



# Final Report: PacifiCode Digital Fluency Pilot

## 2023 REPORT - PacifiCode Afterschool Program in Samoa



IMAGE:Gagaemalae Primary School Teachers receiving their ICT Certification in September 2023.



## TABLE OF CONTENT

<b>TABLE OF CONTENT</b> .....	<b>2</b>
<b>Executive Summary: PacifiCode Digital Fluency Pilot Report</b> .....	<b>4</b>
Introduction.....	4
Stakeholders.....	4
Methodology.....	5
Conclusion.....	5
<b>ACRONYMS</b> .....	<b>6</b>
<b>DEFINITIONS OF TERMS</b> .....	<b>6</b>
<b>GUIDING PRINCIPLES</b> .....	<b>9</b>
<b>Project Background &amp; Context</b> .....	<b>11</b>
PacifiCode’s Vision, Mission & Purpose.....	11
The Big Issues.....	12
PacifiCode’s Visionary Solution.....	14
Starting at the Grassroots: The Foundation of Lasting Impact.....	14
Why ICT Education.....	15
The Beginnings: Phase 1.....	17
<b>Phase 2: Ten School PacificCode Digital Fluency Pilot (PDFC)</b> .....	<b>18</b>
The Pilots Objectives and Outcomes.....	18
Project Key Indicators:.....	19
Objectives.....	19
Outcomes.....	20
<b>Results: Planting Digital Foundations in Savai’i and Upolu</b> .....	<b>21</b>
Project Key Indicators.....	21
1. Connectivity.....	21
2. In-Country Partners Capability Building.....	22
3. Teacher Capability Building.....	24
4. Adoption & Engagement.....	30
5. Equality.....	32
ICT PD Workshops & Content:.....	34
After School ICT Program Content & Outcomes.....	38
Content Overview:.....	38
Outcomes Overview.....	39
Leading with Fa’a Samoa:.....	42
Navigating the Terrain:.....	42
Customising the Approach:.....	43
Connectivity Challenges:.....	43
Celebrating Successes:.....	43
Building Resilience:.....	43
<b>Key Findings</b> .....	<b>44</b>



Local Champions:..... 44

Gender Inclusion:..... 45

Cultural Integration:..... 46

Youth Engagement:..... 47

Teacher Implementation and Engagement:..... 49

Sustainability Challenges..... 49

**Recommendations..... 50**

    Education Education Education..... 50

        1. Provision of Quality Devices:..... 50

        2. Nationwide ICT Teacher Professional Development:..... 51

        3. Digital Safety and Cybersecurity Education:..... 51

        4. Reimagining the ICT Curriculum:..... 51

        5. Early Introduction of ICT Education:..... 52

        6. Local Content Creation:..... 52

        7. Leveraging Technology for Cross-Curricular Learning:..... 52

        8. Cloud Assessment and Feedback Mechanisms:..... 52

    The Transformative Impact of the PacifiCode Pilot on ICT Education..... 53

**Acknowledgement..... 54**

**Stakeholders..... 55**

**Charting the Digital Future: A Collaborative Vision for Samoa's Education..... 56**

**BIBLIOGRAPHY..... 58**

**APPENDIX..... 64**

    Project Key Indicators..... 64

    News Articles..... 65

    Tools, Technologies and Digital Tools Used in the Pilot..... 65

    Ten Schools..... 66

    Total student numbers and gender..... 67

    Professional Development (PD) Samoa workshops, “ICT PD workshops and Training”, and “workshops conducted”..... 67

    After-School ICT Program, Student Course Outline, Material and outcomes..... 71

    Methodologies..... 72

    Rationale for Digital Fluency..... 73

    CA ICT Teacher Professional Development & Certification..... 74

    CA E-Learning Platform..... 75

    Web-link to Project Surveys..... 76

    Websites of stakeholders..... 76

    Web-links to Individual School Reviews Report..... 76



## Executive Summary: PacifiCode Digital Fluency Pilot Report

### Introduction

The PacifiCode Project, initiated in Samoa, is a transformative initiative designed to tap into the vast educational potential of the Internet. By fostering digital fluency among educators and students, the project aims to equip participants with the necessary skills and knowledge to navigate the challenges and leverage the opportunities of the digital age.

### Stakeholders

**Pilot Schools, Principals, Teachers, and Students:** Central to the initiative, these schools have embraced digital transformation. The active participation of principals, teachers, and students has provided real-world context, making the project's impact tangible and measurable.

**E3 Samoa Trust (E3):** As the charitable arm of BlueWave Wireless Limited, E3's mission revolves around enhancing education in rural Samoan communities, making them a pivotal partner in this endeavour.

**Code Avengers (CA):** Originating from New Zealand, CA's e-learning platform has garnered global acclaim. Designed to equip ICT classrooms with the essential tools and resources, it fosters digital fluency, supporting teachers and preparing learners to navigate our progressively digitalised world.

**ISIF Asia:** Champions for digital advancement in the Asia Pacific region, their generous financial grant is a pivotal force behind the PacifiCode project. Their unwavering support and belief have not only propelled the initiative forward but also underscored the importance of digital inclusivity and empowerment in today's educational landscape.

**Pacific Cooperation Foundation (PCF):** Their early financial backing and advisory have been instrumental in laying a strong foundation for the project. Their commitment and strategic insights have provided the momentum needed to navigate the initial challenges and set the stage for sustainable impact.

### Collaboration for Success

Building relationships with key stakeholders, including government officials, school leadership and administrators, and teachers, has been a strategic move. The project's visibility in local and national media and positive feedback has solidified its reputation. This positions the PacifiCode Project for future expansions and deeper impact in Samoa.



## Methodology

**Culture-First Approach:** Respecting and integrating local culture has been paramount. Before any school activities, blessings and support from local chiefs and community leaders were sought, ensuring a harmonious blend of tradition and modernity.

**Schools and communities involved:** Strategic rollout in select schools ensured the project's success. Schools were chosen based on several criteria, including infrastructure readiness and leadership enthusiasm.

**Capability Building for Sustainability:** The project's dual focus on capability building and sustainability has been its strength. With tools and training, teachers can seamlessly integrate ICT education.

### Rationale for ICT Education

The internet, a vast digital library, offers unparalleled educational tools and content. However, to harness this potential, educators need Digital Fluency. The project emphasised this, ensuring educators can effectively tap into these resources.

### Key Tools and Technologies

Participating schools were fitted with high-speed internet connectivity and supplied with high-quality laptops. These devices, pre-installed with leading software, ensure optimal performance. The CA e-learning platform, with its interactive content and real-world projects, has been central to the project, enhancing the learning experience.

### Training and workshops conducted

Beyond providing technology, the project emphasised capacity building. Schools were equipped with laptops, and key teachers underwent intensive ICT training. This holistic approach ensured that the digital transformation was both profound and enduring.

## Conclusion

### A strong case for expansion

The PacifiCode Project stands as a testament to the power of collaborative efforts in bridging the digital divide. By integrating modern technology with the rich cultural fabric of Samoa, the initiative has not only equipped schools with digital tools but has also empowered educators to lead the next generation into a digitally fluent future. The project's success, underpinned by its culture-first approach, strategic partnerships, and emphasis on capacity building, sets a precedent for similar initiatives in the Pacific region. As we reflect on the journey thus far, it's evident that the PacifiCode Project has laid a robust foundation for Samoa's digital evolution, ensuring that its youth are well-prepared to thrive in the global digital landscape. The lessons learned, relationships forged, and successes achieved pave the way for a brighter, more connected future for Samoa and its upcoming generations.



## ACRONYMS

- ❖ **CA** - Code Avengers
- ❖ **CT** - Computational Thinking
- ❖ **DR** - Data Representation
- ❖ **E3** - E3 Samoa Trust
- ❖ **E-Learning** - Electronic Learning
- ❖ **ICT** - Information and Communication Technology
- ❖ **ISIF Asia** - Information Society Innovation Fund Asia
- ❖ **ISP** - Internet Service Provider
- ❖ **MESC** - Ministry of Education, Sports, and Culture
- ❖ **MoU** - Memorandum of Understanding
- ❖ **PD** - Professional Development (as in "ICT Teacher Professional Development")
- ❖ **PDFP** - PacifiCode Digital Fluency Pilot (The name of the collaboration and the name of the pilot)
- ❖ **PCF** - Pacific Cooperation Foundation
- ❖ **PR** - Programming
- ❖ **RSE** - Regional Seasonal Employment
- ❖ **STEM** - Science, Technology, Engineering, and Mathematics
- ❖ **UN SDGs** - United Nations Sustainable Development Goals

## DEFINITIONS OF TERMS

**Adaptive Learning:** An educational method that uses computers as interactive teaching devices, adjusting the educational content based on the student's performance and needs.

**Ava Ceremony:** A traditional Samoan ceremony that involves the preparation and drinking of a beverage made from the ava root.

**Capability Building:** Enhancing the skills, competencies, and abilities of individuals or groups, enabling them to achieve their objectives.

**Cloud Assessment:** Online tools and platforms that allow educators to assess and provide feedback to students in real time, often stored on cloud servers.

**Cross-Curricular Learning:** An approach to teaching that integrates subjects or topics across different curriculum areas, often using technology as a bridge.

**Cybersecurity:** The practice of protecting systems, networks, and programs from digital attacks, damage, or unauthorised access.



**Digital Age:** The current era is characterised by the widespread use of digital technologies and the internet.

**Digital Archive:** A collection of digital documents, images, videos, and other forms of media stored electronically for preservation and access.

**Digital Content Creation:** The process of producing digital materials, such as videos, articles, graphics, or interactive modules, for online consumption.

**Digital Divide:** The gap between individuals with access to modern information and communication technologies and those without.

**Digital Divide Bridging:** Efforts and initiatives aimed at closing the gap between those with and without access to digital technologies and the skills to use them effectively.

**Digital Engagement:** The interaction and involvement of users with digital platforms, tools, or content.

**Digital Fluency:** The ability to use digital technologies confidently, not just understanding how to use them, but also knowing when and why to use them.

**Digital Innovations:** New or significantly improved digital products, processes, or methods that add value or improve efficiency.

**Digital Infrastructure:** The foundational services necessary for the information technology capabilities of a country or organisation, including internet connectivity, servers, software, and hardware.

**Digital Landscape:** The overall state of digital technologies, platforms, and practices within a specific region, industry, or context.

**Digital Leaders:** Individuals who lead digital initiatives, drive digital transformation, and champion the use of digital technologies within an organisation or community.

**Digital Literacy:** The ability to find, evaluate, utilise, share, and create content using information technologies and the internet.

**Digital Native:** A person born or brought up during the age of digital technology and, as a result, is familiar with computers, the internet, and other digital devices from an early age.

**Digital Pedagogical Techniques:** Teaching methods and strategies incorporating digital tools and technologies to enhance the learning experience.

**Digital Realm:** The environment or space created by digital technologies, including the internet, digital platforms, and online communities.

**Digital Repository:** An online database that stores digital content, ensuring its preservation, management, and access.



**Digital Resources:** Online materials and content, such as e-books, interactive simulations, multimedia lessons, and e-learning modules, provided or recommended by the PacifiCode initiative to support and enrich ICT education.

**Digital Safety:** The knowledge and practices that ensure the internet's and digital tools' safe use, protecting users from potential risks and threats.

**Digital Solutions:** Tools, platforms, or methods that leverage digital technologies to address specific challenges or needs.

**Digital Startups:** New businesses that offer digital or tech-based products and services.

**Digital Storytelling:** Using digital tools and platforms to share narratives or stories, often incorporating multimedia elements like audio, video, and graphics.

**Digital Technologies:** A structured educational program that equips students with the knowledge, skills, and understanding to participate confidently, effectively, and safely in a digital world.

**Digital Tools:** Specific software, applications, or online platforms utilized within the PacifiCode initiative to facilitate and enhance the teaching and learning of ICT concepts.

**Digital Transformation:** Integrating digital technologies into all areas of an organisation or project, resulting in fundamental changes to how operations are conducted and value is delivered.

**E-Learning Platform:** An online system or software that provides educators and learners with tools and resources for teaching and learning in a virtual environment.

**Fa'a Samoa:** The Samoan way; encompasses the Samoan lifestyle, culture, and traditions.

**Facilitators:** Key individuals or entities in the PacifiCode pilot responsible for guiding and ensuring effective program delivery.

**Gamified Lessons:** Educational lessons or modules incorporating game design elements to enhance engagement and motivation.

**Grassroots Initiatives:** Community-driven projects or movements that start from the ground up, often initiated by residents or community members.

**ICT (Information and Communication Technology):** Refers to technologies that provide access to information through telecommunications, including the internet, wireless networks, cell phones, and other communication mediums.

**ICT Teacher Professional Development:** Training programs designed to enhance educators' digital skills and knowledge, enabling them to effectively teach ICT concepts and integrate digital tools into their teaching methodologies.

**ICT Teacher Training:** A specialized program within the PacifiCode initiative designed to equip educators with the skills, knowledge, and confidence to effectively teach Information and Communication Technology (ICT) concepts and integrate digital tools into their teaching methodologies.





**Infrastructure Readiness:** The preparedness of a region or institution regarding its physical and digital infrastructure to support specific initiatives or technologies.

**Localised Content:** Digital content tailored to resonate with a specific culture, region, or community, making it more relatable and engaging.

**Methodologies:** The specific teaching and learning strategies adopted in the PacifiCode pilot to ensure effective delivery and comprehension of ICT concepts.

**PacifiCode:** A pilot initiative aimed at boosting digital fluency among primary students in Samoa, integrating infrastructure, teacher training, and curriculum adaptation.

**Pedagogical techniques:** Teaching methods used in the PacifiCode pilot, blending traditional and digital education strategies for optimal student learning.

**Professional Development (PD):** A continuous process of acquiring new skills or knowledge, pertinent in the context of the PacifiCode report to the training and upskilling of teachers in digital fluency and ICT methodologies.

**Project Key Indicators:** A set of specific and measurable metrics used to evaluate a project or initiative's success, progress, and impact.

**Real-World Projects:** Projects that address actual challenges or needs in a practical context instead of hypothetical or simulated scenarios.

**Regional Seasonal Employment (RSE):** A program permitting Pacific nationals to work temporarily in certain sectors, such as agriculture, in host countries.

**Stakeholders:** Individuals, groups, or organisations that have an interest or concern in a project or initiative and can be affected by its outcomes.

**Virtual Library:** An online collection of digital resources, including books, articles, videos, and other educational materials, accessible from anywhere with an internet connection.

## GUIDING PRINCIPLES

### 1. National Information and Communication Technology in Education Policy 2018 - 2023

Government of Samoa Ministry of Education, Sports and Culture <sup>1</sup>

#### 4. POLICY STATEMENTS

4.1 ICT Literacy as a Life Skill

4.2 ICT as a School Subject (Computer Studies)

4.3 ICT for Teaching and Learning (all subjects)

<sup>1</sup> (School Governance Policy, 20018-2023)



**2. Inclusivity and Equal Opportunity:**

Every child should have access to quality digital education regardless of location or background.

UN SDG: Goal 4: Quality Education - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all<sup>2</sup>.

**3. Cultural Respect and Integration:**

Digital education initiatives should respect and integrate local cultures and traditions, ensuring that technology complements rather than replaces cultural values.

UN SDG: Goal 11: Sustainable Cities and Communities - Make cities and human settlements inclusive, safe, resilient, and sustainable<sup>3</sup>.

**4. Empowerment through Digital Fluency:**

Beyond digital literacy, the PacifiCode Digital Fluency Pilot should empower students to use technology for creativity, innovation, and problem-solving.

UN SDG: Goal 8: Decent Work and Economic Growth - Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all<sup>4</sup>.

**5. Safety and Security in the Digital Realm:**

As students become more digitally active, the PacifiCode Digital Fluency Pilot should educate them about the importance of online safety and cybersecurity.

UN SDG: Goal 16: Peace, Justice, and Strong Institutions - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels<sup>5</sup>.

**6. Sustainability and Long-Term Vision**

Digital education initiatives should be designed with a long-term vision, ensuring that their impact remains sustainable and continues to thrive beyond the immediate scope of the project.

UN SDG: Goal 17: Partnerships for the Goals - Strengthen the means of implementation and revitalise the global partnership for sustainable development<sup>6</sup>.

**7. Collaboration and Partnership**

Collaborative efforts, especially with local institutions and ministries, can amplify the impact and reach of digital education initiatives.

UN SDG: Goal 17: Partnerships for the Goals - Strengthen the means of implementation and revitalise the global partnership for sustainable development<sup>7</sup>.

<sup>2</sup> (United Nations SDG Goal 4, n.d.)

<sup>3</sup> (United Nations Goal 11 | Department of Economic and Social Affairs, n.d.)

<sup>4</sup> (United Nations Goal 8 | Department of Economic and Social Affairs, n.d.)

<sup>5</sup> (United Nations Goal 16 | Department of Economic and Social Affairs, n.d.)

<sup>6</sup> (United Nations Goal 17 | Department of Economic and Social Affairs, n.d.)

<sup>7</sup> (United Nations Goal 17 | Department of Economic and Social Affairs, n.d.)



## Project Background & Context



IMAGE: Teachers at Faleasiu Primary receiving their ICT Certification during a Special Assembly in July 2023. Students, parents and chiefs all in attendance to celebrate Teacher's achievement

### PacifiCode's Vision, Mission & Purpose

**Vision:** "Navigating Digital Horizons" – A Samoa where every young mind is empowered to sail the vast seas of the digital age.

**Mission:** Committed to bridging Samoa's digital divide from the grassroots. By instilling digital confidence in every child, we aim to future-proof Samoa, ensuring no one is left behind in the digital age.

**Purpose:** To cultivate a digital talent pipeline in Samoa, empowering Samoan youth to navigate and lead in a rapidly evolving digital world, helping to diversify the Samoan economy, and strengthening Samoa's national identity in the global digital landscape.



## The Big Issues

In Samoa, the path to comprehensive ICT education has multifaceted challenges. As technology advances at an unprecedented rate, it inadvertently contributes to widening **the digital divide**. The COVID-19 pandemic has starkly accentuated this chasm, underscoring the pressing need to bridge the gap between those equipped with digital resources and those left in the digital shadows.

The Samoan Government's School Wi-Fi project is a laudable initiative that has laid a strong foundation by ensuring internet connectivity for 120 schools<sup>8</sup>. *"This is a great day, that this day has finally come to launch this important project... This is an important program for the future prosperity of our children's future. These machines and equipment we are putting up are for your teachers to use, and those who understand how to use this equipment, to use this technology to help you complete your school work."* Minister La'aulialemalietoa Leuatea Polataivao Schmidt said at the Launch of the School Wi-Fi project in Savai'i.<sup>9</sup>



IMAGE: Satellite Dish installed by Bluewave Wireless in June 2022 to help with internet connectivity under the School WiFi Connectivity Project

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<sup>8</sup> (Talamua Media, 2022)

<sup>9</sup> (Talamua Media, 2022)



This visionary step from the Government has bridged a significant gap in the digital landscape of Samoa. However, while this connectivity is a monumental stride forward, many schools, especially in rural areas, still need help **accessing digital resources and equipment**. They may have access to the internet, but the absence of modern ICT equipment limits their ability to harness its full potential. This situation underscores the importance of complementing connectivity with the necessary tools to unlock online education's transformative power.

**Future-Proofing Overseas Employment and the RSE Scheme:** A notable aspect of Samoa's socio-economic dynamics is the migration of its citizens to countries like Australia and New Zealand in search of employment, mainly through the Regional Seasonal Employment (RSE) Scheme. While this program offers Samoans a chance to earn a competitive income, it also highlights the pressing need for robust ICT education in Samoa. By enhancing digital skills and ICT proficiency, Samoa can foster local job opportunities, potentially reducing the need for its citizens to seek employment abroad. Strengthening the local digital ecosystem not only retains talent but also positions Samoa to capitalise on the opportunities presented by the digital age.

The educational framework itself presents its set of challenges. There's a pressing need for **continuous Professional Development (PD)** for educators in ICT. Many teachers, while passionate, may not have been exposed to the latest digital tools or teaching methodologies intertwined with the challenge of **curriculum integration**. While the importance of ICT is recognised, seamlessly weaving it into the broader educational tapestry in a manner that resonates with students remains a task.

Socio-economic factors also play a pivotal role. In certain communities, there might be a **limited awareness** of the transformative potential of ICT education. This can lead to it being sidelined in favour of other subjects perceived as more immediately beneficial. Gender disparities further complicate this. Like many places globally, STEM fields in Samoa have historically seen lower female participation. Addressing these biases to ensure equal opportunities is paramount<sup>10</sup>.

Another challenge lies in the ICT curriculum content itself. Much of the available digital educational material is not tailored to the **Samoa context**, potentially making it less engaging for students.

Lastly, the issue of **sustainability** looms large. While various initiatives might kickstart with enthusiasm, ensuring their longevity in terms of resources, funding, and community engagement is a complex endeavour.

A collaborative approach involving educators, policymakers, communities, and international stakeholders is essential in addressing these challenges. As technology continues its relentless march forward, it's imperative that Samoa not only keeps pace but harnesses these advancements to improve its educational landscape.

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<sup>10</sup> (OECD.org & Squicciarini, n.d.)



## PacifiCode's Visionary Solution

### Navigating the Digital Future: Samoa's Journey of Empowerment and Progress

In the heart of the Pacific, Samoa stands on the cusp of a transformative digital era. The challenges are evident, but so is the untapped potential of its youth. Recognising this, the E3 team, in collaboration with CA, has crafted a holistic, forward-thinking solution. Our mission transcends mere technology; it's a clarion call for empowerment, innovation, and progress.

We envision a Samoa where every school is a hub of digital excellence, where students navigate the digital realm with confidence and creativity. To realise this, we're committed to equipping our schools with state-of-the-art ICT tools, ensuring seamless internet connectivity, and, most crucially, investing in our educators. Through advanced training and continuous teacher PD, we aim to transform our teachers into digital champions, leading their students into the future.

Our ambition doesn't stop at infrastructure and training. We aim to foster an **environment where students not only consume digital content but create it.** We're nurturing critical thinkers, problem solvers, and digital innovators<sup>11</sup>.

Our commitment is unwavering: to bridge the digital divide and ensure that Samoa is not just a participant but a leader in the global digital age<sup>12</sup>. Together, we're crafting a digital legacy for Samoa, ensuring that the next generation is not only outfitted for the challenges ahead but also poised to seize the myriad opportunities the digital world offers.

### Starting at the Grassroots: The Foundation of Lasting Impact

At the core of the "10 School PacifiCode Digital Fluency Pilot" (PDFP) goals, is the belief in the power of grassroots initiatives. By focusing on primary schools, we are investing in the earliest stages of education, where foundational skills and attitudes are formed. During these formative years, students develop curiosity, resilience, and a genuine love for learning<sup>13</sup>. By introducing ICT education at this level, we ensure that digital fluency becomes a natural part of their educational journey. This early exposure equips them with essential digital skills and fosters a mindset that views technology as a tool for innovation, creativity, and problem-solving. By rooting our efforts in primary schools, we aim to cultivate a generation of Samoans who are not just digitally competent but are also digital leaders, ready to navigate and shape the future

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<sup>11</sup> (WEF\_New Vision for Education: Fostering Social and Emotional Learning through Technology, 2016)

<sup>12</sup> (ITU, 2019) (ITU\_Measuring digital development Facts and figures 2019, 2019)

<sup>13</sup> (*A World Ready to Learn*, 2019)



## Why ICT Education

**Economic Evolution:** Pacific Island nations' future economic growth lies in the potential for diversification. While Samoa has traditionally leaned on specific sectors, the digital realm offers many opportunities. A workforce adept in ICT can attract global investments, stimulate innovation, and drive the nation's economic engine forward, positioning Samoa as a competitive player in the digital global economy<sup>14</sup>.



IMAGE: Students at Siufaga Primary learning digital technologies through STEM code camp September 2021

**Empowerment Through Creation:** Beyond just interacting with technology, ICT education can empower Samoans to be at the helm of technological creation. This shift from being mere consumers to active creators can unlock online education's transformative power, enhance education, reduce youth unemployment, and promote social and economic development. Youth can only leverage the transformative power of ICTs when they have access to ICTs and are equipped with a range of digital skills to use to their benefit<sup>15</sup>. It enables the development of tailored solutions that address local challenges, fostering a spirit of self-reliance and innovation.

**Bridging the Knowledge Gap:** The digital world is a treasure trove of knowledge. We're developing students with the keys to this vast library with ICT skills. They gain the ability to access global educational resources, transcending geographical and financial barriers and tapping into a reservoir of global expertise.

<sup>14</sup> (World Development Report 2016: Digital Dividends, 2016)

<sup>15</sup> (ITU-D DIGITAL INCLUSION YOUTH AND CHILDREN, n.d.)



**Preparing for Tomorrow:** The future workplace landscape is set to be dominated by automation and artificial intelligence. By prioritising ICT education now, Samoa is **future-proofing** its workforce, ensuring that the next generation remains relevant, adaptable, and ready to seize the jobs of tomorrow<sup>16</sup>.

**Championing Equity:** The quest for ICT education is also a stride towards social justice. By democratising access to digital skills, we ensure that every Samoan student has an equal chance at success, irrespective of their background. This commitment to inclusivity can help bridge societal inequities, offering every child a platform to soar.

**Resilience in Adversity:** Recent global events, like the COVID-19 pandemic, have underscored the value of digital preparedness. Nations with a strong digital foundation have showcased greater resilience, from facilitating remote work to ensuring uninterrupted learning. By championing ICT education, Samoa is not just preparing for the present but fortifying itself against future adversities<sup>17</sup>.

**Celebrating Samoan Heritage:**

The digital realm offers a unique avenue to celebrate and preserve Samoa's rich cultural tapestry. With the tools and skills acquired through ICT education, the stories, traditions, and values of Samoa can be documented and shared, ensuring they resonate with future generations and the wider world.<sup>18</sup>



IMAGE: Ava Welcoming Ceremony "Ava Feiloaiga" by students of Palauli Primary School during the launch of the PacifiCode Initiative, April 2023

<sup>16</sup> (WEF: Future of Jobs et al., 2018)

<sup>17</sup> (*Embracing Digital Learning and Online Collaboration*, 2020)

<sup>18</sup> (UNESCO: ICTs AND INDIGENOUS PEOPLE & Resta, 2011)





## The Beginnings: Phase 1

As significant progress in connecting Samoa's schools to the internet via satellite was underway, many schools would still lack access to online learning resources, and there was a noticeable scarcity of operational laptops or desktop computers. Moreover, the teachers, though enthusiastic, had limited exposure to online platforms and often lacked the confidence to teach ICT.



IMAGE: Official launch of the first code camp in 2021. Pastor, chiefs, teachers and students of the Siufaga community in attendance

In 2021, the E3 team, in collaboration with CA and PCF embarked on an exploratory mission to harness the newfound digital connectivity in schools. They initiated a five-day Code Camp at Si'ufaga Seventh Day Adventist Primary School in Savai'i. This pilot aimed to assess both teacher receptiveness to ICT education and student engagement with digital platforms accessible solely via computers. The outcomes were overwhelmingly positive: teachers showcased enthusiasm and commitment, while students displayed an innate aptitude for technology and the digital content. Building on the insights from this initial pilot, it was unanimously agreed that PacifiCode should evolve its approach to offer a more holistic, impactful, and sustainable program.<sup>19</sup>

Recognising these challenges and aligning with the United Nations Sustainable Development Goal 4 (SDG 4)<sup>20</sup> on quality education, the "PacifiCode Digital Fluency Pilot" (PDFP) was conceived as a joint venture between E3 and CA. PacifiCode aims to foster a sustainable framework for digital education in Samoan schools, directly addressing Target 4.4 of SDG 4, emphasising the importance of ICT education and the acquisition of relevant

<sup>19</sup> (Samoa Observer & Sanerivi, 2021)

<sup>20</sup> (United Nations, n.d.)



skills for the digital age<sup>21</sup>. The focus is empowering local entities, ensuring E3's independence, and instilling confidence in community leaders. By training Samoan facilitators and educators, the project aspires to cultivate a robust ICT education environment where students are prepared for the digital future in line with global standards set by the United Nations.

PacifiCode aimed to replicate this pilot's achievements across a broader spectrum of Samoan schools. The ultimate goal is a lasting digital transformation, benefiting educators and students in the PDFP and contributing to the global vision of inclusive and equitable quality education for all<sup>22</sup>.

## Phase 2: Ten School PacificCode Digital Fluency Pilot (PDFP)

### The Pilot Objectives and Outcomes

In our ambitious Ten Schools PDFP, we were laser-focused on bridging the digital divide in Ten of Samoa's Primary schools. By establishing a fun and engaging After School ICT program.

Equip schools with high-quality devices and give teachers ICT training to access high-quality online learning resources; we're enhancing access and ensuring quality digital education. This aligns with SDG 4, emphasising inclusive and equitable quality education for all<sup>23</sup>.

**Empowering our Educators** is a vital part of PDFP's mission. A key learning from the Suifaga pilot was more focus on building capabilities in schools hence in Phase Two of PDFP we're investing in teachers professional growth, transitioning them into more confident and digitally fluent educators. We are offering an ICT Professional Development (PD) certification program. This all-inclusive approach to teacher development is pivotal in achieving SDG 4's target of increasing the number of youth and adults with relevant skills<sup>24</sup>.

Our vision extends beyond the classroom. Through our after-school PDFP, the selected schools are fostering a **generation ready to harness technology** for sustainable development. This not only aligns with SDG 8, promoting sustained, inclusive, and sustainable economic growth<sup>25</sup>, and SDG 9<sup>26</sup>, building resilient infrastructure and fostering innovation.

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<sup>21</sup> (*Transforming Our World: The 2030 Agenda for Sustainable Development* | Department of Economic and Social Affairs, n.d.)

<sup>22</sup> (McLoughlin, 2011, #)

<sup>23</sup> (ITU\_Measuring digital development Facts and figures 2019, 2019)

<sup>24</sup> (*Transforming Our World: The 2030 Agenda for Sustainable Development* | Department of Economic and Social Affairs, n.d.)

<sup>25</sup> (*Goal 8* | UN Department of Economic and Social Affairs, n.d.)

<sup>26</sup> (*Goal 9* | UN Department of Economic and Social Affairs, n.d.)



## Project Key Indicators:

### Connectivity

- Providing a two-year internet data package, laptops and three-year licences to CA e-learning Platform to ten schools.

### In-Country Partners Capability Building

- Supporting the team of four E3 facilitators to effectively deliver the teacher PD program to 40+ teachers across ten schools.

### Teacher Capability Building

- Equipping 40 teachers with the skills to offer ICT lessons to their students.
- Each teacher will participate in the CA teacher certification program.
- Face-to-face workshops
- Ongoing support throughout the pilot

### Adoption & Engagement

- Integration of the PDFP ICT After-school Program
- Engagement of Students and teachers on the CA e-learning platform
- Progress of Students on ICT Courses on the e-learning Platform
- 40+ teachers CA ICT PD Certified

### Equality

- Providing equal opportunities to female students to engage in ICT learning.
- 150+ female students participating in the PDFP after-school program to kick-start their digital fluency journeys.

## Objectives

1. **Enhance Digital Fluency:** Through the PDFP After-School program, elevate the digital skills and understanding of teachers and students participating in the pilot, ensuring they can confidently navigate and utilise digital tools and resources<sup>27</sup>.
2. **Community Engagement:** Foster genuine community engagement by collaborating closely with local chiefs, leaders, and communities<sup>28</sup>, ensuring the project resonates with the unique needs and aspirations of each community served<sup>29</sup>.
3. **Integrate Digital Tools:** Through the PDFP After-School program, we aim to integrate digital tools, resources, and methodologies into our pilot schools, transforming traditional classrooms into dynamic learning environments<sup>30</sup>.

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<sup>27</sup> (WEF\_New Vision for Education: Fostering Social and Emotional Learning through Technology, 2016)

<sup>28</sup> (E3 Samoa Trust, 2023)

<sup>29</sup> (Tandon, 2008, #)

<sup>30</sup> (Ertmer & Ottenbreit-Leftwich, 2013, #)



4. **Teacher Upskilling:** Provide intensive ICT Teacher PD for all participating teachers, equipping them with the skills to effectively integrate digital tools into their teaching methodologies and become catalysts for change within their schools<sup>31</sup>.
5. **Sustainable Digital Infrastructure:** Establish and enhance digital infrastructure in participating schools, and increasing the ICT capability of our participating teachers will help deliver long-term sustainability as the capability is now built into the school<sup>32</sup>.
6. **Promote Gender Inclusion:** Ensure that the project promotes gender inclusivity at every stage, from planning to implementation, guaranteeing that both male and female participants have equal access to resources, training, and opportunities<sup>33</sup>.

## Outcomes

1. **Broad Implementation:** Successfully implement an After-School ICT program at all Ten PDFP schools selected across Samoa, encompassing urban and rural settings, reaching many students and educators.
2. **Teacher Training and Certification:** We aim to have 40+ teachers trained in digital fluency, with many embarking on a certification journey through the CA e-Learning Platform, achieving the CA ICT Teacher PD certification.
3. **Infrastructure Enhancement:** Enhance digital infrastructure in participating schools, providing them high-speed internet connectivity and high-quality devices pre-installed with leading software.
4. **Community Collaboration:** Achieved by active collaboration and community feedback, ensuring the project's alignment with local values, traditions, and educational objectives.
5. **Digital Resources:** Successfully integrating teacher and student digital resources through the after school ICT program at each of the participating schools
6. **Tangible Gender Participation:** Ensure equitable access and participation for both male and female students and educators, promoting gender inclusivity in digital education and fostering an environment where all individuals, regardless of gender, have equal opportunities to learn and thrive.

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<sup>31</sup> (UNESCO ICT Competency Framework for Teachers, n.d.)

<sup>32</sup> (Building Technology Infrastructure for Learning, 2019)

<sup>33</sup> (Harnessing the Power of Data for Girls: Taking Stock and Looking Ahead to 2030 - UNICEF DATA, 2016)



## Results: Planting Digital Foundations in Savai'i and Upolu

### Project Key Indicators

#### 1. Connectivity

The initiation of the PDFP faced a delay of approximately three months due to the extended completion time of the preceding school Wi-Fi initiative. This initiative was a vital foundation for the PDFP. Despite this initial setback, the project successfully kicked off at Palauli Primary School in Savai'i on the 18th of April, 2023.



IMAGE: Opening of Sasina Primary School Laptop Center, May 2023. Chief Orator, President and Teachers grateful for the donation of the 12 new laptops PacifiCode Initiative

We are pleased to announce that all ten pilot schools, representing **100% of the target**, have been equipped with their designated laptops, **111 laptops in total**. Additionally, each school has been granted a **two-year internet data package distributed monthly**. All ten participating schools have received **3-year licenses to the CA e-learning platform**, ensuring a comprehensive digital learning experience for the students participating in the PDFP after-school ICT program.



### School Data

School	Internet Connectivity	Student CA Licences	Teachers CA Licences	Laptops
Faleasiu Primary	✓	192	10	10
Palauli Primary	✓	118	7	15
Satapuala Primary	✓	139	7	10
Gagaemalae Primary	✓	162	9	10
Sasina Primary	✓	45	6	10
Lotofaga Primary	✓	68	5	12
Auala Primary	✓	29	4	10
Falelima	✓	48	4	10
Samata Uta	✓	104	10	10
Suifaga Primary	✓	48	2	14
<b>Total</b>	<b>10</b>	<b>953</b>	<b>38/64</b>	<b>111</b>

## 2. In-Country Partners Capability Building

Central to this partnership is the emphasis on building E3's capabilities to ensure long-term sustainability. As the E3 team's skills, knowledge, and confidence in delivering ICT workshops expand, the overall quality of digital education in Samoa rises. The growth in the quality of E3's facilitation directly correlates with enhancing their trainees' skills.



IMAGE: Project Manager/E3 Facilitator presenting to Associate Minister/District Member of Parliament, principal, teachers, chiefs and PTA about the PacifiCode Initiative March 2023



In preparation for the pilot's launch, four E3 facilitators engaged in online sessions with CA Teacher Professional Development (PD) facilitators from New Zealand, accredited by the New Zealand Ministry of Education (MOE). These collaborative sessions, spanning several months, were instrumental in co-constructing the training workshops to be delivered to teachers in the PDFP. The E3 facilitators familiarised themselves with the CA e-learning platform and completed the necessary courses to achieve the status of CA-certified facilitators. A notable outcome of this collaboration was developing a custom “Pacific Flags” programming course tailored to resonate with Samoan teachers. Additionally, audio enhancements were integrated into some of the teacher PD certification courses for improved accessibility<sup>34</sup>.

In the final two weeks of April 2023, two CA facilitators visited Samoa. Their primary mission was to support the E3 team by leading the ICT PD workshops; specifically, Palauli Primary School<sup>35</sup> and Lotofaga Primary School. Both workshop received great support in the attendance of Honourable Prime Minister Fiame Naomi Mataafa and Minister of Education Sports and Culture Honourable Seuula Ioane<sup>36</sup>. At the launch at Lotofaga Primary School, Honourable Prime Minister Fiame Naomi Mataafa eloquently remarked, “*Just as our ancestors learned to navigate and fish the vast oceans through trial and error, we too must embrace technology with the same spirit. Though technology is a new frontier for us, we must actively participate, learn through trial and error, and draw inspiration from our ancestors who mastered navigation and fishing. Just as they charted their course, we too will find our way in the digital realm*”<sup>37</sup>.

While the E3 team had a strong foundation in ICT support, they were initially less assured in their teaching capabilities. Observing the seasoned CA facilitators in action provided the E3 team with invaluable insights and bolstered their confidence in ICT instruction.

As the CA facilitators time in Samoa came to an end, CA's trust in the E3 team's expertise was firmly established. They were impressed by the E3 team's adeptness in conducting ICT teacher PD sessions using the CA materials and platform. What stood out for the CA team was the tangible difference local facilitation made during the ICT PD workshops in the first two schools. The resonance of the content and platform was unmistakably more profound when presented in the Samoan language, emphasising the pivotal role of cultural and linguistic alignment in education. This experience reinforced the significance of harnessing local knowledge to maximise the program's effectiveness, longevity and impact.

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<sup>34</sup> (Talamua Online News, 2023)

<sup>35</sup> (Sua Leota, 2023)

<sup>36</sup> (Sua Leota, 2023)

<sup>37</sup> (Sua Leota, 2023)



### 3. Teacher Capability Building



Fundamental to PDFP's success was a deep-seated commitment to enhancing teacher ICT capability. We recognised the transformative role educators play in charting the digital trajectory of future generations. To this end, our mission was not merely to give them with tools but to set them on a transformative journey towards digital fluency<sup>38</sup>.

IMAGE: E3 Facilitator working together with teachers of Gagaemalae Primary School teachers on their Professional Learning Development Courses during the week long Code Camp in June 2023.

The PacifiCode facilitators implemented pre and post-surveys to gauge this journey's starting point and measure the ICTworkshops impact. The surveys were crafted to capture the initial levels of teacher experience, confidence, and knowledge in ICT. The results from these surveys provided invaluable insights, allowing us to tailor our approach to meet the unique needs of each school.

The teacher ICT PD workshops commenced with engaging opening ceremonies that were well-received by the participants and the wider school community. These ceremonies included the Ava Feiloaiga, a traditional welcoming ritual where chiefs and orators offered kava to guests. Similarly, the Faaloaloga allowed village chiefs to express gratitude through cultural gifts. Such ceremonies were held at every school during the PDFP, fostering an environment of engagement and appreciation for diversity in education.

Each school's journey commenced with an intensive 4-day workshop. These workshops were designed based on the insights from the pre-surveys, ensuring that teachers were provided with both the theoretical knowledge and practical skills required.

The E3 team have now provided ten four day ICT PD training sessions to 64 primary school teachers across ten schools. The program was well received and covered various topics, from exploring the CA platform to unplugged activities like robot cups, ICT concepts like, data representation, algorithms and computational thinking that served as icebreakers and solidified programming concepts.

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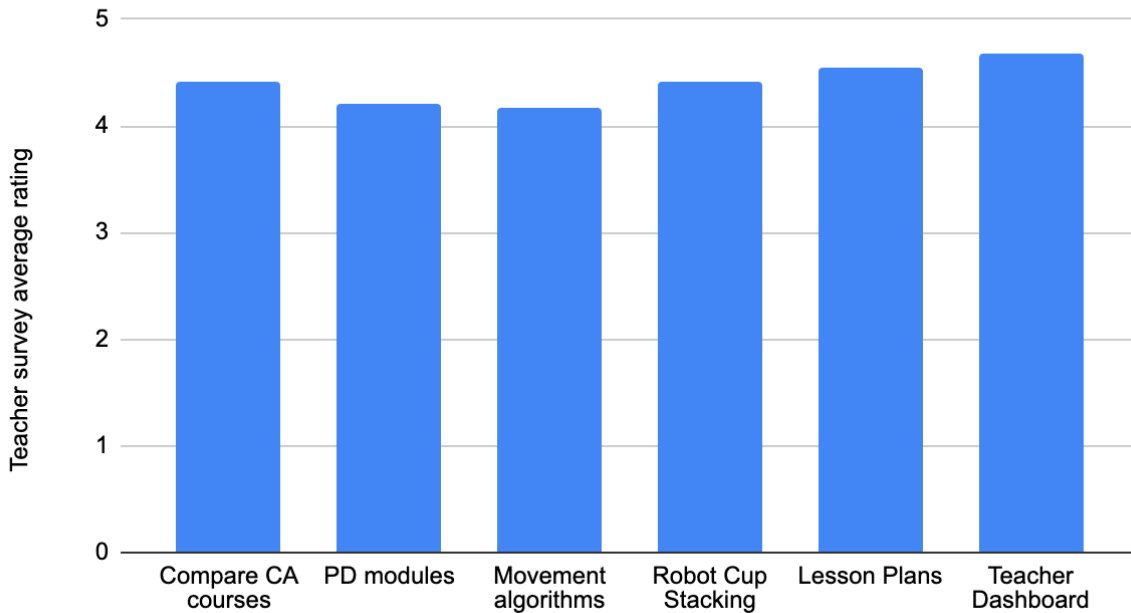
<sup>38</sup> (*Professional Development*, n.d.)





The post-surveys, conducted after the workshops and platform introduction, showcased a marked increase in teacher confidence, skills, and knowledge in ICT.

### How useful did you find the different aspects of ICT training?



**Compare CA courses:** Teachers became familiar with the platform, explored the course library and completed a few online courses.

**Robot cups, movement algorithms:** Unplugged activities which served as ice breakers but also to solidify programming concepts.

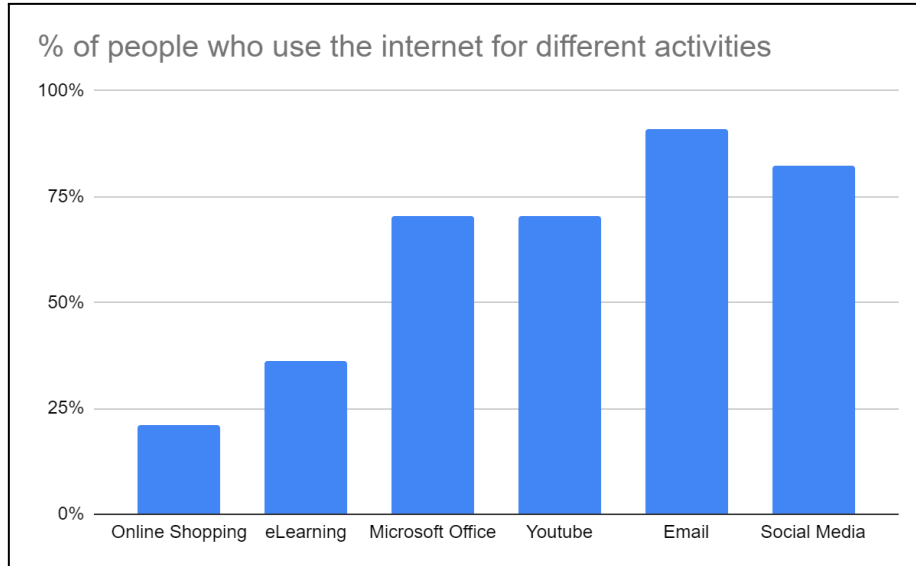
**PD modules:** Online courses designed for teachers to utilise the content and tools of the platform and provide teaching strategies. Completion of these and a series of student courses is a requirement for becoming a CA-certified teacher.

**Teacher Dashboard:** Admin and student tracking tools for the Code Avengers platform.

**Lesson Plans:** 80 hours of teaching material to wrap around the online courses.

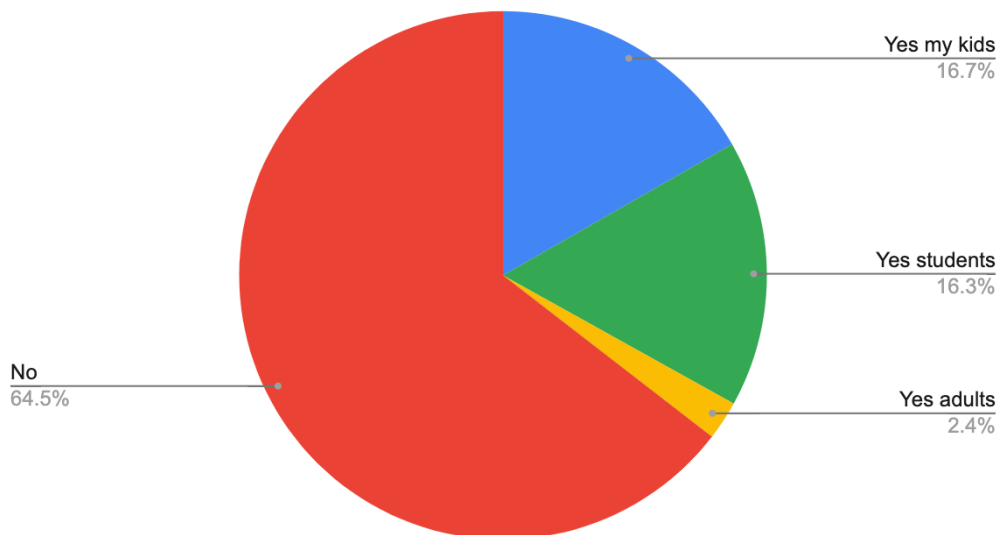


Pre-survey data indicated that the majority of the teachers had not used e-Learning programs or taught ICT to their students before the training.



The majority of teachers had not taught ICT to their students before the training:

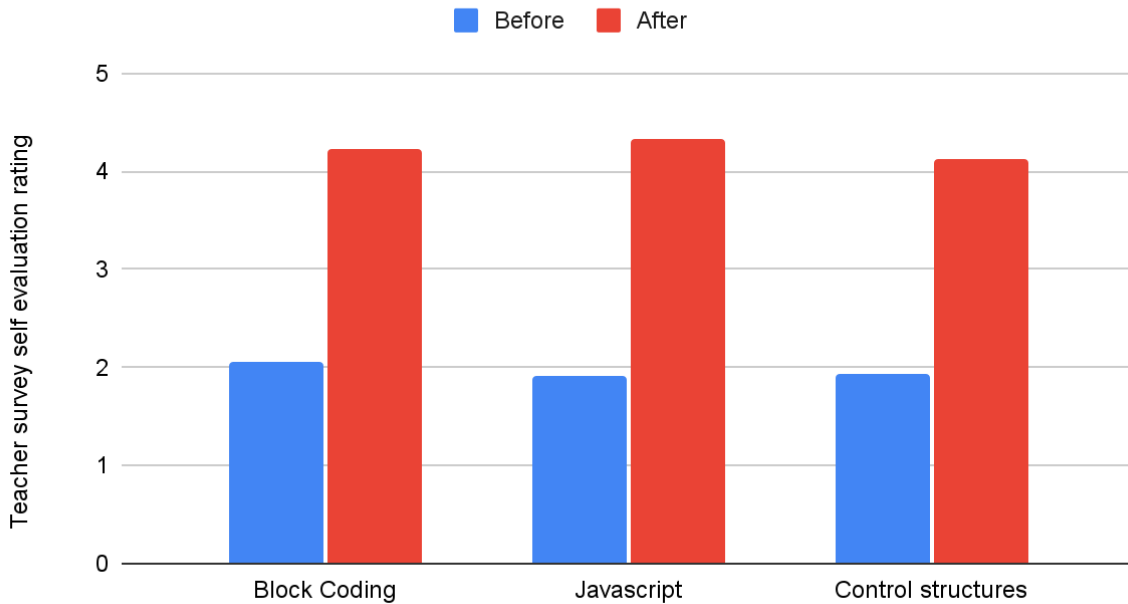
% of teachers who have taught ICT





However, post-training, there was a noticeable increase in the levels of confidence that teachers reported in introducing Digital Technologies.

### Teaching capability rating



Teacher Digital fluency journey to becoming certified CA ICT Teacher by engaging in a number of courses:

Course Code	Course Title
PD100	Why teach Digital Technologies? (Professional development for teachers)
PD101	Effective Classroom Culture (Professional development for teachers)
PD102	Teaching with Code Avengers (Professional development for teachers)
PR100	Introductory block-based programming
JS0	An introduction to JavaScript
CT2	An introduction to Computational Thinking



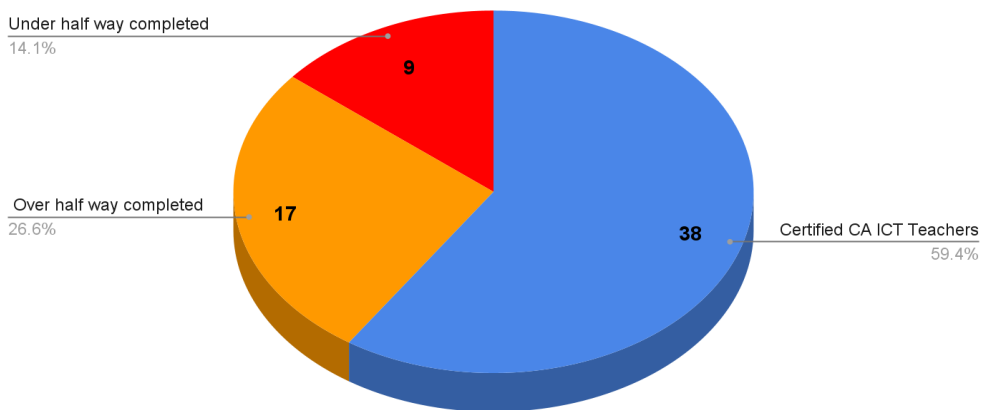
Teacher progress in each school:

Courses	PD100	PD101	PD102	PR100	JS0	CT2
<b>Faleasiu</b>	9	9	9	9	8	2
<b>Lotofaga</b>	0	0	0	5	4	2
<b>Satapuala</b>	4	1	0	5	7	0
<b>Gagaemalae</b>	10	10	9	10	10	3
<b>Sasina</b>	0	0	0	5	5	2
<b>Palauli</b>	8	8	8	8	6	2
<b>Auala</b>	0	0	0	4	4	0
<b>Falelima</b>	0	0	0	5	6	3
<b>Suifaga</b>	2	2	2	2	2	2
<b>Samata Uta</b>	13	13	13	13	12	2

The E3 team has been consistently and diligently following up with the PDFP teachers to encourage them to complete their certification program to have the knowledge to support their students.

Of the 62 dedicated teachers who embarked on this transformative journey, **38 have achieved ICT Teacher Certification through the CA platform**. This is a testament to their dedication and commitment to personal growth and a more digitally enriched future for all their students.

CA ICT Teacher Certification Journey





Teachers of Samata Uta Primary School and District Office Representative's of Salega 1 receiving their Professional Learning Development Certification, September 2023



Teachers of Faleasiu Primary on the main island of Upolu were officially the first teachers and school to complete their Professional Learning Development in Samoa under the PacifiCode Initiative, August 2023



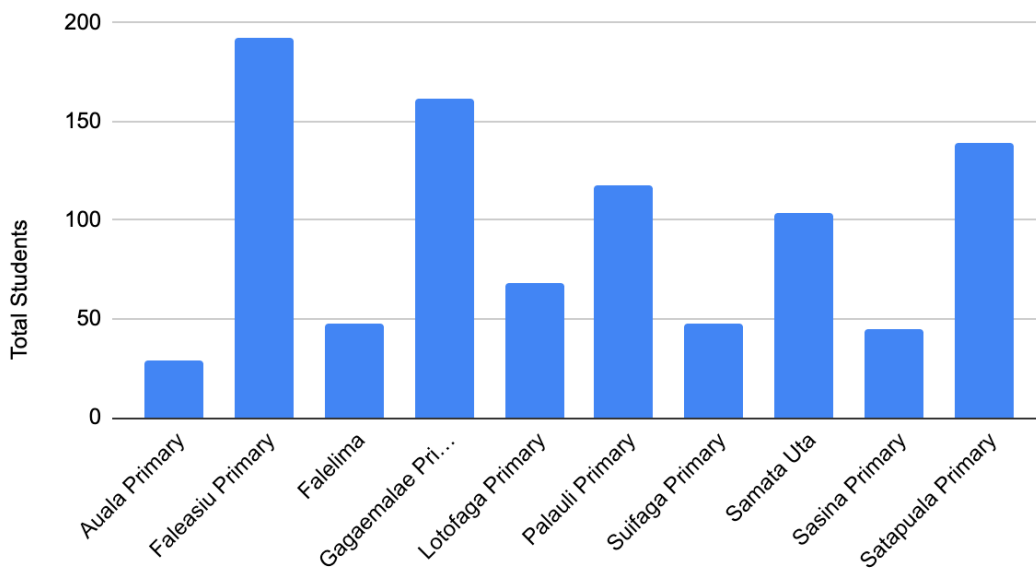
### 4. Adoption & Engagement

The introduction of the ICT After-School Program marked a significant milestone in our journey towards digital empowerment. While the foundational teacher training workshops were delivered across all ten schools, the onus of implementing the "After School Program" was entrusted to each school. This approach was adopted to foster a sense of ownership and to allow each school to tailor the program to its unique needs and challenges.



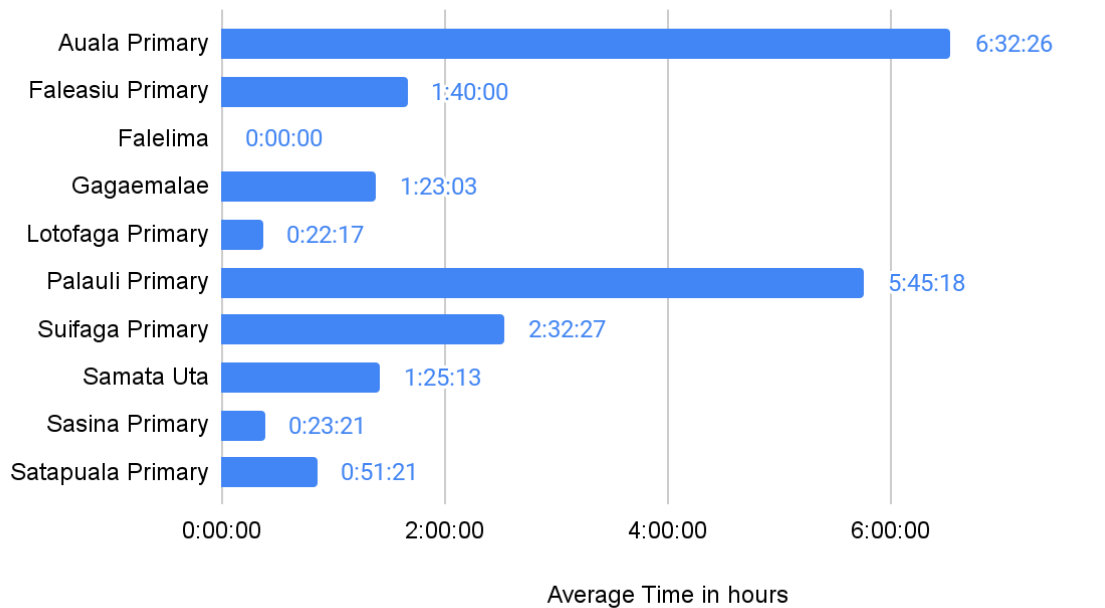
IMAGE: Students, Faleasiu Primary, ICT after school session facilitated by teachers who have completed their PLD Certification, August 2023

### Total Students per school





## Average Time Online Learning Per Student



The results have been a mixed bag of successes and learning opportunities. Six of the ten schools have showcased high engagement levels in the program, with teachers and students actively participating and leveraging the resources provided. Three schools demonstrated medium engagement, while the remaining school lacked student participation. While these numbers indicate areas of improvement, they also highlight the potential and enthusiasm within the educational community.

### Digital Technologies

A particularly heartening statistic emerges when we delve into the engagement metrics on the CA e-learning platform. Over the past six months, students have clocked in over 1,000 hours of lesson engagement, a testament to their dedication and interest. This enthusiasm translates into tangible outcomes, with students completing over 17,000 tasks across courses<sup>39</sup> covering the foundational principles of Digital Technologies like programming, computational thinking and data representation.

The “Computational Thinking” courses played a pivotal role in nurturing students' proficiency in formulating, following, and troubleshooting basic algorithms, particularly concerning outputs and sequencing. These courses served as a strong foundation for our programming courses, where students honed their ability to break down uncomplicated, non-computerized tasks, demonstrating their decomposition skills. They then applied this knowledge to craft precise instructions and algorithms for creating elementary programs, thereby developing their algorithmic thinking capabilities. These principles are the bedrock upon which students

<sup>39</sup> (Code Avengers Curriculum, 2022)



build as they progress to more intricate concepts and programming languages, thereby developing a strong digital fluency foundation.

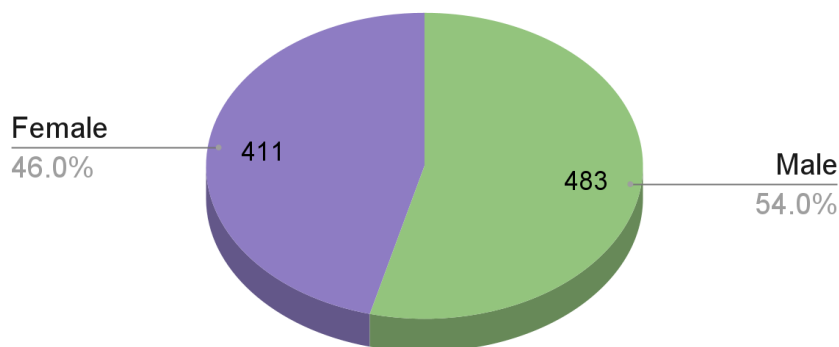
**Inclusion has been a cornerstone of our initiative.** We aimed to ensure that every student, irrespective of gender, had equal access to digital education. We are pleased to report that our efforts have borne fruit. With 46% of the total students being female, we were happy to see that they had the highest engagement, with over 560 hours of learning recorded on the platform. Not only are they participating, but they are also excelling, outperforming their male counterparts in several courses. This achievement underscores the importance of gender inclusion and highlights the untapped potential of our female students.

In summary, while some areas require further attention and support, the overall trajectory of the PDFP after-school program is promising. The enthusiasm of the students, the commitment of the teachers, and the tangible results achieved indicate a brighter digital future for Samoa’s educational community.

## 5. Equality

Our proactive approach to the inclusion of female students has borne fruit. 411 female students have been successfully onboarded and engaging with CA platform. The female participation is inspiring, as female students are engaging and progressing in all courses, especially in programming (PR100, PR2, PR3) and computational thinking (CT200, CT2). Female students, in particular, have showcased an impressive knack for digital language comprehension and platform navigation. An observation from an E3 facilitator encapsulates this: *“The girls not only picked up quickly but also showcased an innate ability to understand digital language and adeptly navigate the digital platform. They were so engrossed that teachers often had to intervene to get them to take breaks from their devices.”*

Total Students by Gender







Armed with the tools and skills imparted through the PDFP, the aim is that female students are not just participants but will emerge as active contributors and innovators in the digital narrative. Their achievements and contributions will testify to the project's success in fostering a more inclusive digital environment.

Total Students by Year and Gender

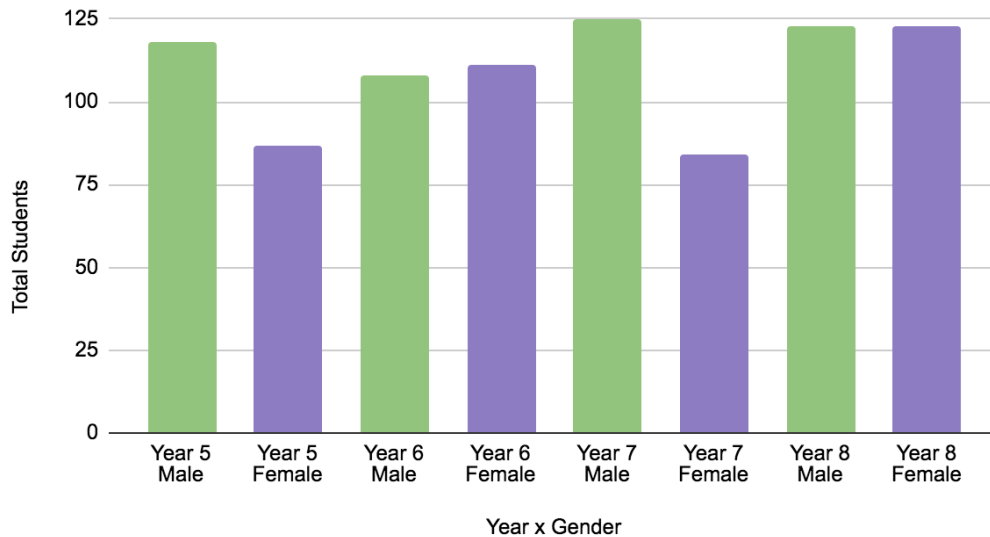


IMAGE: Students at Siufaga Primary learning digital technologies through STEM code camp September 2021

In summary, the results of PDFP are clear. We've achieved almost all our goals and on our way to attaining the remaining goals, whilst setting a precedent for what inclusive digital education can look like.



## ICT PD Workshops & Content:

Understanding that technology alone wouldn't bridge the digital divide, we strongly emphasised capability building.



IMAGE: E3 Facilitator working together with the principal and teachers of Sasina Primary School Professional Learning Development courses during the week long PacifiCode ICT Teacher PD workshops in May 2023.

Key teachers from each school were put forward by school leadership for intensive ICT Teacher training. This training was not just about using computers but was designed to effectively upskill teachers with the skills to integrate digital tools into their teaching methodology.

As these educators progressed in their digital fluency journey, they emerged as catalysts for change within their schools, ensuring the pilot's impact was profound and enduring. To further solidify their expertise, each teacher embarked on a certification journey through the CA Platform, working towards attaining the CA ICT Teacher certification.

## Teacher Certification

Completion of 3 PLD modules:

- [Why teach Digital Technologies](#)
- [Effective Classroom Culture](#)
- [Teaching with Code Avengers](#)

Plus these **computer science fundamentals** from the course library:

- [PR100 Sea Creature Sequences](#)
- [CT2 Creature Feature Zoo\\*](#)
- [DR400 Professor Photon's Color Conundrum](#)
- [HT101 Digital Postcard](#)
- [JS0 Build A Quiz](#)
- [JS104 Pacific Flags](#)





## ICT PD Workshop Content

### Session 1 - Introduction to Code Avengers

#### INTRODUCTIONS (10)

- Introduce ourselves to the teachers, then ask them to introduce themselves, Name, Village, favorite food, Favorite Movie/Show
- Give teachers an overview of the 3 sessions

#### UNPLUGGED ACTIVITY (10)

- [Robot Stacking](#) - Good icebreaker and allows teachers to think about the importance of clear/precise instructions, sequence and also emphasises working in groups and OFF the computer.
- One person is the robot and must close their eyes. The other is the human who is to instruct the peer using simple instructions.
  - Up
  - Down
  - Right (x2 etc)
  - Left

#### TRACKING DATA (10)

- [Pre PLD](#) teacher survey

Explain to the teachers the reason we want to gather data is so we can show evidence of how this program will benefit their students.

#### CODEAVENGERS PLATFORM (20) - Focus is supporting teachers with Logging in

- Show [slide 6](#) and then give a simple overview of the platform and open up
- Introduce the platform - What it is how it can help
- Demo [JR course example - Fish Sequences](#) (PR100)

#### JR COURSE (20)

- Work through PR100.

#### CERTIFIED CODEAVENGERS TEACHER (10)

- Show slides [8 - 11](#)
- Introduce the [PD modules](#) and explain that teachers will need to work through all 3 to gain CA PacifiCode Certified Teacher status.
- If time, show the [interactive](#) in the PD100 module to explain digital literacy V digital fluency, consumer v creator to set the scene of where they want their students to head.

#### WRAP UP (10)

- "Faasoa" - Share feelings Activity
- Finish the session with a Karakia



## Session 2 - Introduction to Teacher Dashboard - [Slides](#)

- **Review Last Lesson**

If I spend my whole day watching youtube, What does that make me? A digital .....

What is a digital creator?

Where do I find the logon button, to the CodeAvengers Platform

- Bottom Right
- Top Left
- Middle
- Top Right

What goes in the Username Box?

- Overview of today's lesson

Today we will be learning the functions that are in the Teacher Dashboard

### UNPLUGGED ACTIVITY (10)

- Ladder Game - Two cups at each level. One has an X the other O. Goal is to climb the ladder if grab an X you fall to the start.

### Teacher Dashboard (10)

- Creating a Class
- Creating a Module - Explain what a module is (Term )
- Assigning Task - How to decide which task to assign (Show Diagram of Flow lessons)
- Adding students to Class

### PRO COURSE (20)

- Demo the main features of the Pro platform using the [tour](#).
- Teachers to complete the first 2 tasks of [Intro to Javascript](#) to practise sequence.
- Complete [task 7](#) to practise conditions.

### CERTIFIED CODEAVENGERS TEACHER (10)

- Logon and work through PR100. (If complete move on to another of the cert courses)

### WRAP UP (10)

- "Faasoa" - Share feelings Activity
- Finish the session with a Karakia



### Session 3 - Adding Students to Class - [Slides](#)

#### Quiz to refresh prior learning

#### PD MODULES (10)

- Introduce the **PD101** module and how it is helpful for developing an effective classroom culture. Today we will focus on task 2:
  - [Collaborate and Communicate](#) (or E3 facilitator could summarise key points)
  - [Pair Programming](#) or this slightly longer one > [Pair Programming](#)
  - [Questions to follow up on video](#) and various slides after.....

#### PAIR PROGRAMMING (30)

- Show slides 24 and 25 to recap team works skills to demonstrate.
- [JS103 Flag Designs](#) | [Lesson Plan](#) (and Samoan flag challenge)

#### Resources

Offline Activities  
Planning  
Progress Tracking

#### Survey (15)

- [Post workshop survey](#)

#### WRAP UP (5)

- Remind what's needed to become a certified teacher.
- Thank everyone for their participation, and allow them the opportunity to share their thoughts and feelings

Certificates

After the conclusion of the ICT PD workshops at each school, the participating teachers, driven by their own initiative and passion for digital education, voluntarily embarked on their Digital Fluency Certification journey through the CA e-learning platform, progressing at their individual pace. Their commitment showcases a genuine desire to enhance their skills, rather than mere obligation



## After School ICT Program Content & Outcomes



IMAGE: Students of Gagaematae Primary School going through their courses on CA e-learning platform. Guided by E3 Facilitators and teachers, June 2023

### Content Overview:

#### 1. Interactive Lessons:

- Drag-and-Drop Coding: Introduces the basics of programming logic using a block-based coding system, allowing students to understand foundational concepts without the complexity of syntax.
- Story-Based Challenges: Engaging narratives where students help characters solve problems using code, making learning relatable and fun.

#### 2. Game Development:

- Students will learn the basics of game design and development, creating simple games that they can play and share with friends.

#### 3. Web Development Basics:

- Even at this junior level, students get a taste of web development, learning how to create basic web pages using simplified tools.

#### 4. Robotics and Hardware:

- Some modules introduce students to the world of robotics, where they can program virtual robots or, in some cases, integrate with actual robotic hardware.



5. Digital Art and Animation:

- Leveraging the platform's design tools, students can create digital art pieces and basic animations, blending creativity with technology.

6. Math and Logic Challenges:

- Infused within the coding challenges are math and logic puzzles, ensuring that students not only learn to code but also enhance their problem-solving skills.

7. Digital Citizenship:

- Even at the junior level, it's essential to instill the principles of online safety, ethics, and responsible behavior. Code Avengers Junior introduces these concepts in an age-appropriate manner.

8. Feedback and Rewards:

- As students progress, they receive real-time feedback on their work. They're also rewarded with badges, points, and sometimes even mini-games, ensuring sustained engagement and motivation.

## Outcomes Overview

### Learning Outcomes of Foundational Courses in the PacifiCode Initiative<sup>40</sup>

#### 1. Creature Feature Zoo (PR2) - Programming

- Level: 2
- Key Learning Outcomes:
  - Students gain an understanding of basic programming concepts, including algorithm creation, debugging, and the use of loops.
  - The course aligns with Levels 2 and 3 of the NZ Curriculum, suitable for primary students aged 7-11, covering aspects of the NZ Computational Thinking and Mathematics curriculum.
  - It meets the Australian Digital Technologies Year 3-4 requirements and the US Computer Science Framework for the end of Grade 2.
  - In the UK, it addresses the Key Stage 1 Computing requirements and introduces elements of Key Stage 2.

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<sup>40</sup> (Digital Education Limited, n.d.)



## 2. Larsson Castle Mystery (PR3) - Programming

- Level: 3
- Key Learning Outcomes:
  - Advanced programming skills, including problem decomposition, algorithm design, and logical thinking.
  - Suitable for students aged 10-13, aligning with Level 3 of the NZ Curriculum and the Australian Digital Technologies Curriculum.
  - It covers the US Computer Science Framework for the end of Grade 5 and the UK National Curriculum in England for Key Stage 2.

## 3. Creature Feature Zoo (CT2) - Computational Thinking

- Level: 2
- Key Learning Outcomes:
  - Focuses on developing computational thinking skills, including algorithm creation and debugging in both computerized and non-computerized contexts.
  - Aligns with Levels 2 and 3 of the NZ Curriculum, suitable for primary students aged 7-11.
  - Covers Australian Digital Technologies Year 3-4 and aspects of the US curriculum for Grades 2-5.
  - In the UK, it addresses Key Stage 1 and introduces elements of Key Stage 2.

## 4. Museum Mystery (DR2) - Data Representation

- Level: 2
- Key Learning Outcomes:
  - Introduction to data representation, focusing on how data is stored and manipulated.
  - Aligns with Level 2 and 3 of the NZ Curriculum, suitable for primary students aged 7-11.
  - Meets specific requirements of the Australian Digital Technologies Curriculum for Years 3 and 4.
  - In the US, it covers aspects of the K-12 CS framework for Grades 3-5 and prepares students for elements of the UK National Curriculum's Key Stage 3.

## Impact on Teacher Development and Student Learning



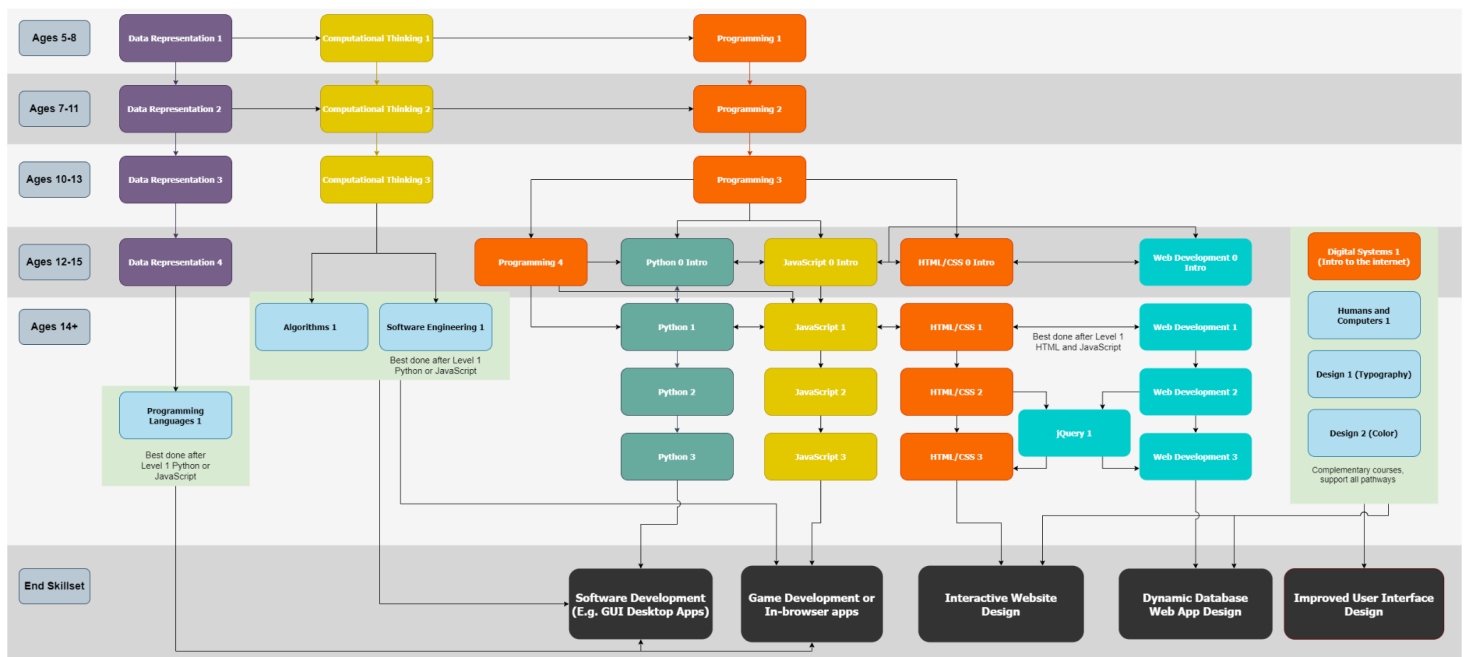


These courses have significantly contributed to the development of digital fluency among participating teachers and students. The alignment with various international curricula ensures that the learning is comprehensive, relevant, and adaptable to different educational contexts. The focus on programming, computational thinking, and data representation equips educators with the necessary skills to foster a digitally literate generation.

The successful completion of these courses by teachers in the PacifiCode initiative has led to a noticeable increase in confidence, skills, and knowledge in teaching digital technologies. This, in turn, has had a positive impact on student engagement and learning outcomes, preparing them for a future in an increasingly digital world.

The PacifiCode initiative, through these foundational courses, has laid a strong foundation for digital education in Samoa, aligning with Samoa's National Information and Communication Technology in Education Policy<sup>41</sup>

## Code Avengers Curriculum Pathways



<sup>41</sup> (Government of Samoa Ministry of Education, Sports and Culture, n.d.)



### Leading with Fa'a Samoa:

**A Journey of Mutual Respect:** Central to PacifiCode's approach was a deep reverence for Fa'a Samoa – the Samoan way. PDFP wasn't just a project about digital fluency; it was a mission intertwined with cultural respect, understanding, and collaboration. The PacifiCode team recognised that to truly make an impact; they needed to approach each school and community not as outsiders but as partners who valued and honoured Samoan traditions and values<sup>42</sup>.

This respect was reciprocated by the communities. In each school, the journey began with a traditional ava ceremony – a significant gesture that symbolises respect, unity, and the welcoming of guests. These ceremonies were not just formalities but were symbolic of the mutual trust and respect between the PacifiCode team and the communities they engaged with. It set the tone for the collaboration that followed, ensuring that the project was rooted in mutual understanding.

With its deep-rooted cultural significance, the Ava ceremony was a poignant reminder of the fusion of the old and the new. As the PacifiCode team introduced cutting-edge digital tools and methodologies, they did so by creating a harmonious blend of progress and tradition.

This approach fostered genuine connections, ensuring that the PDFP was accepted and embraced by the communities.



IMAGE: E3 Project Manager Chief, Principal, Palauli Primary School during the launch of the PacifiCode Initiative, April 2023

<sup>42</sup> (E3 Samoa Trust, 2023)



### **Navigating the Terrain:**

Given our emphasis on reaching rural and remote communities, navigating the expansive terrains of both Savai'i and Upolu posed logistical challenges. While unpredictable weather occasionally threw off travel schedules, the E3/Bluewave team remained committed to timely implementation and training. They understood the significance of capitalising on the enthusiasm shown by teachers and students.

Coordinating with schools, particularly those in secluded areas, demanded detailed planning. Yet, the E3 team's determination ensured no geographical hurdle became an obstacle. They tapped into local insights and frequently collaborated with community members to navigate to each location effectively.

### **Customising the Approach:**

Samoa's rich tapestry of culture and traditions meant that a one-size-fits-all approach would not suffice. Each school's unique ethos and challenges required a bespoke approach. The E3 team invested time in understanding the specific needs of each community. They held preliminary discussions with school leaders, gauged the existing level of digital familiarity among teachers, and tailored their training modules accordingly. This conscientious groundwork ensured that the training was informative, contextually relevant, and resonant.

### **Connectivity Challenges:**

Reliable internet connectivity and device access are fundamental. These are necessary for even the best digital education initiatives to succeed<sup>43</sup>.

There were two instances where the internet dropped out for a day, so the E3 facilitation team had to adjust to offline teaching or postpone the training to the following day. Whilst these were a hindrance, they did not ultimately stop the activity.

### **Celebrating Successes:**

The team found satisfaction in observing positive changes. Teachers started incorporating them into their lessons in schools where students had minimal exposure to educational digital tools. Students who were previously less familiar with digital resources showed increased interest. The program's success was evident in metrics and anecdotes: teachers putting in extra hours to refine a digital lesson<sup>44</sup>, or students expressing a desire to spend more time on the ICT e-learning platform. These stories highlighted the program's influence<sup>45</sup>. These narratives of change were the true testament to the program's impact.

### **Building Resilience:**

The journey was punctuated with unforeseen challenges. There were few days when a sudden power outage would disrupt a training session, or the internet connectivity would waver. On occasions when the team faced a shortage of essential resources, they quickly

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<sup>43</sup> (E3 Samoa Trust, 2023)

<sup>44</sup> (Bluewave Wireless, 2023)

<sup>45</sup> (Sua Leota, 2023)



shifted to plan B or engaged in offline activities. But each challenge was met with grit and determination. The team's problem-solving mindset ensured that they always found a solution. They used these challenges as teachable moments, showing educators that resilience and adaptability are key in the digital world, as in life.

## Key Findings

As we reflect on the initial six months of the pilot's implementation, our journey has been marked by enlightening revelations. From the initial stages of our ICT teacher training workshops to the comprehensive monitoring of teacher and student progress on the e-learning platform, we've navigated a landscape rich in learning opportunities. These insights have validated some of our initial hypotheses and shed light on areas of improvement, potential pivots, and new avenues to explore.

Our commitment to a data-driven approach and qualitative feedback from the ground has allowed us to capture an all-encompassing view of the pilot's impact. Our findings blend quantitative metrics, anecdotal evidence, and on-the-ground observations, painting a comprehensive picture of our efforts and their outcomes.

Furthermore, the results and insights from this pilot can serve as valuable resources for other initiatives and stakeholders. By sharing our experiences and findings, we hope to contribute to the broader discourse on ICT education, offering practical insights that can be adapted and applied in different contexts.

The following metrics are a testament to our progress but also serve as guiding beacons for the subsequent phases of our initiative. They underscore the importance of adaptability, continuous learning, and the power of collaborative effort in the realm of ICT education in Samoa.

### Local Champions:

The success of the PacifiCode pilot underscores the transformative power of local leadership and ownership. The E3 facilitators, being native Samoans and deeply passionate about digital education, played a pivotal role in bridging the gap between modern ICT concepts and Samoa's unique cultural and linguistic context of Samoa. Their ability to contextualise and deliver content that resonated with their fellow Samoans was invaluable. While international facilitators bring a wealth of expertise, they eventually return home.

In contrast, the E3 team, driven by a mission to bring about digital transformation in Samoa, wakes up every day with that singular focus. Their commitment to the cause is unwavering. As we reflect on the journey, it becomes evident that the future of ICT education in Samoa hinges on empowering and upskilling more such local champions. The E3 team, deeply rooted in their culture yet equipped with global knowledge, are the torchbearers of digital transformation in Samoa. Their role goes beyond mere instruction; they inspire, motivate, and instil pride and ownership in the broader community. Investing in these local champions is not just a strategy; it's a commitment to ensuring that the digital revolution in Samoa is led by Samoans, for Samoans.

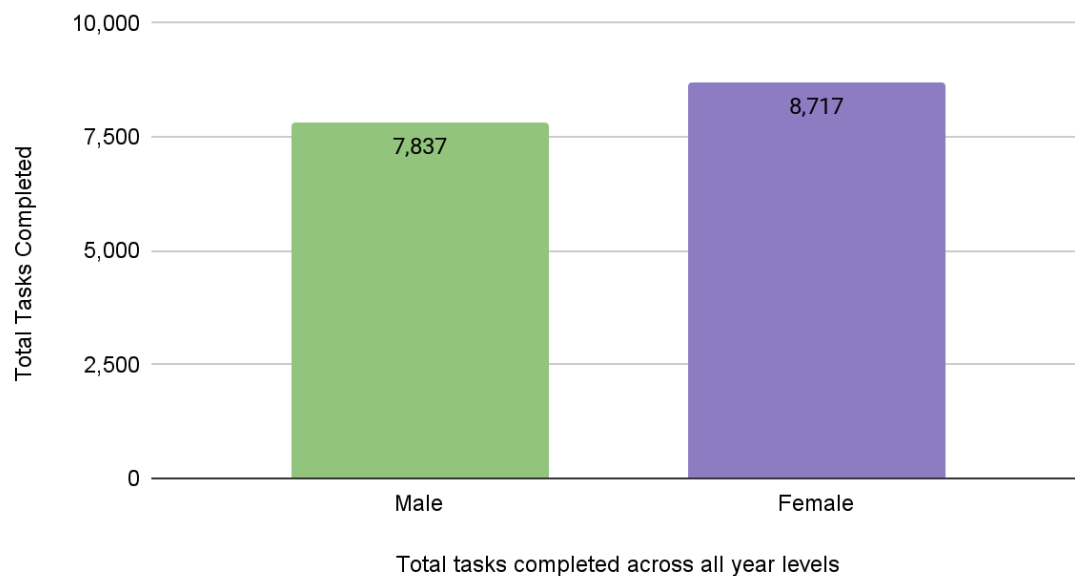


## Gender Inclusion:

A significant highlight of PDFP is the pronounced female engagement. Nearly half of the active users on the e-learning platform are young women. This isn't just a mere statistic; it's a testament to our gender-inclusive strategies' shifting dynamics and tangible success. Their presence isn't limited to just participation; they're thriving. Female students are making commendable progress in various courses, including those that traditionally see a gender disparity, such as programming, computational thinking, and digital design<sup>46</sup>.

Female students' active and successful involvement will help break down long-standing stereotypes about gender roles in STEM fields. It's a clear message that when provided with equal opportunities and resources, female students can and do excel in areas that males have traditionally dominated. This is demonstrated through observing the total number of students participating, of which only 46% are female, however, they have spent more time on the platform and have completed more tasks than their male counterparts, as demonstrated in the graph below.

### Total Tasks Completed by Gender



Moreover, this proficiency isn't just academic achievement. It's empowerment. It equips these young women with valuable skills, opening doors to various career opportunities. These skills are foundational for all future careers, positioning them as potential future leaders and innovators across multiple sectors.

The strides we've seen in gender inclusion and the accomplishments of female students in PDFP aren't just milestones for our project. They serve as a beacon, illuminating the path for other educational initiatives.

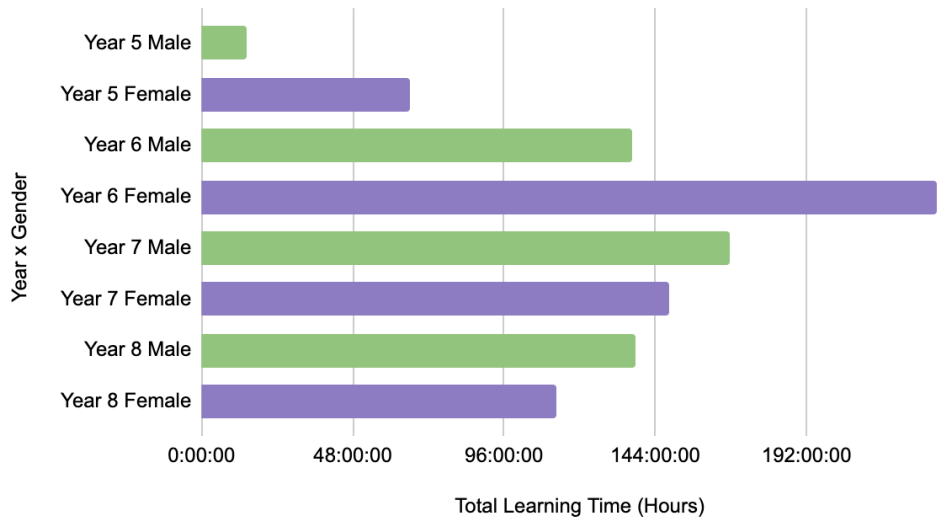
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<sup>46</sup> (Sua Leota, 2023)



This was demonstrated when observing the number of hours female students have engaged with the platform across all year levels, especially at earlier year levels.

### Total Learning Time



In essence, the journey and achievements of female students in our digital education initiative in Samoa symbolise hope, change, and a vision of a more inclusive future in the tech realm and beyond.

### Cultural Integration:

In education, especially when introducing novel concepts like ICT, the medium of instruction can be as crucial as the content itself. Our hypothesis was rooted in the belief that cultural resonance would play a pivotal role in our teacher training workshops' successful delivery and reception. We believed that having Samoans instruct their fellow Samoans would foster a more profound sense of connection and enhance comprehension, given the shared cultural nuances and the ability to communicate in the native Samoan language<sup>47</sup>.

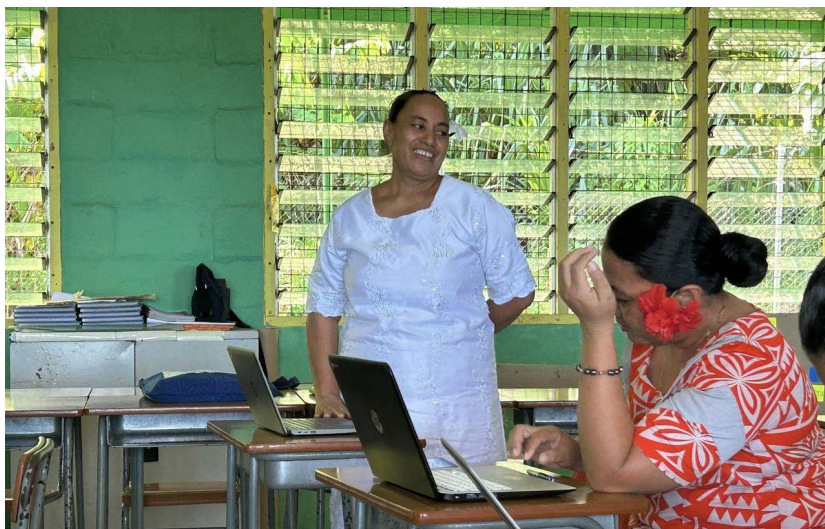


IMAGE: Teacher, Samata Uta Primary School during "Faasoa" or "Share" time after day 2 session on what she learned and challenges during the week long ICT Teacher PD June 2023

<sup>47</sup> (E3 Rural Trust, 2023)



Our experiences during the workshops validated this belief.

The E3 Facilitators, being Samoan, inherently understood the cultural subtleties and were adept at tailoring their delivery to resonate with their audience. This wasn't just about language but context, relatability, and a shared sense of identity. When they translated complex and abstract ICT concepts into Samoan, it wasn't just a linguistic translation; it was a cultural one. They contextualised these ideas in innately familiar ways and were relatable to the participants.

The results were noticeable. We observed heightened levels of engagement and comprehension among the teachers. **There was a visible spark, a connection, when these concepts were elucidated in Samoan, rooted in shared experiences and cultural references.** Evidently, the teachers felt more at ease, more in their element, leading to more interactive sessions and richer discussions.

In retrospect, this cultural integration strategy reinforced a crucial lesson for us: the importance of localisation in education. It's not just about importing knowledge; it's about adapting it, moulding it to fit the local context, and making it relevant and accessible. Our success in Samoa underscores the transformative potential of culturally integrated educational initiatives and serves as a blueprint for similar endeavours in diverse cultural landscapes.

### Youth Engagement:



One of the most enlightening discoveries during our journey was the pivotal role of youth engagement in the success of our digital initiatives. While our primary focus was on building teacher and school capacity, the ultimate beneficiaries of our efforts were the students. Our initial plan didn't actively involve students in the capability-building process due to resource constraints, but specific instances allowed us to witness firsthand the transformative power of youth engagement.

IMAGE: Students of Gagaemalae Primary School going through their courses on CA e-learning platform. Guided by E3 Facilitators and teachers, June 2023

The few opportunities where students were directly involved in the teacher training program were revelatory. **The youth, inherently more tech-savvy and adaptable, showcased an innate ability to grasp and navigate digital platforms with ease.** Their intuitive understanding of technology and enthusiasm and curiosity made them natural ambassadors for digital adoption within their schools<sup>48</sup>.

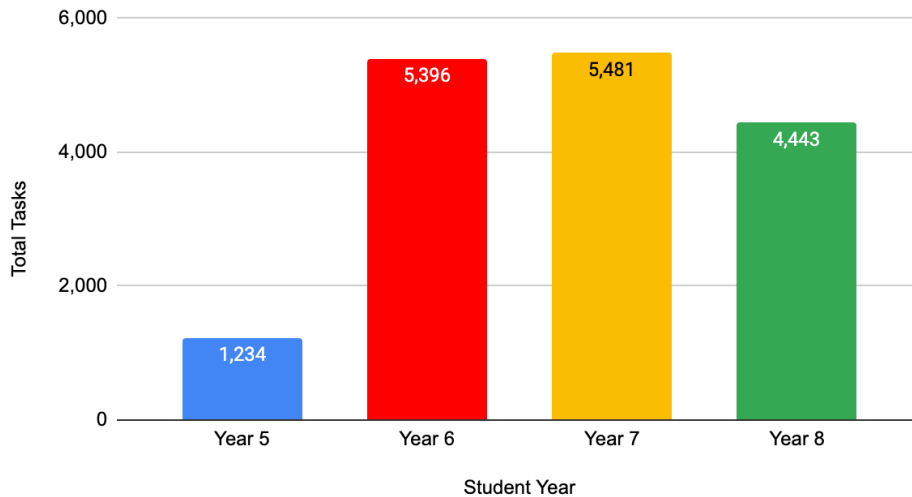
When these young minds were engaged, the dynamics of our workshops and sessions shifted dramatically.

<sup>48</sup> (E3 Samoa Trust & Sua Leota, 2023)

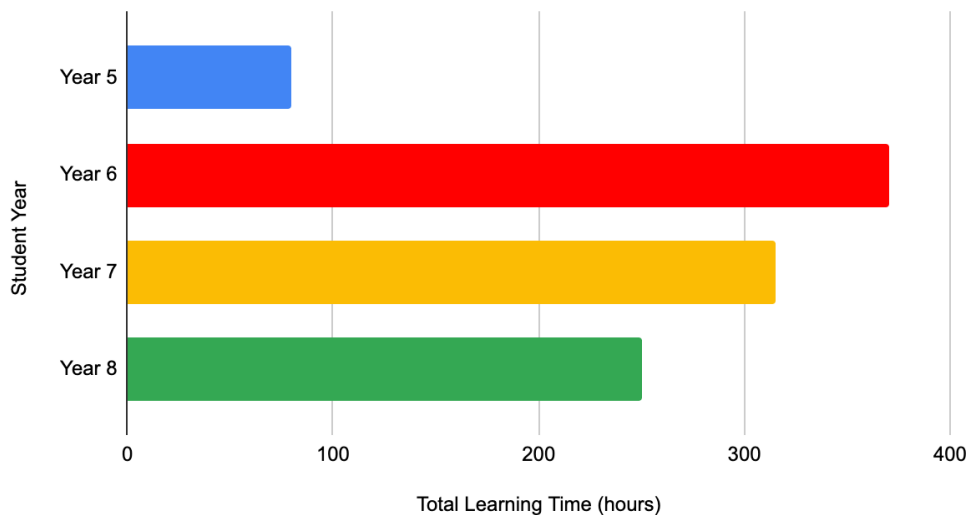


There was an observable energy, a vibrancy that permeated the environment. This energy was most noticeable when looking at engagement across all year levels, most notably the year six and year seven students who combined completed over 10,000 tasks and logged almost 700 hours in total on the platform.

Total Tasks Completed



Time Learning on Platform



In retrospect, these instances underscored a vital lesson for us: the untapped potential of youth as drivers of digital transformation. While our primary focus was on equipping educators, the spontaneous and dynamic outcomes from direct youth engagement highlighted the importance of integrating them more actively in future phases of our projects. Their passion, adaptability, and innate digital intuition make them invaluable assets in the quest for widespread digital fluency.





## Teacher Implementation and Engagement:

### A Journey of Growth and Learning

The diversity among our participant teachers was evident from the outset. They spanned a broad spectrum regarding confidence, knowledge, and skill in ICT. However, their enthusiasm and willingness to engage with the program was a common thread that bound them all. Their energy was apparent, and their commitment to learning and implementing the new digital tools was commendable.

Reflecting on the PDFP's execution, the team gleaned insights for future endeavours. If allowed to revisit our approach, we might consider narrowing our focus to fewer schools to give more attention and focus to each school due to resource constraints on the project. With more resources, the team would allocate more time for each workshop, ensuring a deeper dive into the platform's functionalities and pedagogical strategies. Extended workshops would provide teachers with a more immersive experience, allowing for a more gradual and comprehensive understanding of the digital tools at their disposal. Additionally, increased support sessions could further bolster their confidence, ensuring they feel fully equipped to teach from the platform.

While the pilot witnessed high engagement levels and student participation across most schools, a few lagged in active engagement on the platform. The schools with low engagement underscore the importance of continuous support and perhaps more tailored interventions to address individual schools' specific challenges. By refining our approach based on these learnings, we can better position ourselves to ensure consistent engagement across all participating institutions in future projects.

## Sustainability Challenges

The sustainability of the PDFP hinged on two primary factors:

1. the development of local facilitators
2. and access to high-quality devices in every school.

While international facilitators offer expertise, relying solely on them is not a sustainable long-term strategy due to logistical challenges and associated costs. Cultivating local champions deeply attuned to Samoa's cultural and contextual nuances is paramount for the program's success.

Furthermore, the role of devices cannot be understated. Consistent access to high-quality digital learning experiences necessitates that schools have reliable and modern devices. These devices serve as the primary interface between students and the digital world, influencing the quality of their learning experience. Without adequate devices, even the best-curated content and the most skilled facilitators can face limitations in delivering effective ICT education. These devices must be functional, user-friendly, durable, and suited to the local context, considering factors like power availability and climate conditions.



## Recommendations

### Education Education Education

**A Partnership for Progress:** The PacifiCode team strongly advocates for a collaborative nationwide rollout in partnership with the Ministry of Education and Culture. Our shared vision and combined expertise can catalyse a transformative digital shift across Samoa.

**Empowering a Generation:** We must think beyond isolated, unsustainable interventions to revolutionise Samoa's digital landscape. We envision a Samoa where every child, from the rural villages to the urban centres, is equipped with robust digital skills. By instilling digital fluency in an entire generation, we're not just enhancing educational outcomes but laying the groundwork for a future filled with innovation, creativity, and progress<sup>49</sup>.

**The Promise of Digital Fluency:** Digital fluency is more than just understanding technology; it's about leveraging it to create, innovate, and solve real-world challenges. With a strong foundation in digital skills, the possibilities are limitless. Our youth will be poised to drive technological innovations, develop solutions tailored to Samoa's unique challenges, and contribute significantly to the global digital community<sup>50</sup>.

**A Vision for Samoa's Future:** Imagine a Samoa where digital startups thrive, our youth harness technology to address local challenges and digital solutions are rooted in our rich cultural heritage. It starts with arming our youth with the necessary tools and knowledge<sup>51</sup>.

The success of our pilot has shown the PacifiCode team the potential that lies within Samoan educators and students. As the team looks to Phase 3, we're not just rolling out a program but igniting a movement, a movement that promises a brighter, digitally empowered future for Samoa. We encourage the Ministry of Education and Culture to join us in this transformative journey, ensuring that the digital revolution in Samoa leaves no child behind.

#### 1. Provision of Quality Devices:

**Rationale:** Access to high-quality devices is fundamental for effective ICT education, ensuring students and teachers can use digital resources without technical hindrances.

**Recommendation:** Ensure every school is future-proofed with at least 30 high-quality computers suitable for instructional and student use.

<sup>49</sup> (World Development Report 2016: Digital Dividends, 2016)

<sup>50</sup> (WEF: Future of Jobs et al., 2018)

<sup>51</sup> (United Nations SDG Goal 4, n.d.)



2. Nationwide ICT Teacher Professional Development:

**Rationale:** Teachers play a pivotal role in successfully implementing ICT education. Their proficiency and confidence in using digital tools directly impact student outcomes.

**Recommendation:** Launch a nationwide ICT Teacher Professional Development program to empower educators with the skills and knowledge required to effectively teach ICT concepts and integrate digital tools into their teaching methodologies<sup>52</sup>.

3. Digital Safety and Cybersecurity Education:

**Rationale:** As students become more digitally active, they must understand the importance of online safety and the potential risks associated with digital platforms.

**Recommendation:** Integrate digital safety and cybersecurity modules into the ICT curriculum. Ensure students know safe online behaviours, recognise potential threats and protect their personal information<sup>53</sup>.



IMAGE: Female students working together for the first time on a laptop and e-learning platform Code Avengers during the first code camp at Siufaga Primary School in 2021.

4. Reimagining the ICT Curriculum:

**Rationale:** A relevant and up-to-date curriculum is essential for ensuring students acquire skills aligned with current industry standards and global best practices.

**Recommendation:** Reevaluate and reimagine the current ICT curriculum. Consider aligning it with established curricula from countries like New Zealand and Australia. Additionally, it integrates Samoan translations where applicable to ensure cultural relevance and enhance comprehension<sup>54</sup>.

<sup>52</sup> (UNESCO ICT Competency Framework for Teachers, n.d.)

<sup>53</sup> (Finkelhor et al., 2020)

<sup>54</sup> (Digital Technology Coming to the NZ Curriculum, 2016)



5. Early Introduction of ICT Education:

**Rationale:** Introducing students to ICT education at a young age ensures they develop foundational digital skills crucial in today's digital age<sup>55</sup>.

**Recommendation:** Begin ICT education for students ages 7-8. While other ministries, including those in Australia and New Zealand, have made it compulsory to start ICT education from age 5, it's essential to consider the local context and resources available in Samoa before determining the ideal starting age.

6. Local Content Creation:

**Rationale:** Localised content can resonate more with students, making learning more relatable and engaging.

**Recommendation:** Encourage students and teachers to create and share local digital content. This could include digital storytelling, local history modules, or cultural projects highlighting Samoan traditions and values<sup>56</sup>.

7. Leveraging Technology for Cross-Curricular Learning:

**Rationale:** Technology can serve as a bridge to enhance learning across various subjects, providing students with many resources.

**Recommendation:** Utilize the internet and hardware to connect students with materials for other subjects. For instance, invest in low-cost, durable tablet devices to establish a virtual library. This library can house thousands of reading books, materials, and numeracy resources, offering students a rich repository of learning materials at a fraction of the traditional cost<sup>57</sup>.

8. Cloud Assessment and Feedback Mechanisms:

**Rationale:** Regular assessments and feedback are essential for tracking student progress and identifying areas of improvement. Saving teachers' time and stress by cutting their workload.

**Recommendation:** Implement digital assessment tools that provide real-time feedback to students. Consider platforms that offer adaptive learning, adjusting content based on individual student performance<sup>58</sup>.

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<sup>55</sup> (Alam, 2022, Computer Programming in Early Childhood Education: A Conceptual Framework for Assessing Elementary School Students' Computational Thinking for Designing Powerful Educational Scenarios)

<sup>56</sup> (*The Power of Digital Storytelling to Support Teaching and Learning*, 2016)

<sup>57</sup> (Ertmer & Ottenbreit-Leftwich, 2013, )

<sup>58</sup> (2023, Teachers' AI digital competencies and twenty-first century skills in the post-pandemic world )



IMAGE: E3 facilitators and teachers of Gagaemalae Primary School on the last day of the week long code camp in June 2023.

## The Transformative Impact of the PacifiCode Pilot on ICT Education

While the immediate outcomes of the PacifiCode pilot may not manifest immediately, we predict in the next two to three years, the ripple effects will undoubtedly be felt. As each after-school ICT program continues, more boys and girls will progress forward with foundational digital skills and fluency. This foundation will serve as a stepping stone as they transition to high school, providing them with the tools and confidence to delve deeper into the digital realm. With their early exposure to ICT, we aspire that many of these students will be inspired to pursue tech-related fields in higher education and tech entrepreneurship<sup>59</sup>. However, even those who choose different paths will be armed with a strong foundation in digital fluency, a critical asset in an ever-increasingly digitised world.

Understanding the immense potential and pressing need, we passionately champion the expansion of the PacifiCode program throughout Samoa's primary and high schools. As we navigate the digital era, it's imperative that we equip our children to master technology, lest they become its subjects.

The PacifiCode team is steadfast in the belief that education is the cornerstone. Our pilot has vividly showcased the transformative power of teacher empowerment and the innate affinity our youth possess for technology. It's crucial that we continue this momentum, **preparing our children to be innovators and creators of technology, rather than mere consumers.**

<sup>59</sup> (*The Impact of Technology on Entrepreneurship*, 2023)



## Acknowledgement

In the journey of the PDFP, many have played instrumental roles, ensuring its success and far-reaching impact. At the heart of this endeavour are the individuals, organisations and communities who have believed in our vision and worked tirelessly to bring it to fruition.

We'd like to express our sincere appreciation to the Chiefs and Community Leaders of the communities we've had the privilege to work with. Their warm welcome, insights, guidance, and deep understanding of local realities have fostered genuine community engagement. Their unwavering support and belief in the transformative power of digital education have shone brightly, especially during our school launches. Their feedback and active involvement have been instrumental in ensuring that our approach resonates with the unique needs and aspirations of each community we serve.

We extend our sincere gratitude to the different officials of the Samoan government for their invaluable support and for taking the time to understand our vision for the PDFP. Special acknowledgement goes to Honourable Fiamāe Naomi Mata'afa and the Minister of Education, and Culture, Honorable Seuula Ioane. Their esteemed presence at the PacifiCode launch at Lotofaga Primary School and their wisdom to our teachers and students enriched the event. We also warmly thank the numerous Ministers interested in learning more about PacifiCode's mission and objectives.

Our sincere thanks to the Principals and Teachers of the participating schools. Their dedication, enthusiasm, and willingness to embrace new methodologies have driven the project's success. Their commitment to professional development and passion for imparting digital skills to their students have ensured the project's long-term impact.

To our esteemed donors, ISIF Asia<sup>60</sup> and PCF, your generosity and belief in our mission have been the cornerstone of the PacifiCode project. Your contributions, both financial and in spirit, have enabled us to bring our vision to life. It's not merely the resources you've provided but the trust and faith you've instilled in us that has been invaluable. Your support underscores the collective effort to effect meaningful change in our communities. We thank you from the depths of our hearts for being an integral part of this journey and sharing our commitment to a brighter, digitally-fluent future for Samoa.

In orchestrating this symphony of change, every note played by each organisation has been crucial. We are profoundly grateful to everyone who has been a part of this journey, and we look forward to continuing our collaborative efforts to shape a digitally empowered Samoa.

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<sup>60</sup> (Durack ISIF Asia grant recipients, 2022)



IMAGE: First combined code camp in the PacifiCode Camp with teachers of Falelima Primary and Auala Primary on the island of Savai'i

## Stakeholders

### Pilot Schools, Principals, Teachers, and Students

Central to the PacifiCode initiative are the pilot schools that have opened their doors to this transformative journey. The Principals have provided the necessary administrative support and direction, ensuring that the program aligns with the school's educational objectives. The teachers, ever the torchbearers of education, have actively engaged with the program, adapting and integrating new digital tools into their teaching methodologies. And at the core of it all are the students, whose curiosity and adaptability have been a testament to the potential of digital education. Their collective involvement has been pivotal, offering a real-world context to the project and its objectives.

### E3 Samoa Trust (E3)

E3, the charitable arm of BlueWave Wireless, is central to this project. Their mission revolves around enhancing, engaging, and empowering Samoans in rural communities through STEM. They deeply understand community needs and the importance of education following internet access. Their vast connections across various levels in Samoa make them pivotal in reaching vulnerable groups.

### Code Avengers (CA),

Originating from New Zealand, CA emerged from a research study at the University of Waikato. They are not only globally recognised for their online ICT e-learning platform, which aims to bridge the digital divide among indigenous communities in New Zealand, but they are also accredited by the New Zealand Ministry of Education to provide Digital Fluency Teacher Professional Development. Having made a significant impact on numerous schools worldwide, CA has extended its initiatives across the Pacific, showcasing its commitment to fostering digital education on a global scale<sup>61</sup>.

<sup>61</sup> (Keall, Tech firms launch programme to get Māori, Pasifika children into stem subjects 2023)



### **The Information Society Innovation Fund (ISIF Asia)**

ISIF Asia promotes internet development in the Asia Pacific region, focusing on Inclusion, Infrastructure, and Knowledge. They funded the PacifiCode Project due to its alignment with their inclusion focus, especially after the successful pilot at Siufaga School in Savai'i.<sup>62</sup>

### **Pacific Cooperation Foundation (PCF)**

PCF believed in and financially funded the Pilot and Phase 1 of this project in 2021, our Code Camp and first after-school pilot at Siufaga School in Savai'i. With a uniquely independent Pacific lens, PCF focuses on strengthening the bonds that connect Aotearoa - New Zealand, with the Pacific. It provides platforms to uplift, amplify, inform, and equip Pacific peoples and communities spanning the breadth of Polynesia, Melanesia, and Micronesia<sup>63</sup>.

## **Charting the Digital Future: A Collaborative Vision for Samoa's Education**

The project has also helped us build relationships with key stakeholders in the education community, including government officials, school leadership and administrators, and teachers. These relationships will be invaluable in the future as we work to expand the project and reach more students.

The PacifiCode team are now better positioned to continue their work in Samoa. The past few months have highlighted several crucial strategies for the future development of the PDPF:

- Continue to work with our partners to develop and deliver high-quality training and resources to teachers and students.
- Keeping building relationships with key stakeholders in the education community to raise awareness of the project and its importance.
- **Expanding the project to reach more schools and students.**
- Securing additional funding through aid funding and grants, corporate sponsorships, and individual donations.

Samoa, stands at a pivotal juncture in the realm of digital education. While challenges persist, the PacifiCode Pilot has illuminated a path filled with promise, showcasing the enthusiasm and aptitude of our educators and students. Their engagement and the tangible outcomes achieved are testament to Samoa's readiness to embrace a digital future.

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<sup>62</sup>(Durack ISIF Asia grant recipients, 2022)

<sup>63</sup> (Pacific Cooperation Foundation, n.d.)





As we celebrate these successes, it's imperative that we build upon this momentum. We invite the Ministry of Education and Culture to collaborate with the PacifiCode Digital Fluency Initiative as we move forward.

Our next steps are clear:

- Expand the program's reach.
- Continuously refine our methodologies.
- And ensure that every Samoan child is equipped with digital skills to thrive in the digital age.

In an era where digital fluency is as fundamental as literacy and numeracy, our collective efforts will ensure that Samoa's youth are well-prepared for the challenges and opportunities of the digital age.



IMAGE: Palauli Primary Teachers, after assembly where they were awarded their ICT Professional Development Certificates



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## APPENDIX

1. Project Key Indicators
2. News Articles
3. Key Tools, Technologies and Digital Tools Used in the Pilot
4. Ten Schools
5. Total student numbers and gender
6. “Professional Development (PD) Samoa workshops”, “ICT PD workshops and Training”, and “workshops conducted”
7. After-School ICT program, Student course outline Material and outcomes
8. Methodologies
9. Rationale for Digital Fluency
10. CA ICT Teacher PD certification
11. Pre-installed with leading software.
12. Web-link to Project Surveys
13. Websites of stakeholders
14. Web-links to Individual School Reviews Report

### Project Key Indicators

#### 1. Connectivity

- Providing a two-year internet data package, laptops and three-year licences to CA e-learning Platform to ten schools.

#### 2. In-Country Partners Capability Building

- Supporting the team of four E3 facilitators to effectively deliver the teacher PD program to 40+ teachers across ten schools.

#### 3. Teacher Capability Building

- Equipping 40 teachers with the skills to offer ICT lessons to their students.
- Each teacher will participate in the CA teacher certification program.
- Face-to-face workshops
- Ongoing support throughout the pilot

#### 4. Adoption & Engagement

- Integration of the PDFP ICT After-school Program
- Engagement of Students and teachers on the CA e-learning platform
- Progress of Students on ICT Courses on the e-learning Platform
- 40+ teachers CA ICT PD Certified





## News Articles

- Links
  - <https://talamua.com/2023/04/17/bluewave-code-avengers-partners-to-create-sustainable-digital-fluency-in-samoa/>
  - <https://talamua.com/2022/08/18/e3-rural-samoa-trust-prepares-rural-samoan-communities-for-the-digital-future/>
  - <https://talamua.com/2021/09/29/first-code-camp-launched-at-siufaga-sda-primary-school/>
  - <https://tech.pngfacts.com/2021/11/pcf-new-zealand-sponsored-code-camps.html>
  - <https://www.samoaoobserver.ws/category/samoa/92217>
  - <https://pmn.co.nz/articles/call-for-pacific-governments-to-invest-in-computer-and-technology-education>
  - <https://www.rnz.co.nz/international/pacific-news/450047/high-participation-rate-for-female-students-in-png-s-code-camps>
  - <https://www.nzherald.co.nz/business/indigitech-firms-launch-programme-to-get-more-maori-and-pasifika-kids-into-stem-subjects/I62LABBPXZHQLI7YCJ3MIKDNZQ/Key>

## Tools, Technologies and Digital Tools Used in the Pilot

- To ensure the pilot's effectiveness, we utilised various cutting-edge tools and technologies. Each participating school was fortified with high-speed internet connectivity, surpassing what the Ministry already provides, to ensure seamless and uninterrupted access to a wealth of online resources. This robust connectivity ensures a consistent and strong connection for seamless online access and supports the demands of modern educational tools and platforms. Furthermore, the infrastructure has been built with scalability in mind, ready to accommodate future growth and expansion.
- In addition to the enhanced connectivity, each school was provisioned with 10-14 high-quality laptops. These devices were pre-installed with leading software to ensure optimal performance right out of the box. Designed with durability, they are tailored for long-term use, especially considering the local environment and the unique challenges it might present.
- Teachers received training on the CA e-learning platform, a cloud-based tool offering flexible and accessible digital learning. This platform provides interactive content for various skill levels, from basic digital literacy to advanced coding. Its intuitive design, gamified lessons and real-world projects enhance the learning experience. The platform's adaptability ensures personalised learning, allowing teachers to structure content and monitor student progress in real time.
- High-quality Devices
  - 10-14 laptops provided for each school
  - Devices pre-installed with leading software for optimal performance
  - Durable and designed for long-term use, considering the local environment.
- High-speed internet connectivity
  - Ensures a consistent and robust connection for seamless online access
  - Supports the demands of modern educational tools and platforms
  - Infrastructure built with scalability in mind to accommodate future growth.
- CA e-learning platform:
  - Age-appropriate interactive content
  - Gamification
  - Real-world project modules
  - Built-in assessment tools
  - Comprehensive analytics
  - Cloud-based access, ensuring continuity of teaching and learning from anywhere in Samoa or globally.

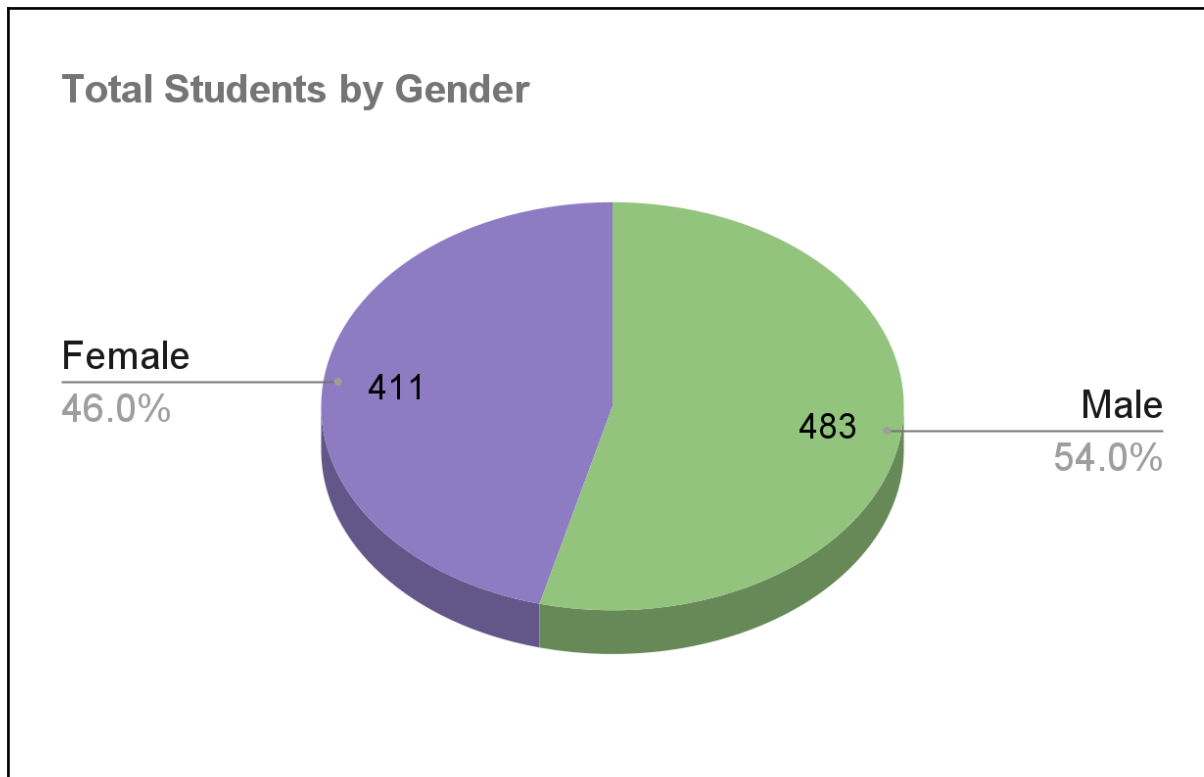


### Ten Schools

School	Internet Connectivity	Student CA Licences	Teachers CA Licences	Laptops
Faleasiu Primary	✓	192	10	10
Palauli Primary	✓	118	7	15
Satapuala Primary	✓	139	7	10
Gagaemalae Primary	✓	162	9	10
Sasina Primary	✓	45	6	10
Lotofaga Primary	✓	68	5	12
Auala Primary	✓	29	4	10
Falelima	✓	48	4	10
Samata Uta	✓	104	10	10
Suifaga Primary	✓	48	2	14
<b>Total</b>	<b>10</b>	<b>953</b>	<b>38/64</b>	<b>111</b>



### Total student numbers and gender



### Professional Development (PD) Samoa workshops, “ICT PD workshops and Training”, and “workshops conducted”

#### Session 1 - Introduction to Code Avengers

##### INTRODUCTIONS (10)

- Introduce ourselves to the teachers, then ask them to introduce themselves, Name, Village, favorite food, Favorite Movie/Show
- Give teachers an overview of the 3 sessions

##### UNPLUGGED ACTIVITY (10)

- [Robot Stacking](#) - Good icebreaker and allows teachers to think about the importance of clear/precise instructions, sequence and also emphasises working in groups and OFF the computer.
- One person is the robot and must close their eyes. The other is the human who is to instruct the peer using simple instructions.
  - Up
  - Down
  - Right (x2 etc)



- Left

### TRACKING DATA (10)

- [Pre PLD](#) teacher survey

Explain to the teachers the reason we want to gather data is so we can show evidence of how this program will benefit their students.

### CODEAVENGERS PLATFORM (20) - Focus is supporting teachers with Logging in

- Show [slide 6](#) and then give a simple overview of the platform and open up
- Introduce the platform - What it is how it can help
- Demo [JR course example - Fish Sequences](#) (PR100)

### JR COURSE (20)

- Work through PR100.

### CERTIFIED CODEAVENGERS TEACHER (10)

- Show slides [8 - 11](#)
- Introduce the [PD modules](#) and explain that teachers will need to work through all 3 to gain CA PacifiCode Certified Teacher status.
- If time, show the [interactive](#) in the PD100 module to explain digital literacy v digital fluency, consumer v creator to set the scene of where they want their students to head.

### WRAP UP (10)

- "Faasoa" - Share feelings Activity
- Finish the session with a Karakia

## Session 2 - Introduction to Teacher Dashboard - [Slides](#)

- **Review Last Lesson**

If I spend my whole day watching youtube, What does that make me? A digital .....

What is a digital creator?

Where do I find the logon button, to the CodeAvengers Platform

- Bottom Right
- Top Left
- Middle
- Top Right

What goes in the Username Box?

- Overview of today's lesson

Today we will be learning the functions that are in the Teacher Dashboard



### UNPLUGGED ACTIVITY (10)

- Ladder Game - Two cups at each level. One has an X the other O. Goal is to climb the ladder if grab an X you fall to the start.

### Teacher Dashboard (10)

- Creating a Class
- Creating a Module - Explain what a module is (Term )
- Assigning Task - How to decide which task to assign (Show Diagram of Flow lessons)
- Adding students to Class

### PRO COURSE (20)

- Demo the main features of the Pro platform using the [tour](#).
- Teachers to complete the first 2 tasks of [Intro to Javascript](#) to practise sequence.
- Complete [task 7](#) to practise conditions.

### CERTIFIED CODEAVENGERS TEACHER (10)

- Logon and work through PR100. (If complete move on to another of the cert courses)

### WRAP UP (10)

- "Faaso" - Share feelings Activity
- Finish the session with a Karakia

## Session 3 - Adding Students to Class - [Slides](#)

### Quiz to refresh prior learning

### PD MODULES (10)

- Introduce the **PD101** module and how it is helpful for developing an effective classroom culture. Today we will focus on task 2:
  - [Collaborate and Communicate](#) (or E3 facilitator could summarise key points)
  - [Pair Programming](#) or this slightly longer one > [Pair Programming](#)
  - [Questions to follow up on video](#) and various slides after.....

### PAIR PROGRAMMING (30)

- Show slides 24 and 25 to recap team works skills to demonstrate.
- [JS103 Flag Designs](#) | [Lesson Plan](#) (and Samoan flag challenge)

### Resources

Offline Activities  
Planning  
Progress Tracking



### Survey (15)

- [Post workshop survey](#)

### WRAP UP (5)

- Remind what's needed to become a certified teacher.
- Thank everyone for their participation, and allow them the opportunity to share their thoughts and feelings

### Certificates

## Teacher Certification

Completion of 3 PLD modules:

- [Why teach Digital Technologies](#)
- [Effective Classroom Culture](#)
- [Teaching with Code Avengers](#)

Plus these **computer science fundamentals** from the course library:

- [PR100 Sea Creature Sequences](#)
- [CT2 Creature Feature Zoo\\*](#)
- [DR400 Professor Photon's Color Conundrum](#)
- [HT101 Digital Postcard](#)
- [JS0 Build A Quiz](#)
- [JS104 Pacific Flags](#)



### Training and workshops conducted:

Understanding that technology alone wouldn't bridge the digital divide, we strongly emphasised capability building.

More importantly, key teachers from each school were chosen for intensive ICT Teacher training. This training was not just about using computers but was designed to effectively equip teachers with the skills to integrate digital tools into their teaching methodology. The training covered various topics, from basic computer literacy to advanced digital pedagogical techniques.

As these educators progressed in their digital fluency journey, they emerged as catalysts for change within their schools, ensuring the pilot's impact was profound and enduring. To further solidify their expertise, each teacher embarked on a certification journey through the CA Platform, working towards attaining the CA ICT Teacher certification.

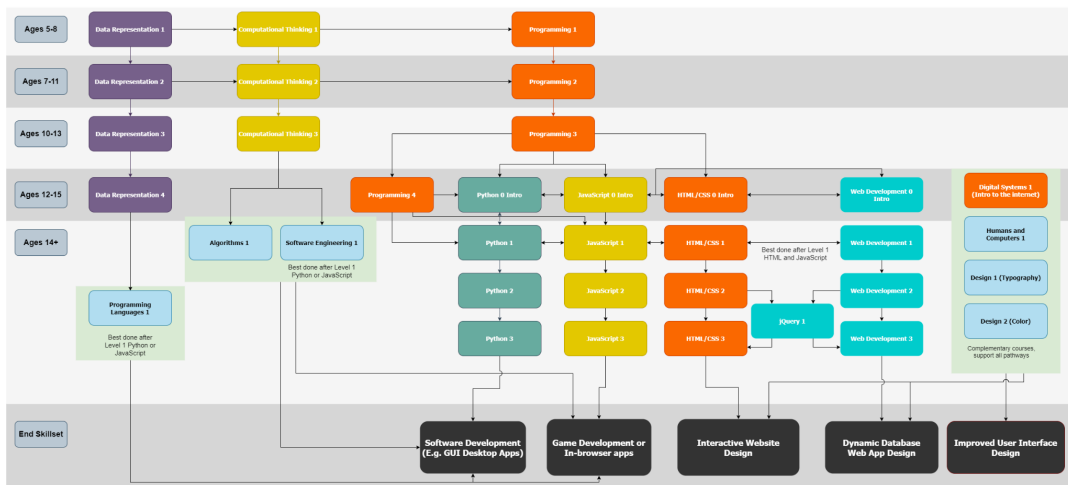


# After-School ICT Program, Student Course Outline, Material and outcomes

Code Avengers Courses By Year			
BAND 1	YEAR 1	YEAR 2	YEAR 3
	Sea Creature Sequences PROGRAMMING 100 <b>JR</b>	Code Crazy Creatures PROGRAMMING 0 <b>JR</b>	Matariki: Māori New Year COMPUTATIONAL THINKING 200 <b>JR</b>
	Carnival Crisis DATA REPRESENTATION 1 <b>JR</b>	Camping Adventure COMPUTATIONAL THINKING 1 <b>JR</b>	Stormy Day PROGRAMMING 1 <b>JR</b>
BAND 2	YEAR 4	YEAR 5	YEAR 6
	Creature Feature Zoo COMPUTATIONAL THINKING 2 <b>JR</b>	Gear Up For Safety PROGRAMMING 2 <b>JR</b>	Larsson Castle Mystery PROGRAMMING 3 <b>JR</b>
	Data Rep DJ DATA REPRESENTATION 200 <b>JR</b>	Museum Mystery DATA REPRESENTATION 2 <b>JR</b>	Shield Design Showdown PROGRAMMING 300 <b>JR</b>
			Blockly Flags JAVASCRIPT 123 <b>PRO</b>

BAND 3	YEAR 7	YEAR 8	YEAR 9
	Robot Restaurant Designer COMPUTATIONAL THINKING 300 <b>JR</b>	Digital Postcard HTML/CSS 101 <b>PRO</b>	Wires, Waves, & Wifi DIGITAL INFRASTRUCTURE 4 <b>JR</b>
	Saving Food Avengers COMPUTATIONAL THINKING 3 <b>JR</b>	Robot Restaurant Puzzler ALGORITHMS 0 <b>PRO</b>	Mind vs. Machine PROGRAMMING 4 <b>JR</b>
	Security Siege IMPACTS OF COMPUTING 300 <b>JR</b>	Intro to Graphics (Tangrams) JAVASCRIPT 102 <b>PRO</b>	Old MacDonald Hacked a Farm. AI, AI, Drones! IMPACTS OF COMPUTING 400 <b>JR</b>
	Jumping Jam DIGITAL MEDIA 300 <b>JR</b>	Introduction to JavaScript JAVASCRIPT 0 <b>PRO</b>	Game Dev: Sneaky Ninja JAVASCRIPT 110 <b>PRO</b>
	Sequence Grid Challenge JAVASCRIPT 101 <b>PRO</b>	Professor Photon's Color Conundrum DATA REPRESENTATION 400 <b>JR</b>	Photo Booth WEB DEVELOPMENT 100 <b>PRO</b>
	Drawing Flags JAVASCRIPT 103 <b>PRO</b>	Game Dev: Pixel Robbers JAVASCRIPT 100 <b>PRO</b>	Introduction to Web Development WEB DEVELOPMENT 0 <b>PRO</b>
	Game Dev: Food Frenzy JAVASCRIPT 105 <b>PRO</b>	Intro to Python Turtle Graphics PYTHON 100 <b>PRO</b>	Introduction to jQuery JQUERY 0 <b>PRO</b>
	AVATAR: Big Data & Digital Footprints IMPACTS OF COMPUTING 600 <b>JR</b>	Introduction to Python PYTHON 0 <b>PRO</b>	
	Operation Cloud NETWORKS & SECURITY 600 <b>JR</b>		
	The Information Transformation DATA AND ANALYSIS 60 <b>JR</b>		

## Code Avengers Curriculum Pathways





## Methodologies

### **Culture-First Approach:**

Our approach prioritised respect for local culture and traditions. We emphasised a "culture-first" strategy and sought the support of local chiefs and community leaders before we started any school activities. To symbolise our commitment and the blending of tradition with modernity, we initiated each school's participation with the traditional Fa'a Samoa ava ceremony<sup>64</sup>.

### **Schools and communities involved:**

We strategically launched the PDFP in select schools across various regions, selecting schools based on:

- Their eagerness to participate
- The enthusiasm of their leadership,
- And their infrastructure preparedness<sup>65</sup>:

### **Capability building for Sustainability:**

Drawing from our inaugural pilot in Samoa, and informed by our experiences across the Pacific and our extensive collaborations with numerous schools, teachers, and students in ICT classroom instruction, Code Avengers has honed a distinctive methodology. At its heart lies a dual focus: capability building and ensuring sustainability<sup>66</sup>.

**Resource Provision to Schools:** Our first step is to equip schools with the essential digital tools and resources. This foundational support ensures that the infrastructure for digital education is robust and ready<sup>67</sup>.

**Teacher-Led Approach:** We firmly believe that the success of any educational initiative is anchored in its educators. A teacher-led approach ensures that the program is tailored to the unique needs of each classroom, fostering a more personalised and effective learning environment.

**Empowering Teachers:** Our ICT Teacher PD program is crafted to enhance their digital confidence, knowledge, and skills. This empowerment ensures they are the primary drivers of the digital transformation in their classrooms.

**In-Person Digital Fluency Training Camps:** These camps, held for selected teachers from each participating school, are intensive sessions to deepen their digital fluency, ensuring they can navigate the digital realm with ease and confidence.

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<sup>64</sup> (Smith & Corbett, n.d.)

<sup>65</sup> (*Trust in Schools: A Core Resource for School Reform*, 2003)

<sup>66</sup> (Mensah Sustainable development: Meaning, history, principles, pillars, and Implications for human action, 2019)

<sup>67</sup> (*World Bank Document KNOWLEDGE MAPS: ICT IN EDUCATION*, n.d.)





**Training on the ICT E-Learning Platform:** Hands-on training on our ICT e-learning platform is provided within these digital fluency sessions. This platform serves a dual purpose: a teaching aid and a continuous learning resource. Educators can continue to evolve and adapt to the ever-changing digital landscape through our Teacher ICT PD Certification.

**Outcomes and Long-Term Sustainability:** Teachers can integrate ICT education through the e-learning platform with the tools and training provided. Students' progress in their digital fluency journey is a testament to our methodology's effectiveness. More importantly, by building capabilities within schools and teachers, we ensure that the impact of this initiative remains sustainable and continues to thrive long after the pilot project concludes.

### **Digital Infrastructure Enhancement and Data Allocation Strategy**

In collaboration with a local provider, we leveraged satellite data to enhance the digital infrastructure for our pilot schools in Samoa. As part of our commitment to ensuring sustained benefits beyond the immediate scope of the Digital Fluency program, each participating school has been allocated 100GB of data per month. This provision will continue for the next 24 months, supporting their ongoing digital education endeavours.

Importantly, this allocation is in addition to and designed not to strain the data already provided by MESC, ensuring that schools have ample resources without overburdening existing infrastructure. This approach underscores our dedication to reinforcing the lasting impact of our initiative while working harmoniously with existing provisions.

## **Rationale for Digital Fluency**

### **Rationale for ICT Education:**

In Samoa's evolving educational landscape, the internet is an expansive digital library, offering a vast repository of educational tools and content. Beyond traditional lesson plans and guides, some platforms offer interactive simulations, multimedia content, and collaborative learning opportunities.

This digital library opens doors for educators to a world of reading resources. The breadth and depth of content are unparalleled, from classic literature available on platforms like Project Gutenberg to contemporary articles on academic databases. Furthermore, educators can access global repositories like the Smithsonian's digital collections for cultural lessons or tap into platforms like Khan Academy for math and science modules.

This wealth of information, if harnessed effectively, can transform traditional classrooms into dynamic learning environments where students are not just passive recipients but active explorers of knowledge.

### **The Necessity of Digital Fluency First:**



However, the potential of these resources can only be fully realised when educators possess the requisite Digital Fluency. Without this foundational capability, even the most comprehensive online tools may remain underexplored. It's akin to having a library where many books remain unread.

● **Teacher Upskilling in Context**

Our program in Samoa focused on enhancing teachers' digital skills, ensuring they can confidently navigate and integrate diverse online resources into their curriculum. This included familiarising them with platforms particularly relevant to the Samoan educational context.

● **ICT Learning Adapted for Samoan Students**

The pilot also addressed student learning, ensuring they're not just consumers of digital content but also creators. Students were introduced to basic digital tools that resonate with their local context and global digital trends.

● **Integrating Digital Resources Across Subjects**

With improved Digital Fluency, the pilot observed that Samoa educators could enrich their ICT lessons and weave digital elements into subjects like math, history, geography, and science. For example, a geography lesson could be supplemented with satellite imagery or a history lesson with digital archives of Pacific islander cultures.

## CA ICT Teacher Professional Development & Certification

### Professional Development

Increase your confidence in the classroom, and within the Code Avengers platform. Strengthen your understanding of key concepts and effective pedagogy for digital technologies learning.

<p>1HR ☆</p> <p>WHY TEACH DIGITAL TECHNOLOGIES</p> <p><b>Why teach Digital Technologies</b></p> <p>Join Sarah from Code Avengers as she helps teachers and school leaders to understand the benefit...</p> <p>📖</p>	<p>1HR ☆</p> <p>EFFECTIVE CLASSROOM CULTURE</p> <p><b>Effective Classroom Culture</b></p> <p>Join Hannah from Code Avengers as she visits teachers to support them with developing an effectiv...</p> <p>📖</p>	<p>1HR ☆</p> <p>TEACHING WITH CODE AVENGERS</p> <p><b>Teaching with Code Avengers</b></p> <p>Join the Code Avengers team as they introduce teachers to the Code Avengers platform, explorin...</p> <p>📖</p>	<p>1HR ☆</p> <p>CODE AVENGERS JUNIOR</p> <p><b>Code Avengers Junior</b></p> <p>Join the Code Avengers team to learn about key aspects and features of the junior courses an...</p> <p>📖</p>
<p>1HR ☆</p> <p>CODE AVENGERS PRO</p> <p><b>Code Avengers Pro</b></p> <p>Join the Code Avengers team to learn about key aspects and features of the pro courses and...</p> <p>📖</p>	<p>1HR ☆</p> <p>NZ CURRICULUM: YEARS 1-10</p> <p><b>NZ Curriculum: Years 1-10</b></p> <p>Join the Code Avengers team as they help teachers to unpack the NZ curriculum.</p> <p>📖</p>		



## Certification Requirements

Complete the required courses below to become certified.

Complete **ALL** of the following courses:

<p>1 HR GRADE 0</p> <p><b>PROGRAMMING 100</b></p> <p><b>Sea Creature Sequences</b></p> <p>Join Alex and Lonnie as they design some fancy, fishy creations.</p> <p>Progress bar: 10% complete</p>	<p>3 HRS GRADE 1</p> <p><b>COMPUTATIONAL THINKING 1</b></p> <p><b>Camping Adventure</b></p> <p>Join Tilley and Charlie on their adventure to get to Pango Rangi Campsite. Will they get there and...</p> <p>Progress bar: 10% complete</p>	<p>4 HRS GRADE 4</p> <p><b>DATA REPRESENTATION 2</b></p> <p><b>Museum Mystery</b></p> <p>Join Cody and Ava at the Museum of Communication Technology as they explore the different ways...</p> <p>Progress bar: 10% complete</p>	<p>4 HRS GRADE 5</p> <p><b>PROGRAMMING 3</b></p> <p><b>Larsson Castle Mystery</b></p> <p>Alex and Lonnie are on holiday in Finland. During their stay, they find out that Alex's mom, Leena, has...</p> <p>Progress bar: 10% complete</p>
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Complete **ALL** of the following courses in order from left to right:

<p>1 HR</p> <p><b>WHY TEACH DIGITAL TECHNOLOGIES</b></p> <p><b>Why teach Digital Technologies</b></p> <p>Join Sarah from Code Avengers as she helps teachers and school leaders to understand the benefit...</p> <p>Progress bar: 10% complete</p>	<p>1 HR</p> <p><b>EFFECTIVE CLASSROOM CULTURE</b></p> <p><b>Effective Classroom Culture</b></p> <p>Join Hannah from Code Avengers as she visits teachers to support them with developing an effectiv...</p> <p>Progress bar: 10% complete</p>	<p>1 HR</p> <p><b>TEACHING WITH CODE AVENGERS</b></p> <p><b>Teaching with Code Avengers</b></p> <p>Join the Code Avengers team as they introduce teachers to the Code Avengers platform, explorin...</p> <p>Progress bar: 10% complete</p>
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## CA E-Learning Platform

Code Avengers is an interactive e-learning platform designed to make learning ICT and digital technologies engaging and accessible. Originating from New Zealand, the platform offers a wide range of courses tailored for beginners and advanced users. These courses encompass web development, programming, design, and data science, among others.

What sets CA's platform apart is its user-friendly interface, coupled with a gamified learning experience. As learners progress through the courses, they are rewarded with points, badges, and real-time feedback, making the learning process both fun and motivating.

The platform's curriculum is meticulously crafted, ensuring that the content is up-to-date with the latest industry standards. Moreover, CA places a strong emphasis on project-based learning, allowing students to apply their knowledge in real-world scenarios and build a portfolio as they learn.

In addition to individual learners, Code Avengers also caters to educators and institutions. They offer tools and resources that assist teachers in integrating ICT and digital technology lessons into their classrooms, making it a holistic solution for digital education in the Pacific region.

<https://youtu.be/dF7S1VZzLEs?si=ZksWcptomdLS65VMV>



### Web-link to Raw data from Code Avengers e-learning Platform

- [https://docs.google.com/spreadsheets/d/11m498qtiqHYcmEVKM4bR8NRiHkAE5Q\\_x9T5ABr4ggmo/edit?usp=sharing](https://docs.google.com/spreadsheets/d/11m498qtiqHYcmEVKM4bR8NRiHkAE5Q_x9T5ABr4ggmo/edit?usp=sharing)

### Web-link to Project Surveys

- <https://docs.google.com/spreadsheets/d/1C4CmnXhmaQorOdgMuT94q8pYJOqWvUCNhUTawQkbHNQ/edit?usp=sharing>

### Websites of stakeholders

- E3 Samoa Trust - <https://www.facebook.com/e3samoatrust>
- Code Avengers - <https://www.codeavengers.com/>
- PCF - <https://www.pcf.org.nz/>
- ISIF Asia - <https://isif.asia/>

### Web-links to Individual School Reviews Report

School Name	Link to Individual School Review
Faleasiu	<a href="https://docs.google.com/document/d/14O5whCb8ulgrpr43l2y9nnrAofChElorhQg_a1B8hQU/edit?usp=sharing">https://docs.google.com/document/d/14O5whCb8ulgrpr43l2y9nnrAofChElorhQg_a1B8hQU/edit?usp=sharing</a>
Lotofaga	<a href="https://docs.google.com/document/d/1Llxk4LdZKcNQ2UigocsYGu-MRWY_G2qpRo1Euw-G2yc/edit?usp=sharing">https://docs.google.com/document/d/1Llxk4LdZKcNQ2UigocsYGu-MRWY_G2qpRo1Euw-G2yc/edit?usp=sharing</a>
Satapuala	<a href="https://docs.google.com/document/d/1ztxuLlxV_GGnfnkMILpISQf_HWG_Xas-TPhPswy0B1U/edit?usp=sharing">https://docs.google.com/document/d/1ztxuLlxV_GGnfnkMILpISQf_HWG_Xas-TPhPswy0B1U/edit?usp=sharing</a>
Gagaemalae	<a href="https://docs.google.com/document/d/1i-KreAAsGe4XmpXV7eyXkmP3DV_NCYXZo98jhV1RUi5Q/edit?usp=sharing">https://docs.google.com/document/d/1i-KreAAsGe4XmpXV7eyXkmP3DV_NCYXZo98jhV1RUi5Q/edit?usp=sharing</a>
Sasina	<a href="https://docs.google.com/document/d/1mUmhA4XWN665cgb3LCjKn4YEx_SenMBHcFmXyO1SihRc/edit?usp=sharing">https://docs.google.com/document/d/1mUmhA4XWN665cgb3LCjKn4YEx_SenMBHcFmXyO1SihRc/edit?usp=sharing</a>
Palauli	<a href="https://docs.google.com/document/d/1-ShlrF0RLcsCIBXHtjTjeAfmMTORqmqGY5DEjdB-luk/edit?usp=sharing">https://docs.google.com/document/d/1-ShlrF0RLcsCIBXHtjTjeAfmMTORqmqGY5DEjdB-luk/edit?usp=sharing</a>
Auala	<a href="https://docs.google.com/document/d/1EAFbzeasWGmOgWcFX59o9rOSa4DIEhuNMdTFi6QJW6k/edit?usp=sharing">https://docs.google.com/document/d/1EAFbzeasWGmOgWcFX59o9rOSa4DIEhuNMdTFi6QJW6k/edit?usp=sharing</a>
Falelima	<a href="https://docs.google.com/document/d/16fKvcBNASEzYzQsRIOh6qZx06D_RyXuEcq3k-eDzLUI/edit?usp=sharing">https://docs.google.com/document/d/16fKvcBNASEzYzQsRIOh6qZx06D_RyXuEcq3k-eDzLUI/edit?usp=sharing</a>
Suifaga	<a href="https://docs.google.com/document/d/1Sq17OsFh_2dfBrLCWRkRpBC-8B_HZcxhE-8jksJLs_mU/edit?usp=sharing">https://docs.google.com/document/d/1Sq17OsFh_2dfBrLCWRkRpBC-8B_HZcxhE-8jksJLs_mU/edit?usp=sharing</a>
Samata Uta	<a href="https://docs.google.com/document/d/1tYZjlkYfOeD6EnKJjbrHiPFJ5Fn5V_JuatV3hj7gi2E/edit?usp=sharing">https://docs.google.com/document/d/1tYZjlkYfOeD6EnKJjbrHiPFJ5Fn5V_JuatV3hj7gi2E/edit?usp=sharing</a>