

Improving Teaching Practices in a FLN Program in Senegal with Applied Behavioral Science

WWH 2024

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First, let me introduce ...



applies insights from **behavioral science** to **design solutions** to some of the world's most **persistent social problems.**



focuses on educational innovations and action research to **promote quality education in Senegal.**

ARED's Ndaw Wune program



Program aims to improve FLN outcomes for 2nd and 3rd graders in Senegal



Tutors (public school teachers) teach after school 3x per week



~20 learners are grouped into 2-3 groups based on their level of reading and math



One "relearning" group and 1-2 "autonomous" group(s) per lesson



Tutors follow tutor guide for relearning group; autonomous groups work independently



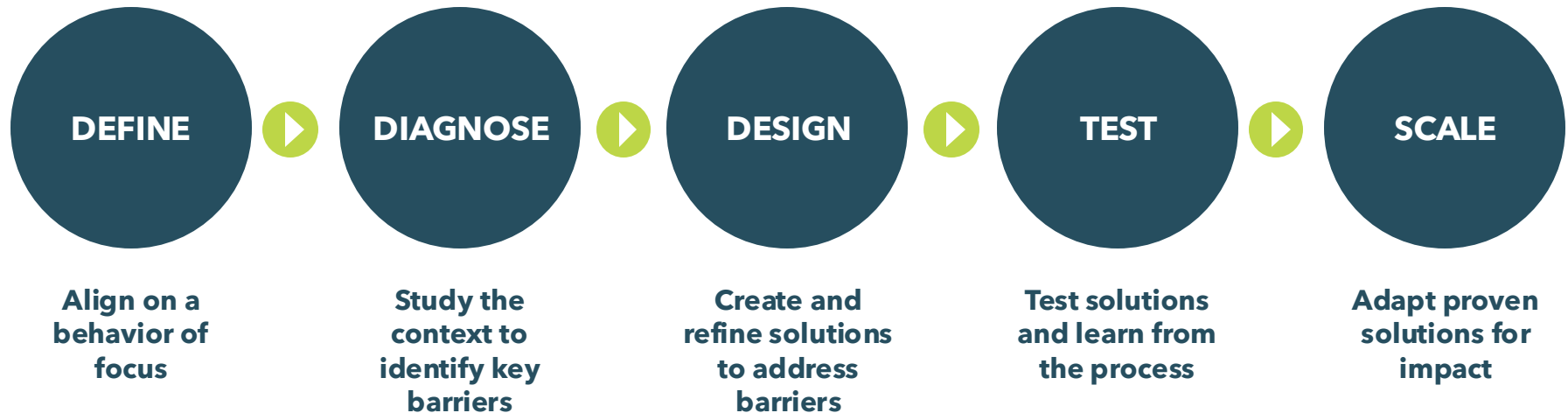
Tutors should rotate between relearning and autonomous groups throughout the class

Background on Senegalese schooling

- At the end of primary school, **34% of learners** reach the minimum proficiency level **in math** and **13% in reading**.¹
- Focus is on teaching to the curriculum and **rote memorization**.
- Classes are often large and meeting the **learning needs of different levels of students is not a priority**.

1. UNESCO Institute for Statistics (2022)

Our behavioral design approach



Our objective throughout the project

To help tutors **increase the amount of support** provided to autonomous groups during Ndaw Wune classes

Why is this important?

Learners spend **at least half of their time in autonomous groups**, equating to 3+ (out of 6) hours of instruction per week

Learners are **more likely to being off-task or not engaged in learning** when they don't receive enough support from tutors

Behavioral barriers preventing teachers from engaging with autonomous groups

DIAGNOSE



'I'm focusing on improving the skills of the relearning group'

Tutors prioritize the upskilling of the relearning group to such an extent that the **needs of the autonomous groups are overlooked.**



'But they are quiet...'

Tutors assume if students **are quiet, they are on task.**



'No prompts'

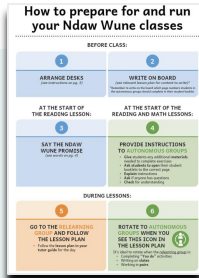
Tutors don't have an **explicit or implicit rule of thumb for when to rotate and provide support** to autonomous groups.



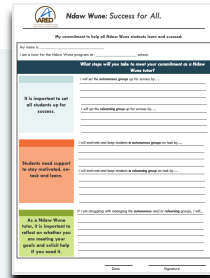
'It's not easy'

Tutors **face obstacles** that **impede their ability to provide support** to autonomous groups.

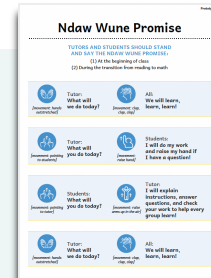
We designed a suite of interventions to address these barriers



Heuristics checklist & reminders



Tutor training + commitment



Ndaw Wune Promise

Heuristics checklist & reminders

A **short guide with a checklist** that outlines what tutors should do before, at the start of, and during class. This is placed at the beginning of the tutor guide.

It is accompanied by **visual reminders in the lesson plans** in the tutor guide to rotate to autonomous groups, and **guidance on the ideal classroom setup**.

Barriers addressed:



How to prepare for and run your Ndaw

BEFORE

- ARRANGE DESKS**
(see instructions on pg. 3)

AT THE START OF THE READING LESSON:

- SAY THE NDAW WUNE PROMISE**
(see words on pg. 4)

DURING

- GO TO THE RELEARNING GROUP AND FOLLOW THE LESSON PLAN**
Follow the lesson plan in your tutor guide for the day


Autonomous management best

As a tutor, it is your job to keep autonomous groups motivated, on-task, and engaged. HERE ARE SOME TIPS TO HELP YOU

WHEN TO ROTATE
Rotation happens when the re-learning group has an activity to complete on their own or with pairs, such as:

- "You do" activities
- Writing on slates
- Working in pairs

Tips:

-  icon in the lesson plan represents rotation.
- No group should be left alone for more than 15 minutes.

WHAT TO DO WHEN YOU ROTATE TO AUTONOMOUS GROUPS

- Ask if anyone has questions.
- Check 2-3 students' work and correct if necessary.
- Provide support for students.
- Explain exercises.
- Suggest students work together.

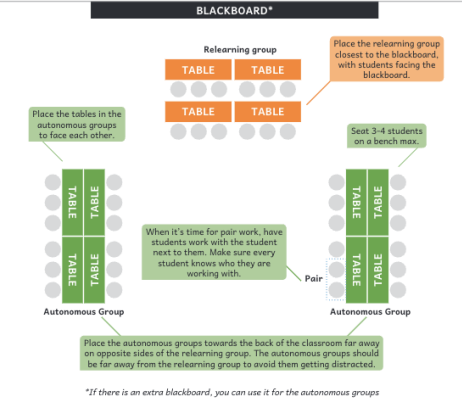
STUDENTS IN AUTONOMOUS GROUPS ARE LIKELY

- Distracting others.
- Listening to what the relearning group is doing.
- Staring at others.
- Being quiet during exercises.

Tip: If you notice students in autonomous groups are distracting others, rotate to them & follow instructions for what to do with them.

The Ideal Classroom Setup

Try to set up the desks like this before class starts



BLACKBOARD*

Relearning group
Place the relearning group closest to the blackboard, with students facing the blackboard.

Autonomous Group
Place the tables in the autonomous groups to face each other.

Pair
When it's time for pair work, have students work with the student next to them. Make sure every student knows who they are working with.

Tip: Place the autonomous groups towards the back of the classroom far away from the relearning group to avoid them getting distracted.


**If there is an extra blackboard, you can use it for the autonomous groups*

WHAT IF YOU CAN'T MOVE THE DESKS?
Make sure the relearning group is closest to the blackboard. Space autonomous groups as far as possible from the relearning group to avoid them being distracted.


Tutor training + commitment

An **additional module** in tutors' training that utilizes role modeling and role playing to practice how to set autonomous groups up for success, rotate, and provide support.

This is accompanied by a **commitment contract** that helps tutors form strategies for how to achieve their goals.

 **Agenda for today**

Session	Time	Type of activity
Introduction	09h00 - 09h30	Group discussion
Best practices for Ndaw Wune classes	09h30 - 10h30	Lecture
Introduction to new materials	10h30 - 10h45	Lecture & swapping
Comfort break	10h45 - 11h15	N/A
Ndaw Wune Promise	11h15 - 11h45	Group discussion /
Role modeling	11h45 - 12h30	Group activity and
Lunch and prayer break	12h30 - 14h00	N/A
Role playing	14h00 - 15h30	Breakout
Group discussion: peer sharing and reflection	15h30 - 16h00	Group discussion
Commitment exercise	16h00-16h30	Individual activity
Closing	16h30 - 17h00	Group discussion

 **Ndaw Wune: Success for All.**

My commitment to help all Ndaw Wune students learn and succeed:

My name is _____
I am a tutor for the Ndaw Wune program at _____ school.

What steps will you take to meet your commitment as a Ndaw Wune tutor?

It is important to set all students up for success.

I will set the **autonomous** groups up for success by....

I will set the **relearning** group up for success by....

Students need support to stay motivated, on-task and learn.

I will motivate and keep students in **autonomous** groups on task by....

I will motivate and keep students in **relearning** group on task by....

As a Ndaw Wune tutor, it is important to reflect on whether you are meeting your goals and solicit help if you need it.

If I am struggling with managing the **autonomous** and/or **relearning** groups, I will....

Date

Signature

Barriers addressed:



Ndaw Wune Promise

A simple, catchy **song** paired with hand movements to help tutors and students set goals for how they will behave in class and what they will accomplish.









Barriers
addressed:



Prototype 3

Ndaw Wune Promise

TUTORS AND STUDENTS SHOULD STAND AND SAY THE NDAW WUNE PROMISE:
At the beginning of class

 <i>[movement: hands outstretched]</i>	Tutor: What will we do today?	 <i>[movement: clap, clap, clap]</i>	All: We will learn, learn, learn!
 <i>[movement: pointing to students]</i>	Tutor: What will you do today?	 <i>[movement: raise hand]</i>	Students: I will do my work and raise my hand if I have a question!
 <i>[movement: pointing to tutor]</i>	Students: What will you do today?	 <i>[movement: raise arms up in the air]</i>	Tutor: I will explain instructions, answer questions, and check your work to help every group learn!
 <i>[movement: hands outstretched]</i>	Tutor: What will we do today?	 <i>[movement: clap, clap, clap]</i>	All: We will learn, learn, learn!

We ran a cluster RCT, randomizing at the supervisor level...



January 2024

Intervention launch



April/May 2024

Endline data collection

CONTROL

83 tutors

Original Ndaw Wune
training and materials

TREATMENT

101 tutors

Behavioral
interventions



Randomized at the supervisor level

...and measured three key outcomes



**Number of rotations
to autonomous
groups**

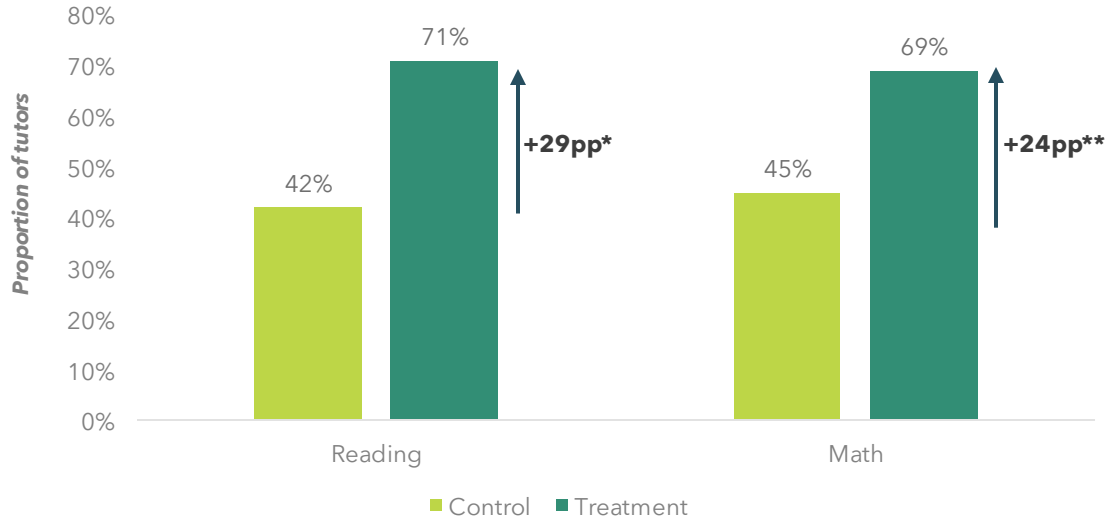


**Duration of time spent
with autonomous
groups**



**Quality of
interactions with
autonomous groups**

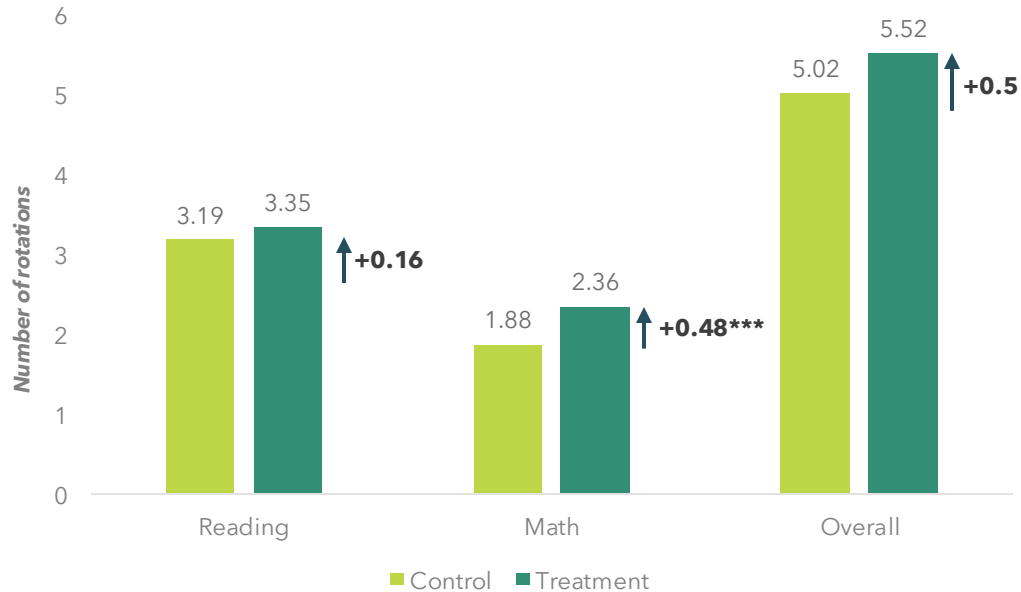
Class arranged in the ideal configuration



Tutors in the treatment group **were significantly more likely to set up the desks in the ideal classroom setup**

Reading: N=138; P=.09*; Math: N=180; P=.026**

Number of rotations to autonomous groups



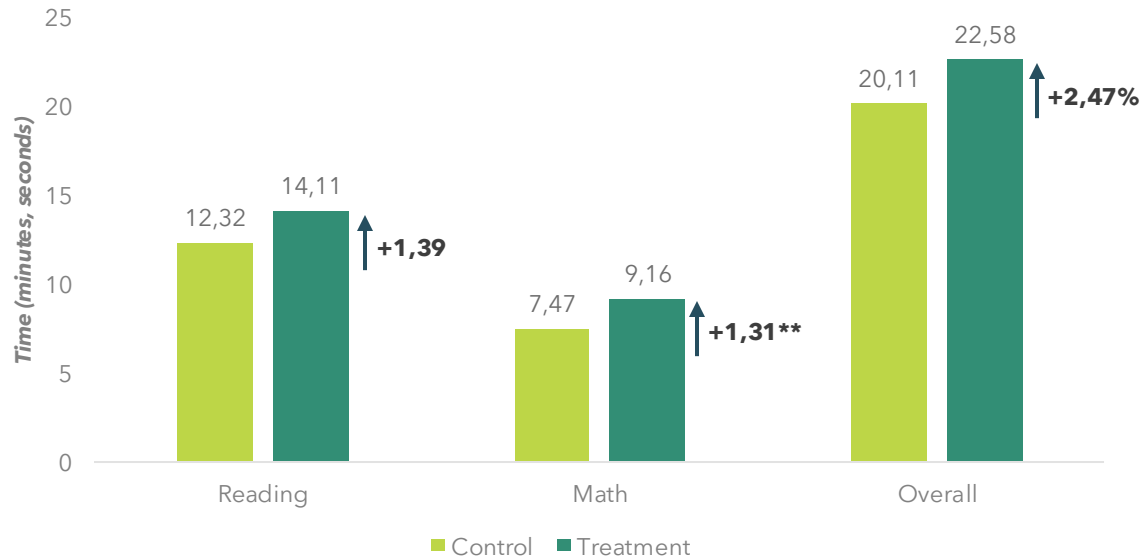
ROTATION: any instance where a tutor spends **more than 1 minute, 30 seconds** with an autonomous group.



Tutors in the treatment group had **0.5 more rotations on average** to autonomous groups

Reading: N=176; P=.70; Math: N=176; P=.003***; Overall: N=178; P=.29

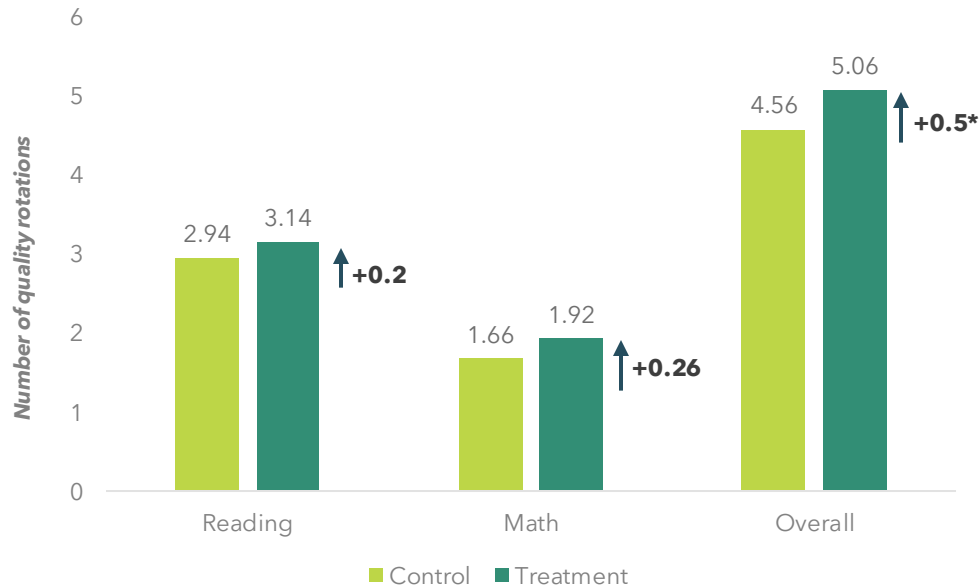
Time spent with autonomous groups



Tutors in the treatment group spent an additional **2 min, 47 seconds (14% increase)** with autonomous groups

Reading: N=176, P=.27; Math: N=176, P=.017**; Overall: N=181; P=0.13

Quality of rotations to autonomous groups



Reading: N=157, P=.51; Math: N=154, P=0.175; Overall: N=168, P=.095*

QUALITY ROTATION: A tutor performing **at least three of these behaviors** when rotating to an autonomous group:

1. Ask if there are any questions
2. Check the work 2+ learners
3. Provide corrective feedback
4. Offer positive reinforcement to 2+ learners
5. Reading instructions for next activities



Tutors in the treatment group had **0.5 more quality rotations** to autonomous groups.

Key takeaways

- The **results are promising**: behavioral interventions improved tutor's amount and quality of support to autonomous groups.
- Behavioral interventions were **low cost** and relatively **simple to implement**, building on existing materials and touchpoints of the Ndaw Wune program.

Recommendations for implementing teaching methodologies with multiple groups of learners

Frame groups as
equal

Role playing in
trainings

Clear guidance on
how to support
each group

Visuals for
important
information

**Rotation
reminders** in the
right channels

**Leverage the
'middle tier'** for
implementation and
accountability

Want to learn more?

HOT OFF
THE
PRESS



bitly

ideas 42

June 2024

Improving Teaching Practices in a Foundational Literacy and Numeracy Program in Senegal

Summary

Accustomed to one mode of classroom instruction, teachers are often asked to adopt new, evidence-based practices to improve students' learning. We explored ways to help teachers provide better support to multiple groups of students, grouped by proficiency levels in reading and math. We tested three designs and found that low-cost solutions like training incorporating role playing, simple checklists, and reminders could help teachers be more effective. Ultimately, this work shows how behavioral science can enhance foundational literacy and numeracy programs and help more kids achieve the skills they need to thrive.

The challenge

Foundational literacy and numeracy (FLN) in Sub-Saharan Africa remains low, and Senegal is no exception. In 2019, 69% of children in Senegal could not read a simple text with comprehension by the age of 10. Only 62% of students in fifth grade in Senegal have the required skills in math to continue their schooling without difficulties.

To help address this challenge, Associates in Research and Education for Development (ARED) launched *Ndaw Wune*, an after-school remediation program aimed at improving FLN outcomes among second and third graders in Senegal. But while this program holds enormous promise to help students, it represents a different kind of pedagogy that teachers need to learn, and students aren't always learning as much as they could be. The field of behavioral science—the study of how people make decisions and act in the real world—offers the opportunity to better understand what might be preventing teachers from adopting new pedagogical practices and to introduce effective, low-cost ways to help instructors maximize their teaching.

How it works

Ndaw Wune classes are taught by public school teachers, referred to as "tutors," and occur after school three times a week for two hours. Roughly half of each class focuses on reading in the local language and the other half focuses on math. The *Ndaw Wune* program trains tutors in a new methodology known as *differentiated pedagogy* in leveled smaller groups. This methodology requires tutors to adopt new teaching practices, such as grouping students by their proficiency levels in reading and math (rather than by age), and simultaneously managing multiple groups of students in the same classroom. Each class has one *relearning* group and one or two *autonomous* groups.¹ The students designated as the day's *relearning* group change each class. Tutors follow a guide that provides daily lesson plans for the day's *relearning* group, whereas the *autonomous* groups work independently using their student workbooks. Tutors are expected to rotate between the *relearning* and *autonomous* groups, providing support to all students throughout class.

¹ Generally, in reading there are two autonomous groups and in math there is one autonomous group.

■■■■■■■ IMPROVING TEACHING PRACTICES IN A FOUNDATIONAL LITERACY AND NUMERACY PROGRAM IN SENEGAL 11

ideas 42

Improving Teacher Uptake of Pedagogical Best Practices for Foundational Literacy and Numeracy

Key behavioral barriers and tips to address them

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Carolina Better • Kate Rinehart-Smit
June 2024



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