachers (N = 45, 48.4%) stated that **non-disabled children generally accept** neither girls nor boys with disabilities. In 2016, just over half of teachers (N = 48, 51.6%) stated that non-disabled children generally accept both girls and boys with disabilities (see Figure 10).

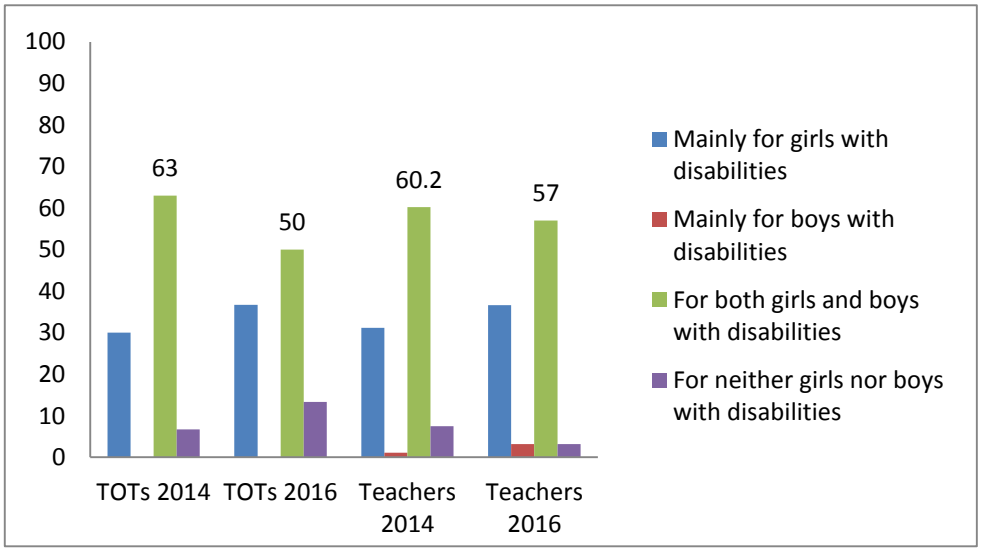
Figure 10. Non-disabled children generally accept…according to TOTs and teachers.



11. In 2014, just under two-thirds of TOTs (*N* = 19, 63.3%) stated that **community cultural beliefs and practices affect access to education** for both girls and boys with disabilities. In 2016, less TOTs (*N* = 15, 50%) stated that community cultural beliefs and practices affect access to education for both girls and boys with disabilities.

    In 2014, just under two-thirds of teachers (*N* = 56, 60.2%) stated that **community cultural beliefs and practices affect access to education** for both girls and boys with disabilities. In 2016, less teachers (*N* = 53, 57.0%) stated that community cultural beliefs and practices affect access to education for both girls and boys with disabilities (see Figure 11).

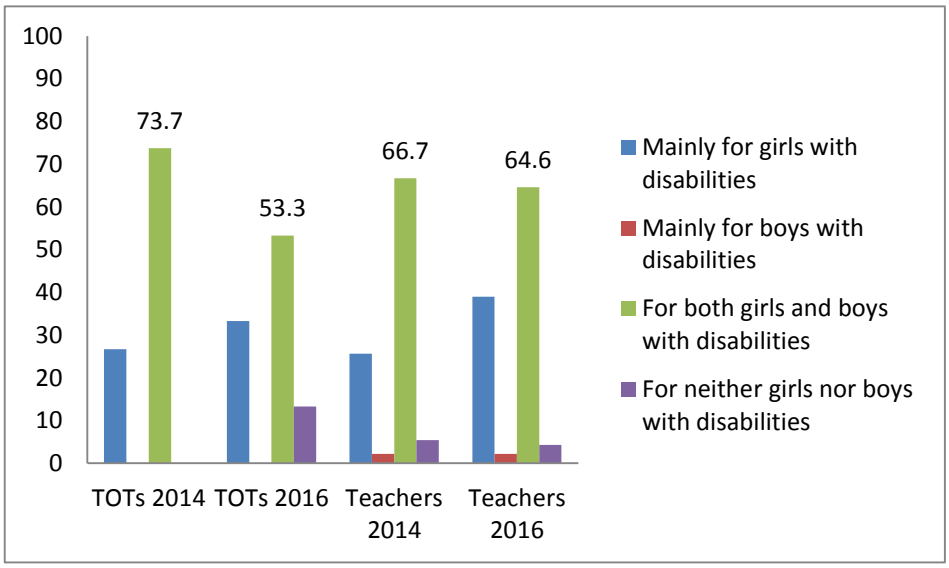
Figure 11. Community cultural beliefs and practices…according to TOTs and teachers.



12. In 2014, just under three quarters of TOTs (*N* = 22, 73.3%) stated that **negative attitudes held by community members affect access to education** for both girls and boys with disabilities. In 2016, less TOTs (*N* = 16, 53.3%) stated that negative attitudes held by community members affect access to education for both girls and boys with disabilities.

    In 2014, approximately two-thirds of teachers (N = 62, 66.6%) stated that **negative attitudes held by community members affect access to education** for both girls and boys with disabilities. In 2016, less teachers (N = 60, 64.5%) stated that negative attitudes held by community members affect access to education for both girls and boys with disabilities (see Figure 12).

Figure 12. Negative attitudes held by community…according to TOTs and teachers.



3. Inferential analyses

Knowledge, attitudes, and practices

It was expected that the Leonard Cheshire Disability IE intervention would facilitate positive change in TOTs' and teachers' knowledge, attitudes and practices toward inclusion pre- to post-intervention. The attitudinal measure employed by the KAP survey consisted of 18 items assessed on a four-point Likert scale (1 = *Disagree*, 4 = *Agree*).

The knowledge, attitudes and practices measure consisted of three components (see Appendix for a full list of items):

- Items 1-6 measured the extent that TOT and teacher held supportive beliefs toward inclusive education (e.g., "*I believe that an inclusive school is one that encourages academic progression of all students regardless of their ability*").
- Items 7-12 measured the extent that TOTs' and teachers' experienced negative emotions when educating students' with disabilities (e.g., "*I get frustrated when I am unable to understand students with a disability").*
- Items 13-18 measured the extent that TOTs' and teachers' were willing to adopt inclusive practices (e.g., "*I am willing to encourage students with a disability to participate in all social activities in the regular classroom*").

Analyses of these three components are discussed below. For each aggregated component (knowledge, attitudes, & practices), a repeated measures ANOVA was conducted with intervention (pre- vs. post-) as a within-subjects factor and group (TOT vs. Teacher) as a between-subjects factor. Table 3 shows the pre-intervention and post-intervention means and standard deviations for each component of the knowledge, attitudes and practices measure[9].

Table 3. Impact of the intervention on TOT and teacher knowledge, attitudes and practices.

	Pre-intervention (2014)		Post-intervention (2016)	
TOT	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**
Knowledge	3.67^{a}_{a}	0.35	3.95^{b}_{a}	0.15
Attitudes	1.83^{a}_{a}	0.75	1.86^{a}_{a}	0.75
Practices	3.78^{a}_{a}	0.56	3.86^{a}_{a}	0.28

[9] Due to a single case of missing teacher data for this measure, analyses were conducted on a matched sample of N = 122.

Teacher				
Knowledge	3.26^{a}_{b}	0.67	3.66^{b}_{b}	0.48
Attitudes	2.22^{a}_{b}	0.72	1.72^{b}_{a}	0.73
Practices	3.66^{a}_{a}	0.53	3.77^{a}_{a}	0.45

Note. **Within rows means with different superscript notations are significantly different from each other at $p < .05$. Within columns means with different subscript notations are significantly different from each other at $p < .05$. TOT $N = 30$, Teacher $N = 92$.**

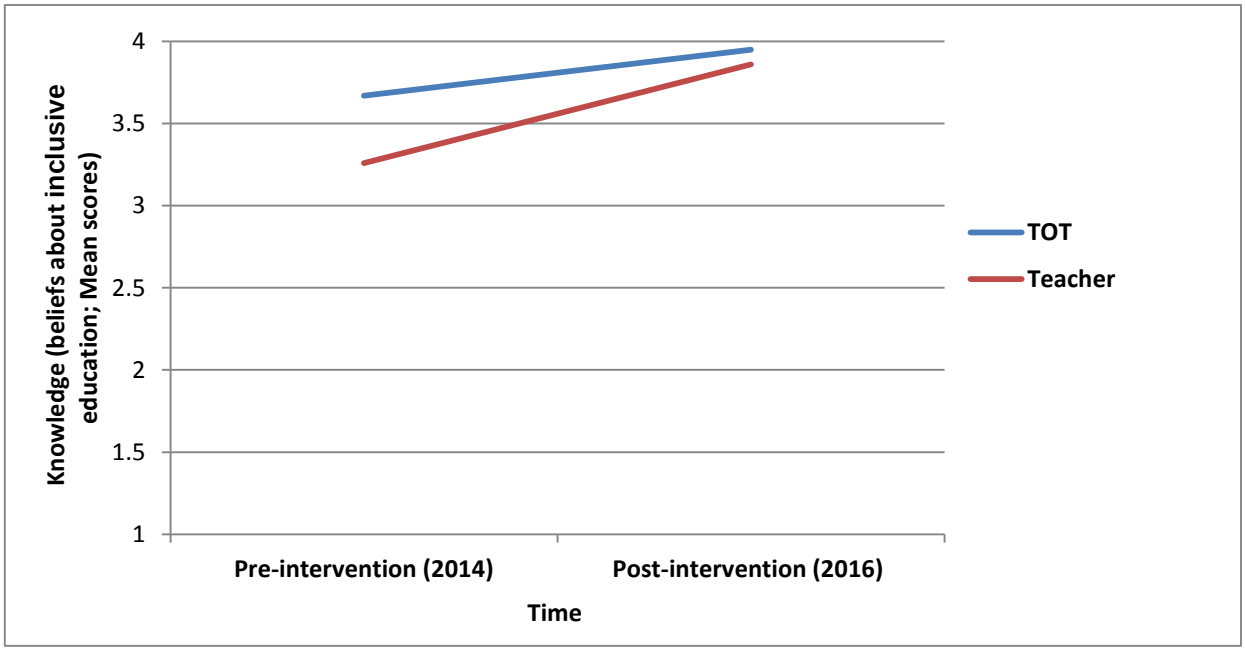
Knowledge

Items 2, 5, and 6 were negatively valenced and were reverse-coded to match the other items. Cronbach's Alpha indicated that scale reliability at both time-points would be higher if Items 1 ("*I believe that an inclusive school is one that encourages academic progression of all students regardless of their ability*") and 3 ("*I believe that inclusion facilitates socially appropriate behaviour amongst all students*") were excluded from the scale. Thus, Item 2 and Items 4-6 were averaged into a single index measuring beliefs about inclusive education pre- and post-intervention, where high scores indicated more positive beliefs about inclusive education (pre-intervention $\alpha = .63$, post-intervention $\alpha = .61$).

Consistent with our prediction, there was a main effect of the intervention on beliefs about inclusive education, F (1, 120) = 22.13, $p < .001$, partial $\eta^2 = .156$. There was also a main effect of group, F (1, 120) = 17.79, $p < .001$, partial $\eta^2 = .129$, but no significant interaction effect, F (1, 120) = .659, $p = .422$, partial $\eta^2 = .005$. In other words, the intervention was successful at promoting positive beliefs among both TOTs' and teachers' toward inclusive education, though TOT attitudes were generally more positive across both times, compared to teachers (see Figure 13)[10].

[10] Levene's test revealed that the assumptions that the variance in both pre-intervention and post-intervention beliefs was equal between TOTs and teachers were violated, therefore the observed group difference should be interpreted with caution.

Figure 13. Impact of the intervention on TOT and teacher knowledge.



Attitudes

Item 11 was positively valenced and was reverse-coded to match the other items. Cronbach's Alpha indicated that scale reliability at both time-points would be higher if Item 11 ("*I am concerned that students with a disability are included in the regular classroom, regardless of the severity of the disability*") was excluded from the analysis. Thus, Item 7-10 and Item 12 were averaged into a single index measuring emotions about educating students' with disabilities at pre- and post-intervention, where high scores indicated more negative emotions about educating students' with disabilities (pre-intervention α = .63, post-intervention α = .74).

Consistent with our prediction, there was a main effect of the intervention on TOT and teacher emotions about educating students' with disabilities, F (1, 120) = 5.89, p = .017, partial η^2 = .047. There was no main effect of group, F (1, 120) = 1.17, p = .282, partial η^2 = .010, but there was a significant interaction effect, F (1, 120) = 7.47, p = .007, partial η^2 = .059.

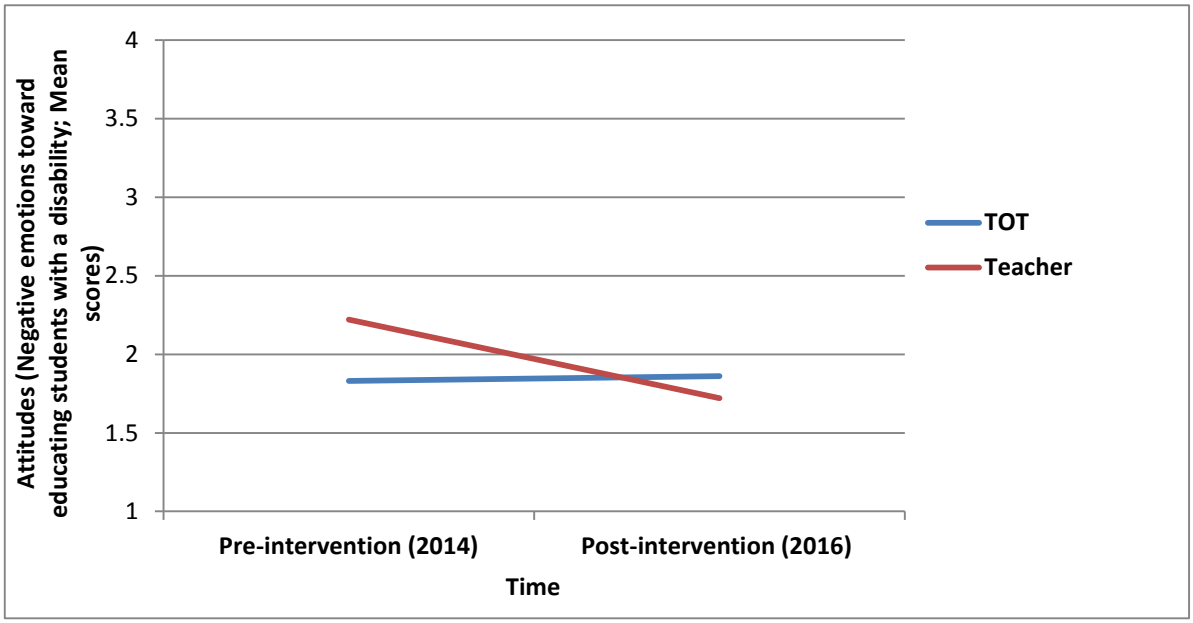
Further analysis revealed a simple main effect of the intervention among teachers, F (1, 91) = 26.40, p < .001, partial η^2 = .225, but not TOTs, F (1, 29) = .034, p = .855, partial η^2 = .001.

Analyses revealed a simple main effect of group at the pre-intervention stage, F (1, 128) = 7.17, p = .008, partial η^2 = .053. However, there was no corresponding main effect of group at the post-intervention stage, F (1, 122) = .827, p = .365, partial η^2 = .007. That is, while initially the teachers reported more negative emotions toward

educating students' with disabilities, post-intervention ratings between groups were not significantly different (see Figure 14).

This suggests that the effect of the intervention observed on emotions is being driven by a reduction in the negative emotions toward educating students' with disabilities of teachers', rather than TOTs'. It also indicates that the post-intervention emotions of teachers are similar to those of TOTs before any intervention took place.

Figure 14. Impact of the intervention on TOT and teacher attitudes.

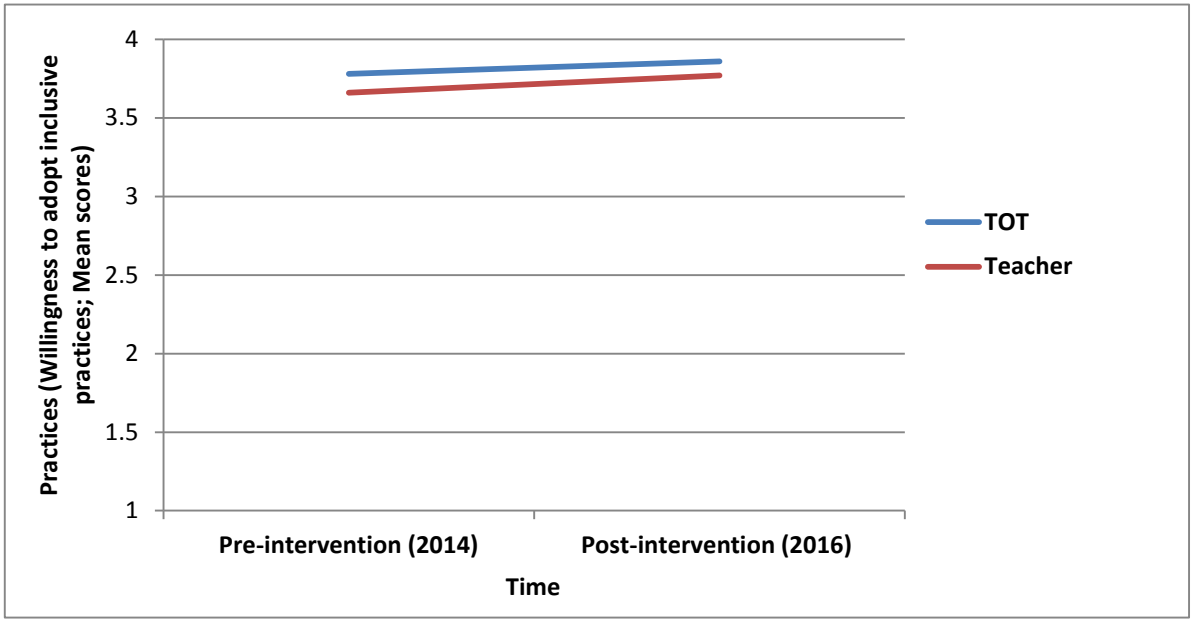


Practices

Items 13-18 were averaged into a single index measuring the extent that TOTs' and teachers' were willing to adopt inclusive practices where high scores indicated greater willingness to adopt inclusive practices (pre-intervention α = .83, post-intervention α = .76).

Contrary to our prediction, there was no main effect of the intervention on TOT or teacher willingness to adopt inclusive practices, F (1, 120) = 1.68, p = .197, partial η^2 = .014. There was also no main effect of group, F (1, 120) = 2.09, p = .151, partial η^2 = .017, nor an interaction effect, F (1, 120) = .022, p = .881, partial η^2 < .001. In other words, the intervention did not impact TOT or teacher willingness to adopt inclusive practices (see Figure 15).

Figure 15. Impact of the intervention on TOT and teacher practices.



Concerns

It was expected that the Leonard Cheshire Disability Inclusive Education intervention would reduce TOT and teacher concerns about including a child with a disability in their classroom. The concerns measure employed by the KAP consisted of 21 items, assessed on a four-point Likert Scale (1 = *Disagree*, 4 = *Agree*).

The KAP concerns measure consisted of two components: self-focused concerns and other-focused concerns (see Appendix for a full list of items):

- Items 1-4, 10, 16, 18, 19, and 21 measured the extent that TOTs and teachers held self-focused concerns. These denote concerns about how the inclusion of a child with a disability might affect them (e.g., "*The inclusion of a student with disability in my class or school will lead me to have a higher degree of anxiety and stress*") or be affected by them (e.g.," *I will not have enough time to plan educational programs for students with disabilities*").

- Items 5-9, 11-15, 17, and 20 measured the extent that TOTs and teachers held other-focused concerns. These denote concerns how the inclusion of a child with a disability might be perceived by or affect other groups such as parents (e.g., "*Parents of non-disabled children may not like the idea of placing their children in the same classroom as children with disabilities"*) and other non-disabled students (e.g., "*Students with disabilities will not be accepted by non-disabled students"*), as well as perceived feasibility of their

school to support an inclusive classroom (e.g., "*My school will not have enough funds for implementing inclusion successfully*").

Analyses of these two components are discussed below. For each aggregated component (self-focused concerns & other-focused concerns), a repeated measures ANOVA was conducted with intervention (pre- vs. post-) as a within-subjects factor and group (TOT vs. Teacher) as a between-subjects factor. Table 4 shows the pre-intervention and post-intervention means and standard deviations for each component of the concerns measure.

Table 4. Impact of the intervention on TOT and teacher concerns.

	Pre-intervention (2014)		Post-intervention (2016)	
TOT	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**
Self-focused concerns	2.08^{a}_{a}	0.58	1.76^{b}_{a}	0.52
Other-focused concerns	2.53^{a}_{a}	0.66	2.11^{b}_{a}	0.67
Teacher				
Self-focused concerns	2.51^{a}_{b}	0.62	2.13^{b}_{b}	0.60
Other-focused concerns	2.71^{a}_{b}	0.60	2.42^{b}_{b}	0.65

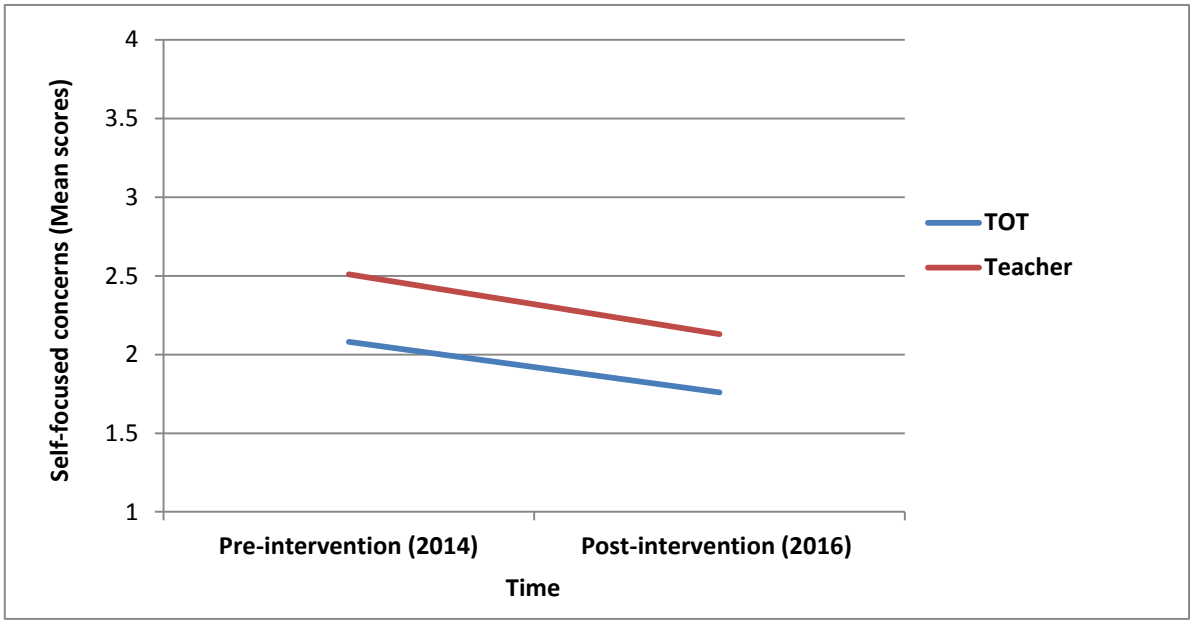
Note. **Within rows means with different superscript notations are significantly different from each other at $p < .05$. Within columns means with different subscript notations are significantly different from each other at $p < .05$. TOT $N = 30$, Teacher $N = 93$.**

Self-Focused Concerns

Items 1-4, 10, 16, 18, 19, and 21 were averaged into a single index measuring TOT and teacher self-focused concerns about including a child with a disability in their classroom, where high scores indicated greater levels of self-focused concerns (pre-intervention $\alpha = .75$, post-intervention $\alpha = .80$).

Consistent with our prediction, there was a main effect of the intervention on TOT and teacher self-focused concerns, F (1, 121) = 25.42, $p < .001$, partial $\eta^2 = .174$. There was also a main effect of group, F (1, 121) = 14.58, $p < .001$, partial $\eta^2 = .108$. There was no interaction effect between intervention and group, F (1, 121) = .142, $p = .707$, partial $\eta^2 = .001$. That is, the intervention reduced both TOT and teacher self-focused concerns, though TOTs possessed generally less self-focused concerns across the intervention period, compared to teachers (see Figure 16).

Figure 16. Impact of the intervention on TOT and teacher self-focused concerns.

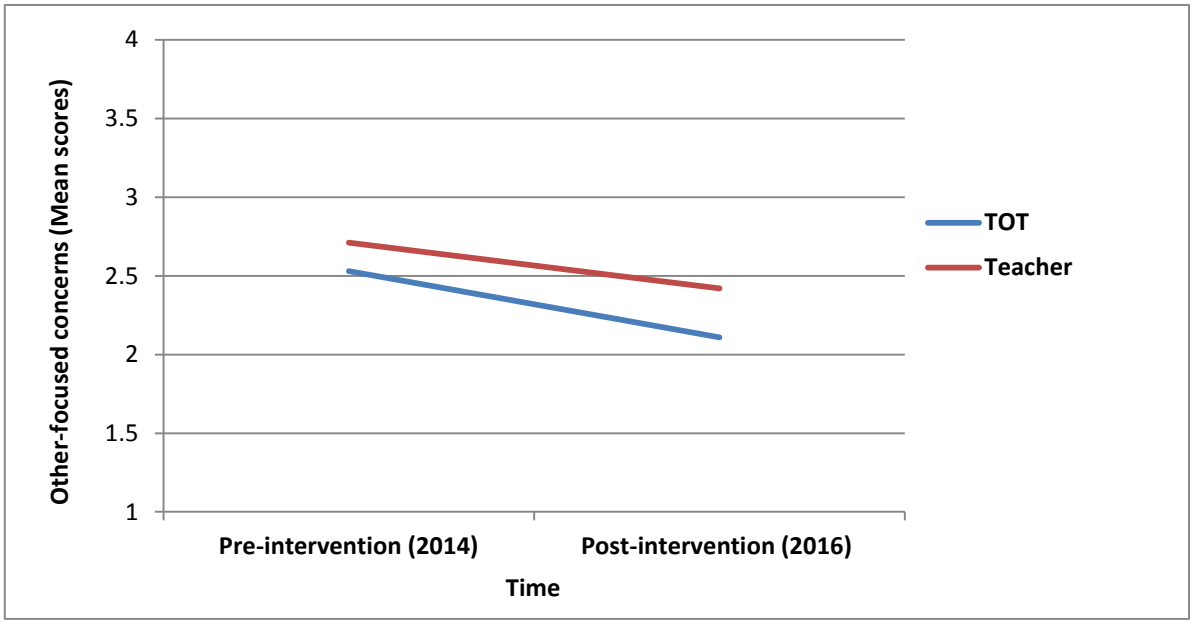


Other-Focused Concerns

Items 5-9, 11-15, 17, and 20 were averaged into a single index measuring TOT and teacher other-focused concerns about including a child with a disability in their classroom, where high scores indicated greater levels of other-focused concerns (pre-intervention α = .81, post-intervention α = .86).

Consistent with our prediction, there was a main effect of the intervention on TOT and teacher other-focused concerns, F (1, 121) = 22.38, p < .001, partial η^2 = .156. There was also a main effect of group, F (1, 121) = 4.73, p = .032, partial η^2 = .038. There was no interaction effect between intervention and group, F (1, 121) = .684, p = .410, partial η^2 = .006. In other words, the intervention reduced both TOT and teacher other-focused concerns, though TOTs possessed generally less other-focused concerns across the intervention period, compared to teachers (see Figure 17).

Figure 17. Impact of the intervention on TOT and teacher other-focused concerns.



Perceived Teaching Self-Efficacy

It was expected that the Leonard Cheshire Disability inclusive education intervention would facilitate positive change in TOTs' and teachers' perceived teaching self-efficacy pre- to post-intervention The KAP perceived teaching self-efficacy measure consisted of a single component comprising four items (e.g., *I am able to teach students with disabilities effectively, no matter the specific nature of the disability*) measured on a four-point Likert scale (1 = *Disagree*, 4 = *Agree*). These four items were averaged into a single index measuring TOT and teacher self-efficacy (pre-intervention α = .72, post-intervention α = .72).

A repeated measures ANOVA was conducted with intervention (pre- vs. post-) as a within-subjects factor and group (TOT vs. Teacher) as a between-subjects factor.

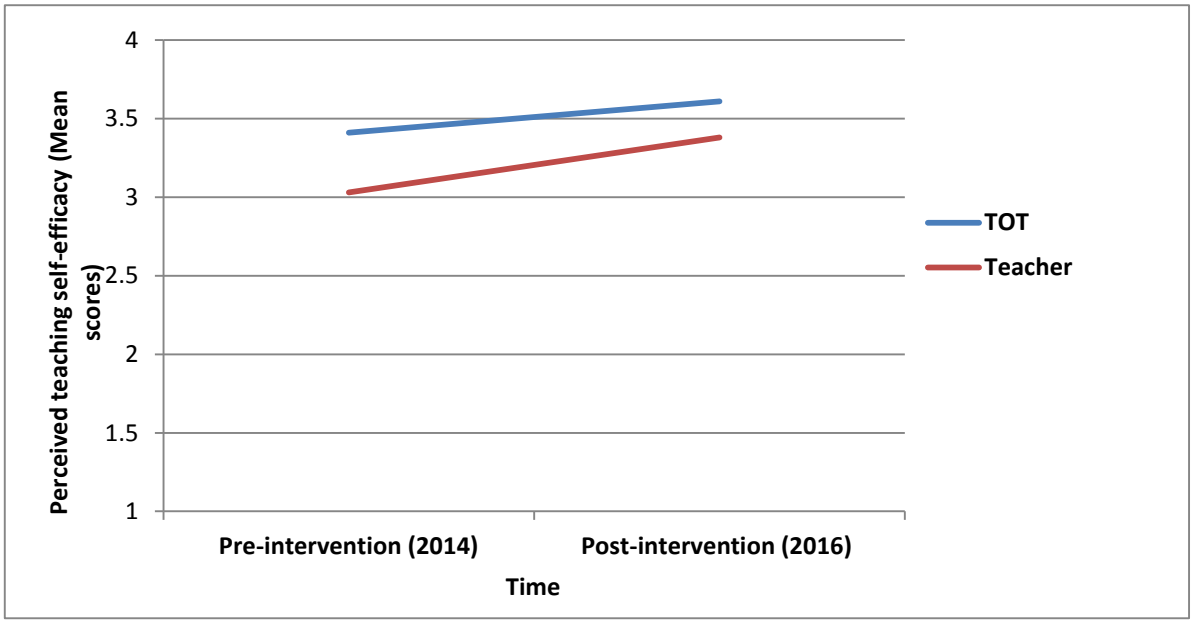
Consistent with our prediction, there was a main effect of the intervention on TOT and teacher perceived teaching self-efficacy, F (1, 121) = 13.48, p <.001, partial η^2 = .100. There was also a main effect of group, F (1, 121) = 8.38, p = .005, partial η^2 = .065, but no interaction effect, F (1, 121) = 1.02, p = .314, partial η^2 = .008. That is, the intervention reduced both TOT and teacher perceived teaching self-efficacy, though TOTs reported generally more self-efficacy across the intervention period, compared to teachers (see Table 5 and Figure 18).

Table 5. Impact of the intervention on TOT and teacher perceived teaching self-efficacy.

	Pre-intervention (2014)		Post-intervention (2016)	
TOT	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**
Perceived teaching self-efficacy	3.41^{a}_{a}	0.56	3.61^{b}_{a}	0.67
Teacher				
Perceived teaching self-efficacy	3.03^{a}_{b}	0.67	3.38^{b}_{b}	0.55

Note. **Within rows means with different superscript notations are significantly different from each other at $p < .05$. Within columns means with different subscript notations are significantly different from each other at $p < .05$. TOT $N = 30$, Teacher $N = 93$.**

Figure 18. Impact of the intervention on TOT and teacher perceived teaching self-efficacy.



Perceptions of Barriers

The perceptions of barriers measure employed by the KAP consisted of 12 items, assessed on a four-point Likert Scale (1 = *Disagree*, 4 = *Agree*).

1. In 2014, on average TOTs somewhat agreed that school was not physically accessible (*M* = 3.37, *SD* = 0.89). In 2016, on average TOTs believed that this was less of a barrier (*M* = 2.27, *SD* = 1.28).

   In 2014, on average teachers somewhat agreed that school was not physically accessible (*M* = 2.90, *SD* = 1.22). In 2016, on average teachers believed that this posed less of a barrier (*M* = 2.40, *SD* = 1.20).

2. In 2014, on average TOTs agreed that toilets in the school were not physically accessible (*M* = 3.55, *SD* = 0.69). In 2016, on average TOTs believed that this was less of a barrier (*M* = 3.10, *SD* = 1.11).

   In 2014, on average teachers somewhat agreed that toilets in the school were not physically accessible (*M* = 3.32, *SD* = 1.06). In 2016, on average teachers believed that this posed less of a barrier (*M* = 2.97, *SD* = 1.20).

3. In 2014, on average TOTs agreed that there was a lack of assistive devices in schools (*M* = 3.73, *SD* = 0.69). In 2016, on average TOTs believed that this posed less of a barrier (*M* = 2.83, *SD* = 1.12).

   In 2014, on average teachers agreed that toilets in the school were not physically accessible (*M* = 3.73, *SD* = 0.75). In 2016, on average teachers believed that this was less of a barrier (*M* = 3.32, *SD* = 1.10).

4. In 2014, on average TOTs somewhat agreed that schools were a long distance from home (*M* = 3.37, *SD* = 0.77). In 2016, on average TOTs believed that this posed less of a barrier (*M* = 3.07, *SD* = 1.11).

   In 2014, on average teachers agreed that schools were a long distance from home (*M* = 3.46, *SD* = 0.84). In 2016, on average teachers believed that this posed less of a barrier (M = 3.02, SD = 1.14).

5. In 2014, on average TOTs somewhat agreed that there was no transportation to schools (*M* = 3.27, *SD* = 1.05). In 2016, on average TOTs believed that this was less of a barrier (*M* = 3.10, *SD* = 1.27).

   In 2014, on average teachers somewhat agreed that there was no transportation to schools (*M* = 3.37, *SD* = 1.02). In 2016, on average teachers believed that this posed less of a barrier (*M* = 3.18, *SD* = 1.10).

6. In 2014, on average TOTs somewhat agreed that parents believed that children with disabilities should not go to school (*M* = 3.30, *SD* = 0.65). In

2016, on average TOTs believed that this was less of a barrier (*M* = 2.33, *SD* = 1.18).

In 2014, on average teachers somewhat agreed that parents believed that children with disabilities should not go to school (*M* = 3.20, *SD* = 1.01). In 2016, on average teachers believed that this posed less of a barrier (*M* = 2.80, *SD* = 1.10).

7. In 2014, on average TOTs somewhat agreed that parents believed that children with disabilities cannot learn (*M* = 3.40, *SD* = 0.72). In 2016, on average TOTs believed that this was less of a barrier (*M* = 2.40, SD = 1.07).

   In 2014, on average teachers somewhat agreed that parents believed that children with disabilities cannot learn (*M* = 3.20, *SD* = 1.09). In 2016, on average teachers believed that this posed less of a barrier (*M* = 2.69, *SD* = 1.09).

8. In 2014, on average TOTs somewhat agreed that parents generally think it is not worthwhile for children with disabilities to learn (*M* = 3.10, *SD* = 0.92). In 2016, on average TOTs believed that this was less of a barrier (*M* = 2.50, *SD* = 0.97).

   In 2014, on average teachers somewhat agreed that parents generally think it is not worthwhile for children with disabilities to learn (*M* = 3.04, *SD* = 1.03). In 2016, on average teachers believed that this posed less of a barrier (*M* = 2.63, *SD* = 1.03).

9. In 2014, on average TOTs agreed that parents are worried that their child with a disability may be abused (e.g., bullied; *M* = 3.57, SD = 0.73).). In 2016, on average TOTs believed that this posed less of a barrier (*M* = 2.83, *SD* = 1.21).

   In 2014, on average teachers somewhat agreed that parents are worried that their child with a disability may be abused (*M* = 3.31, *SD* = 1.03). In 2016, on average teachers believed that this was less of a barrier (*M* = 3.12, *SD* = 1.09).

10. In 2014, on average TOTs somewhat agreed that parents cannot afford the direct costs of school (*M* = 2.87, *SD* = 1.14). In 2016, on average TOTs believed that this posed less of a barrier (*M* = 2.63, *SD* = 1.00).

    In 2014, on average teachers somewhat agreed that parents cannot afford the direct costs of school (*M* = 2.72, *SD* = 1.09). In 2016, on average teachers believed that this posed more of a barrier (*M* = 2.87, *SD* = 1.10).

11. In 2014, on average TOTs somewhat agreed that parents cannot afford the indirect costs of school (*M* = 3.10, *SD* = 0.71). In 2016, on average TOTs believed that this posed less of a barrier (*M* = 3.13, *SD* = 0.97).

In 2014, on average teachers somewhat agreed that parents cannot afford the indirect costs of school (*M* = 2.96, *SD* = 1.09). In 2016, on average teachers believed that this posed less of a barrier (*M* = 3.09, *SD* = 0.95).

12. In 2014, on average TOTs somewhat agreed that teachers' lacked expertise (*M* = 3.10, *SD* = 1.21). In 2016, on average TOTs believed that this posed less of a barrier (*M* = 2.45, *SD* = 1.12).

    In 2014, on average teachers somewhat agreed that teachers' lacked expertise (*M* = 3.16, *SD* = 1.03). In 2016, on average teachers believed that this posed less of a barrier (*M* = 2.70, *SD* = 1.19).

13. In 2014, on average TOTs somewhat agreed that there were natural environment barriers (e.g., floods; *M* = 3.30, *SD* = 1.09). In 2016, on average TOTs believed that this was less of a barrier (*M* = 2.57, *SD* = 1.25).

    In 2014, on average teachers somewhat agreed that there were natural environment barriers (*M* = 3.08, *SD* = 1.12). In 2016, on average teachers believed that this was less of a barrier (M = 2.90, SD = 1.17).

The measure consisted of five components: school-based, environmental, parental attitudes, financial costs, and lack of teacher expertise (see Appendix for a full list of items):

- Items 1-3 measured the extent that TOTs and teachers perceived factors within the school as barriers to children with disabilities attending class. These included inaccessible school facilities (e.g., "*Toilets in the school are not physically accessible*"), and lack of provision of aids (e.g., "*The lack of assistive devices (e.g. wheelchairs, hearing aids, etc.*").
- Items 4-5 & 13 measured the extent that the event that TOTs and teachers perceived factors within the school as barriers to children with disabilities attending class. These included the distance between home and school (e.g., "*Schools are a long distance from home")* and lack of transportation (e.g., "*There is no means of transportation to the school").*
- Items 6-9 measured the extent that TOTs and teachers perceived parental attitudes as barriers to children with disabilities attending school (e.g., "*Parents generally think it is not worthwhile for children with disabilities to learn*").
- Items 10-11 measured the extent that TOTs and teachers perceived financial costs incurred by parents as a barrier to children with disabilities attending school. These included direct (e.g., *Parents cannot afford direct costs for the school (e.g. uniform, books, fees*)) and indirect costs (e.g., "*Parents cannot afford indirect costs for the school (e.g. meals, transportation*)")

- Additionally, we included an item measuring "*lack of expertise of teachers*" as a perceived barrier.

Analyses of these five components are discussed below. For each aggregated component, a repeated measures ANOVA was conducted with intervention (pre- vs. post-) as a within-subjects factor and group (TOT vs. Teacher) as a between-subjects factors. Table 6 shows the pre-intervention and post-intervention means and standard deviations for each component of the barriers measure.

Table 6. Impact of the intervention on TOT and teacher perceptions of barriers.

Barriers	Pre-intervention (2014)		Post-intervention (2016)	
TOT	Mean	Standard deviation	Mean	Standard deviation
School-based	$3.55^{a}{}_{a}$	0.55	$2.71^{b}{}_{a}$	0.98
Environmental	3.31	0.64	2.91	0.91
Parental attitudes	$3.34^{a}{}_{a}$	0.57	$2.52^{a}{}_{a}$	0.97
Financial costs	2.98	0.74	2.88	0.84
Lack of teacher expertise	3.10	1.21	2.45	1.12
Teacher				
School-based	3.31	0.81	2.89	0.90
Environmental factors	3.29	0.70	3.01	0.89
Parental attitudes	$3.18^{a}{}_{a}$	0.87	$2.81^{b}{}_{a}$	0.90
Financial costs	2.84	1.02	2.98	0.91
Lack of teacher expertise	$3.16^{a}{}_{a}$	1.04	$2.70^{b}{}_{a}$	1.19

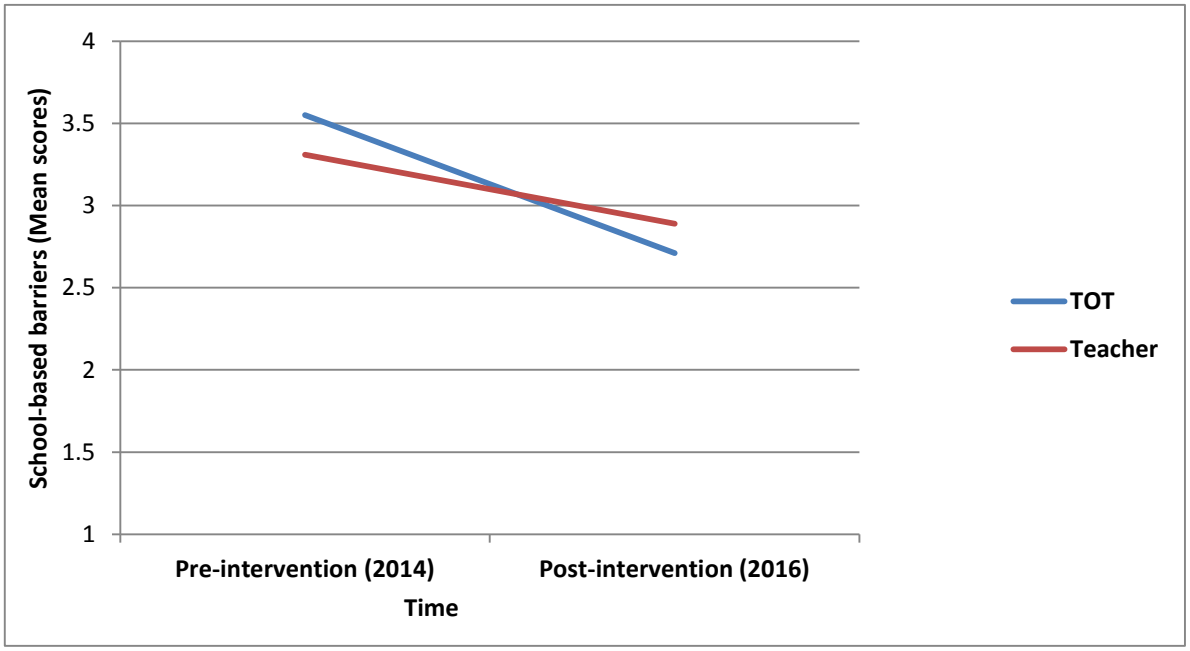
Note. **Within rows means with different superscript notations are significantly different from each other at $p < .05$. Within columns means with different subscript notations are significantly different from each other at $p < .05$. TOT $N = 30$, Teacher $N = 93$.**

School-Based

Items 1-3 were averaged into a single index measuring perceptions of school-based barriers pre- and post-intervention, where high scores indicated more agreement that each barrier was problematic for the school attendance of children with disabilities (pre-intervention α = .66, post-intervention α = .68).

There was a main effect of the intervention on TOT and teacher perceptions of school-based barriers, F (1, 121) = 32.71, p < .001, partial η^2 = .213. There was no main effect of group, F (1, 121) = .048, p = .827, partial η^2 = .000, nor an interaction effect, F (1, 121) = 3.55, p = .062, partial η^2 = .029.[11] In summary, the intervention reduced the extent that school-based factors were perceived as barriers toward children with a disability attending school among both TOTs and teachers (see Figure 19).

Figure 19. Impact of the intervention on TOT and teacher perceptions of school-based barriers.



Environmental

Items 4-5 and 13 were averaged into a single index measuring perceptions of environmental barriers pre- and post-intervention, where high scores indicated more agreement that each barrier was problematic for the school attendance of children with disabilities (pre-intervention α = .36[12], post-intervention α = .63).

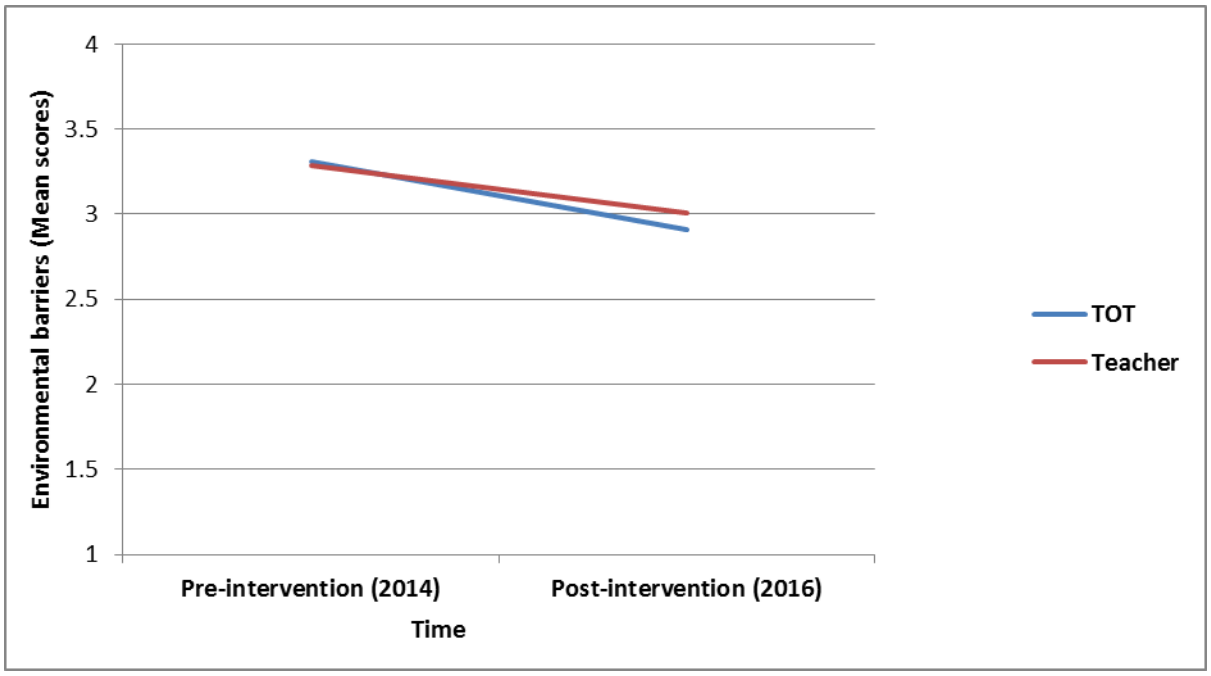
There was a main effect of the intervention on TOT and teacher perceptions of environmental barriers, F (1, 121) = 11.47, p < .001, partial η^2 = .087. There was no main effect of group, F (1, 121) = .083, p = .774, partial η^2 = .001, nor an interaction effect, F (1, 121) = .400, p = .529, partial η^2 = .003. In summary, the intervention reduced the extent that environmental factors were perceived as barriers toward

[11] However as the interaction effect was marginally significant (i.e. p = .062), it was probed for completeness. The only simple main effects observed was an effect of the intervention among TOTs, F (1, 29) = 17.21, p < .001, partial η^2 = .372, and an effect of the intervention among teachers, F (1, 92) = 15.62, p < .001, partial η^2 = .145.

[12] This indicates low scale reliability, thus findings should be interpreted with caution.

children with a disability attending school among both TOTs and teachers (see Figure 20).

Figure 20. Impact of the intervention on TOT and teacher perceptions of environmental barriers.



Parental Attitudes

Items 6-9 were averaged into a single index measuring perceptions of parental attitudinal barriers, where high scores indicated more agreement that each barrier was problematic for the school attendance of children with disabilities (pre-intervention α = .84, post-intervention α = .86).

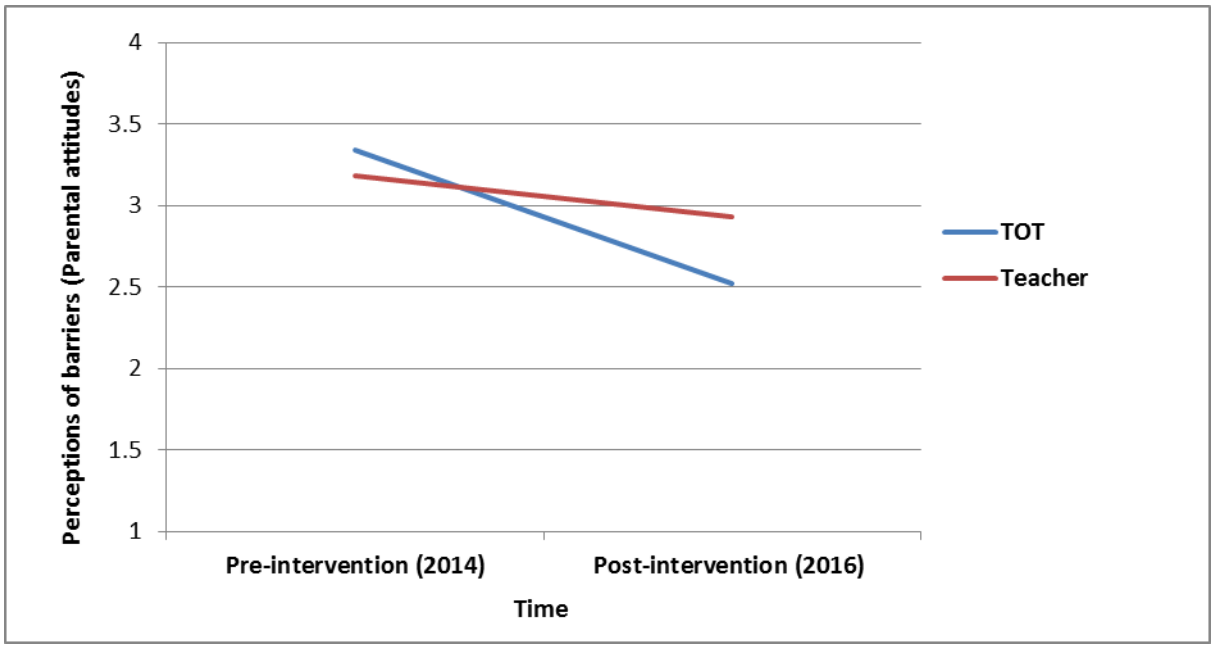
There was a main effect of the intervention on TOT and teacher perceptions of parental attitudinal barriers, F (1, 121) = 25.90, p < .001, partial η^2 = .176. There was no main effect of group, F (1, 121) = .239, p = .626, partial η^2 = .002[13], nor an interaction effect, F (1, 121) = 3.65, p = .058, partial η^2 = .029.[14] In other words, the intervention reduced the extent that parental attitudes were perceived as barriers

[13] Levene's test revealed that the assumption that the variance in pre-intervention perceptions of parental attitudinal barriers was equal between TOTs and teachers was violated.

[14] However as the interaction effect was marginally significant (i.e. p = .058), it was probed for completeness. The only simple main effects observed was an effect of the intervention among TOTs, F (1, 29) = 26.15, p < .001, partial η^2 = .474, and an effect of the intervention among teachers, F (1, 92) = 9.24, p = .003, partial η^2 = .091. Although this might suggest that the intervention was more effective among TOTs than teachers, in view of the marginal significance of the interaction and the violation of Levene's test for pre-intervention perceptions, this finding should be interpreted with caution.

toward children with a disability attending school among both TOTs and teachers (see Figure 21).

Figure 21. Impact of the intervention on TOT and teacher perceptions of parental attitude barriers.

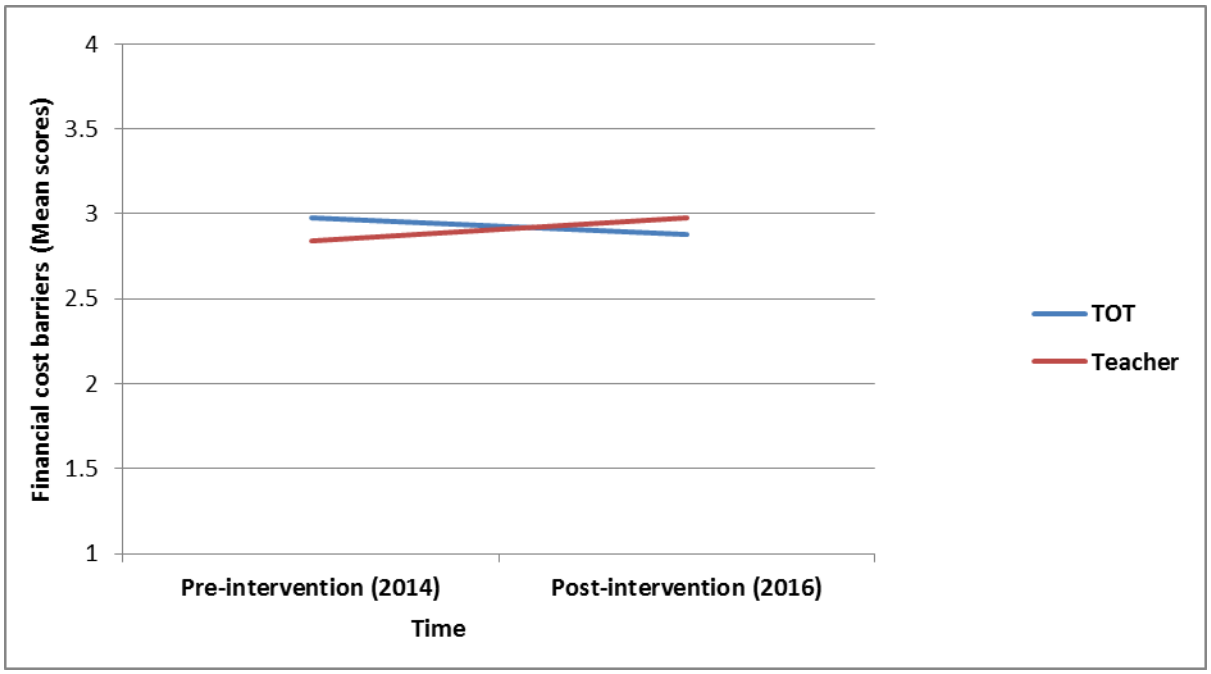


Financial Costs

Items 10-11 were averaged into a single index measuring perceptions of financial cost barriers, where high scores indicated more agreement that each barrier was problematic for the school attendance of children with disabilities (pre-intervention r = .65, post-intervention r = .53).

There was no main effect of the intervention on TOT and teacher perceptions of financial cost barriers, F (1, 121) = .022, p = .883, partial η^2 = .000. There was no main effect of group, F (1, 121) = .031, p = .859, partial η^2 = .000, nor an interaction effect, F (1, 121) = .786, p = .377, partial η^2 = .000. In other words, the intervention did not reduce the extent that financial costs were perceived as barriers toward children with a disability attending school among both TOTs and teachers (see Figure 22).

Figure 22. Impact of the intervention on TOT and teacher perceptions of financial cost barriers.

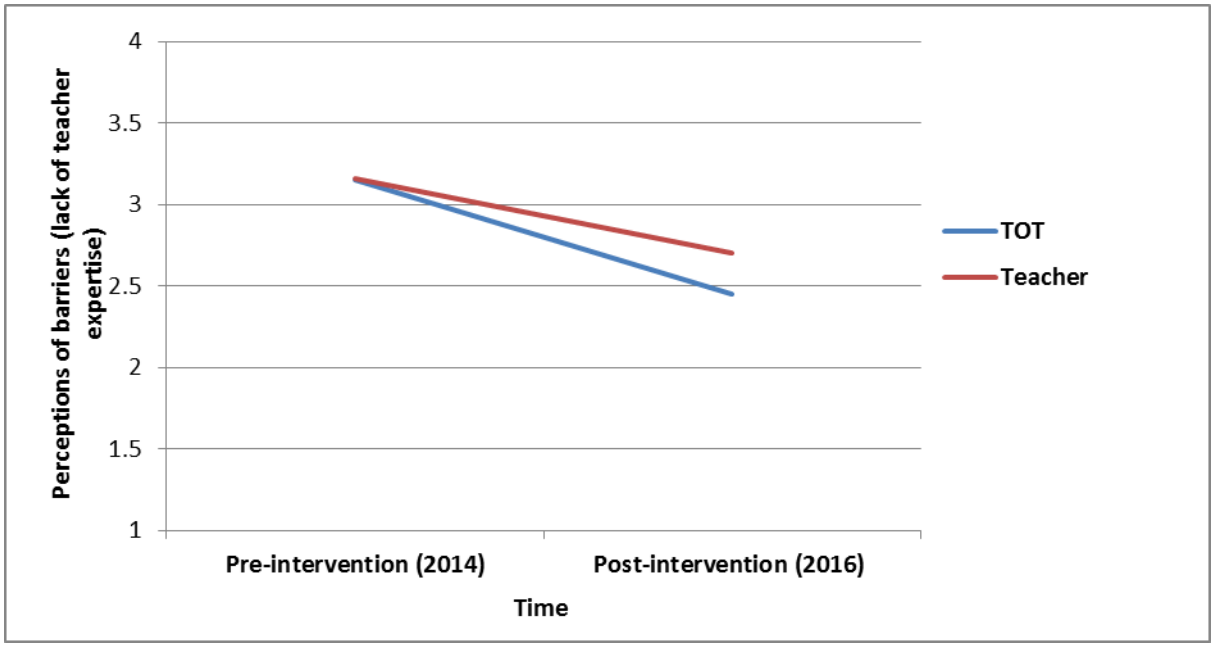


Lack of Teacher Expertise

There was a main effect of the intervention on TOT and teacher perceptions of the lack of teacher expertise as a barrier, F (1, 118) = 13.09, p < .001, partial η^2 = .100. There was no main effect of group, F (1, 118) = .739, p = .392, partial η^2 = .006, nor an interaction effect, F (1, 118) = .394, p = .532, partial η^2 = .003. That is, the intervention appeared to reduce the extent that lack of teacher expertise was perceived as a barrier for children with a disability attending school among both TOTs and teachers (see Figure 23)[15].

[15] This analysis was conducted with a matched sample of N = 120, due to three instances of missing data (2 TOTS, 1 teacher).

Figure 23. Impact of the intervention on TOT and teacher perceptions of lack of teacher expertise barriers.



4. Qualitative data[16]

Key Elements of Inclusive Education

TOTs and teachers were asked whether they had heard of inclusive education and what they thought the key elements of inclusive education were. In both 2014 and 2016, all TOTs (N = 30, 100%) reported having heard of inclusive education. In In 2014, nearly a quarter of teachers (N = 21, 22.6%) had not heard of inclusive education, but by 2016 this had decreased to zero, meaning all teachers had heard of inclusive education.

Participants commonly focused on the processes by which inclusive education is achieved as its key elements. Often these were practical, entailing things like: modification of the environment (e.g., toilets, latrines), knowledge gained by the teachers, the implementation of adaptive curriculum and use of assistive devices (e.g., hearing aids):

> *Adaptation involves improving the physical structures in the school to make learning environment friendly to learners with disabilities. Creation of awareness among pupils with no disability to make them accept those with disability and provide assistance where necessary to the disabled ones. Provision of assistive devices such as wheelchairs, hearing aids and braille machines- this may help in mobility, communication, and making the learning process smooth and constructive to learners with disabilities.*

> *Teachers also gain skills of handling learners with disability. Helps to make the school environment friendly e.g. building of ramps, proper lighting of the classrooms. Learning/teaching resources improve in order for the teachers to teach well.*

However, participants also sought to highlight the psychological processes which constitute inclusive education provision:

> *The key elements are; showing love to the concerned, giving attention to the learners to help reach the target, approach and skill delivery to the concerned, empathy.*

> *Inclusive learning is very important because it makes the learner with a disability to feel he/she belongs to the society.*

[16] Quotes are anonymised to protect participant confidentiality and minor spelling errors have been corrected to aid readability.

Many focused on defining inclusion in the broad sense, and did so using inclusive language:

> *Key elements of inclusive learning are: All pupils are equal and should learn together whether with disability or not. Boys and girls are also allowed to learn together. Girl child education is vital. Education for all is necessary.*

As the example above shows, some participants recognised that inclusion was also applicable to gender and cultural background (the latter signified by the use of the word *tribe* by some teachers).

In fact, some participants briefly problematized the term "disability", thus showing an understanding of possible negative implications use of this label has:

> *All learners regardless of their disabilities have a right to education and it is true that disability is not inability.*

> *Bring learners that are not disabled to learn together with disabled learners and the appreciation by the two groups that disability is not inability.*

A minority of participants however continued to use normative language to describe inclusive education:

> *This is where learners of all the discipline learn together with other normal children and they enjoy the environment without stigmatization.*

> *Including learners with special needs in the same class with the normal children giving them equal opportunities.*

Finally, two teachers chose to pick up on perceived negative elements of inclusive education, suggesting inclusion is not welcomed by all:

> *It is very difficult to control the learners.*

> *Class control is very difficult because of mixed abilities.*

Perceived Helpfulness of a Classroom Assistant

TOTs and teachers were asked whether they would find a classroom assistant helpful and to provide examples to support their answer. In both 2014 and 2016, all TOTs (N = 30, 100%) said that they would find a classroom assistant helpful. In 2014, the majority of teachers (N = 82, 88.2%) said they would find a classroom assistant helpful. In 2016 this number had increased (N = 87, 93.5%).

Overall, participants highlighted a variety of ways in which classroom assistants may be of assistance to them. Frequently, examples given involved the provision of specific types of support to children with different disabilities:

This will apply with the wheelchair pupil especially when he/she would like to visit the latrine for short or long calls during the lessons. I need somebody who can pull him/her on the wheelchair to the toilets. Same apply to one with health problems, one who can rush the pupil to the nearest dispensary during the class hours.

Assist in use of braille machines to pupils with visual impairment. Assist in training of children with physical impairment in walking. To children with epilepsy, help in identifying them before onset.

Classroom assistant would help to interpret to the children with H.I and read/write the braille.

Interpreter for the deaf, Guide for the blind as well as conducting activities like helping the blind feel the tactile objects as you explain, Helping the physically challenged with toileting and wheelchair mobility.

Others saw the role of a classroom assistant as to offer generalised support to all learners:

The classroom assistant would be helping the learners to access the learning/aids(relevant) while the teacher does the explanation.

Assist in class sitting arrangement so as to benefit from instruction or group work. Help in sharing out teaching/learning aid to the learners. Help learners to understand concepts and complete assignments given in class.

Help the teachers when attending to individual learners or when explaining to learners who are near him/her and are at a distance from the teacher.

Some participants envisaged classroom assistants as directly supporting them as teachers:

Assistant can manage the class when the teacher is not in, The assistant can help the teacher to control the class if the number of learners is big.

A classroom assistant may have an experience over a given issue and may even do it better than the teacher.

Taking up responsibility in case the teacher is absent.

Classroom assistant will help me overcome worries that might lower my ability to teach children with disability.

In a two instances, this role was mentioned specifically in the context of safety:

A classroom assistant will ensure that peace prevails in the challenged child because he has been given the mandate to control the classroom in absence of the teacher by ensuring that other children do not tease him or beat him.

> *In absence of a teacher in class, they help in assisting pupils with disabilities from being teased or ill-treated by others. They also control bullying as well as maintaining discipline.*

Not all participants gave examples of classroom assistance from a salaried professional. One mentioned a potential role for parents or community members:

> *A parent or person who helps to bring a physically challenged child to school will help me to teach. A parent who gives the background of a child will help me to teach the child.*

While a couple spoke in terms of assistance facilitated by environmental factors:

> *A classroom with transparent iron sheets provide good lights in class to assist the visually impaired.*
>
> *Children with visual impairment need a classroom full of light with brightly painted walls. The classroom should also be spacious.*

Additional Information

Participants were given the opportunity to leave open-ended feedback at the end of the survey. The majority felt that everything had been covered. However, some suggested that attention should be paid to how teachers can continue to be motivated, particularly in terms of incentives:

> *The teachers handling children in the schools that inclusive education is practised should be motivated by being given an allowance as is done in special units.*
>
> *You covered almost everything, but the questionnaire would have touched on how to encourage special needs teachers to continue helping the special needs learners and how to advance their skills.*
>
> *Yes you forgot to talk about incentives for the teachers and learners.*
>
> *That teachers handling mainstreamed schools are given additional remuneration due to the IEP that they offer.*
>
> *The work is too hard. Let teachers get some special allowances.*

Others saw the need for the project to be expanded, particularly to include boys with disabilities and secondary schools:

> *We have been looking after the girl child more than the challenged boy child, I feel that both sexes should be helped in the same way. Challenged boys are also facing challenges in the community.*

Try and improve inclusive education for both girls and boys with disabilities. Stress on boys also with disabilities.

Whether the study would also be carried for boys with disability or not.

Yes, it is limited to primary school and majoring on girls. It should include boys.

However, in terms of gender, two teachers spoke in detail about additional barriers and dangers facing girls with disabilities and the need to support them:

Girls with disability who are over age above eighteen are not protected by the law when sexually abused and even impregnated. Parents never care so much about their daughters with disability and are reluctant to cooperate with relevant teachers. One girl in my school has been sexually abused and impregnated yet no legal action has been taken.

Girls with disabilities need more support than boys both at school and at home. Girl child with disability is very vulnerable right away from birth to adulthood binded with special care they need once they start to have their menstrual cycles pads will be constantly needed. Therefore I advocate for more attention and support to girl child with disability in all environments at all times. Let us encourage, appreciate and support them because disability is not inability.

A few highlighted the potential of inclusive education for children from other marginalised groups:

Yes: Please, you have not included children with other special needs in education e.g., children heading families, children living in the streets, children with health problems - those living with HIV/AIDS & children living under difficulties

Orphaned children are at risk too.

Others highlighted a potentially important role for parents and the community in supporting inclusive education. In particular, the word *sensitization* was frequently used:

There should be a sensitization and creating awareness to parents and the community at large on the importance of accepting children with disability and supporting them in the quest to having quality education.

The parents of children with disability to be sensitized in their roles in taking care of their children outside learning institutions.

The parents and the community should be sensitized on the role of children with disabilities in their society.

Finally, two teachers gave perceived exceptions to the feasibility of inclusive education provision to children with disabilities in schools:

> *In some homes there are some children with multiple disabilities that cannot be admitted in our regular schools. We were informed that home-based care would be done to them, and we tried to inform their parents about the plan. Specifically girls, but this has not been addressed. What assistance can such girls be given?*

> *The pupils/child who have severe cases of multiple disabilities who cannot access the school due to their children. Hence such children should be handled or taken care of at home (home based care).*

5. Summary of Findings and Recommendations

Knowledge, Attitudes and Practices

Overall, the Leonard Cheshire Disability inclusive education intervention was **effective** at **positively shifting knowledge and attitudes** about inclusive education, but **no evidence** was found that the intervention could **impact practices**.

Specifically, the intervention was **effective** at producing more positive attitudes toward inclusive education among TOTs and teachers. Specifically, both TOT and teacher **beliefs about inclusive education became more positive** pre- to post-intervention. Moreover, **teachers reported reduced negative emotions about educating students with disabilities**. However, the intervention **did not appear to impact teacher and TOT willingness to adopt inclusive practices**[17].

Cross-group comparisons between TOTs and teachers revealed some evidence that **TOTs held generally more positive beliefs about inclusive education compared to teachers**.[18] Additionally, compared to teachers, **TOTs reported less negative emotions before the intervention** but after the intervention levels of negative emotions reported by TOTs and teachers were not significantly different (i.e. **the intervention appeared to reduce teachers' negative emotions to a level comparable with TOTs**).

One interpretation of the findings is that the Leonard Cheshire Disability inclusive education intervention is effective at shifting knowledge and attitudinal barriers to inclusive education among teachers, but not their practices. This suggests that practitioners should focus on refining aspects of the intervention orientated toward changing practice.

However, a possible alternative explanation for the failure of the intervention to impact willingness to adopt inclusive education practices is that willingness was already very high in the matched sample pre-intervention (M = 3.70, SD = 0.54). To suggest that the intervention is ineffective at changing practices may therefore underestimate its impact. Similarly, the sample also held rather positive beliefs about inclusive education before the intervention occurred (M = 3.36, SD = 0.63). Thus, in this case, it is not clear whether the intervention would exert the same positive impact of beliefs among participants who hold more deleterious beliefs about inclusive education.

To clarify this issue, the Leonard Cheshire Disability inclusive education intervention should be tested among samples who hold fairly negative opinions about inclusive education. Notwithstanding, the evidence at present is encouraging as it suggests

[17] This might be more likely to be subject to factors beyond the teachers' control – e.g. resources.
[18] However, recall that Levene's test was violated in this case, suggesting that this finding may not be robust.

that the intervention has a positive impact on the knowledge and attitudes of teachers who are fairly open to inclusive education initially.

Concerns

The intervention was **very effective** at reducing TOT and teacher concerns about including a child with disability in the classroom. Specifically, **both TOT and teacher self-focused concerns were reduced** pre- to post-intervention. Moreover **TOTs and teachers reported reduced other-focused concerns** over the intervention period.

Cross-group comparisons between TOTs and teachers also revealed that **TOTs held generally less self-focused and other-focused concerns about including a child with a disability in their classroom,** compared to teachers**.**

These findings suggest that the Leonard Cheshire Disability inclusive education is able to reduce both the self-focused concerns that teachers have about educating a child with a disability (e.g., anxiety) and concerns related to others (e.g., parental attitudes). Our descriptive data underpins the importance of these findings. That is, levels of both pre-intervention self-focused concerns (*M* = 2.40, *SD* = 0.63) and other-focused concerns (*M* = 2.67, *SD* = 0.62) were quite high. This suggests that such concerns were experienced quite keenly by participants and that they may pose a particular challenge for policymakers wishing to implement inclusive education in schools. As such, it is particularly encouraging that the intervention appeared to significantly reduce both sets of these concerns over time.

However, it is also important to note that, given that post-intervention levels of self-focused concerns (*M* = 2.04, SD = 0.60) and other-focused concerns (*M* = 2.34, *SD* = 0.68) were around the scale mid-point, that the intervention does not entirely ameliorate such concerns, but instead attenuates them. This suggests that the Leonard Cheshire Disability inclusive education intervention could play an integral role in a multi-faceted approach designed to address this important barrier to inclusive education among TOTs and teachers.

Perceived Teaching Self-Efficacy

Findings suggest that **the intervention was successful at improving perceived teaching self-efficacy among both TOTs and teachers, though TOTs perceived teaching self-efficacy was generally higher across the intervention, compared to teachers.**

Although the perceived teaching self-efficacy of the sample pre-intervention was fairly high (*M* = 3.12, *SD* = 0.68) it is encouraging that the intervention was able to further bolster this among the sample. Moreover, this change occurred even when controlling for the prior teaching experience among the sample (see footnote 14).

Perceptions of Barriers

The intervention was **effective** at reducing TOT and teacher perceptions of barriers toward children with a disability attending school. Specifically, **perceptions of school-based factors, the environment, parental attitudes and lack of teacher expertise as barriers decreased among TOTs and teachers pre- to post-intervention. However, the intervention did not appear to impact perceptions of financial costs as barriers.** Additionally, no differences were observed between TOT and teachers in regard to their perceptions of barriers.

Pre-intervention levels of perceptions of barriers were rather high (all > 3). Post-intervention they had shifted significantly, but remained high (all > 2.50). This suggests that the intervention was able to mildly attenuate, but not ameliorate, the extent that school-based factors, the environment, parental attitudes, and lack of teacher expertise were seen as a barrier toward a child with a disability attending school. This is unsurprising as many of these barriers refer to things that are outside of the participants' control (i.e. environment, parental attitudes, expertise of other teachers).

Qualitative Findings

The qualitative data collected suggested that the majority of TOTs and teachers are aware of the key elements of inclusive education, which suggests that they have engaged with the Leonard Cheshire Disability inclusive education intervention. However, there were instances of normative language being used, where children with disabilities were contrasted with "normal[19]" children. Two teachers also highlighted negative facets of inclusive education as its key elements, specifically in terms of additional workload for them. This suggests that while the intervention was effective at producing positive shifts in things like knowledge, attitudes and concerns about inclusive education, some negativity remains (an interpretation supported by the quantitative data, e.g., post-intervention levels of self-focused and other-focused concerns).

Nearly all participants felt that a classroom assistant would be able to assist them in class, though opinion differed about the type of support this assistant would provide, and even whether this person would be a salaried professional or simply a parent or community member. However, the responses offered by the majority of teachers suggest a variety of ways in which they could be helped by a classroom assistant (e.g., by the assistant supporting children with different disabilities or learners in general). Some teachers conceptualised the role of a classroom assistant as to support them directly, and one highlighted the potential for this to have psychological benefits, stating that a classroom assistant might help them overcome anxiety. This might suggest an intriguing possibility: that the Leonard Cheshire Disability inclusive

[19] This is unacceptable as it still implies the use of a medical or charity model of disability (and is not what the LCD IE training promotes).

education intervention might help further reduce teacher concerns about educating children with disabilities if used in combination with classroom assistants.

Conclusion

The preliminary evidence contained in this report suggests that the Leonard Cheshire Disability inclusive education intervention may be a useful tool to improve teacher knowledge and attitudes among participants who are generally open to inclusive education. Moreover, the intervention may be particularly effective as part of a multi-faceted approach designed to address the self-focused and other-focused concerns held by teachers, which these findings also suggest may pose a particular challenge to implementing inclusive education. Additionally, the intervention is also able to improve teachers' perceived teaching self-efficacy and attenuate perceived barriers to educating a child with disability in the classroom.

In light of the empirical information presented in this report, we believe that the Leonard Cheshire Disability inclusive education intervention has had a positive impact on participating TOTs and teachers in Lakes Region in Kenya, and thus may have broader application in other similar national and international contexts, if additional resources are made available. Accordingly, we would like to close this report with a quote from a participant which we believe demonstrates the general applied value of inclusive education interventions for people with (and without) disabilities, as well as the positive experience (most) participants have had from this project:

> *…If both girls and boys with disabilities are supported, they can go much further with education hence helps a lot in nation building since they are good mathematicians and scientists. Inclusive education really leads to national unity, since it does not discriminate those with disabilities. I really appreciate Leonard Cheshire for coming up with a program which recognises the disabled as human beings and people.*

APPENDIX

Teacher Knowledge, Attitudes and Practice Survey

TEACHERS' QUESTIONNAIRE

Thank you for your willingness to participate in this research study.
If you are unsure about how to answer a question or if it is hard to pick an answer, please choose the one that seems nearest or most appropriate to your thinking. This can often be the first thing that comes to your mind.
There are no right or wrong answers, just answers that are true for you.
In some cases, we will ask you to choose your answer from a range of options; in other cases, we will ask you to briefly tell us about your experience. Finally, some questions will ask you to rate your experience on a scale.
Since we really value your opinion, we would like to ask you to answer all questions, however if you feel uncomfortable in giving us some details, please let us know and you can skip those specific issues.

QUESTIONNAIRE NUMBER_____

Trainer of the Trainers ☐ Yes(1) ☐ No(2)

Head Teacher……. ☐ Yes(1) ☐ No(2)

DATA COLLECTOR'S NAME_____

Date_____

Data entry person: _____

Annex 1. Teacher Knowledge, Attitudes and Practice Survey

PERSONAL INFORMATION

Q1. School Name:

_____

Q2. School Code:

_____

Q3. District/Sub-county:

_____

Q3_1. City/Town/Village:

_____

Q4. First Name: _____ **Surname**:

Q5. Gender ☐ Male (1) ☐ Female (2) **Q6. Age** _____

Q7. Marital Status:

☐ (1)	Single	☐ (4)	Living together
☐ (2)	Married	☐ (5)	Separated/Divorced
☐ (3)	Widowed	☐ (6)	Other (specify_____)

Q8. EDUCATION (Please specify HIGHEST level of education attained)	
☐ (1)	Completed Secondary
☐ (2)	Some College (specify_____)
☐ (3)	Completed College (specify_____)
☐ (4)	Some University (specify_____)
☐ (5)	Completed University (specify_____)
☐ (6)	Other (specify_____)

Q9. Did your education include any content related to disability? ☐ Yes(1) ☐ No(2)

Q10. Are you trained in special needs education (excluding LCD provided IE training)? ☐ Yes(1) ☐ No(2)

Q11. Have you undertaken any training courses since 2014?

☐ Yes(1) if yes, go to Q12_1 ☐ No(2) if no, go to Q13

Q12_1. Did any of these additional training courses include any content <u>specifically</u> related to disability? ☐ Yes(1) ☐ No(2)

Q12_2. Did any of these additional training courses include any content <u>specifically</u> related to gender? ☐ Yes(1) ☐ No(2)

TEACHING EXPERIENCE

Q13. How long have you been teaching (in YEARS)?

_____

Q14. How long have you been teaching IN YOUR CURRENT SCHOOL (in YEARS)?

_____

Q15. What type of provision are you currently teaching? (tick as many as apply)	☐ Mainstream class (1)
	☐ Resource unit (2)
	☐ Special unit (3)
	☐ Other (4): Specify_____

	Type of provision	**Number of years**
Q16. Have you previously taught in any of the following: (tick as many as apply)	☐ Mainstream class (1)	_____
	☐ Resource unit (2)	_____
	☐ Special unit (3)	_____
	☐ Special school (4)	_____
	☐ Other (5): Specify_____	_____

EXPERIENCE WITH DISABILITIES

Q17. Please specify whether in the current school year you are teaching any students who have been identified as having disabilities, by type of disability:

Type of disability	**Presence**
1. Visual impairment	☐ Yes (1) ☐ No (2)
2. Hearing impairment	☐ Yes (1) ☐ No (2)
3. Intellectual disabilities	☐ Yes (1) ☐ No (2)
4. Learning difficulties	☐ Yes (1) ☐ No (2)
5. Speech and Language disorders	☐ Yes (1) ☐ No (2)
6. Epilepsy	☐ Yes (1) ☐ No (2)
7. Physical disabilities	☐ Yes (1) ☐ No (2)
8. Health problems (specify:_____)	☐ Yes (1) ☐ No (2)
9. Multiple disabilities (specify:_____)	☐ Yes (1) ☐ No (2)
10. Other (specify:_____)	☐ Yes (1) ☐ No (2)

Q18. Please specify whether in previous school years you have taught students who have been identified as having disabilities, by type of disability:

Type of disability	Presence
1. Visual Impairment	□ Yes (1) □ No (2)
2. Hearing Impairment	□ Yes (1) □ No (2)
3. Intellectual disabilities	□ Yes (1) □ No (2)
4. Learning Difficulties	□ Yes (1) □ No (2)
5. Speech and Language disorders	□ Yes (1) □ No (2)
6. Epilepsy	□ Yes (1) □ No (2)
7. Physical disabilities	□ Yes (1) □ No (2)
8. Health problems (specify:_____)	□ Yes (1) □ No (2)
9. Multiple disabilities (specify:_____)	□ Yes (1) □ No (2)
10. Other (specify:_____)	□ Yes (1) □ No (2)

Q19. How easy is it to teach students with disabilities (by type of disability)?

Type of disability	Extremely difficult	Somewhat difficult	Somewhat easy	Extremely easy	No experience
1. Visual Impairment	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
2. Hearing Impairment	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
3. Intellectual disabilities	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
4. Learning Difficulties	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
5. Speech and Language disorders	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
6. Epilepsy	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
7. Physical disabilities	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
8. Health problems (specify_____)	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
9. Multiple disabilities (specify_____)	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
10. Other (specify_____)	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)

Q20. To what extent has your training effectively prepared you to teach children with disabilities (by type of disability)?

Type of disability	Not at all	A little bit	Quite a lot	A lot	No Training
1. Visual Impairment	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
2. Hearing Impairment	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
3. Intellectual disabilities	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
4. Learning Difficulties	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
5. Speech and Language disorders	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
6. Epilepsy	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
7. Physical disabilities	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
8. Health problems (specify_____)	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
9. Multiple disabilities (specify_____)	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)
10. Other (specify_____)	□ (1)	□ (2)	□ (3)	□ (4)	□ (5)

Q21. Could you please indicate to what extent each of the following is a barrier that prevents children with disabilities from going to your school, using the scale from 1 (Disagree) to 4 (Agree)	Disagree	Somewhat disagree	Somewhat agree	Agree
1. Schools are not physically accessible	□ (1)	□ (2)	□ (3)	□ (4)
2. Toilets in the school are not physically accessible	□ (1)	□ (2)	□ (3)	□ (4)
3. The lack of assistive devices (e.g. wheelchairs, hearing aids, etc.)	□ (1)	□ (2)	□ (3)	□ (4)
4. Schools are a long distance from home	□ (1)	□ (2)	□ (3)	□ (4)
5. There is no means of transportation to the school	□ (1)	□ (2)	□ (3)	□ (4)
6. Parents think children with disabilities should not go to school	□ (1)	□ (2)	□ (3)	□ (4)
7. Parents generally think children with disabilities cannot learn	□ (1)	□ (2)	□ (3)	□ (4)
8. Parents generally think it is not worthwhile for children with disabilities to learn	□ (1)	□ (2)	□ (3)	□ (4)
9. Parents are worried their children with disabilities will be abused (bullied, teased, ill-treated, etc.)	□ (1)	□ (2)	□ (3)	□ (4)
10. Parents cannot afford direct costs for the school (e.g. uniform, books, fees)	□ (1)	□ (2)	□ (3)	□ (4)
11. Parents cannot afford indirect costs for the school (e.g. meals, transportation)	□ (1)	□ (2)	□ (3)	□ (4)
12. Lack of expertise of teachers	□ (1)	□ (2)	□ (3)	□ (4)
13. Natural environmental barriers (e.g. animals, rivers, floods, etc.)	□ (1)	□ (2)	□ (3)	□ (4)

14. Other specify:_____)	□ (1)	□ (2)	□ (3)	□ (4)

Q22.	**Would a classroom assistant help you in teaching a child with disabilities?**	□ Yes(1)	□ No(2)
Q22_s.	Please explain how by providing examples		
Q23.	**Have you ever heard of inclusive education?**	□ Yes(1)	□ No(2)
	If Yes go to Q24. If No go to Q25		
Q24.	**In your opinion what are the key elements of inclusive education?**		

Q25. Taking into account your teaching experience, we would like to ask you some questions around education. There are no right or wrong answers: we are just interested in your opinion. Please respond to all the following statements using the scale from 1 (if you disagree with the sentence) to 4 (if you agree with the sentence)	**Disagree**	**Somewhat disagree**	**Somewhat agree**	**Agree**
1. I believe that an inclusive school is one that encourages academic progression of all students regardless of their ability.	1	2	3	4
2. I believe that students with a disability should be taught in special education schools.	1	2	3	4
3. I believe that inclusion facilitates socially appropriate behaviour amongst all students.	1	2	3	4
4. I believe that any student can learn in the regular curriculum of the school if the curriculum is adapted to meet their individual needs.	1	2	3	4
5. I believe that students with a disability should be segregated because it is too expensive to modify the physical environment of the school.	1	2	3	4
6. I believe that students with a disability should be in special education	1	2	3	4

schools so that they do not experience rejection in mainstream school.				
7. I get frustrated when I have difficulty communicating with students with a disability.	1	2	3	4
8. I get upset when students with a disability cannot keep up with the day-to-day curriculum in my classroom.	1	2	3	4
9. I get frustrated when I am unable to understand students with a disability.	1	2	3	4
10. I am uncomfortable including students with a disability in a regular classroom with other non-disabled students.	1	2	3	4
11. I am concerned that students with a disability are included in the regular classroom, regardless of the severity of the disability.	1	2	3	4
12. I get frustrated when I have to adapt the curriculum to meet the individual needs of all students.	1	2	3	4
13. I am willing to encourage students with a disability to participate in all social activities in the regular classroom.	1	2	3	4
14. I am willing to adapt the curriculum to meet the individual needs of all students regardless of their ability.	1	2	3	4
15. I am willing to physically include students with a severe disability in the regular classroom with the necessary support.	1	2	3	4
16. I am willing to modify the physical environment to include students with a disability in the regular classroom.	1	2	3	4
17. I am willing to adapt my communication techniques to ensure that all students with an emotional and behavioural disorder can be successfully included in the regular classroom.	1	2	3	4
18. I am willing to adapt the assessment of individual students in order for inclusive education to take place.	1	2	3	4

Q26. In the context of your school/teaching situation and your personal experience as a teacher, please indicate your level of agreement by using the scale from 1 (if you disagree with the sentence) to 4 (if you agree with the sentence). If a child with disability was included in my classroom…	**Disagree**	**Somewhat disagree**	**Somewhat agree**	**Agree**
1. I will not have enough time to plan educational programs for students with disabilities	1	2	3	4
2. It will be difficult to maintain discipline in class	1	2	3	4
3. I do not have the knowledge and skills required to teach students with disabilities	1	2	3	4
4. I will have to do additional paperwork	1	2	3	4
5. Students with disabilities will not be accepted by non-disabled students	1	2	3	4
6. Parents of non-disabled children may not like the idea of placing their children in the same classroom as children with disabilities	1	2	3	4
7. My school will not have enough funds for implementing inclusion successfully	1	2	3	4
8. There will be no para-professional staff available to support the inclusion of students (e.g. speech therapist, physiotherapist, occupational therapist, etc.)	1	2	3	4
9. I will not receive enough incentives (e.g. additional remuneration or allowance) to be able to include students with disabilities	1	2	3	4
10. My workload will increase	1	2	3	4

11.Other staff members of the school will be stressed	1	2	3	4
12.My school will have difficulty in accommodating students with various types of disabilities because of inaccessible infrastructure, e.g. architectural barriers, lack of accessible toilets	1	2	3	4
13.There will be inadequate resources or special teachers available to support inclusion	1	2	3	4
14.My school will not have adequate special education instructional materials and teaching aids (e.g. Braille)	1	2	3	4
15.The overall academic standards of the school will suffer	1	2	3	4
16.My performance as a classroom teacher or school principal will decline	1	2	3	4
17.The academic achievement of non-disabled students will be affected	1	2	3	4
18.It will be difficult to give equal attention to all students in an inclusive classroom	1	2	3	4
19.I will not be able to cope with disabled students who do not have adequate self-care skills (e.g. students who are not toilet trained)	1	2	3	4
20.There will be inadequate administrative support to implement the inclusive program	1	2	3	4
21.The inclusion of a student with disability in my class or school will lead me to have a higher degree of anxiety and stress	1	2	3	4

Q27. Thinking about your daily experience as a teacher, could you please indicate to what extent you agree with the following sentences, using the scale from 1 (if you disagree) to 4 (if you agree)?	**Disagree**	**Somewhat disagree**	**Somewhat agree**	**Agree**
1. I am able to teach students with disabilities effectively, no matter the specific nature of disability	1	2	3	4
2. I am able to develop lesson plans that do not leave any students with disabilities behind	1	2	3	4
3. I am able to adapt assessment procedures to take account of specific needs of students with disabilities	1	2	3	4
4. I am able to build a relationship with parents of children with disabilities to improve their learning at home	1	2	3	4

Q28. In the next section there is a list of statements. Please tick the box that best represents your view.

1. School is an unsafe place…	☐ Especially for girls with disabilities	☐ Especially for boys with disabilities ☐	☐ For both girls and boys with disabilities	☐ For neither girls nor boys with disabilities
2. Being victims of bullying at school is a risk…	☐ Mainly for girls with disabilities	☐ Mainly for boys with disabilities	☐ For both girls and boys with disabilities	☐ For neither girls nor boys with disabilities
3. Being victims of physical and/or sexual	☐ Mainly for girls with disabilities	☐ Mainly for boys with disabilities	☐ For both girls and boys with disabilities	☐ For neither girls nor boys with disabilities

	abuse during the journey to school is a risk…				
4.	**A lack of accessible toilets in the school would be a problem…**	□ Mainly for girls with disabilities	□ Mainly for boys with disabilities	□ For both girls and boys with disabilities	□ For neither girls nor boys with disabilities
5.	**I believe education is…**	□ More important for girls with disabilities	□ More important for boys with disabilities	□ Equally important for boys and girls with disabilities	□ Not important for either girls or boys with disabilities
6.	**I believe that…**	□ Girls with disabilities are better at math and science than boys with disabilities	□ Boys with disabilities are better at math and science than girls with disabilities	□ Girls with disabilities and boys with disabilities are equally good at math and science	□ Neither girls with disabilities nor boys with disabilities are good at math and science
7.	**I would feel uncomfortable talking about sex and reproductive health…**	□ Mainly with girls with disabilities	□ Mainly with boys with disabilities	□ With both girls and boys with disabilities	□ With neither girls nor boys with disabilities
8.	**Parents think education is…**	□ More important for girls with disabilities	□ More important for boys with disabilities	□ Equally important for both girls and boys with disabilities	□ Not important for either girls or boys with disabilities
9.	**Parents generally think…**	□ Girls with disabilities cannot learn	□ Boys with disabilities cannot learn	□ Neither girls nor boys with disabilities can learn	□ Both girls and boys with disabilities can learn
10.	**Non-disabled children generally…**	□ Do not accept girls with disabilities	□ Do not accept boys with disabilities	□ Do not accept either girls or boys with disabilities	□ Accept both girls and boys with disabilities
11.	**Community cultural beliefs and practices affect access to education...**	□ Mainly for girls with disabilities	□ Mainly for boys with disabilities	□ For both girls and boys with disabilities	□ Neither for girls nor boys with disabilities
12.	**Negative attitudes held by community members affect access to education...**	□ Mainly for girls with disabilities	□ Mainly for boys with disabilities	□ For both girls and boys with disabilities	□ Neither for girls nor boys with disabilities

Q29. Is there anything that we have not covered in the questionnaire that you would like to tell us?

Thank you for your participation