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# Tonga

## Tonga PEARL Project

Tonga's school readiness and early grade reading pilots:  
impacts and the case for scale-up

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## **Tonga’s school readiness and early grade reading pilots: impacts and the case for scale-up**

Policy Brief<sup>1</sup>

World Bank Group

*Between 2015 and 2017, two small-scale programs showed how to improve the school readiness and early literacy of children. The first program provided support to communities to setup and run playgroups for children aged 0 to 5 and their caregivers, and increased school readiness by an additional 28 percent of what a child usually gains between ages 3 and 4. The second program provided 1<sup>st</sup> and 2<sup>nd</sup> grade teachers with training, instructional materials and coaching on a new method to teach reading, as well as learning resources for their students and increased the proportion of 2<sup>nd</sup> grade students who could read from 18 to 29 percent. The expected future effects on productivity outweigh the costs and justify scale-up of programs.*

### **Why community playgroups and early grade reading instruction?**

Human capital<sup>2</sup>—skills, knowledge, health—is essential for productivity and economic growth, but investments that have the largest impact on human capital often occur in childhood<sup>i</sup>. Educational attainment has a rate of return of approximately 9 percent per year of schooling globally, but what matters more are the skills that an individual acquires during schooling.

However, many developing countries struggle to provide youth with the skills needed to be high earners, innovators or competitive for the 21<sup>st</sup> century global economy. The 2015 Pacific Islands Literacy and Numeracy Assessment (PILNA) found that less than half of 4<sup>th</sup> grade and 6<sup>th</sup> grade children achieved the expected level of proficiency in literacy<sup>ii</sup>. The Tongan Early Grade Reading Assessment (TEGRA) conducted in 2009 found that only 34 percent of 3<sup>rd</sup> grade students were able to read fluently (i.e., able to read 50 or more words per minute) (**Figure 1**).

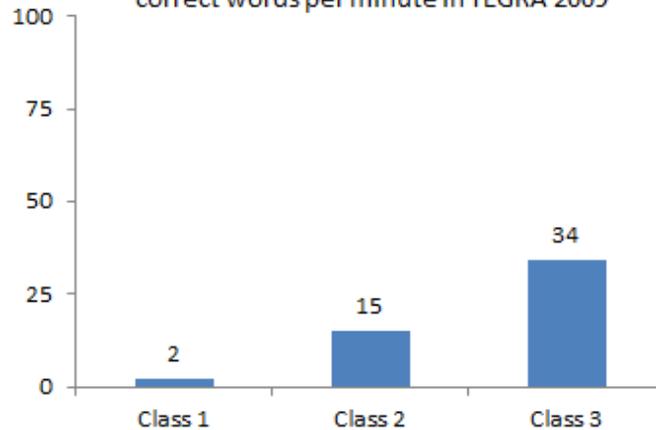
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<sup>1</sup> This policy brief summarizes the findings of an impact evaluation financed by the World Bank under the PEARL program. Full results of the impact evaluation have been disseminated as a World Bank Policy Research Working Paper: Macdonald, Kevin Alan David; Brinkman, Sally Anne; Jarvie, Wendy; Machuca-Sierra, Myrna; Mcdonall, Kristen Andrew; Messaoud-Galusi, Souhila; Tapueluelu, Siosiana; Vu, Binh Thanh. 2018. *Intervening at Home and Then at School: A Randomized Evaluation of Two Approaches to Improve Early Educational Outcomes in Tonga (English)*. Policy Research Working Paper WPS8682, Washington, D.C.: World Bank Group.

<sup>2</sup> The Human Capital Index quantifies the contribution of health and education to the productivity of the next generation of workers. Countries can use it to assess how much income they are foregoing because of human capital gaps, and how much faster they can turn these losses into gains if they act now.

**TEGRA 2009 revealed that only about one third of students could read fluently by 3<sup>rd</sup> grade**

Figure 1. Percent of students achieving 50 or more correct words per minute in TEGRA 2009

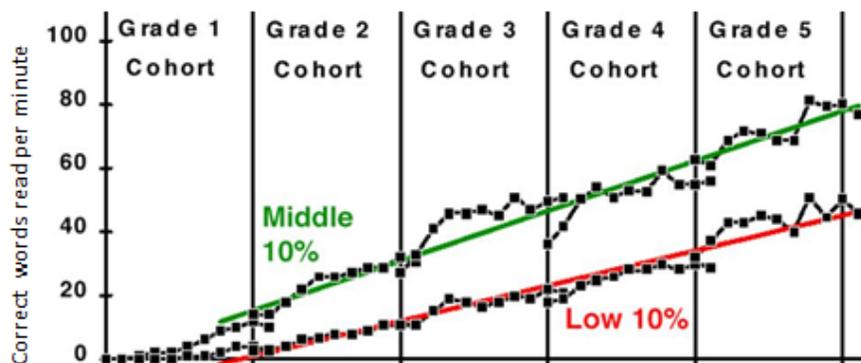


Source: World Bank 2012

Early literacy determines both a child’s future literacy skills and their education outcomes more broadly including learning achievement, the likelihood of staying in school and transitioning to higher levels of education<sup>iii</sup>. However, getting off to a strong start is essential because those who fall behind early tend to fall even further behind as they get older<sup>iv</sup> (**Figure 2**). Fortunately, a substantial body of international research has identified effective ways to teach children to read alphabetic languages,<sup>v</sup> even in very difficult contexts<sup>vi</sup>. One such early grade reading program was piloted in Tonga.

**Reading deficits start early and compound with age**

Figure 2. Differences in reading achievement by cohort



Source: Good, Simmons, & Smith (1998)

Another key element for a strong start is a child’s physical, socio-emotional and cognitive development so that they are ready to learn in a school environment<sup>vii</sup>. Data on school readiness of Tongan children was limited. One indicator was preschool participation which was, and remains, quite low, approximately 37.1 percent of 3 to 5 year olds<sup>viii</sup>. A baseline school readiness assessment conducted in 2014 in Tonga found substantial disparity in school readiness outcomes especially in terms of socio-economic status.

The home environment is crucial to a young child's development and ultimately school readiness<sup>ix</sup>; it is in this sense that parents and caregivers are a child's first teachers. Providing training to mothers has been shown to be highly cost effective both in terms of developmental outcomes and future labour market outcomes later in life<sup>x</sup>. One approach is using peer learning or support groups such as community mothers' groups to improve child feeding practices<sup>xi</sup>. The community-based playgroup model fits well with the needs and context of Tonga, given the significant social capital in communities and that 86 percent of Tonga's preschools are run by community groups including parent-teacher associations and churches (2012 data). The community playgroups program implemented in Tonga was based on a program in Australia in which caregivers and children together with a facilitator lead learning activities and structured interaction which parents could continue at home. This model was found to be effective among indigenous and disadvantaged communities in Australia.

### **Community playgroup program**

The Tongan school readiness program provided communities with support and assistance to establish community play-based activities (CPBAs). CPBAs included children aged 0 to 5 and their caregivers and met once or twice per week for approximately two hours. Each CPBA consisted of approximately 15 children and their caregivers. A volunteer facilitator led them through different activities of "learning through playing" which children and caregivers participate together. Activities might include sensory play (or messy play) through activities such as ice cube painting and gloop; physical play to build gross motor skills and confidence with activities involving balancing, ball skills, rolling, pushing and pulling; improving fine motor skills through block building, bead threading and painting, coloring, drawing or the facilitator leads the singing and everyone sings together and does the actions or reading books together to promote early literacy skills, etc.

The purpose of the CPBAs was also to promote quality caregiver-child interaction at home. The activities held during the CPBA sessions provided caregivers with ideas and examples of the types of interactions that they could replicate at home.

The intervention provided with start-up kits consisting of play-based learning materials, facilitator, guides were provided by the intervention at the beginning while communities provided ongoing support to run the CPBAs. Volunteer facilitators, venues, funding and additional materials were provided by community members. Playgroups were typically held in town halls, unused classrooms, churches or private residences. The CPBA team worked closely with leaders of communities to help establish a CPBA, including support organizing community meetings and raising awareness among community members. The team also provided ongoing support to town officers to resolve problems that arose, for example, the loss of a venue or volunteer facilitator. Training was provided to community facilitators twice per year, and mentors visited community playgroups to work with facilitators four times per year. The primary recurrent cost of the CPBAs was the support and time of the program team as well as training and mentoring. The average annual cost of the programme was US\$ 1,149 per CPBA and US\$ 12.62 per child; this excludes the one-time starter kit that provided materials to initiate a CPBA.

Between 2015 and 2017, 51 CPBAs were established in communities across Tonga. In total, 1,700

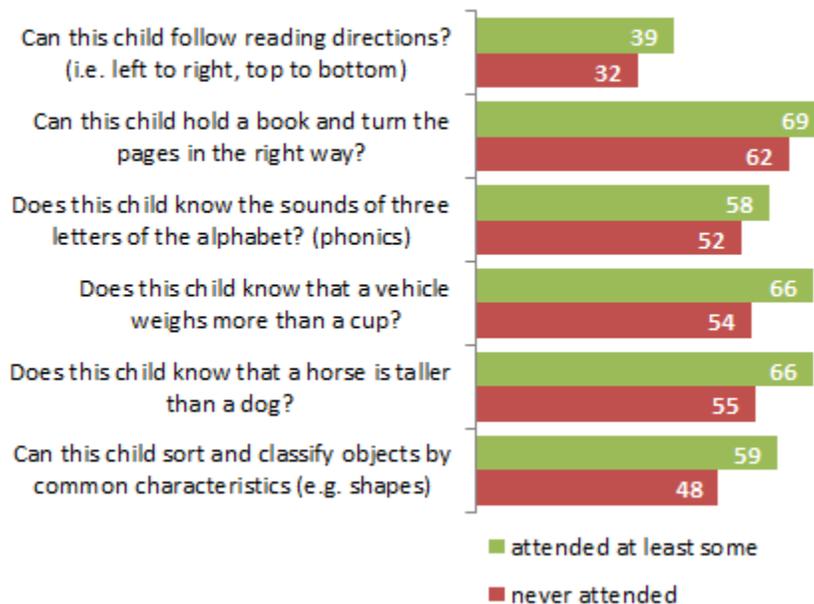
children mostly aged 0 to 5 attended a CPBA in 2016. Children that attended CPBAs were more likely to be older, girls and from less educated mothers.

### Effect on school readiness<sup>3</sup>

Children who attended a CPBA were more likely to be ready for school. For literacy skills, for example, they were more likely to know which direction to read from, how to hold a book and turn pages, and know some letter sounds; for numeracy skills, they were more likely to know that a vehicle weighs more than a cup, to know that a horse is taller than a dog, and how to sort and classify objects by common characteristics (**Figure 3**).

Positive effects were found for disadvantaged children in communities that received support to establish CPBAs. The intervention increased overall school readiness of 3- and 4-year-old girls of mothers without high school education by an additional 28 percent of what is normally gained between age 3 and 4. It also increased literacy and numeracy skills for girls and boys by an additional 26 and 22 percent respectively of what is normally gained between ages 3 and 4 (**Figure 4**).

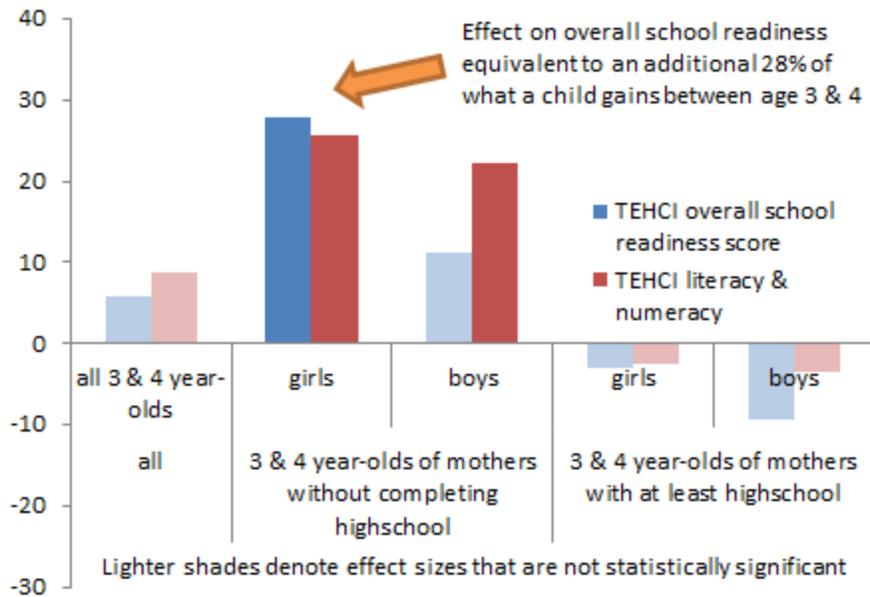
**Children who attended CPBA had better literacy and numeracy**  
 Figure 3. Percent of children in TEHCI by indicator and CPBA attendance for selected literacy and numeracy items



<sup>3</sup> Both programs (CBPA and CLRW) were implemented as randomized-controlled trials with randomly selected group of schools or communities who experienced the program and a randomly selected group which did not.

**Being in a community that received support to establish a CPBA increased school readiness outcomes for disadvantaged children**

Figure 4. Effect of the school readiness intervention as a % of developmental gains between age 3 and 4



**Early grade reading instruction program**

The reading instruction program, Come Let’s Read and Write (CLRW), provided teachers with training and materials for both teachers and students to implement a specific pedagogic approach for reading instruction. The pedagogic approach provided clear sequencing for the learning competencies for basic reading and writing already stipulated in the Tongan curriculum. The sequencing of skills and competencies, including understanding the relationship between printed letters and sounds and their reading fluency, is based on international research on reading instruction<sup>xii</sup>. Training and materials were coupled with monitoring and coaching and offered to 1<sup>st</sup> and 2<sup>nd</sup> grade teachers.

CLRW was implemented in 2015 in first grade and extended to second grade in 2016 and 2017. 1<sup>st</sup> and 2<sup>nd</sup> grade teachers in 38 schools received training and materials, and the annual recurrent cost of the program was US\$ 62.57 per student. This cost includes training, materials, monitoring and coaching, but it does not include the cost of developing the pedagogic approach, as this cost would not be incurred again if the intervention was scaled up.

**Effects on early grade reading skills<sup>4</sup>**

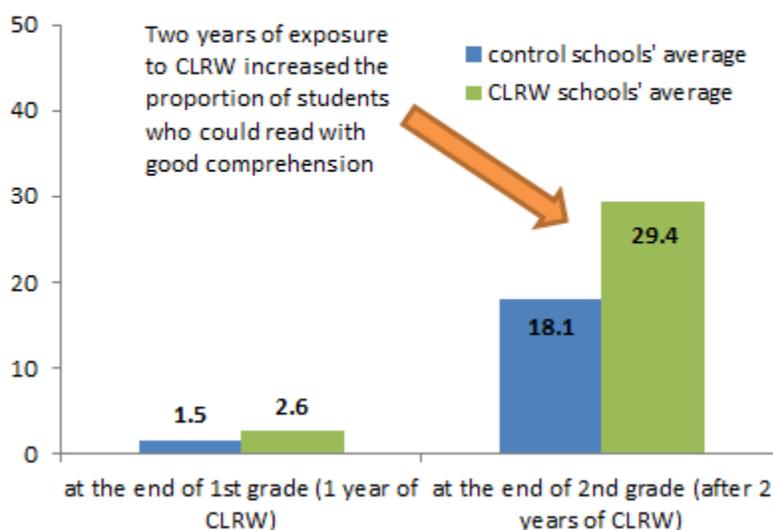
At the end of two years of exposure to CLRW, the proportion of students in the treatment schools who could read (fluent readers with good comprehension) was 29.4 percent compared to 18.1 percent in the control schools, and increase of 11.3 percent (**Figure 5**). The intervention was also

<sup>4</sup> See footnote 3.

found to have significant positive effects after two years on the EGRA domains of initial sounds, letter sounds, familiar words, invented words, oral reading fluency, reading comprehension and dictation.

### CLRW increased the percent of children who could read

Figure 5 Percent of students with positive oral reading scores and scoring 80% or higher on the reading comprehension TEGRA sub-task



The school readiness program (CPBA) provided an additional boost to reading achievement. Some children who participated in the CLRW program had also experienced the CPBA program. Positive effects were found on reading achievement for 2<sup>nd</sup> grade girls and boys whose community was exposed to one year of the school readiness intervention and 1<sup>st</sup> grade girls exposed to two years of the community school readiness intervention.

### The case for scaling up

Both programs improved the outcomes they aimed to achieve. The school readiness program would cost approximately US\$ 150,000 per year to reach all the approximately 11,500 children aged 1 to 5. The CLRW program would cost approximately US\$ 350,000 annually to reach all 5,600 first and second grade children<sup>xiii</sup>. The positive effects on children's outcome of both programs are expected to improve their human capital and ultimately increase their future productivity and earnings. These benefits are expected to be many times larger than the costs of this initial investment

The school readiness and early grade reading pilots provide important lessons for countries other than Tonga as well. For example, community playgroups have worked in other countries including Australia and Indonesia<sup>xiv</sup>, and they are being established in Kiribati and Tuvalu. The lesson is that community playgroups have the potential to be successful in any country in areas where communities play an important role in people's lives. Indeed, community learning more generally as an approach for teaching parents feeding practices has also been shown to be effective in Africa<sup>xv</sup>. The early grade reading program is also applicable outside of the Pacific.

Similar programs have been applied in Liberia, Kenya, Papua New Guinea, and Uganda<sup>xvi</sup>. The success of both the school readiness and early grade reading pilots in Tonga provide evidence that they are relevant to a wide range of countries.

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<sup>i</sup> See: World Bank (2019) Human Capital Index ; Naudeau et al. 2011. For example, home visits by community nurses in Jamaica improved early stimulation for young children suffering from stunting, and a follow up study of these children found that, 20 years later, the intervention increased their earnings by 38 percent.

<sup>ii</sup> Educational Quality Assessment Program 2016. Only 46.4 percent of 4<sup>th</sup> grade children and 45.7 percent of 6<sup>th</sup> grade children achieved the expected level of proficiency in literacy for their age.

<sup>iii</sup> See: Entwisle, Alexander & Olson 2005; Jimerson et al. 2000; Alexander, Entwisle & Horsey, 1997

<sup>iv</sup> Butler et al. 1985

<sup>v</sup> See: August & Shanahan 2006; National Institute for Child Health and Human Development 2000; Pressley, M., 1998; Snow, Burns & Griffin 1998

<sup>vi</sup> See: Piper & Korda 2011; Piper, Zuilkowski, & Mugenda 2014; Lucas et al. 2014; Macdonald & Vu 2018

<sup>vii</sup> See: Black et al. 2016; Nores & Barnett 2010

<sup>viii</sup> Based on TEHCI 2017

<sup>ix</sup> See: Britto et al. 2016; Melhuish et al. 2008; Rao et al. 2017

<sup>x</sup> Gertler et al. 2014

<sup>xi</sup> See: Prost et al. 2013

<sup>xii</sup> See notes vii and viii.

<sup>xiii</sup> Details on how scale-up are published in a companion piece called "Implementing and Evaluating Interventions to Improve School Readiness and Early Literacy - Experience from the Pacific Early Age Readiness and Learning Program: Operation Guides"

<sup>xiv</sup> Brinkman et al. 2015; Nakajima et al. 2016; Gregory et al. 2016, Hancock et al. 2015

<sup>xv</sup> Prost et al. 2013; O'Rourke, Howard-Grabman, & Seoane 1998

<sup>xvi</sup> Piper & Korda 2011; Piper, Zuilkowski & Mugenda 2014; Lucas et al. 2014; Macdonald & Vu 2018