SCHOOL-TO-SCHOOL INTERNATIONAL

Supporting teachers in implementing effective ability grouping strategies in Tanzania

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Background

STS International's Whole Child Model program in Tanzania includes the implementation of ability grouping in Tanzanian schools.

The ability grouping intervention aims to enable classroom teachers to identify and support struggling learners, reduce assessment time and inform systematic next steps in guiding the student learning journey.

STS has gathered evidence of positive feedback from teachers for the ability grouping approach in schools and created an initial toolkit for teachers to use; however, before the program is scaled up to district levels or beyond, challenges need to be addressed related to the successful implementation and completion of ability grouping in its current form.

These challenges include effective grouping and decision-making based on teachers' analysis of data in the ability grouping process, as well as the consistent implementation of ability grouping using the recommended tools during lesson time.

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Project journey overview

Understanding the Context

Our collaboration with STS International began with understanding the unique challenges of implementing ability grouping in Tanzanian classrooms, characterised by exceptionally high student-teacher ratios and a very low resource setting. The STS model uses in-class activities and assessments to divide students into smaller, ability-based groups, however several implementation challenges emerge:

- Teachers struggled to analyze assessment data effectively.
- Inconsistent ability grouping practices or process completion reduced the program's measured fidelity of implementation.

STS are interested to also understand opportunities for teachers implementing ability grouping to effectively support their most struggling learners.

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Project journey overview

Identifying Key Challenges

Our further investigation revealed systemic barriers:

- The process of ability grouping is complex and had not been clearly visualised through supporting resources.
- Teachers lack the resources and understanding to differentiate learning activities effectively for each group.
- Limited time for lesson planning and a shortage of pre-prepared, suitable activities compound this issue.

We compared the STS approach to other global flexible ability grouping models in a literature review, finding that this method reduces many negative effects of traditional grouping and that it does possess potential in particular to support the most at-risk learners.

As a next step, a survey of Tanzanian educators currently implementing ability grouping in their schools provided critical insights into:

- Their perceptions of the model's success.
- Challenges in completing the grouping process.
- Academic learning that the model supports.
- The types of learning activities supported.
- Available technology devices to facilitate the process.

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Project journey overview

Developing Solutions

To address the challenges identified and support opportunities to deepen the impact of STS's ability grouping model, we have designed tools, resources and strategies to improve fidelity of implementation, provide an easier planning and resource selection experience for educators, and identify potential next steps that STS can pursue in order to expand the program and enhance its ability to enable teachers to assess and support at-risk and struggling learners at scale.

01 About STS International

About STS International

STS has two roles. First, STS/International (STS/I) assists governments in low- and middle-income countries to assess student learning, train teachers, and develop educational policies that support improved learning. Second, STS/Tanzania is a local initiative of STS/I, where STS is piloting the Whole Child Model (WCM), combining support for education, health, and parent and community engagement so that all children can succeed in primary school. One component of the WCM is flexible ability grouping (AG), in which teachers in STS-supported schools are trained to organize their students into learning groups, assess them while in their groups, then tally the results to determine which students are still struggling. STS is the originating designer of this form of AG and provides basic implementation protocols and tools to teachers to use in the practice.

While uptake of AG has been high, even in class sizes of 100 students or more, many teachers have struggled to understand the needs of individual students and provide appropriate remediation. STS thus sought the assistance of LEAP for two reasons:

1. To identify areas where the existing AG process can be streamlined to make it more feasible to execute faithfully for all teachers, and

2. To identify strategies that could help teachers assess the needs of students who are struggling most, even in large classes, so those teachers can provide appropriate support to those struggling students.

The thought is that the AG approach already instituted by STS can be used as a “first pass” to assess all students, even in large classes, and that a second, more focused strategy can be found to address the needs of students found to be struggling most.

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02 The Context of the Tanzanian Classroom

Tanzania has a high net enrollment rate, compared to other East African countries. However, a large gap exists between education access and quality. Although Tanzania has been ranked at the 88th percentile in access compared to other low and middle income countries, the literacy rate ranks at the 21st percentile.

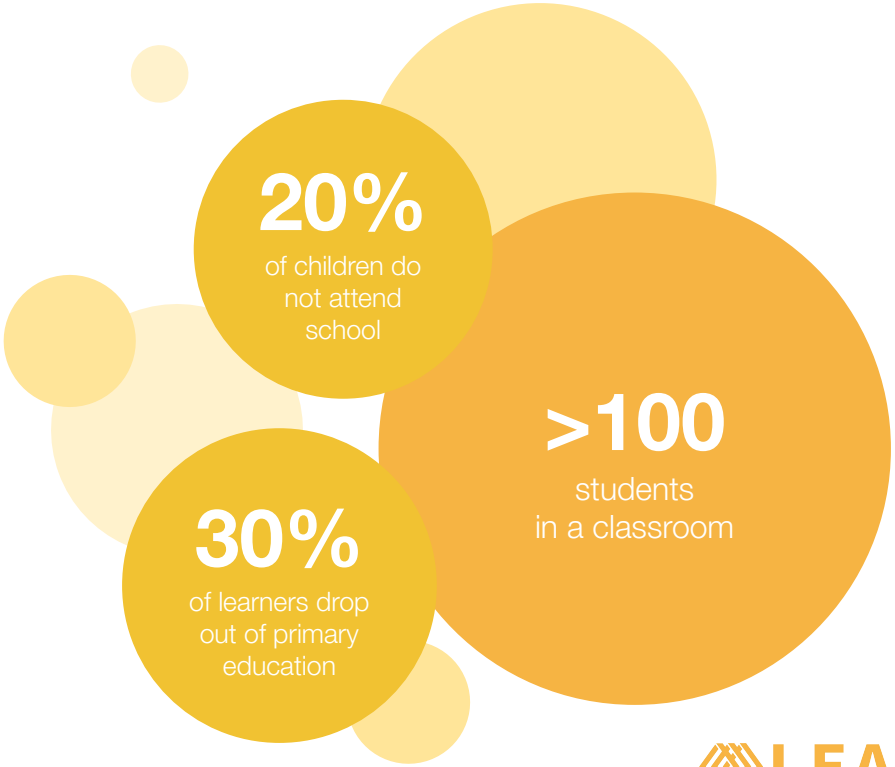
https://www.epdc.org/node/5941.html

Primary and secondary dropout rates are high, with approximately 29 percent of girls and 34 percent of boys estimated to drop out of lower secondary school before they complete.

https://documents1.worldbank.org/curated/en/356111553606355438/pdf/Gender-Equity-and-Fee-Free-Basic-Education-in-Tanzania.pdf

Teaching and learning conditions are poor; classrooms are crowded and poorly equipped.

https://www.bmz.de/en/countries/tanzania/social-situation-117244



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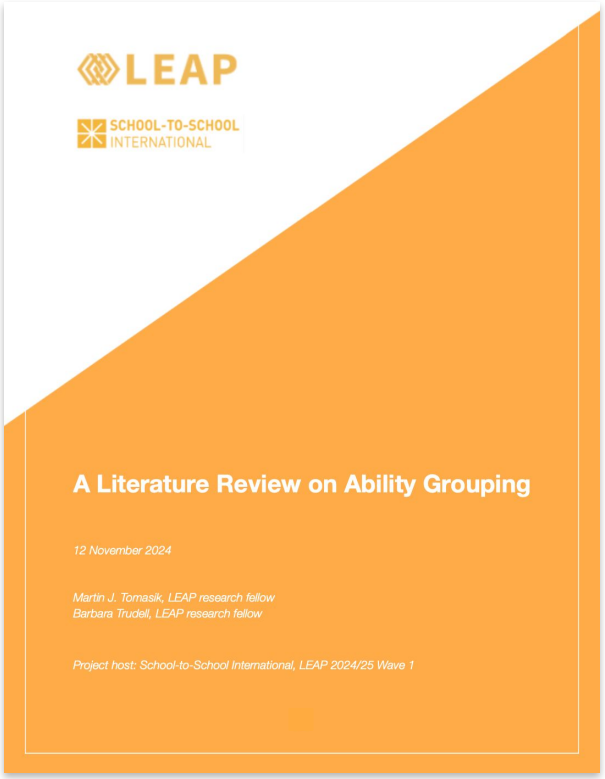
03 A Literature Review of Ability Grouping



- *Ability Grouping* is an effective approach to differentiated instruction. It carries learning benefits, but also carries risks of social comparison and stigma for poorer performing students.
- *Flexible Ability Grouping* provides a temporary learning context within the classroom, in which students can receive targeted assistance from the teacher.
- The effective implementation of flexible ability grouping requires frequent formative assessments to monitor student progress, enabling teachers to adjust instruction responsively.
- However, teachers may face challenges in managing these groups, especially in large classes.
- In order to maximize the benefits of flexible ability grouping in this context, Tanzanian teachers would need to adapt or introduce a range of support structures.

Download the literature review **here**

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04 The Flexible Ability Grouping Process

Benefits of the process as seen by teachers

>90%

of teachers and school administrators surveyed have stated that Ability Grouping adds value to teaching and learning.

100%

of teachers surveyed stated that ability grouping helps them to support students who are struggling with learning.

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Challenges in the implementation process

Process

2023 studies by STS showed that the majority of teachers only complete half of the process. In our survey, teachers stated that they stop at the stage of grouping students in ability groups.

Analysis

In STS studies, teachers struggle to correctly analyse results. In our survey, teachers who stop the process also stated that they stop at the point of data analysis, or that scoring data takes them 15 minutes to analyse.

Time

Teachers surveyed stated that they have only [1-2 hours] to plan and prepare activities for student learning.

Activities

The majority of teachers surveyed do not have a access to a repository of differentiated activities for topics that they teach.

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Visualising the Ability Grouping process

We have created a visualisation of the granular steps of the flexible ability grouping process, in a way that:

1) can provide a consistent naming convention for the steps involved;

2) clarifies the steps that need to be taken to implement flexibility ability grouping.

Download the process visualisations

here

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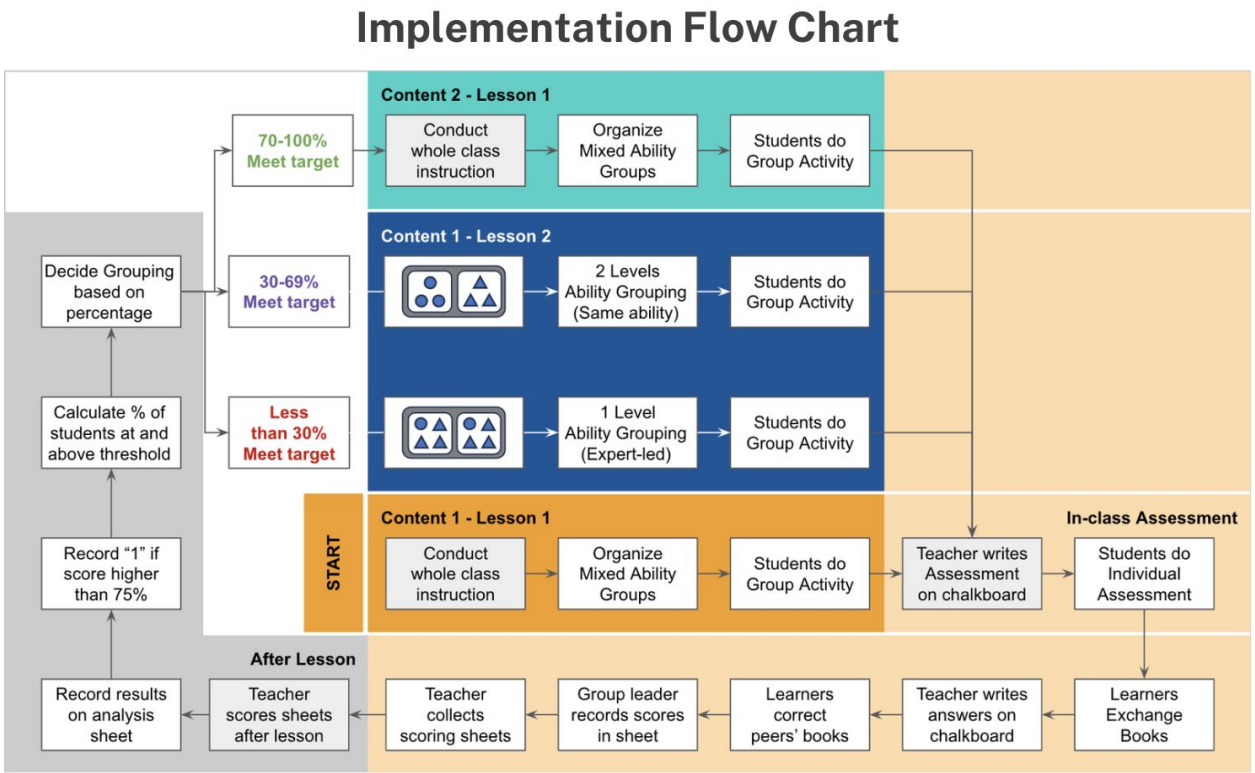
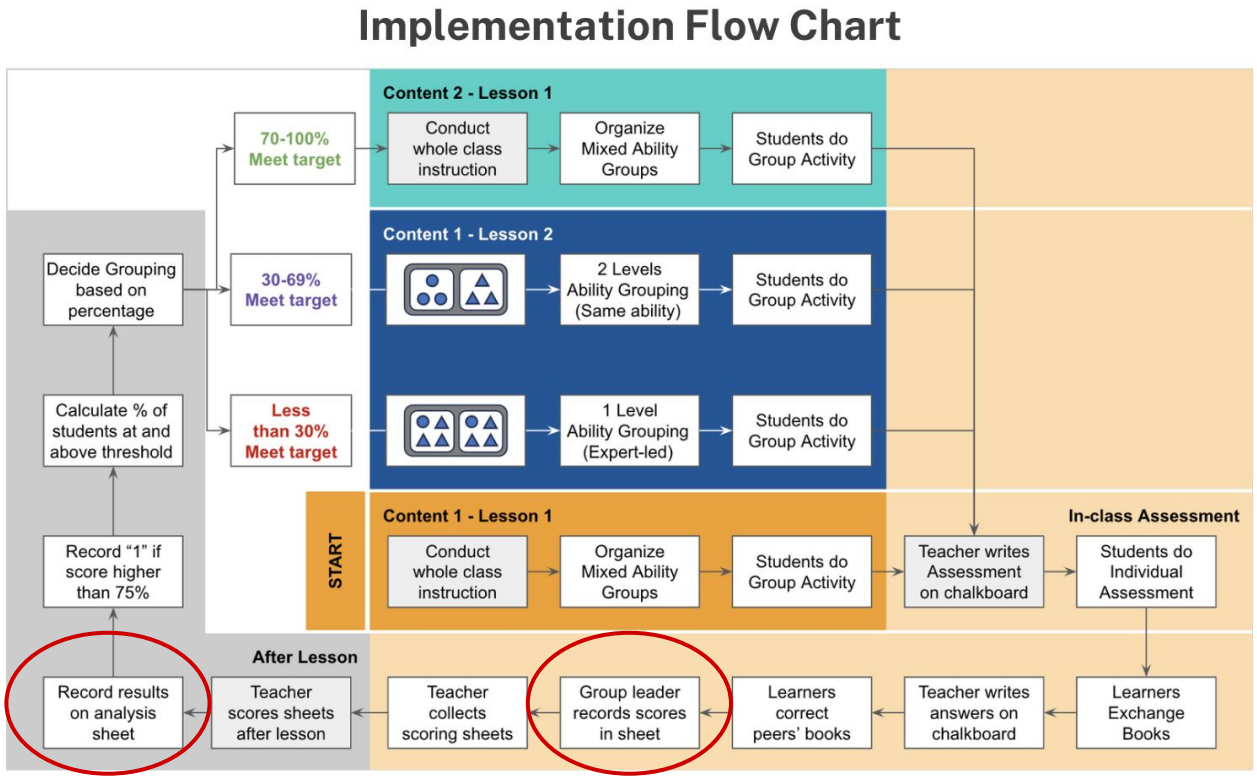
Visualising the Ability Grouping process



This flow chart helps to clarify the ability grouping process, giving the teacher the big picture of the various steps involved.

Visualising the Ability Grouping process

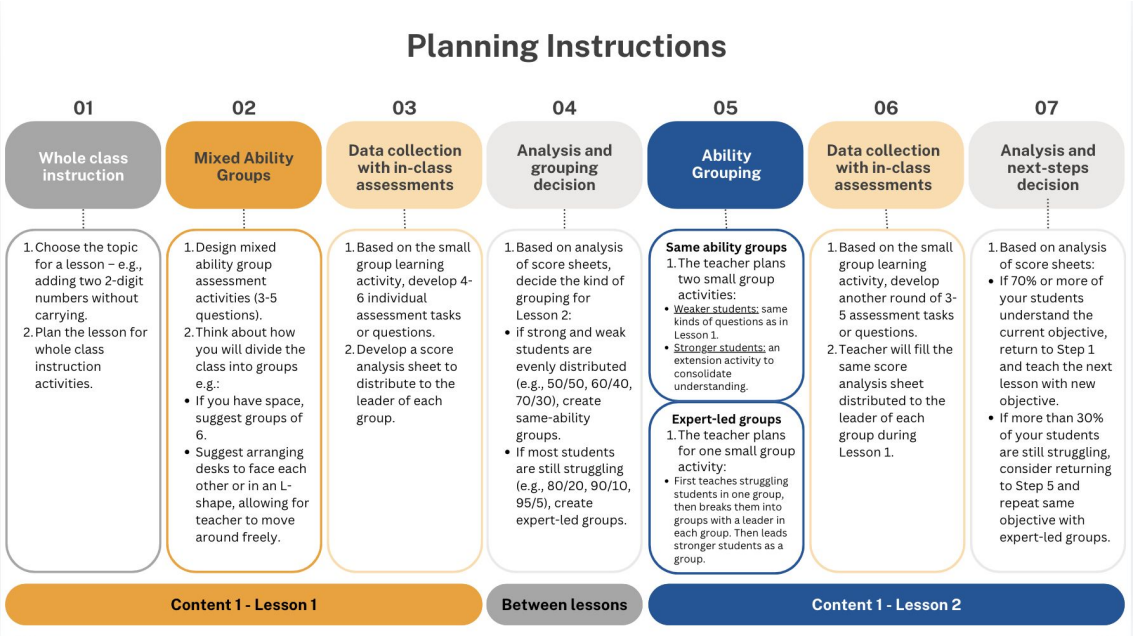


We have found that the steps of recording and analysing student data may reduce the fidelity of implementation of the ability grouping process therefore supporting tools for these steps in the process will be helpful for teachers to successfully execute them.

Optimising planning time

Consistent, clear instructions on the process that a teacher should follow can reduce planning time, particularly the analysis and grouping steps; this leaves more time for the teacher to choose appropriate activities for differentiated learning and assessment.

In contexts where teachers have no more than 1-2 hours per week for lesson planning, and where the analysis takes 15 minutes to complete, this has the potential to return significant planning time back to the teachers.



Grouped scoring to simplify data analysis

Step 3 - Group Leader Score Sheet - Example

Round 1		Subject Math	Date 29/10/24
Group Leader Name Laura		Group Number 3	
Total Items 5		Total number of questions in activity	
Threshold 4		Number of correct answers for 70% threshold	
Learner name	Score	Above Threshold	Below Threshold
1. Chris	2		1
2. Barbara	5	1	
3. Mark	4	1	
4. Francis	3		1
5. Melissa	3		1
6. Martin	1		1
7. Amani	4	1	
8. Laura	3		1
Total		3	5

Step 3 - Teacher Aggregated Score Sheet - Example

Round 1		Subject Math	Date 29/10/24
Total Items 5		Total number of questions in activity	
Threshold 4		Number of correct answers for 70% threshold	
Group Number	Above Threshold	Below Threshold	Number of Students
1.	2	4	6
2.	4	2	6
3.	3	5	8
4.	1	5	6
5.	5	3	8
6.	6	2	8
7.	4	4	8
8.	3	3	6
Total	28	28	56
Percentage	50%	50%	100%

In STS' research, teachers report that they frequently miscalculate assessment results.Our survey also indicates that, when teachers do not complete the ability grouping process, the data analysis step contributes to this.

Using a group leader score sheet for the results of student activities helps alleviate this problem. Group leaders report an aggregated score to the teacher, who can then enter it into an aggregated score sheet. This helps teachers to save analysis time, and make the calculation of in-class scoring results easier and more accurate.

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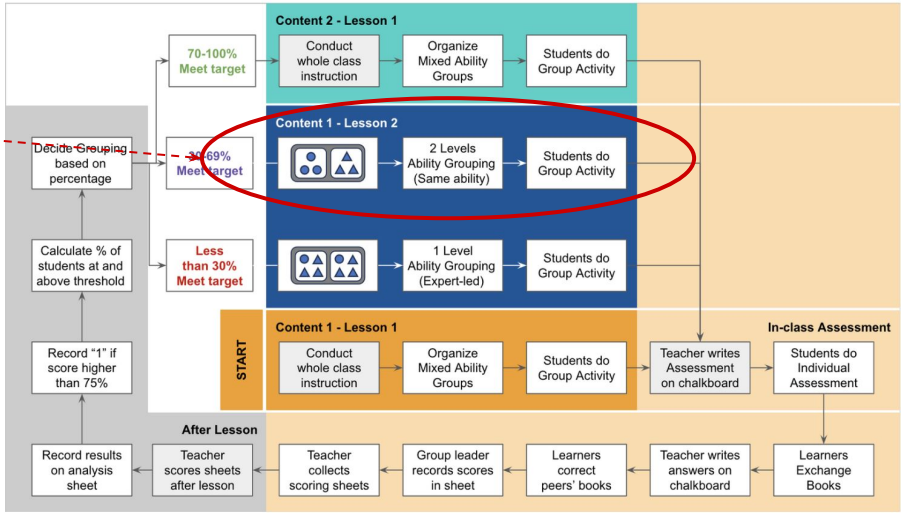
A Visual scale to decide ability groups

Step 4 - Grouping Decision Parameters

	Less than 30% Meet target			30-69% Meet target					70-100% Meet target		
H	0	10	20	30	40	50	60	70	80	90	100
L	100	90	80	70	60	50	40	30	20	10	0

Remedial | Expert-Led Groups | Same Ability Groups | Next Lesson

Implementation Flow Chart



This guide provides a visual aid for teachers, who can quickly use the data from the aggregated score sheet to move to the appropriate next step in the implementation flow chart.

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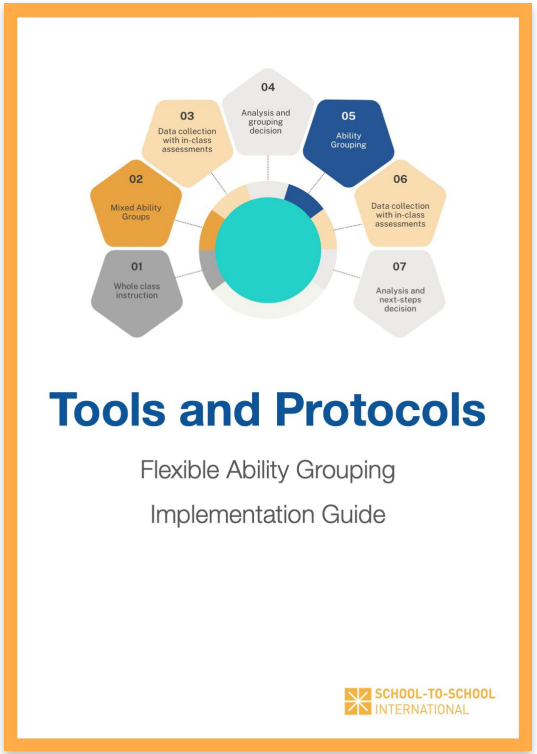
Step by step implementation guide



To support the implementation and training follow up, we developed a guide to using of the tools created and following the implementation process. It content includes:

1) Conducting whole class instruction
2) Organizing mixed ability groups
3) Data collection
4) Analysis and grouping decision
5) Organizing students into new ability groups

Download the guide **here**

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05 Lesson Planning and Differentiating Activities

Arranging and accessing learning resources

Teachers surveyed indicated that they have only 1-2 hours per week to plan and prepare their lessons; they reported that this preparation time is typically only available the evening before the day of the lesson. They also noted that there are few or no differentiated activities available for students to use in their ability groups.

However, 85% of our surveyed teachers indicated that they have access to an internet connected device, and 82% of them reported using this device for teaching purposes. Notably, only 22% of these teachers state that they use their mobile devices for planning.

A selection of free activities from reputable sources, compiled and organised according to curriculum topics, can allow teachers to find and choose differentiated activities that are appropriate for the topic they are teaching. Guidance for the teacher's selection of activities will be important as well.

Using existing, freely available platforms, these resources can be identified, organized and made shareable amongst teacher communities.

Activity resources for teachers

Kolibri is an offline accessible learning management platform that can host activity repositories.

A Kolibri “channel” can be setup for free with links to resources organised by topics.

Kolibri resources include Swahili resources.

Onecourse and onetest from one billion, as well as KitKit School from Enuma are freely available literacy and numeracy content and assessment activities, linked to upstream assessment methodologies.

These learning activities are available in Swahili and have been tested in Tanzanian public schools.

Whilst the activities would not be available to students through teacher phones, in the absence of student device access, they are a ready resource of exemplar activities and assessments that can be introduced in an offline form, where appropriately selected by teachers.

KitKit School Installation apk files can be accessed for installation to Android devices **here**

Sample activities: Arithmetic and Mathematics

77% of our surveyed teachers reported that ability grouping is most helpful for teaching mathematics; 23% reported it most useful for teaching literacy and reading. (We recognize that a broader sample may highlight literacy and reading as an alternative area that ability grouping is most helpful for - particularly for the youngest learners).

Following this survey data, we provide sample activities in arithmetic and mathematics that align with Tanzanian primary curriculum competencies in standards 1-4 (age 7-10).

Since it is not possible to provide recommended activities for all of the Tanzanian curriculum topics, we have focused on topics that relate to the competencies assessed in the EGMA Assessment subtests.

Selected curriculum topics

Number Identification	Number Discrimination	Pattern Identification	Addition, Subtraction and Word Problems
Tanzania Arithmetic Competencies Standard 1: Recognizing numbers	Tanzania Arithmetic Competencies Standard 1: Recognizing the relationship between number of items	Tanzania Arithmetic Competencies Standard 1: Using number operations	Tanzania Arithmetic Competencies Standard 1: Using number operations
Tanzania Arithmetic Competencies Standard 2: Recognizing numbers	Tanzania Arithmetic Competencies Standard 2: Recognizing the relationship between number of items	Tanzania Arithmetic Competencies Standard 2: Using number operations	Tanzania Arithmetic Competencies Standard 2: Using number operations
	Tanzania Mathematics Competencies Standard 3-4: Applying number relationship skills to solve problems in different contexts	Tanzania Mathematics Competencies Standard 3-4: Applying skills in patterns to solve the everyday life word problems	Tanzania Mathematics Competencies Standard 3-4: Applying mathematical operations to solve problems

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06 Next Steps in Assessment to Support Struggling learners

Assessing students in large classrooms

According to STS data, Tanzanian primary classrooms can include over 100 learners. Through the flexible ability grouping process, even large numbers of students can be informally assessed and then organised into differentiated groups according to their learning needs related to a given topic.

Research highlights that this model of ability grouping is effective as a strategy to support struggling learners, as well as learners with special educational needs (Davies & Henderson 2020). All teachers who responded to our survey indicated that ability grouping helps them to support struggling learners.

We have already identified that a route to give teachers a greater ability to support struggling learners appropriately is through the ability to access curriculum relevant differentiated activities that can be appropriately and time-efficiently selected to provide sequential learning experiences that are calibrated to the needs of different ability groups.

Where there are learners who regularly show low assessment scores, how can teachers be afforded strategies to take the assessment of struggling learners further to gain individualised insight and provide individualised learning activities?

How can this be achieved where 61% of teachers that we surveyed state that over 75% of teaching and learning time is already occupied implementing the ability grouping process and where time is already scarce to plan?

Comparable existing initiatives in Tanzania

KitKit School was awarded the Global Learning XPrize following rigorous field testing in Tanzania for demonstrating proficiency in creating learning gains in literacy and mathematics.

Camara Education specialises in the sustainable provision of information technology resources and capacity building.

KitKit and Camara Education carried out a successful pilot program with a Tanzanian primary school, focused on learners learning in Standard 1-3 identified as at-risk, being notably weaker or having special educational needs. The program demonstrated as being operationally successful as well as collecting anecdotal evidence of learning gains within the pilot.

Imagine has also operated pilot studies with KitKit content to enable struggling learners to experience learning gains in Swahili and Mathematics in response to Tanzanian classroom challenges of high teacher-student ratios, instructional materials and available infrastructure. The Imagine studies have been monitored for efficacy and cost effectiveness.

Comparable existing initiatives in Tanzania

Imagine and Jacobs Foundation funded RTI to create a self administered assessment for early grade literacy and mathematics.

This has been delivered in English in Ghana, Sierra Leone and Liberia with ongoing translations to further languages.

The self administered EGRA and EGMA assessments have been implemented in classroom. The assessment can be implemented with a couple of facilitators. There are options for students to answer using paper and pencil or tablets depending on device availability.

The self administered EGRA and EGMA assessments can be accessed through the RTI open source Tangerine server.

STS International has experience of adapting EGRA and EGMA assessments for remote delivery using the tangerine server in its 2022 early grade reading assessment initiative for deaf students in the Philippines. Therefore the linguistic and technical adoption of the self administered assessment funded by Imagine and Jacobs Foundation should be feasible and aligned to prior experience.

How they support struggling learners in this context

KitKit School is available in Swahili. Its resources have been tested in Tanzania and have been shown as applicable for supporting struggling learners.

KitKit School resources have also been used to advance student learning related to the EGRA and EGMA subtests which have alignment to Tanzanian primary education standard 1-4 topics in reading, writing, arithmetic, mathematics and language.

Given that classrooms typically have access to only one educator device, it is unlikely that individualized assessment can be significantly expanded. However, using well-established activities for assessment and organizing results topic by topic based on EGRA and EGMA competencies could enhance foundational learning and improve the quality of assessments. This approach would provide more reliable results compared to assessments based on less thoroughly tested content within the Tanzanian context.

Given that ability grouping already occupies significant time within lessons, student device access would be a necessity to further individual insight into student learning. The experience of Camara and Imagine, suggests that with device access, the activities and assessment tools can be successfully operationalised within the time available in the Tanzanian classroom setting.

It is not necessarily the case that large numbers of devices would need to be sourced. Given that struggling learners can be effectively identified through ability grouping from a huge classroom, device access could be made available to those learners identified as particularly at risk.

Where multiple student devices can be made available, using a self administered approach to student assessment twould mean that struggling learners could generate deeper insight into the challenges they are facing without requiring 1:1 administration of tests.

07 Recommendations

The scope for immediate progress

The feedback on the flexible ability grouping model from Tanzanian educators is positive. They report that the outcomes allow them to guide learners more effectively, and they are willing to recommend the process to other educators. However, for the program to grow and be taken up more widely, it needs to demonstrate that it can be consistently and correctly completed.

Understanding the process and the steps of ability grouping

- The process of ability grouping needs to be outlined in detail, with steps that are clearly defined.

Clear implementation guidance, planning guidelines and analysis tools for teachers.

- Frameworks and tools are needed to streamline teachers' interpretation of learner assessment outcomes; these will save the teachers valuable time, which can then be used for the selection of pupil learning activities and assessment tasks.

Organised resources that can be added to by the community of practitioners

- Validated resources are available in Swahili, and can be accessed through the devices available to Tanzanian educators. Sharing these resources through a community resource library link, such as a Kolibri channel, can also serve as a core feature of a community of practice amongst educators who implement ability grouping.

The need for technology

The flexible ability grouping model deployed by STS has demonstrated effectiveness in enabling educators to identify and assist struggling learners in large classrooms, even without technology access. Existing initiatives in Tanzania are proving effective and scalable. However replicating and extending such initiatives will almost certainly require student access to digital devices.

Provision of device access

- Tablet devices are a clear priority, for providing access to high quality resources for student activities and assessment. These should be android tablets, so that software can be installed and accessed through offline sdk files.

Assessment and out of school time learning

- Existing initiatives in Tanzania are using out-of-school time through asynchronous and self-administered study resources to accelerate learning for struggling learners. This would alleviate pressure on the use of in-class time for in-depth assessment during lesson time, or the need for qualified facilitators to support out-of-school time learning. This would be complementary to the existing outcomes of ability grouping; but it would require access to student devices.

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Conclusion

Ability grouping, executed in the flexible ability grouping format by STS International in Tanzania, has demonstrated a valid and deliberate approach to managing student learning progress in challenging classroom contexts.

For this program to grow beyond its current scale, and ultimately become a high-impact means to nurture progress in all learners - including the most struggling and at-risk learners - STS's ability grouping program must focus first on demonstrating consistently improved implementation results such that all educators following the process are correctly completing the steps involved.

The successful increase in scale that a high fidelity of implementation to the program can catalyse, and the consequent reputation of the program amongst Tanzanian educators, will be a crucial factor in attracting broader interest in the initiative. Not only so, but enhanced program success will strengthen the program's ability to attract the funding needed to introduce technology and devices, helping to achieve the program's learner impact goals, particularly for teachers to unlock access to a broad suite of strategies and resources to support their most struggling learners.

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