

CAMBODIA

Can Transparency and Incentives for Community Participation Increase the Supply of Textbooks to Schools?

MAY 2020

The project tested the use of non-financial rewards to School Support Committee members who used a book tracking system to report the receipt and use of books at schools.



Photo courtesy of GPE/Livia Barton



Many children do not have access to the reading materials they need due to a lack of content in appropriate languages, inflated costs, and inefficient supply chains.



Results-based financing can help countries tackle these challenges by incentivizing stakeholders to ensure that children receive quality books.

The Results in Education for All Children (REACH) Trust Fund supports and disseminates research on the impact of results-based financing on learning outcomes. The EVIDENCE series highlights REACH grants around the world to provide empirical evidence and operational lessons helpful in the design and implementation of successful performance-based programs.

Textbooks are one of the most important tools for helping students to learn. Evidence from a wide range of countries has demonstrated that to increase literacy and improve learning outcomes students must have access to learning materials and must use them. Unfortunately, education systems in many countries struggle to provide enough books of adequate quality to schools because of inflated costs, inefficiencies in the supply chain, or a lack of content in the appropriate language. Furthermore, even when schools are

provided with books, they are not always regularly and properly used in the classroom.

Results-based financing (RBF) is an important way for governments to overcome these obstacles and to ensure that all students have access to quality books in an appropriate language. Results-based financing can improve all stages of the supply chain, from the development and production of books to their procurement and distribution and even their use in schools and at home.



Textbooks are delivered to a school in Banteay Meanchey province. Photo courtesy of World Education Inc.

The REACH Trust Fund provided a grant to World Education to test a results-based approach to incentivizing the textbook supply chain in Cambodia. The intervention targeted community members who sit on School Support Committees (SSCs) to check and confirm the receipt of books at their local school.

The intervention introduced a new IT-based system that tracked requests for books, their distribution, and their receipt by schools. The intervention included non-financial rewards to SSCs that successfully used the system to report the books received and whether they were being used in the classroom.



It is estimated that more than 2 million primary school students in Cambodia face a chronic lack of good quality textbooks

CONTEXT

The textbook supply chain in Cambodia has several weak points. Book forecasting can take many months, as schools report their book needs to district or cluster officers who then collate all of the requirements of the schools within their jurisdiction and report them to the national government. This process is also not well aligned with the government budgeting processes which further exacerbates delays. Schools fill out paper-based forms with complex formulae to determine the number of books the schools need, making the process prone to errors.

The distribution of books is also a time-consuming process and prone to error. When the books are printed and dispatched, district or cluster officials receive a bulk allocation for all of their schools and are then required to collate and repackage the books destined for each school, which introduces a risk of error. Then the school directors (or headteachers) collect their schools' books from the district and report the

receipt of the books using a complex paper receipt template, which is time-consuming to complete and also prone to error.

Perhaps most problematically, data about whether books reach schools is not available for months, and there is little data about whether books reach the hands of children. This means that key officials remain unaware if books are lost during the delivery process, or if schools receive the wrong books in the wrong amount.

As a result of these weaknesses in the supply chain new textbooks often do not reach schools on time or in the correct quantities. In the baseline for this study, only around 65 percent of school directors surveyed reported having adequate numbers of textbooks for key subjects, and 45 percent did not receive their books in time for the start of the school year. Consequently, it is estimated that more than 2 million primary school students in Cambodia face a chronic lack of good quality textbooks.

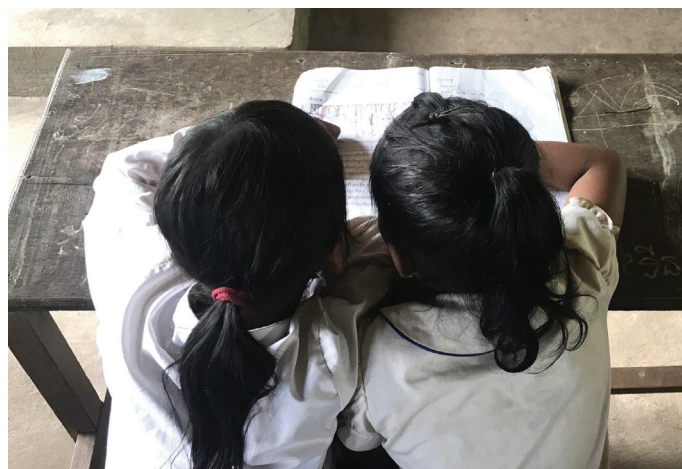
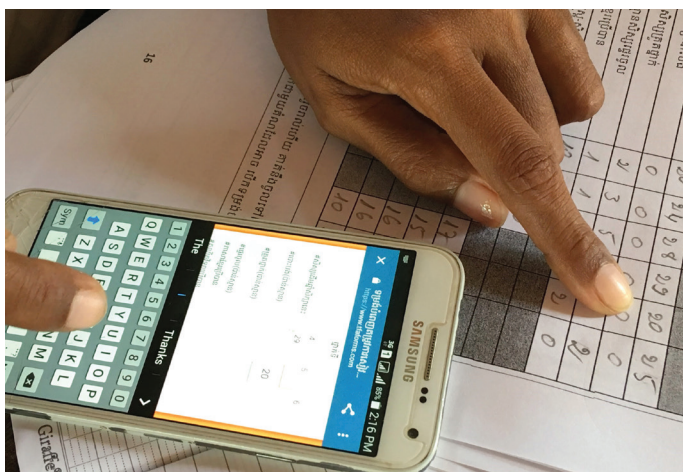
WHY WAS THE INTERVENTION CHOSEN?

The intervention adopted for the pilot had two key advantages. First, by empowering School Support Committees (SSCs) to independently verify the receipt of books by their schools, the intervention introduced reliable data about the effectiveness of the book distribution system. The intervention further empowered SSCs to conduct spot checks on the use of books in the classroom, which was the first time that teachers and school directors were held accountable

for how the books were used. The provision of a results-based incentive was also expected to revitalize SSCs and increase community engagement in tracking book deliveries and their use in schools.

Second, the intervention created a new IT-based tracking system that helped to identify where delays occurred along the supply chain which helped to improve transparency and monitor progress.

The new system addressed problematic stages of the book chain including the reporting and forecasting of book requirements, the tracking of book distribution and the reporting of problems with the final delivery of books to schools. While the intervention helped to strengthen information systems around book distribution it did not change book procurement procedures or the contracting of distribution companies.



Top left to bottom right: (1) The TnT digital platform uses cost-efficient tech tools including a chatbot, a smartphone app, and a web-based dashboard. (2) Deputy School Director Mr. Rith (left) cooperates with Mr. Sinath (right) to request textbooks using the TnT system. (3) A school director uses the TnT platform to confirm that he received the correct number of textbooks. (4) Cambodian schoolgirls reading. Photo courtesy of World Education Inc.

HOW DID THE INTERVENTION WORK?

The pilot was conducted in 416 public primary schools in 10 districts in 2018 and 2019. The intervention introduced an IT-based system called Track and Trace for book ordering, distribution, and reporting. It provided a results-based incentive, a certificate from the District Office of Education, to SSCs for using the system. The Track and Trace system, which is operable on smartphones, replaced the previous paper-based system that had been used by schools to order, track, and report the receipt of books. Instead of being required to estimate their future book needs, school directors reported their current book stocks and recent enrollment rates, and the Track and Trace system automatically projected their book requirements for the following year. Instead of being collated for all schools

by district officials the new system sent the information directly to the central government so that it could be included in the following year's budget.

Once books were procured and printed, the system tracked their progress through each stage of their delivery to schools. Officials at the central warehouse recorded when books were dispatched and officials at the district level recorded when they were received. Once the books arrived in schools, directors used Track and Trace to confirm the numbers of books received and to report any discrepancies or shortfalls. The SSCs then used the system to verify the receipt of books by the school. This meant that information was recorded instantly at each stage of the supply chain,

ensuring that any discrepancies could be immediately identified and traced to their source. This increased transparency and accountability while simultaneously reducing the time burden on officials at each stage of the book supply process. The system also allowed the SSCs to conduct spot checks of the use of books in schools and to provide the government with an important source of information that had previously only been available by arranging expensive visits to a sample of schools.

The membership of the SSCs is made up of active members of the school community who are independent of the school directors and well placed to oversee the receipt and use of books in schools. The

Track and Trace System



project team asked SSC members a range of questions about what would motivate them to take on additional responsibility. As well as gifts or financial incentives, the members said that a recognition of effort from school directors and parents would be a key motivator. Given that it was difficult in the current government system to allow financial incentives in the form of payments to SSCs, it was therefore suggested by stakeholders that a certificate from the District Office of Education would be an adequate incentive to attract SSCs to take up their new responsibilities. In order to receive the incentive, the SSCs were required to have at least one SSC member registered in the system, to enter the numbers of books received by the school into the system, and to conduct spot checks on the use of books in the classroom and report on their findings in Track and Trace.



Photo courtesy of GPE/Livia Barton

WHAT WERE THE RESULTS?

The intervention increased the efficiency of the process of ordering books.

The books requested by all 416 participating schools were received by the central ministry within two weeks, whereas under the previous system, the central ministry typically received book orders gradually over several months. “The old paper method takes too long. This method is much faster and easier,” commented one school director. “I like that I receive a message that shows the calculated total [books required]. If there is a mistake, it is easy to correct it and resend the data.”

Accuracy under the system also increased. Ninety-five percent of school directors’ receipts stated that the school had been given the correct quantities of textbooks in accordance with their allocation, and more than 90 percent of receipts provided by the SSCs matched those from the directors. In addition, district officials reported that the intervention significantly reduced the time taken to deliver books from the district level to schools from 10 days prior to the intervention to just one to two days.

School Support Committees responded well to the new system.

During the first book delivery, 44 percent of the participating SSCs acknowledged receipt of the books delivered to their school, despite an error in the system that prevented a reminder text message from being

sent. In the second delivery just five months later, this had gone up to 70 percent. In addition, 92 percent of SSCs conducted spot checks on the use of books in classrooms, while 60 percent completed all of the RBF criteria and received a certificate from their District of Education. In focus group discussions, SSC members suggested that they were eager to support the system even without an incentive. However, the certificate scheme may have helped to legitimize and establish the SSCs’ new role in checking book use in schools with other stakeholders.

The government has enthusiastically adopted the Track and Trace system.

The system increased the government’s ability to track books through the supply chain. Using Track and Trace, government officials were able to record the dispatch of books from the warehouse, their receipt at the district level, and their delivery to schools. As a result, the Minister of Education, Youth, and Skills has agreed to expand the system nationwide. This decision was partly based on the cost-effectiveness of the system. The annual cost of scaling the system up nationwide is estimated to be approximately US\$13,000, while the cost of losing 2 percent of contracted textbooks would be around US\$206,000. Thus, the system would pay for itself even with only marginal reductions in book losses.



Example of a certificate awarded to SCCs who fulfilled all criteria. Photo courtesy of World Education Inc.

Delays in government procurement of books delayed the overall delivery timeline.

While the Track and Trace system was successful at distributing books once they had been provided by contractors, delays in government procurement resulted districts receiving books few months behind schedule. As a result, despite the faster distribution time using Track and Trace, the delivery

of all required books to schools was delayed by several months. In focus group discussions, some school directors felt that this timing was too late to benefit students. As a result, according to reports from school directors, teachers, and students, the share of students in the pilot schools with available textbooks was not consistently higher after the intervention than at the baseline.

The data provided by the Track and Trace system enabled the government to identify accurately where losses and misallocations were taking place, and to quickly resolve those issues.

WHAT WERE THE LESSONS LEARNED?

Transparent data is important to make the book supply chain more efficient and effective. In addition to reducing losses and misallocations of books, the data provided by the Track and Trace system enabled the government to identify accurately where losses and misallocations were taking place. It was also possible to identify the schools that did not receive the correct quantity and type of books. When problems like this were identified, the system made it possible for authorities to act quickly to resolve them.

Even well-designed systems require users to receive extensive training.

In general, users found the Track and Trace system easier than the previous cumbersome paper-based reporting. However, the users, particularly SSC members, did report experiencing some challenges when using the system, such as keeping

phones charged, remaining signed into the app, and dealing with weak internet connections. Digital training resources, including text messages, online videos, and an e-learning course, may be required in future to bolster in-person training and to allow users to access training material for troubleshooting at a later date.

The RBF for distributors is expected to be adopted in future.

The intervention explored the use of results-based financing with companies that publish and distribute books. The government's standard contracts with these companies already included a stipulation that 10 percent of the value of each overall contract is kept aside in a third-party account and paid only if the distributor provided the correct quantity of books. However, the system relied on an inefficient set of checks involving paper receipts, phone-based spot checks to schools, and visits to a sample of schools. The project team held discussions with the government to explore the

possibility of tying the 10 percent deposit partially or fully to the feedback available from the Track and Trace system. Unfortunately, this was not possible to do in time for the pilot as it was agreed that such a stipulation would need to be included in publishers' and distributors' contracts. However, procurement experts within the government expressed enthusiasm for doing so in the future.

Simplification of the Track and Trace system will be necessary before it is scaled up nationwide. The pilot implementation of Track and Trace tracked books at numerous points along the supply chain. While this approach yielded valuable data, it proved to be inflexible when the supply chain changed. For example, the system was designed for a single book distributor but the government used two distributors

which generated multiple records and significant confusion among users. These kinds of changes to procurement processes are likely to continue to occur in the future and will require a streamlining and simplification of the Track and Trace system before it is scaled up.



Photo courtesy of GPE/Chor Sokunthea

CONCLUSION

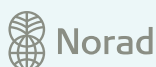
The pilot of the Trace and Trace system helped tackle textbook supply chain challenges at the forecasting and distribution stages, and tested a process to verify the availability and use of books at the school-level using School Support Committees. By enabling stakeholders to track books through the supply chain, this new system helped increase the efficiency and accuracy of ordering books and delivering them to schools, and the result-based non-monetary incentive for SSC members helped increase their engagement in verifying the use of books in schools. A scale up would

require modifications to the system to reflect lessons learned from the study, which include developing additional resources for training of its users, and simplifying the system to allow it to adjust to changes in the textbook supply chain. Recognizing the benefits of the system, the Publishing and Distribution House, the government agency charged with preparing and procuring books, agreed that they will finance the scale up of Track and Trace from their own budget. The modified system is expected to be rolled out in five provinces in 2020 and into the remaining provinces in future years.

By enabling stakeholders to track books through the supply chain, this new system helped increase the efficiency and accuracy of ordering books and delivering them to schools.

RESULTS IN EDUCATION FOR ALL CHILDREN (REACH)

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