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Behavioral Science for Improving Catch Up Delivery in Zambia

Designed by ideas42

Summary

The Catch Up program in Zambia is a remedial class for primary school students aimed at improving foundational numeracy and literacy (FLN) through Teaching at the Right Level (TaRL). We conducted a mixed-methods study to develop and test solutions to improve Catch Up delivery among teachers, thereby strengthening FLN outcomes for students. Using behavioral lab studies, we examined how feedback, recognition, and information influence teachers' beliefs and behaviors, including self-efficacy, locus of control, reflection, and effort. While recognition and information did not shift teachers' beliefs and behaviors, feedback proved effective at encouraging teachers to reflect on and correct their mistakes. This study demonstrates how teachers' beliefs and behaviors can influence Catch Up delivery and underscores the need to design programs and solutions with these factors in mind.

The challenge

Although primary school enrollment rates are increasing worldwide, many children do not acquire FLN in the first few years of schooling. For example, the [World Bank](#) reported that in 2019, 99% of children in Zambia were not proficient in reading at a late primary age. In response to this learning crisis, the Zambian Ministry of Education adopted TaRL in 2016, an approach developed by [Pratham](#) focused on foundational learning for children in primary school. Several rigorous studies from various contexts, including [India](#) and [Madagascar](#), demonstrate that TaRL significantly increases FLN outcomes among students.

How it works

The Ministry of Education is implementing TaRL through Catch Up, a large-scale program that adapts TaRL to align with the Zambian context and integrates the approach into the national education system. For one hour outside of regular classroom hours, teachers arrange children in grades three to five into groups based on their learning level rather than their age or grade. Teachers then administer lesson plans tailored to each group's learning level using specific tools and techniques from the TaRL approach, which include interactive, fun, and educational activities for the children. At the teacher's discretion, learners are moved into new learning groups as they progress to ensure appropriate targeted instruction.

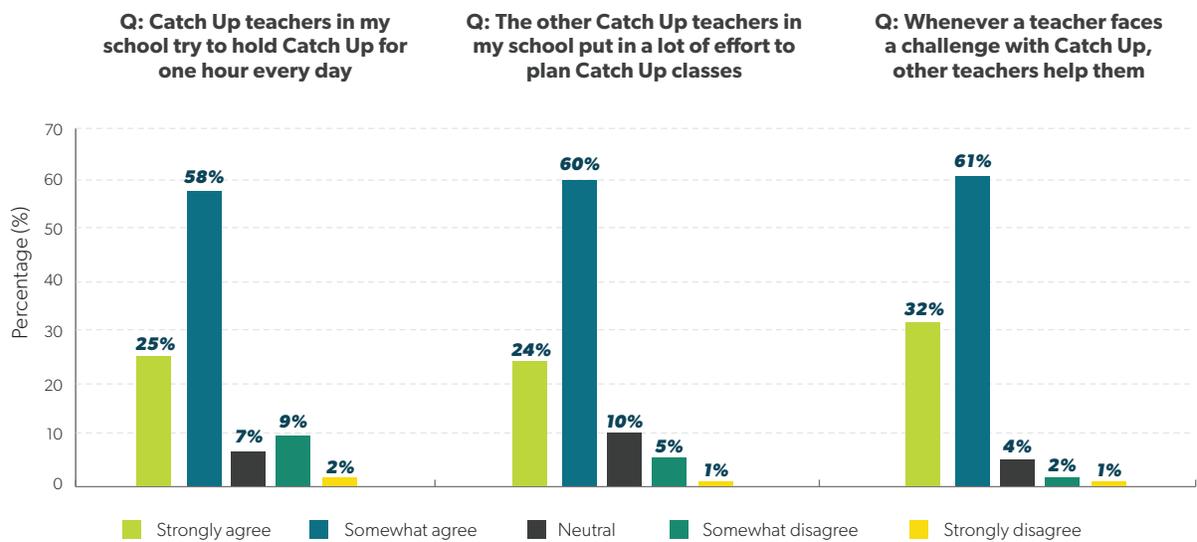
To deliver Catch Up lessons well, teachers must follow through on a series of behaviors. For example, they must correctly assess students' numeracy and literacy, sort them into groups accordingly, and simultaneously manage the entire classroom, small groups, and individual learners. Using mixed-methods research, we explored the factors that enable or inhibit teachers' ability to deliver high-quality Catch Up lessons, drawing on theories from behavioral science to analyze their beliefs, preferences, and cognitive biases. We then used this information to develop and test solutions that leveraged enablers and overcame barriers to improve the quality of Catch Up delivery.

Behavioral insights and solutions

We conducted 30 in-depth interviews and 2,000 phone surveys with teachers across Eastern, Southern, and Lusaka provinces from January to September 2023. We aimed to understand their Catch Up experience, identify the enablers and barriers to quality Catch Up delivery, and analyze how these enablers and barriers correlate with learning outcomes.¹ While our research uncovered many findings, three key insights are listed below.

1. We found that there are positive social norms around the Catch Up program among teachers (see Figure 1). Additionally, there is a positive, statistically significant correlation between peer support and learner outcomes.

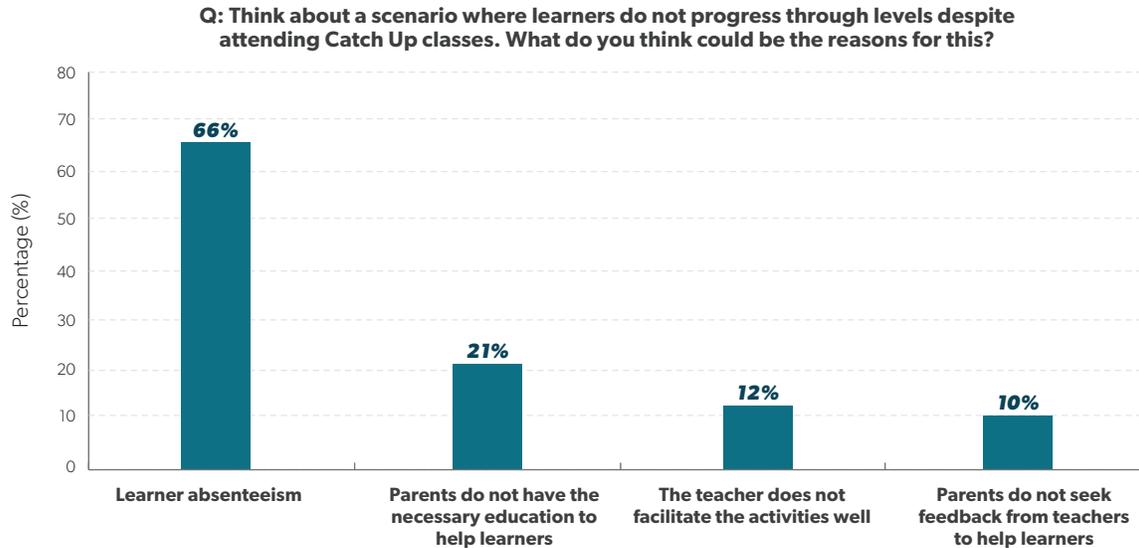
FIGURE 1: RESPONSES TO QUESTIONS ON SOCIAL NORMS FROM TEACHER SURVEY



2. We identified a positive, statistically significant relationship between teaching numeracy and self-efficacy (i.e., self-confidence). According to the interviews, teachers often feel less confident teaching numeracy compared to literacy. According to the surveys, the relatively few teachers who do feel confident teaching numeracy are more likely to work in schools with higher learner outcomes in numeracy.
3. The vast majority of teachers in our sample reported having an external locus of control, meaning they attributed learning outcomes to factors beyond their direct control. They said learner absenteeism and parents who are either uneducated or unsupportive are the primary causes of poor learner progress (see Figure 2).

¹ We used administrative data from January to May 2023 on learning outcomes to assess student progress in numeracy and literacy, grouping schools into high- or low-learner progress based on the number of learners moving to more advanced learning groups between baseline and midline. We then ran regressions to determine which enablers and barriers were correlated with high versus low learner progress groups.

FIGURE 2: RESPONSE TO QUESTION ON LOCUS OF CONTROL



We took these three findings into a co-design workshop with 12 teachers in October 2023, where we conducted a series of brainstorming exercises to develop potential solutions to leverage social norms and overcome barriers posed by external locus of control and self-efficacy. Then, in November 2023, we presented the solutions to stakeholders at the Ministry of Education and external facilitators of the Catch Up program to prioritize and refine the initial ideas.

During the workshop, teachers expressed the need to receive more feedback on their performance. Currently, teachers receive training on Catch Up and feedback from several different sources, including district-based mentors, but feedback is provided too infrequently. This communication gap leaves them feeling undervalued and uncertain about their effectiveness, which in turn lowers their self-efficacy and motivation. They brainstormed several ways to provide feedback, such as recognizing teachers for their effort and using schools or teachers with strong performance records as role models.

Teachers also want guidance on navigating the various factors that may influence Catch Up classes beyond the training they receive on implementing the program using the TaRL pedagogy. This guidance includes practical strategies for managing learner behaviors, such as addressing disruptive learners, handling heavy workloads, and navigating large class sizes. The lack of sufficient information on how to address these challenges leaves teachers feeling they have little control over learner outcomes.

Results

From January to October 2024, we conducted behavioral lab studies, where we mobilized 398 teachers across Eastern, Southern, and Lusaka provinces to a central location per province to play two “games” on a tablet. These gamified Catch Up activities simulated real-life teaching scenarios, allowing us to test specific hypotheses by adjusting different elements of the game.

The first game tested if recognizing teachers and giving them feedback on their work would improve their self-efficacy and level of effort. Teachers were tasked with sorting a hypothetical student into a learning group based on literacy and numeracy levels, completing up to 90 rounds with the option to stop at any time. After finishing, they could review and correct any incorrect groupings. They also completed a survey to measure their self-efficacy.

We *randomly* assigned participants to three groups:

- 1. Control**, with no additional information;
- 2. On-demand feedback**, showing participants which groupings they got correct in real-time; and
- 3. Recognition**, where a hypothetical Ministry official acknowledged their achievements.

Across the three groups, we compared the number of rounds participants completed to get a sense of whether the treatments impacted their levels of effort; their levels of self-efficacy; the number of rounds they got correct; and if they went back to fix the answers they got incorrect, which gauged their levels of reflection.

The second game tested if providing complete and accurate information about being a Catch Up teacher would increase teachers’ effort and sense of control over learner outcomes. Teachers were presented with five scenarios illustrating various challenges in the classroom (e.g., disruptive learners) and could choose to stop at any time. After finishing, they completed a survey to measure their sense of control. Participants were *randomly* assigned to three groups:

- 1. Control**, with no additional information;
- 2. Teacher manuals**, offering detailed guidance on managing large classes, handling disruptions, and tracking learner progress; and
- 3. Flashcards**, presenting the same information in concise, bite-sized chunks.

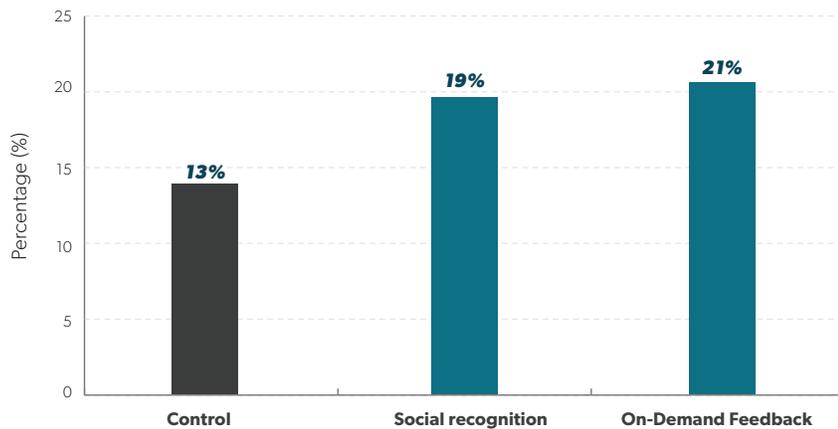
Across the three groups, we compared the number of scenarios participants answered correctly, the number of rounds they completed, and whether they felt in direct control of learner outcomes.

While the lab games uncovered many findings, three key insights are listed below:

- ▶ **Neither on-demand feedback nor recognition significantly increased self-efficacy or level of effort.** In the first game, there were no statistically significant differences in self-efficacy survey scores between the groups that had the option to receive on-demand feedback or recognition and the control. All groups played roughly the same number of rounds of the grouping game.
- ▶ **Neither teacher manuals nor flashcards significantly changed locus of control or increased level of effort.** In the second game, there were no statistically significant differences in survey responses between the groups with access to teacher manuals or flashcards and the control. All groups completed roughly the same number of scenarios.

- **On-demand feedback increased reflection.** In the first game, teachers who received on-demand feedback were more likely to correct the groupings they got incorrect at the end of the game compared to the group that received recognition and the control group. This difference has a significance level of 10%.

FIGURE 3: PERCENTAGE OF TEACHERS WHO CORRECTED INCORRECT GROUPINGS BY TREATMENT GROUP



Recommendations

This research sheds light on how norms, beliefs, and cognitive biases can influence how teachers deliver Catch Up, which ultimately affects learning outcomes. For example, we found from our surveys with teachers that positive social norms and self-efficacy are correlated with literacy and numeracy outcomes. These findings underscore the importance of considering the influence of social norms, alongside teachers' beliefs and bias, when designing programs and interventions to support their work.

The interventions we co-designed and tested aimed to do exactly this, and the on-demand feedback intervention showed some promise; while it failed to improve self-efficacy, it encouraged meaningful reflection. Given this finding, we recommend further refining this idea and iteratively improving our initial design to effectively address the barriers created by low self-efficacy among teachers. Doing so will help teachers feel more confident and supported, inspiring greater motivation to deliver high-quality Catch Up lessons.

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