



## How are Tongan Children Developing?

### Results from the second national census and policy recommendations for better child development in Tonga

This policy brief presents findings from the second national census of children's early development in Tonga; the Tongan early Human Capability Index. First conducted in 2014 and then again in 2017, results provide a snapshot of the current status of early childhood development in Tonga, demonstrate how children's development has changed over time, highlight factors that are playing an important role in influencing children's outcomes across the country, and provide policy recommendations for ways forward in order to provide all Tongan children with the opportunity to reach their developmental potential.

#### **The importance of investing early**

When children thrive in their early years, fuelled by adequate health care and nutrition, interactive and supportive stimulation, and protection from harm, they are able to reach their full developmental potential as adults and successfully participate in economic, social, and civic life. Investment in young children, therefore, not only benefits the children of today, but has a direct impact on the human capability, stability and prosperity of nations in the future.

Previous studies in Tonga have demonstrated a lack of parental and wider community awareness regarding the importance of the first few years of a child's life for their later health, development, learning, behaviour and achievements throughout life. Recognising that early investment is needed to achieve the best outcomes for children and indeed the country, the Tongan Ministry of Education and Training, with support from the World Bank, sought to improve the learning outcomes of Tongan children through implementation of the Pacific Early Age Readiness and Learning (PEARL) Programme.

## **Project background**

The PEARL Programme aims to support Pacific Island countries in building capacity to design, implement, and monitor evidence-based integrated policies and programs that prepare children and their families for primary school. One of PEARL's visions is that all children have access to and benefit from programs in their communities that promote healthy, stimulating, and culturally relevant experiences that prepare them for schooling and life.

To work towards achieving this vision in Tonga, a national monitoring system for school readiness, the Tongan early Human Capability Index (TeHCI) was locally developed and then implemented in 2014<sup>1</sup>, measuring the early development of all children aged 3-5 years across the country. Census results highlighted areas of both strength and need, and were used to develop a low-cost and sustainable community intervention; Community Play Based Activities (CPBAs). Implemented in approximately 30 percent of Tongan communities, CPBAs aimed to improve the school readiness of young children by increasing parent and wider community awareness of the importance of both early childhood education and providing rich and stimulating home environments for children to grow up in. The second national census of children's early development was then conducted using the TeHCI in 2017, to measure changes in children's development over time and the effectiveness of PEARL interventions.

## **This policy brief**

The PEARL Programme has played a crucial role in promoting school readiness across the Pacific. Despite the challenges created by limited resources and capacity, activities under PEARL have shown positive results. With the PEARL Programme now complete, project learnings should be used to guide early years policy and practice in order to continue to promote and improve the development of Tongan children. This policy brief captures key learnings, as evidenced by the two waves of child development census data, and provides four key recommendations related to (i) the positive influences of early childhood education on children's outcomes, (ii) the provision of universal services and supports across the country, and (iii) the importance of fostering parents and caregivers as children's first teachers in order to best promote children's early development.

---

<sup>1</sup> For 2014 census results, see Brinkman, S. & Thanh Vu, B. (2017). Early Childhood Development in Tonga: Baseline results from the Tongan Early Human Capability Index. World Bank, Washington DC.

## Data collection

Data were collected across communities in Tonga throughout August to October 2017 from caregivers and teachers on 5,588 children aged 3 to 5 years old. The majority of children resided on Tongatapu (N=74.3%), while the remainder were from Vava'u (13.8%), Ha'apai (5.9%), Eua (4.9%), Niuatoputapu (<1%), and Niuafuou (<1%). The survey captured an estimated 85 percent of children aged 3-5 across Tonga, collecting information regarding children's development status, as well as their experience with early childhood education and their learning environments at home in order to provide a snapshot of their early years.

Table 1 shows that the majority of children included in the data collection were aged 3 or 4 years – this is because children who were already enrolled in primary school were not eligible to participate, and so this reduced the number of 5-year-olds captured. There were an even proportion of males and females in the sample, a small number of children were reported to have a disability, and the majority of children had mothers with a high school education.

**Table 1. Sample characteristics**

| <b>Variable</b>    |                       | <b>Number (%)</b> |
|--------------------|-----------------------|-------------------|
| Gender             | Male                  | 2847 (50.9)       |
|                    | Female                | 2741 (49.1)       |
| Age                | 3 years               | 2324 (41.6)       |
|                    | 4 years               | 2346 (42.0)       |
|                    | 5 years               | 918 (16.4)        |
| Special Needs      | Yes                   | 116 (2.1)         |
|                    | No                    | 5472 (97.9)       |
| Mother's education | Primary school        | 95 (1.7)          |
|                    | Started high school   | 1520 (27.2)       |
|                    | Completed high school | 2889 (51.7)       |
|                    | Tertiary studies      | 1084 (19.4)       |

## Measuring early childhood development

Early child development is the most important phase in life which determines later health, development, learning, behaviour and achievements. It is generally defined as children's holistic development from conception and occurs when children learn to move, think, feel and interact at increasingly complex levels. There are different areas of development including physical, language, cognitive, and social and emotional development, and each child's development is influenced by a mixture of both biological and environmental factors.

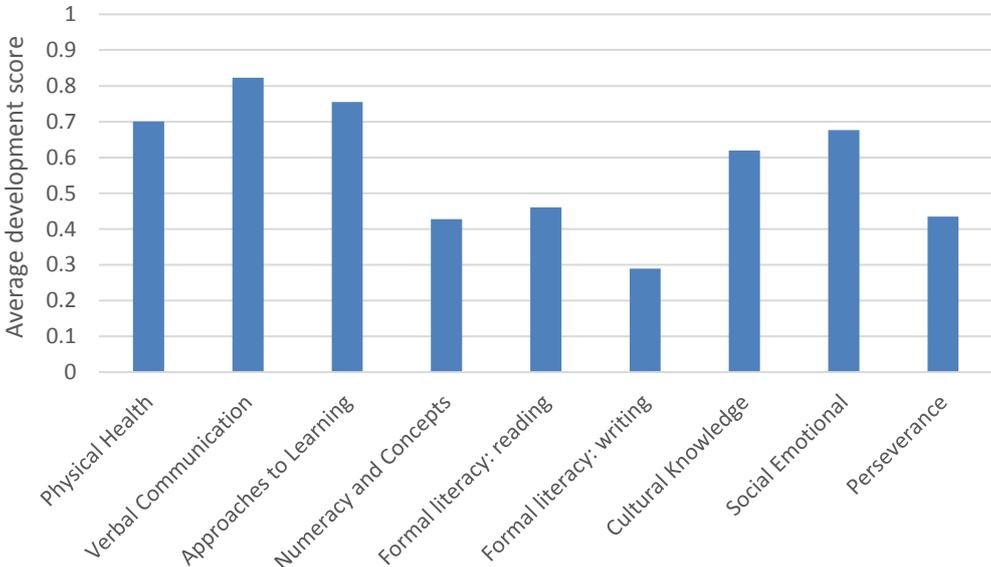
The tool used to measure child development is based on the Early Human Capability Index (eHCI) which has been used internationally. The eHCI is a population measure designed to capture key aspects of holistic development in children aged 3-5 years that predict future capabilities. The Tongan version of the eHCI (TeHCI), adapted by local stakeholders, provides a score for each child on nine different developmental domains: verbal communication, approaches to learning, numbers and concepts, cultural and spiritual knowledge, reading, writing, social and emotional skills, perseverance, and physical health. Domain scores range from 0 to 1; with 1 being the best score. From these nine domains an overall development score is derived, also ranging from 0 to 1; with 1 being the best score.

First, results from the 2017 national census are presented to provide a snapshot of the current status of Tongan children’s development. Then, census results from 2014 and 2017 are compared to explore how children’s development has changed over time.

**Current status of early child development**

Figure 1 below presents average scores across the nine different development domains for all children measured in 2017. Children scored highest in areas of verbal communication and approaches to learning, and lowest on perseverance as well as the more formal aspects of development; reading, writing, and numeracy. This pattern across developmental domains is to be expected considering the age of the majority of the children assessed (3-4 years) and the nature of the more advanced types of skills that are measured in these domains, for instance, we would not expect the writing skills of a 3 year old to be well developed.

**Figure 1. Children’s scores across developmental domains**

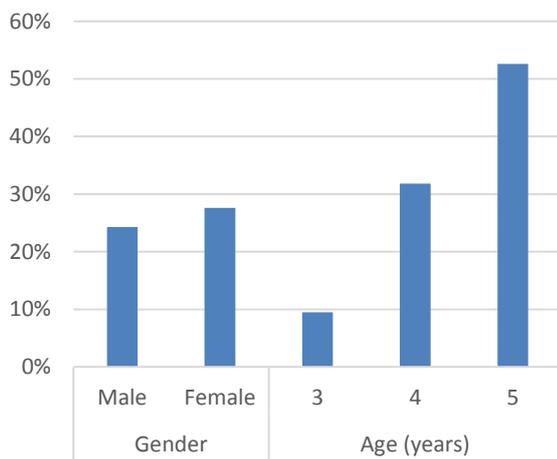


### Early literacy skills

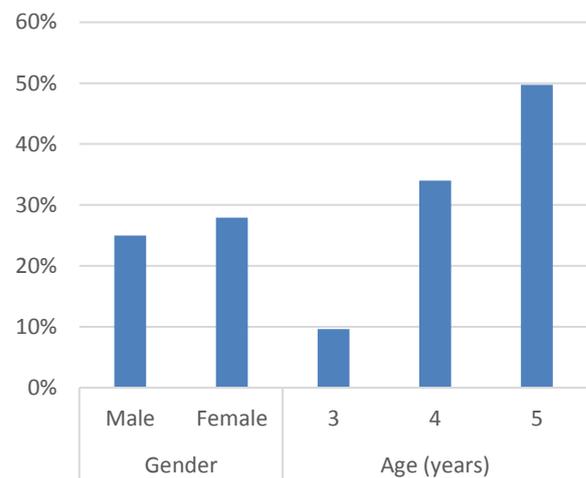
Familiarity with sounds, words, and language, as well as the more formal aspects of literacy that develop later in childhood – reading, comprehension, and writing – are all skills that are essential for children to be able to further develop and learn throughout school and life.

Caregivers and teachers reported that 62.3 percent of children could hold a book and turn its pages correctly, indicating familiarity with books and print. When asked about children’s reading abilities, a third (31.7%) were said to be able to read 4 or more simple words. Respondents were also asked about children’s writing skills, with 46.6 percent of children able to trace letters, while 26.4 percent were reported to be able to write their name. As expected, children’s literacy skills increase with age, and girls slightly outperform boys (see Figure 2).

**Figure 2. Can child write their name?**



**Figure 3. Can child count to 20?**



### Early numeracy skills

Basic numeracy skills such as being able to recognise numbers and shapes, having knowledge of numerical concepts such as time, size and weight, and being able to count, are also important for children to be ready to learn and make the most of their school environment.

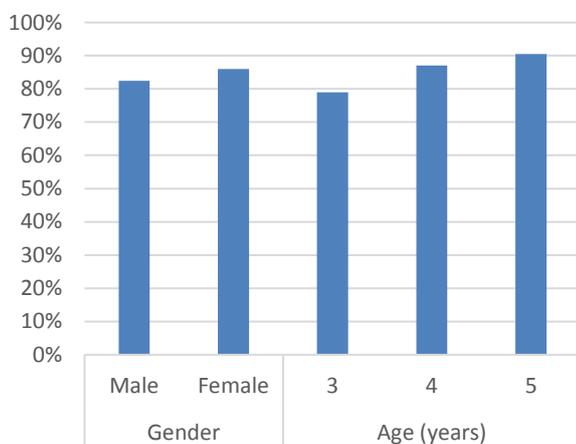
Children had varied knowledge of numerical concepts – the majority know that a car weighs more than a cup (55.5%) and that a horse is taller than a dog (56.1%), while a third (34.0%) understand the concept of yesterday, today and tomorrow, and 30.1 percent know that the number 8 is larger than the number 2. The majority of children were reported to be able to count to 10 (77.3%), while a quarter (25.9%) could also count to 20. Figure 3 demonstrates that patterns in children’s numeracy favour girls as well as older children, as expected.

### Early social and emotional skills

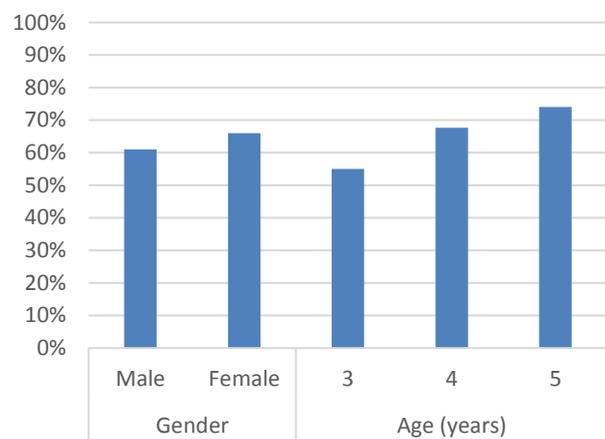
Children’s early social and emotional skills develop through their early interactions with adults and children. These skills enable children to get along with others, form healthy relationships, and adapt positively to their school environment, ready to engage and learn.

The majority of children were reported to be helpful (84.2%), happy to share their belongings (78.1%), demonstrate respect for adults (63.5%) and other children (64.6%), and considerate of other people’s feelings (62.9%). Some children were also reported to demonstrate negative behaviours such as kicking, biting, or hitting other children or adults (26.7%). As demonstrated by Figures 4-5, again we see the expected patterns in development across gender and age.

**Figure 4. Is child always helpful?**



**Figure 5. Does child show respect for adults?**

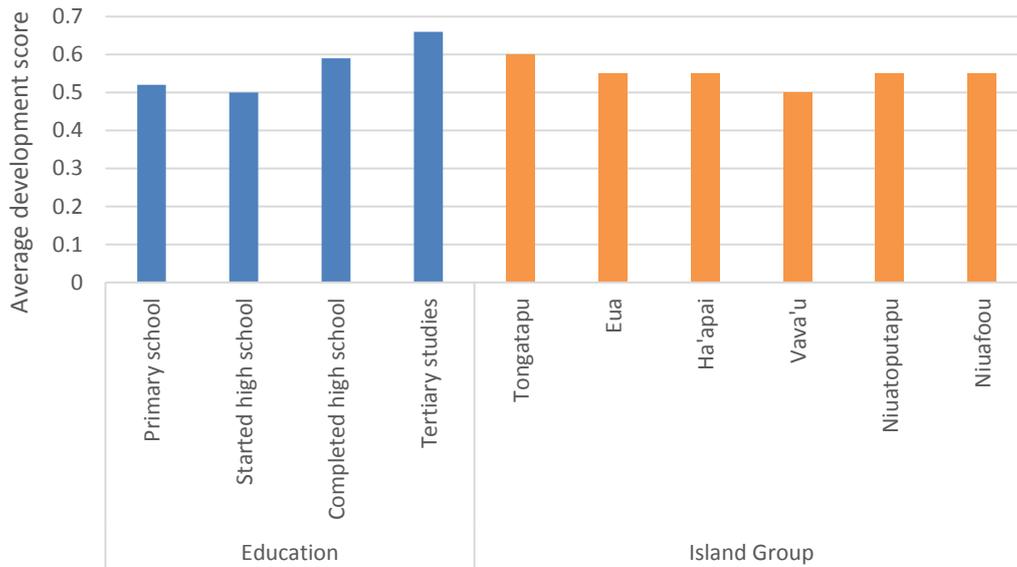


### Disparities in children’s development

In addition to developmental differences by age and gender, we found a strong relationship between caregiver’s education and children’s overall development; higher education is associated with better development (Figure 6). These results are consistent with international evidence that suggests more educated parents are better able to provide children with the supports and stimulation needed to promote development, and highlight the importance of educating caregivers around how they can facilitate their child’s learning and development.

In contrast, when comparing children’s overall development across the six island groups, as in 2014, again we see relatively similar outcomes across the islands, with no single area showing consistently poor results across all domains. This highlights the notion that there are children who are developing well and those who are not developing so well across all areas, and so a universal approach to supporting children across the country will be most beneficial.

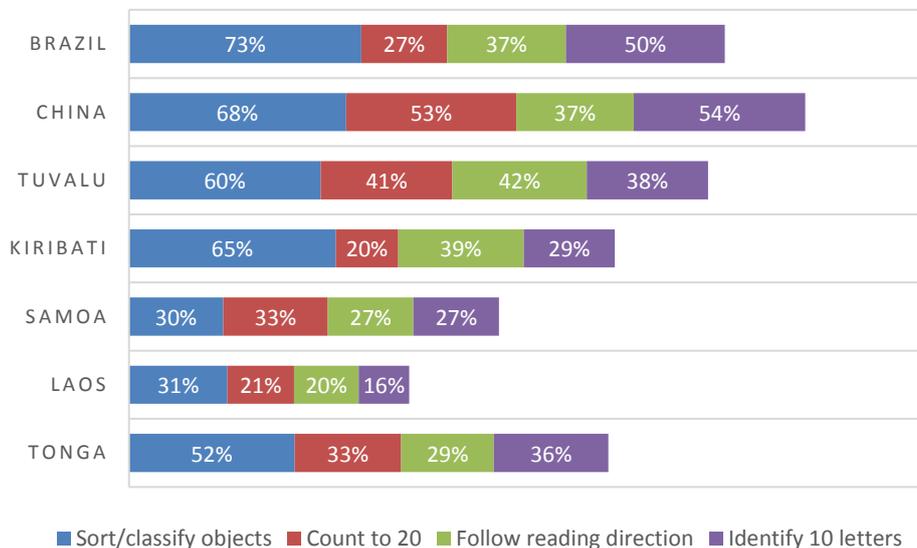
**Figure 6. Disparities in overall development by caregiver’s education and island group**



**How is Tonga performing compared to other countries?**

The eHCI has been used internationally which enables child development comparisons across countries. Figure 7 shows the percentage of children aged 3-5 years across countries who can sort and classify objects and count to 20 (early numeracy skills), and can follow the correct reading direction and identify 10 letters of the alphabet (early literacy skills). Although Tongan children are performing better than those in some other countries (namely, Laos and Samoa), evidently much progress can be made to improve children’s early development to be at a level similar to better performing Pacific countries, namely Tuvalu and Kiribati.

**Figure 7. Children’s development across countries**

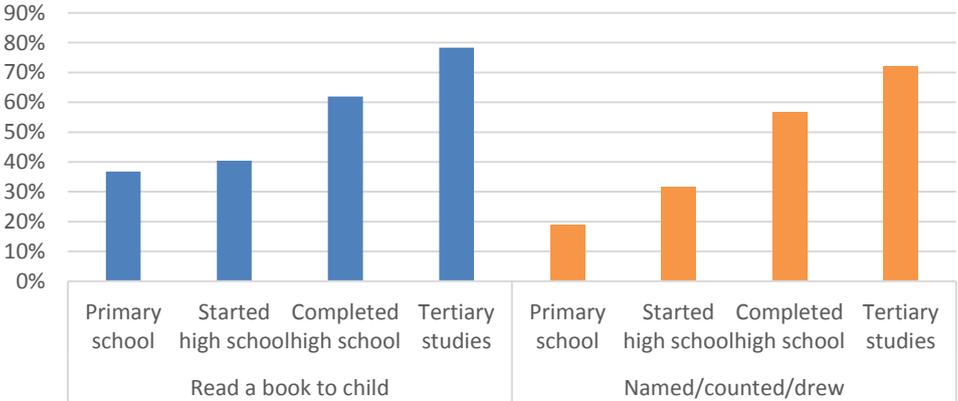


**Stimulation in the home environment**

Caregivers are often referred to as children’s first teachers because, especially important for children’s healthy development is a home environment that provides love and support, as well as opportunities to learn. To do so, parents should play with their children, read, count, draw, and sing and dance, all of which provide children with opportunities to learn and develop.

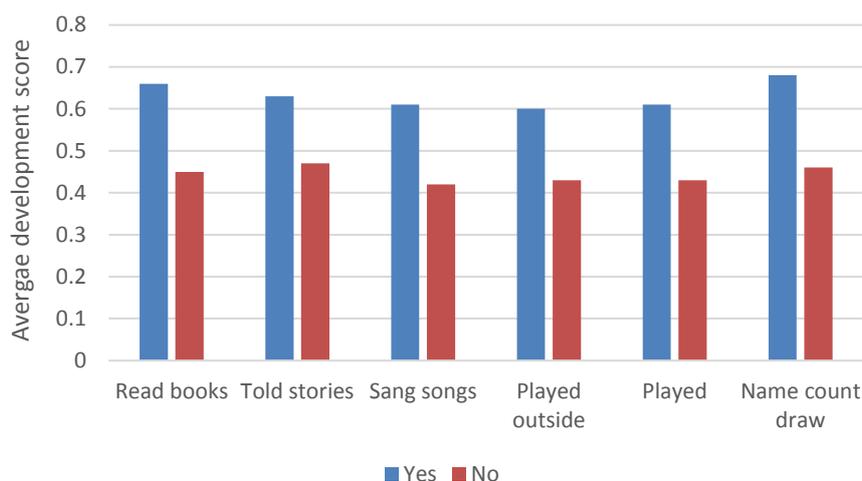
To gain an understanding of the level of interaction that families have with their children to support everyday learning, data were collected about the learning activities they participate in with caregivers in the home. Overall, 58.8 percent of children had been read a book in the past week, 63 percent had been told a story, 80.5 percent had sung songs, 82.5 percent had played with their child outside, 82.4 percent had played with their child in general, and 52.2 percent had named, counted and drawn objects with their child. Although results show the majority of children are having opportunities to play and learn at home, ideally we want to see all Tongan children with rich, stimulating home environments to promote development.

**Figure 8. Home learning activities by caregiver’s level of education**



We also observe a strong relationship between caregiver’s education and child interaction. Better educated parents engage in learning activities with their children more so than less educated parents, especially those that focus on early literacy and numeracy skills (see Figure 8), likely because parents with a lower education do not know how to engage in these activities, or that it is important to do so. These differences in interactions are so important because these activities reflect a supportive home environment for healthy development, which has a key influence on children’s outcomes (see Figure 9). These results highlight the importance of teaching caregivers about why these interactions with their children are so crucial, as well as how they can engage with their children to promote healthy development.

**Figure 9. Influence of home learning activities on children’s overall development**



### **Early childhood education**

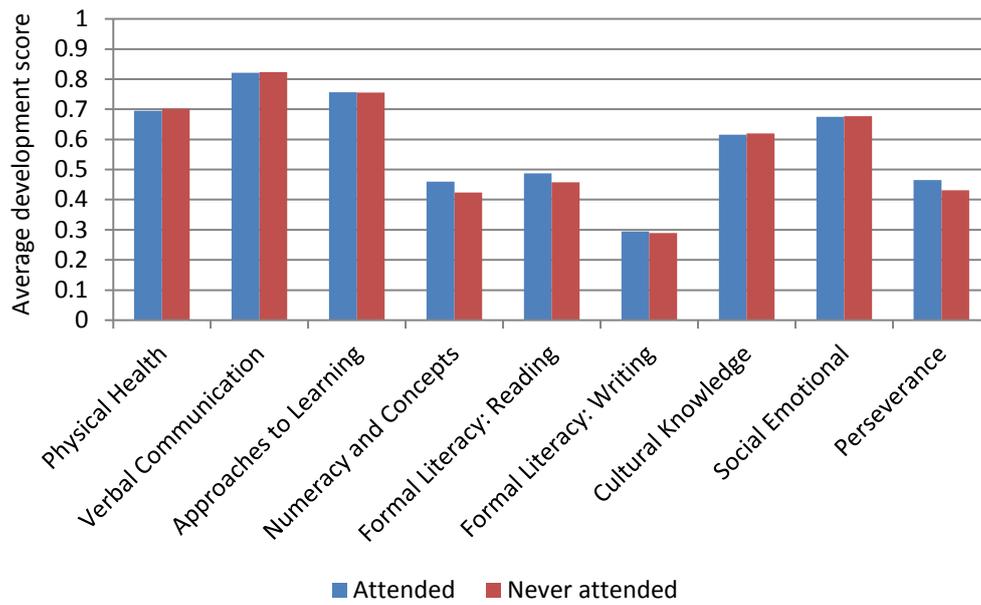
Access to quality early education promotes healthy child development and prepares children for continued learning at school. Less than half (38.9%) of Tongan children aged 3-5 years were reported to be currently attending some form of early childhood education (either playgroup or preschool), while 44.2 percent had attended some form of ECE ever.

### **Community Play Based Activities**

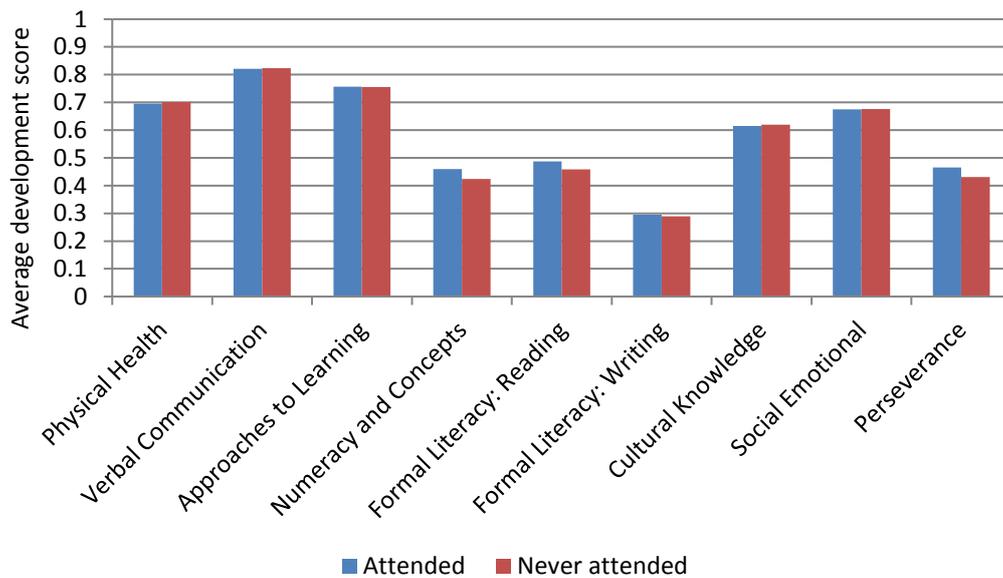
The PEARL Programme supported the establishment of CPBAs, community led playgroups for children aged 0-5 years and their caregivers aimed at improving early development and school readiness through increased interactions between caregivers and children in the home environment. CPBAs were implemented in 55 villages across Tonga, and one quarter (25%) of children from these communities attended a CPBA (or just under 10% of the total country sample). Slightly more girls attended than boys (10.2% and 9.3%, respectively), and somewhat more 3 and 4-year-olds attended than 5-year-olds (9.3%, 10.8% and 8.2%, respectively).

Encouragingly, results show that CPBAs are achieving their goal of promoting community support for children’s school readiness. Children from families who had attended playgroup were being engaged in home learning activities more so than those who had not, particularly activities related to early literacy and numeracy skills (see Figure 10). These differences in home learning activities appear to translate to positive differences in children’s development. As Figure 11 shows, early literacy and numeracy scores, as well as perseverance, were higher amongst children who had attended playgroup compared to those who had not. Considering these areas of development are where the children of Tonga are scoring the lowest (Figure 1), improvements in these skills are exactly what these early interventions are hoping to achieve.

**Figure 10. Influence of CPBA attendance on home learning activities**



**Figure 11. Influence of CPBA attendance on children’s development**



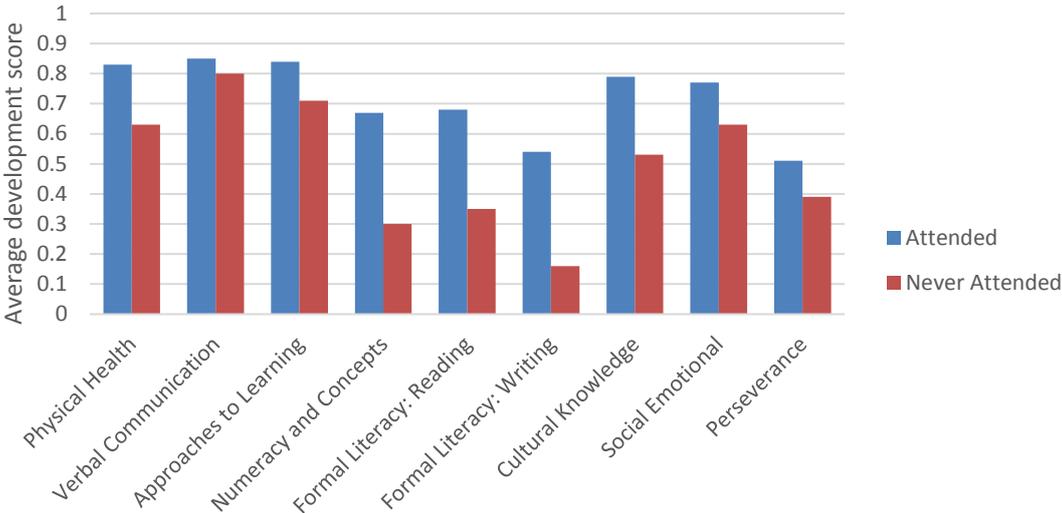
**Preschool**

About a third of children (33.1%) aged 3-5 years were attending preschool, while 37.1 percent had attended at some stage (i.e. some children had attended in the past but were no longer attending). Slightly more girls attended preschool than boys (38.1% and 36.1%, respectively), and preschool attendance increased as children with children’s age – less than a quarter of children aged 3 had attended (23.2%), compared to more than half of 5-year-olds (51.7%).

Caregivers provided responses around why their child had not attended preschool, with the main reasons being because they have no time (n=966), the child is too young (n=791), laziness (n=457), they had not considered preschool (n=389), it is too far and there is no transport available (n=182), the child attends playgroup instead (n=178), because it is too expensive (n=148), or because someone is home to look after the child (n=95).

Preschool was also found to be positively associated with children’s development. Figure 12 demonstrates that for those children who had attended preschool, performance across all developmental domains was better than that of children who had not attended. Developmental gaps between children who had and had not attended preschool are especially large when looking at children’s literacy and numeracy skills, as well as their approaches to learning – to be expected as these are the skills children would be learning at preschool.

**Figure 12. Influence of preschool attendance on children’s development**



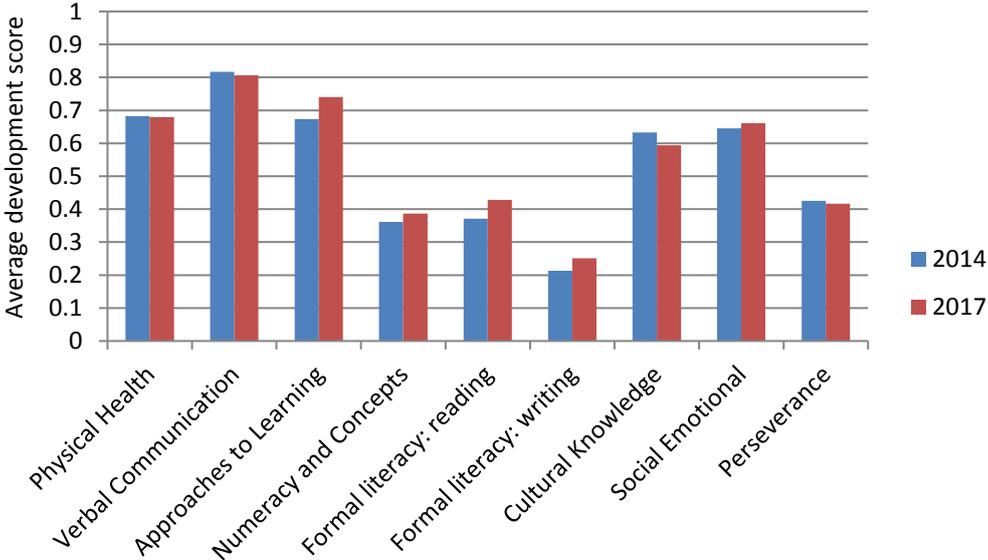
**Comparing child development over time**

Tonga is now one of the very few countries in the world to have undertaken population wide monitoring of children’s early development. Importantly, two waves of census data enable us to compare results over time and determine if efforts to support children’s development have made a difference. Below we compare results<sup>2</sup> of the 2014 census cohort of children with those in the 2017 cohort who grew up when the PEARL Programme was being implemented.

<sup>2</sup> Data comparisons are made for 3 and 4-year-old children only. Due to differences in sampling methods of 5-year-olds between 2014 and 2017 (i.e. children already enrolled in primary school were excluded from data collection in 2017, but not in 2014), valid comparisons cannot be made and so have been excluded from analyses.

Results show that children who participated in the 2017 census had better developed literacy and numeracy skills, approaches to learning, and social and emotional skills (see Figure 13), relative to children in the 2014 census. Although not all children in the 2017 census were exposed to an intervention, it appears that efforts to promote community awareness around the importance of children’s early development is making a positive difference.

**Figure 13. Children’s development scores in 2014 and 2017**

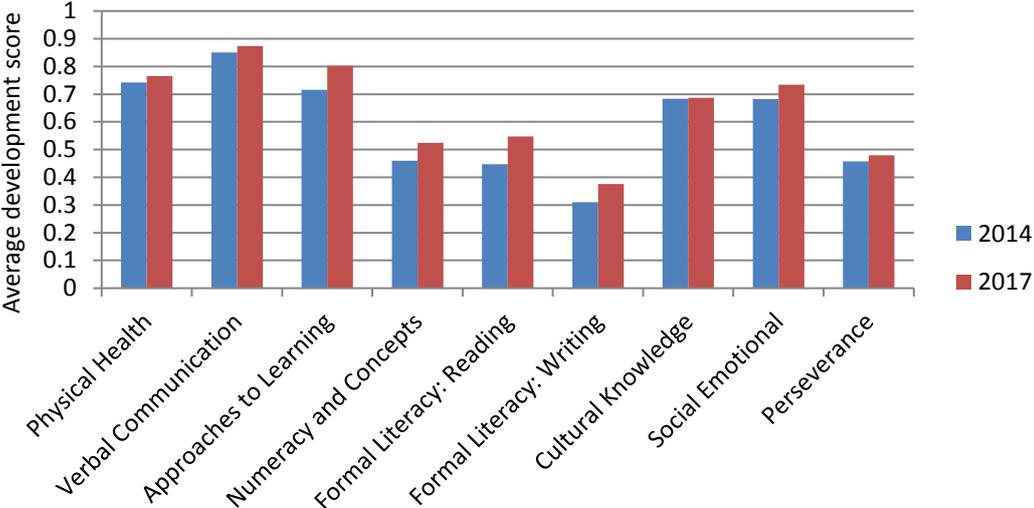


When examining increased literacy scores more closely, we find that in 2017, the percentage of children who could write simple words and write simple sentences was approximately double of that of 2014 (9% versus 15% and 3% versus 7%, respectively). There are also considerable differences in children’s familiarity with books and print between 2014 and 2017, with the percentage of children able to hold a book and turn its pages correctly 51 percent in 2014 and 59 percent in 2017, and the percentage of children able to follow reading direction correctly 16% in 2014 and 28% in 2017.

When looking at differences in children’s numeracy scores, we find that while 38 percent of children were able to sort and classify objects in 2014, 45% were able to do so in 2017. Similarly, the percentage of children who could understand the order of the day (i.e. morning, afternoon, night) was 26% percent in 2014 and 30 percent in 2017; and while 20 percent of children understood that the number 8 is bigger than 2 in 2014, 25% could do so in 2017.

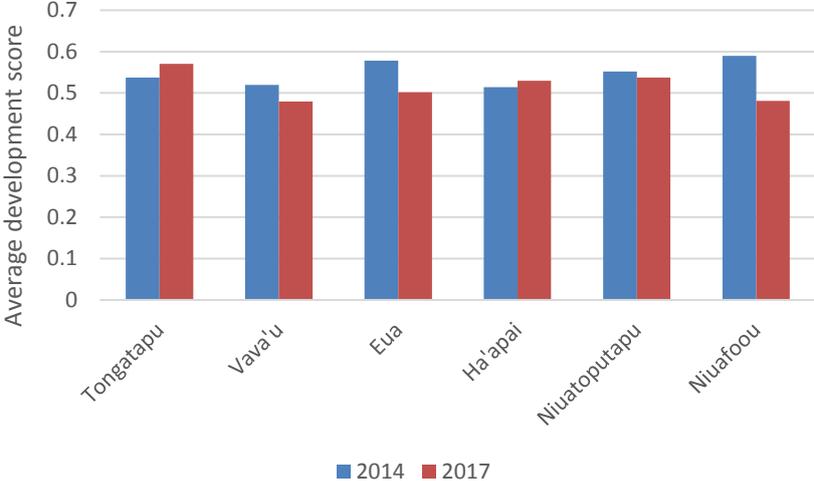
Evidently, differences in 2014 and 2017 results vary by developmental domain, but also differ based on children’s demographic characteristics, namely gender and age. Results show that the largest increase in scores between 2014 and 2017 were found for 4-year-old girls (Figure 14), and it is possible that this is linked to the fact that (i) girls were more likely to be attending early childhood education than boys, and (ii) 4-year-olds would have been exposed to two years of PEARL, compared to 3-year-olds who would have only been exposed to one year.

**Figure 14. 4-year-old girls’ development scores in 2014 and 2017**



Finally, when looking at changes in children’s average overall development scores between 2014 and 2017 by geography however, we see varied patterns across the six main island groups (see Figure 15). This is consistent with earlier results (Figure 6), again highlighting that a universal approach to supporting children across Tonga will be most beneficial.

**Figure 15. Children’s development scores by island group in 2014 and 2017**



## **Key learnings and recommendations**

The results presented in this brief highlight four key recommendations to guide early years policy and practice to continue to promote and improve the development of Tongan children

- 1. The provision of universal services across the country.** This brief demonstrates varied results across islands in terms of differences across developmental domains as well as improvements in children's overall development over time. This highlights that, across all island groups, there are children who are developing well, as well as children who are not developing well and would benefit from additional supports. As such, a universal approach to service provision is recommended (i.e. rather than targeted services), particularly in terms of the provision of both community playgroups and preschool, to help support the early development of children across the country.
- 2. The promotion of preschool attendance.** Results show that children who attend preschool are developing considerably better across all domains compared to those who have not attended. Results also demonstrate that the majority of children in Tonga are starting school without any exposure to early childhood education. Global evidence suggests these children will find the transition to the school environment more challenging due to a lack of school readiness, and are at an increased rate of school dropout. Increasing early childhood education attendance rates through continued promotion of community awareness around the importance of the early years for children's development, as well as improvements in access through reducing financial and geographical barriers will positively impact the development and school readiness of future generations in Tonga.
- 3. The promotion of playgroup attendance.** Community led playgroups were also found to be having a positive influence on children's development, particularly when looking at children's early literacy and numeracy skills, through the promotion of caregiver-child interactions both at playgroup and in the home environment. Relative to preschool, playgroups offer a low-cost, sustainable, yet effective form of early childhood education that not only benefits children, but also promotes capacity building amongst parents and the wider community around the importance of children's early development. Increasing the availability of playgroups and promoting attendance will continue to have a positive impact on children's early development.

Importantly, as playgroup provision increases, it is crucial that the community playgroup model whereby caregivers stay and learn how to interact with their child is maintained, as this is the key mechanism through which positive effects occur.

- 4. The promotion of parents as children's first teachers.** Finally, results also show that caregiver interactions with children have an important influence on developmental outcomes. Children whose caregivers engaged in simple yet stimulating activities with them in the home environment, such as reading, storytelling, naming, counting and drawing, were developing better than children whose caregivers had not been interacting with them in this way. Although the majority of children are having opportunities to play and learn at home, all Tongan children should be afforded these opportunities. As such, promoting parents as children's first teachers who provide nurturing and stimulating home environments for their children to support their early learning and development is recommended. Opportunities to teach parents around the importance of interaction with their child, as well as guiding parents on how they can provide developmentally stimulating experiences for their child, as community playgroups seek to do, should be prioritised.

Tonga is now one of the very few countries in the world to have undertaken population wide monitoring of children's early development over time, second only after Australia. As not all children in the country attend a single early education or health service at any one point in time to act as a system wide data collection point, such monitoring requires the implementation of an innovative, mixed-method, and cross-sector approach to data collection. The data collection process in itself as well as the results dissemination processes has helped to foster community awareness of the importance of early childhood development, and how families can work to support their children's learning and readiness for school. This is a pragmatic data collection model that other countries should consider utilising, and Tonga should be commended on such an achievement.

As Tonga continues to work towards promoting children's early development and school readiness, it is recommended that such data monitoring continue to act as a means of program and policy evaluation, because only with repeat data will governments and communities alike understand if their work to support the children in their community is making a difference.

**Prepared by:**

Sally Brinkman, Alanna Sincovich, and Binh Thanh Vu

**For more information about the study results, please contact Sally Brinkman:**

[sally.brinkman@telethonkids.org.au](mailto:sally.brinkman@telethonkids.org.au)

**For more information about the PEARL Program, please contact Binh Thanh Vu:**

[tvu@worldbank.org](mailto:tvu@worldbank.org)



Education Global Practice  
The World Bank  
1818 H Street, NW  
Washington D.C. 20433, USA  
Tel: (202) 4731000  
Fax: (202) 4776391