



THE BRIDGE PROJECT

THE MOLISA FOUNDATION

11 NOVEMBER 2016

Request for Proposal:

All Children Reading:

A Grand Challenge for Development,
Round 2 Grant Competition

ELEVATING SUSTAINABLE LITERACY
IN AMBRYM VANUATU

FOCUS AREA

Family and Community Engagement

PROBLEM

Remediation

PROJECT BUDGET

\$323,841.97

TECHNICAL PROPOSAL

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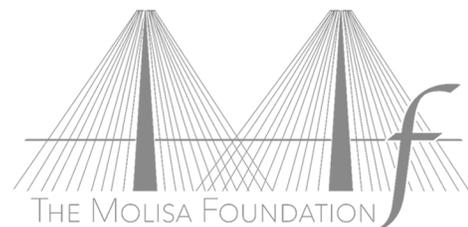
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The Bridge Project:

Elevating Sustainable Literacy in Ambrym Vanuatu

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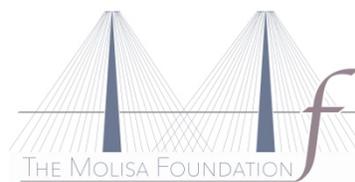


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Acronym List

EGRA	Early Grade Reading Assessment
ICT	Information Communication Technology
VanEGRA	Vanuatu Early Grade Reading Assessment
MoET	Ministry of Education and Training
RTI	Response to Intervention
VERM	Vanuatu Educational Roadmap
VANLEP	Vanuatu Literacy Education Programme
UNDP	United Nations Development Programme
NAMA	Nationally Appropriate Mitigation Action
UAP	Universal Access Policy

1. Executive Summary

The Bridge Project utilizes an innovative, social, and community-driven literacy app called *EduBrij* to improve English reading scores for grade two students in Ambrym, Vanuatu. Ambrym is among the 65 inhabited and culturally-diverse islands of the Vanuatu archipelago. The Molisa Foundation appreciates its rich local cultures and believes in providing **low-cost, effective and sustainable** literacy supports for Ni-Vanuatu children. We are ready to launch *EduBrij* as a literacy support for grade two children who are at a critical point in their education when classroom instruction transitions from their mother tongue to English.¹ The Bridge Project is a **16-month pilot** implementation with high replicability and scalability. The Molisa Foundation requests \$301,302.47 in funding to provide a literacy remediation intervention focused on family and community engagement.

EduBrij effectively supplements children's learning with 15 culturally-themed literacy audio/visual modules focused on **reading and oral comprehension**. Families and community members are **actively engaged** to co-create learning content for their children. Sample topics include cultural values and beliefs, diversity, history, gender and inclusion. The complexity and difficulty level of each module increases progressively as it combines the lessons learned in previous modules and gradually transitions from the participants' selected mother tongue into English. Constant RTI-style monitoring mechanisms allow *EduBrij* to adapt to the evolving skills of the child and provide The Molisa Foundation with monitoring reports. These reports will be used to inform our external evaluation.

The Molisa Foundation recognizes that transportation across Ambrym is difficult and infrequent. In response, *EduBrij* addresses the importance of **inter-community and cross-cultural communication** by integrating social profiles into the literacy modules. Each participant will set up a basic learning profile and will be connected digitally to a learning companion from a different community in Ambrym to exchange knowledge and cultural experiences. Our goal is not only to encourage reading at home but also connect children from different cultures.

The Molisa Foundation has formed a strategic partnership with Millbug, a South African technology company, and will distribute solar-powered, low-cost Millbug Vuya tablets installed with *EduBrij* to 150 grade two students from Leleut Primary School and Megamone Primary School in Ambrym. To address the lack of internet access on Ambrym, The Bridge Project has Google's agreement to utilize its Project Loon in order to provide Wi-Fi access for the designated area using a network of balloons in the earth's stratosphere.

The Molisa Foundation utilizes varying methods in both design and implementation to ensure that The Bridge Project is an **innovative and viable** solution. By using both **environmentally sustainable** and **easily replicable** methods, The Bridge project can be scaled to support children across Vanuatu. With **rigorous and integrated monitoring and evaluation methods**, The Bridge Project will demonstrate improved English reading and literacy scores as well as an increase in students' motivation to engage with English. *EduBrij* will increase children's literacy, ensure the preservation of the diverse communities of Ambrym, and bridge the cultural gap between children across Vanuatu.

¹ Ministry of Education. (2012) *Vanuatu National Language Policy*. Retrieved from <https://moet.gov.vu/>

2. Innovation Viability

The current state of education in Vanuatu presents a set of challenges that require innovative thinking. Along with vast linguistic diversity, Vanuatu faces unpredictable environmental disasters and issues with infrastructure. These factors, given in greater detail below, make access to quality education difficult for many Ni-Vanuatu children. The government's Vanuatu Educational Roadmap (VERM) introduces several initiatives aimed to address these issues in education for its students; The Bridge Project serves to complement these initiatives. Considering the various and uncertain factors influencing the educational landscape of Vanuatu, The Molisa Foundation has taken great steps to push technology-based innovation to the forefront to tackle these challenges. Our **social and locally-inspired app**, using **breakthrough Wi-Fi and solar technology**, strategically allows The Bridge Project to target students at a **critical language transition** in their education.

2.1 Facilitating Language Transition at a Critical Point in Schooling

Vanuatu is a country of linguistic diversity with more than 113 indigenous languages being spoken by its population. The national language of Vanuatu is Bislama, with English and French designated as official languages. Since the 1960s, schooling has been officially conducted in English-medium or French-medium schools, a result of British and French colonization. After gaining its independence in 1980, Vanuatu retained the two language school systems and established a national curriculum to unify the overall education sector.²

Ni-Vanuatu children attend lower primary schools close to or in their local village, where they learn English or French from teachers who are almost exclusively speakers with limited language proficiency in these languages themselves.³ Official documents prohibit use of mother tongue or Bislama in school settings, even extending to the playground. Despite this, as regulation and accountability have not been thoroughly established, teachers will often use these languages to clarify or emphasize points during lessons.⁴ In recent years, the government has begun to recognize the importance of mother tongue instruction and thus allow Bislama or a local vernacular to be used in early primary schooling.⁵ Students are still expected to gain English or French fluency starting in grade three over the course of their education and are tested in those languages throughout the rest of their education.

In a 2010 survey, in Ambrym, 41.3% of residents age six or older claimed literacy (partial or full) in Bislama and English, while only 4.4% reported speaking their local language exclusively.⁶ In terms of English literacy, as shown by the results of the 2010 VanEGRA, most Ni-Vanuatu children struggle to acquire basic reading skills, with only 17% of boys and 33% of girls able to read and write satisfactorily in grade four of primary school.⁷ The results additionally indicated that by the end of grade three, English fluency development was weak, with only 1 in 10 students able to understand most of the text they read.

² Crowley, T. (2010). *The Language Situation in Vanuatu*. Current Issues in Language Planning. 1(1).

³ Ibid.

⁴ Ibid.

⁵ Ministry of Education. (2012). *Vanuatu National Language Policy*. Retrieved from <https://moet.gov.vu/>

⁶ Crowley, T. (2010). *The Language Situation in Vanuatu*. Current Issues in Language Planning. 1(1).

⁷ Vanuatu Early Grade Reading Assessment Baseline Survey, Anglophone Stream Results Report. (2012). Retrieved from <http://documents.worldbank.org/curated/en/690361468133520894/Vanuatu-report>

In its conclusion, the VanEGRA report suggested that current instruction fails to establish a solid foundation for students, which leads to poor English skills as they enter the Anglophone stream. This in turn furthers the divide between expected language goals and reality. Ni-Vanuatu children need support to develop a reading habit beyond the requirements of the school curriculum to correct for this divide.

To assist Ni-Vanuatu children in improving their reading literacy in the most effective manner, The Molisa Foundation has identified a **critical transition point** in their language learning process at school. In grade two, in most Ambrym primary schools, the language of instruction in class is gradually phased from the students' mother tongue to English. We designed The Bridge Project to seize the opportunity at this critical transition point. Our emphasis on incorporating both the child's mother tongue and English allows for a smoother transition into the English stream of education.⁸ Mother tongue literacy is essential to developing literacy in a second language; by **facilitating mother tongue skills**, *EduBrij* improves reading skills in English. This attempt to bridge between languages not only fits current education trajectories, but also **prevents linguistic gaps from developing** early on in Ni-Vanuatu children's education.

This type of project is additionally unique in that neither English nor mother tongue are given dominant status; equal priority creates a more fluid and fair multilingual learning environment. While we do not ignore the dominant status of English in the national curriculum, we promote through *EduBrij* a symbiotic relationship between languages, showing that both can act as resources to enable learning.

We are cognizant of the fact that not all Ni-Vanuatu parents have the English literacy skills necessary to assist their children in their learning. This barrier potentially eliminates the crucial engagement and motivation for parents to follow up on their students' academic progress. Our use of mother tongue in *EduBrij* modules creates space for greater parental involvement. The audio and visual components of *EduBrij* serve to embrace all levels of literacy and facilitate parental involvement and academic success.

2.2 Engaging Family and Community to Co-create Learning Content

While low literacy skills could lead to low parental involvement, another factor affecting education in Vanuatu is a lack of parental knowledge about the importance of their involvement in children's schooling. Parents are not often aware of the critical role that they play in supporting not only their child's attendance at school, but also their child's learning. Many studies indicate that students do better in school when their parents are actively involved in their education.⁹ For those parents who are involved, such as reading to their child or helping him/her with homework, their children end up achieving better reading outcomes.¹⁰ The Molisa Foundation recognizes the connection between family engagement and children's learning and strategically incorporates this connection in The Bridge Project.

⁸ Ministry of Education. (2012). *Vanuatu National Language Policy*. Retrieved from <https://moet.gov.vu/>

⁹ <http://dfat.gov.au/about-us/publications/Documents/vanuatu-education-sector-program.pdf>

¹⁰ Vanuatu Early Grade Reading Assessment Baseline Survey, Anglophone Stream Results Report. (2012). Retrieved from <http://documents.worldbank.org/curated/en/690361468133520894/Vanuatu-report>

While Ni-Vanuatu parents consistently rate education as highly important, they do not have much guidance in how to help their child succeed in school. Other community engagement programs, such as the Vanuatu Literacy Education Programme (VANLEP), utilize parents' influence as teachers, yet the materials they use are often standardized and lack substantive cultural connection.¹¹ Parental participation in these programs tends to be encouraged only through attendance in community meetings or advocacy campaigns; follow-through in those endeavors is not always successful because of inadequate accountability.¹²

To tackle these challenges, The Bridge Project encourages **deeper parental integration in learning materials** throughout the entirety of the program. Children respond better to content that is interesting and relevant to their experiences. During initial phases of content development, in a series of focus groups, parents work with app developers to add their personal and cultural stories and experiences to topics such as cultural values and beliefs, diversity, history, gender and inclusion. Our app developers and program manager then ensure that these stories meet educational standards and center the stories around a cultural theme for each of the 15 modules. This in turn provides their children with ties not only to their individual family histories and cultures, but also the histories and cultures of their surrounding community that they can read and listen to whenever, wherever.

We believe the integration of **family- and community-specific content** in our app embodies a robust sense of involvement. Ni-Vanuatu are proud of their culture, and each region maintains strong cultural bonds to their ancestral land. In Ambrym, ancient customs play a significant part in day to day living, and cultural heritage practices are frequently utilized in the community.¹³ These themes drive *EduBrij's* 15 modules, which in turn improves students' intrinsic motivation to read and set them up for better learning progress. By mobilizing adult Ni-Vanuatu to co-create content themes for each module, The Bridge Project innovatively solicits the cultural expertise and engagement from the community.

Once students embark on their learning journey with *EduBrij*, the parents' job does not end; rather, the app integrates parents further in various learning activities to ensure their continued involvement. For example, *EduBrij* prompts students to record topical conversations of up to 5 minutes with their parents that are guided by questions in each module. These types of activities aim to **increase parental familiarity with and engagement in their children's learning**. Because of this, we anticipate that parents will have greater interest in not only the lessons, but also in helping their children succeed in achieving the app goals and learning at home. This will therefore encourage the very same **effective practices** suggested by the VanEGRA.

¹¹ UNESCO Institute of Lifelong Learning. (n.p.) Vanuatu Literacy Education Programme. Retrieved from <http://www.unesco.org/uiil/litbase/?menu=4&programme=34>

¹² Ibid.

¹³ Mikjel Rio, K. (2007). *The Power of Perspective: Social Ontology and Agency on Ambrym Island, Vanuatu*. New York: Berghahn Books.

2.3 Connecting Communities beyond Geographical Boundaries

One commonality shared among Ni-Vanuatu is their aspiration for connectivity, in the sense that they are shifting towards greater mobility and expanding their networks.¹⁴ People within every island and even every language district of Vanuatu express an eagerness to see how other groups practice their cultural heritage.¹⁵

Because travel and communication between villages in Ambrym is limited or difficult, the opportunity for students to go beyond their immediate community to connect with these unexplored networks is restricted. *EduBrij* removes those barriers by connecting students through social profiles across the two targeted schools, Megamone Primary School and Leleut Primary school. The social profile component of *EduBrij* uploads writing samples, reading passages, and recorded audio and video content from the 15 modules to a student's profile. The app's learning companion function pairs users from one school to another and further promotes active discussion of differing cultural activities in their lives. These features offer students the opportunity to express their individual cultures as well as their pride in them while allowing other users of the app to witness and learn about cultural differences and similarities. Exposure to varying cultural practices not only **opens new opportunities to learn**, it also opens opportunities to engage in dialogue, which **enhances critical thinking development**.¹⁶

We anticipate an eager acceptance in culture sharing through the social networking function of our app. This is an effort that engages not only the students, but the parents too, as the social profiles incorporate discussion activities between the students and their parents. We additionally give students opportunities to share what they've learned about other cultures with their parents through targeted questions. The chance to engage in cultural dialogue beyond community boundaries is an unexplored and rich educational opportunity for community members in Ambrym.

2.4 Powering Learning with Innovative Technology

Vanuatu is not immune to natural disasters: its position and geographical makeup leave it extremely vulnerable to cyclones, typhoons, volcanic eruptions, and many other natural shocks. Such unpredictability in the effects of these various natural occurrences can and do make access to education difficult for students, especially those living in rural areas. Ambrym is subject to continuous volcanic activity that greatly influences the way of life for its communities; for example, villagers in Southern Ambrym have had to relocate to evade deleterious effects of volcanic activity as recent as 2009.¹⁷ This type of inconsistency must be handled with innovative solutions, and The Molisa Foundation has developed **thoughtful partnerships** with economically **self-sufficient products** to combat these challenges.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Hurtado, Sylvia. (2001). Linking Diversity and Educational Purpose: How Diversity Affects the Classroom Environment and Student Development. In Orfield, Gary, Ed., *Diversity Challenged: Evidence on the Impact of Affirmative Action*. Cambridge, Harvard Education Publishing Group. p187-203.

¹⁷ Government of the Republic of Vanuatu. (2009) Ambrym Volcanic Activity Situation. Retrieved from http://www.pacificdisaster.net/pdnadmin/data/original/VUT_Ambrym_VO_activity_situation.pdf

As only 17% of rural dwellers—roughly 75% of Vanuatu’s population—have access to electricity other than battery-powered technology, The Molisa Foundation strategically turns to one abundant resource in Vanuatu to support the Bridge Project: the sun.¹⁸ One way to ensure that children are receiving their education no matter what the environmental situation may be is to offer them solar-powered mobile devices that can be used anywhere. By partnering with Millbug, the provider of low-cost solar-powered Millbug Vuya tablets installed with *EduBrij*, we eliminate the risk of interrupted or nonexistent grids. Children therefore can utilize *EduBrij* in their home whether they have electricity or not. Their education, therefore, is neither interrupted nor nonexistent outside of the classroom. This is a low-cost solution to the electricity challenge presented by Vanuatu’s current infrastructure situation.

These efforts additionally comply with the United Nations Development Programme (UNDP) and Vanuatu government’s Nationally Appropriate Mitigation Action (NAMA) renewable energy project.¹⁹ As the project expands its infrastructure reach to wider areas of Vanuatu, The Bridge Project can innovatively and economically accommodate the education and energy needs of not only the Ambrym community, but the entire nation of Vanuatu.

The challenge of high-speed and stable Internet access will be addressed by partnering with Google, which aligns us with their mission of technological exploration. Google’s Project Loon is the first of its kind to provide substantial Internet services to underserved populations. Using a network of reusable balloons in the stratosphere, this technology provides Wi-Fi access to the populations below while avoiding potential weather effects as it moves across a designated area. This **breakthrough in connectivity** helps us overcome the current challenges of Internet access in Vanuatu.

2.5 Enhancing Learning with Response to Intervention (RTI) Approach

Our technological innovations extend beyond the environmental challenges to address issues with instruction in Vanuatu. Many teachers in Vanuatu are under-equipped, unsupported, and inadequately trained in teaching literacy and numeracy.²⁰ While these are serious issues that need to be addressed, and are receiving funding from other projects and programs, *EduBrij* offers a **built-in RTI remediation approach** that identifies struggling students. RTI is a data analysis-based system that continuously makes pedagogical decisions while students interact with modules to address educational needs and prevent learning delays. This approach enhances learning by identifying the needs of students early in their learning process. RTI follows a three-tiered model:

Tier 1: High-Quality Instruction, Screening, and Group Interventions

In this first tier, students begin with the same, high-quality material and methods of instruction. Throughout the 15 modules, the app screens students based on their performance. Students who move easily through each of the lesson modules indicate content comprehension, and therefore do not require

¹⁸ International Renewable Energy Agency. (2015) Vanuatu Renewable Readiness Assessment. Retrieved from http://www.irena.org/DocumentDownloads/Publications/IRENA_RRA_Vanuatu_2015.pdf

¹⁹ United Nations Development Programme (2015) Rural Electrification in Vanuatu. Retrieved from <http://www.undp.org/>

²⁰ Vanuatu Education Sector Program. (2012). Retrieved from <http://dfat.gov.au/about-us/publications/Documents/vanuatu-education-sector-program.pdf>

supplementary aid. Students who demonstrate difficulty with lesson completion, however, are identified within the app (though not communicated to the student) as struggling and move on to Tier 2, where they receive additional support.

Tier 2: Targeted Interventions

Within Tier 2, a struggling student's needs, based on the levels of performance and rates of progress, the app matches students with **appropriate instruction remediation**. Varying in intensity and duration, depending on initial performance levels, this instruction intervention means to address areas in which the student is weaker and assist in catching him or her up to the required level for module progression. For the student, this will look like additional audio or reading exercises to complete the module. Because they are not being explicitly told of their identification as “struggling”, students in this category will not face any negative psychological effects from such labeling.

If a student continues to show little progress during this targeted intervention stage after five recursive attempts, the student moves on to Tier 3.

Tier 3: Intensive Interventions and Comprehensive Evaluation

The level of intensity in Tier 3 increases significantly to address the skill deficits of students reaching this level. Teachers are notified at this stage to assist in providing individualized interventions in the classroom. Further lack of substantial progress in this stage may lead to a formal and comprehensive evaluation of the student to determine if there are unacknowledged or unserved learning disabilities that must be accommodated. These are processes that teachers and school administration will handle, as this goes beyond the current scope of *EduBrij* and The Molisa Foundation.

By monitoring the progress of students at every step of their lessons with the RTI approach, *EduBrij* provides **customized lessons** to meet the learning demands of individual students. This type of learning instruction is meant to complement the in-classroom instruction to produce **improved reading skills** among the children of Megamone Primary School and Leleut Primary School.

3. Application and Sustainability

While the Bridge Project is a sustainable and cost-effective concept that can be easily scalable and replicable in other countries, this iteration is tailored to the hallmarks of Vanuatu culture. Diversity is one of the Ni-Vanuatu's key characteristics; however, it also presents distinct challenges for education policymakers aiming to improve literacy among primary school students. Leveraging new technologies in innovative ways, we at The Molisa Foundation intend to tackle this challenge by transforming the way grade two students learn, pushing the boundaries of traditional education to derive optimal academic results from Ni-Vanuatu students.

The diversity in mother tongues across the islands of Vanuatu makes language instruction difficult. As a result, children do not meet grade appropriate literacy requirements. Our theory of change stems from the belief that by providing needs- and culture-specific supplementary bilingual education at a critical language transition point, the literacy outcomes of grade two Ni-Vanuatu students will improve. The Molisa Foundation has designed our invention, *EduBrij*, to be easy to navigate and self-monitoring, allowing these students to learn at their own pace through contexts and themes relevant to their daily life.

3.1 Contextualizing the Bridge Project

The Molisa Foundation has conducted thorough research on the country's existing state of education. As of 2015, the primary school enrollment rate was only 86%, and the promotion rate was 83%, indicating that problems with dropouts and low completion and progression rates persist.²¹ Among the Ministry of Education and Training's (MoET) key strategic targets is improved levels of literacy, an issue it is unable to adequately address alone. Despite approximately 23% of total government expenditure being dedicated to education, nearly 90% of these funds are needed for teacher salaries and relevant costs.²² Moreover, although teachers are employed at a 1-for-25 ratio, only 63% of primary school teachers in 2015 were certified instructors.²³

Infrastructure is an additional concern. Many schools in rural Vanuatu are lacking in resources; for example, only 29% of school water supplies are in adequate condition.²⁴ Vanuatu's tropical climate yields a long rainy season, wherein significant rainfall and cyclones make it difficult for students to travel to school. During Cyclone Pam in March 2015, schools in the Shefa and Tafea provinces were substantially damaged, leading to their closure for over a month.²⁵ It is therefore important to consider ways that education can be supplemented at home.

²¹MoET. (2015) Annual Statistical Digest. Retrieved from https://moet.gov.vu/docs/statistics/Annual%20Statistics%20Digest%20for%20the%20Ministry%20of%20Education_2015.pdf

²²MoET. (2006) Vanuatu Education Sector Strategy 2007-2016. Retrieved from <http://www.paddle.usp.ac.fj/collect/paddle/index/assoc/van019.dir/doc.pdf>

²³n.a. (2015) Education in Vanuatu. Retrieved from https://moet.gov.vu/docs/press-releases/ministry/2015%20Education%20Statistics_05_2016.pdf

²⁴MoET. (2015) WASH in Schools. Retrieved From https://moet.gov.vu/docs/policies/WASH%20in%20Schools%20-%20Call%20to%20Action_2016.pdf

²⁵MoET. (2015) Annual Statistical Digest. Retrieved from https://moet.gov.vu/docs/statistics/Annual%20Statistics%20Digest%20for%20the%20Ministry%20of%20Education_2015.pdf

The Molisa Foundation provides learning support that does not divert strained government funds, and that offers high-quality teaching methods independent of traditional classroom environments. We designed our solution for the home, so that students' learning experiences are not disrupted because of external factors, such as traditional gender roles, that make attending school challenging. For this project, we have selected to target the 150 grade two students of the Megamone and Leleut primary schools in Ambrym. Both schools have historically been recipients of international aid, and so are open to and practiced in external partnerships. The two schools and their pertinent communities are a significant distance apart, which has traditionally prevented interaction between the two, an issue *EduBrij* seeks to address.

3.2 Literacy Improvement

3.2.1 Mother Tongue Instruction

Our chief focus is on making English, one of the principal languages of formal education in Vanuatu, easier to learn and more accessible for grade two students in rural communities. The education language policy in Vanuatu mandates that English or French be utilized as the language of instruction beginning in grade two. There are nearly double the number of primary school students learning in English as there are in French.²⁶ However, extensive research has proven that children learn most effectively when taught in their mother tongue, as their command over the vocabulary and semantic structure makes it easier for them to make connections with new concepts tied to a second language. As a result, mother tongue instruction provides a crucial foundation for students as they embark upon the process of transitioning towards bilingual or multilingual education.²⁷

EduBrij uses audio software to offer grade two students a stimulating environment for English-learning that puts early heavy emphasis on learning through their mother tongue. Upon accessing the application, students see a welcome menu, where they can select the language they wish to use from a list of options verbally announced. Once chosen, that language will provide the basis of all instructional recordings, while written text will appear exclusively in English to enable children to make connections between the English words and their definitions and applications, as explained in the child's mother tongue. *EduBrij's* learning model is centered on the concept of immersion, from speaking and listening to reading itself. Our application employs all of these forms of the English language while relying on the students' core competencies in their mother tongue to bridge difficult learning gaps. As students' progress through the 15 modules and their vocabulary and grammar subsequently increase, their mother tongue gradually is phased out and English becomes the predominant language within *EduBrij*.

3.2.2 Learner-Centered Pedagogy

The Bridge Project complements traditional classroom learning, as *EduBrij* facilitates self-learning at one's own pace while using RTI-based technology to identify those who require special attention. Struggling students thus receive supplementary training tailored to their learning needs, enabling teachers to more efficiently allocate their time during class. *EduBrij* has the greatest impact on students not already at the top of their class, as it gives them the opportunity to access effective learning tools focused

²⁶MoET. (2015) *Annual Statistical Digest*. Retrieved from https://moet.gov.vu/docs/statistics/Annual%20Statistics%20Digest%20for%20the%20Ministry%20of%20Education_2015.pdf

²⁷UNESCO. (2011) *Enhancing Learning of Children from Diverse Language Background: Mother Tongue-based Bilingual or Multilingual Education in the Early Years*. Retrieved from <http://unesdoc.unesco.org/images/0021/002122/212270e.pdf>

specifically on their weaknesses in the privacy of their homes, without peer pressure, gender biases, or time constraints. While *EduBrij* helps teachers identify students with learning disabilities, the app does not have built-in assistive technologies for such students. This is a constraint the Molisa Foundation is still working to address.

Through its colorful and interactive interface, and multimedia learning methods, such as pictures, videos, audio recordings of stories, conversations, and songs, *EduBrij* ensures that there is something exciting and relatable for every grade two student, and that different learning preferences and abilities are addressed. The Bridge Project has made every effort to honor MoET's mission, in which literacy is viewed as a means of providing life and livelihood skills, and instilling in students a respect for their history and culture, and an awareness of gender equality, disabilities, and minority inclusion.²⁸

3.2.3 Technological Literacy

At The Molisa Foundation, we believe that literacy does not solely refer to the ability to “use the dominant symbol system of a culture – sounds, alphabets, numbers, and visual symbols – in order to communicate with others,” but also to the ability to navigate other methods of communication in life.²⁹ In this view, we are aligned with MoET, which is also focused on visual literacy, media literacy and information literacy. *EduBrij* has therefore been specifically developed to address all of these types of literacies, using an interactive platform that requires real-time responses from students to information disseminated through various types of media. For many grade two students, this is likely to be their first foray into web-based technology, and consequently, we have ensured that the design of *EduBrij* is simple enough for even a grade one student to comprehend, and that the commands are intuitive and easy to learn.

3.3 Family and Community Engagement

The Ni-Vanuatu have great pride in their culture and a strong sense of responsibility to employ home-grown methods of tackling national concerns. The Vanuatu Education Sector Strategy, developed in 2006 to target schooling initiatives from 2008 to 2017, explicitly outlines the importance of giving Ni-Vanuatu greater control of their children's development agenda and of fostering self-reliance. The Ni-Vanuatu view education as “the key to protecting [their] culture and identity and to developing individuals, communities, and the productive sectors.”³⁰ It is therefore important to harness their contributions to improve the literacy of grade two children. The Molisa Foundation prioritizes supporting parental involvement in each child's education, and places heavy emphasis on gathering input from major Ni-Vanuatu stakeholders. We believe this is the only way to ensure our project's success and sustainability.

3.3.1 Family Engagement

The Bridge Project concentrates on family engagement through the provision and frequent tracking of education data. Using a simple interface devised for grade two students, *EduBrij* requires students to

²⁸ MoET. (n.a) Mission Statement. Retrieved from <https://moet.gov.vu/index.php?id=mission-statement>

²⁹ MoET. (n.a) Literacy Learning in the Vanuatu Kindergartens. Retrieved from <http://education.gov.vu/docs/ecce-reports-and-policies/Literacy%20Development%20in%20the%20Vanuatu%20Kindergarten.pdf>

³⁰ MoET. (2006) Vanuatu Education Sector Strategy 2007-2016. Retrieved from <http://www.paddle.usp.ac.fj/collect/paddle/index/assoc/van019.dir/doc.pdf>

complete 15 literacy modules selected through community inputs that teach and test reading and oral comprehension. Involvement from the students' families is crucial to the process, with each module containing various tasks wherein the child is required to engage with his/her family members, for example, to learn vocabulary specific to the family's customs and rituals and the sentence structures through which this vocabulary can be used.

Parent-child interaction plays a large role in each module, and consequently their interactions, as well as interactions with grandparents, siblings, and other family members, are recorded into the application and subsequently uploaded to each student's user profile to become a critical part of his or her *EduBrij* identity. These recordings have several purposes:

- To constantly reinforce to both the parent and child the importance of frequent discussions around education.
- To facilitate the process of culture-sharing. Each child will be matched with at least one learning companion from another school, enabling learning companions to learn each other's traditions and habits via their recordings. Through this feature, children are given an in-depth access to other families, allowing them to draw comparisons and understand that culture can be unique to each family unit.
- To ensure effective monitoring and evaluation for the Bridge Project. *EduBrij* has built-in voice recognition technology that tests for multiple voices in each recording, therefore facilitating our tracking of familial engagement in the project. Although parents are also required to self-report on their commitment, it is important for us to be able to qualitatively and quantitatively evaluate family engagement without bias.

We are confident that when family members are given a prominent role in each child's learning process, they will be able to have a strong, lasting positive impact on the child's academic achievement, and help to make modules more dynamic, exciting and constructive for the student. In this way, children are able to contextualize their learning of the English language within familiar concepts, parents are consistently updated on their child's progress and scores, and familial traits are kept alive within the new generation.

While parental involvement in education can be limited in households where both parents have jobs, we believe *EduBrij* largely bypasses this constraint, as it can be used outside of regular workday hours and gives parents a formalized opportunity to actively contribute to their child's education without requiring major time commitment. By raising awareness of the importance of parental involvement, and better-equipping families to act as support systems for student learning, The Bridge Project provides the scaffolding necessary to institutionalize this practice within our target communities, so that it can be utilized for decades to come.

3.3.2 Community Engagement

The Bridge Project also harnesses Vanuatu's impressive diversity to build engagement in grade two education within the broader community. Community input is a critical feature of our design process for the *EduBrij* application, and each module will be developed in response to suggestions from various community members, including the parents themselves, village leaders, teachers, doctors, farmers, and others to ensure that *EduBrij* offers a holistic view of life in Vanuatu. In the months leading up to the

academic school year, our design team will conduct focus groups with the aforementioned categories of community members to ascertain the kind of material that they would like to see embedded in the grade two curriculum. We will target various categories of people – of different ages, genders, mother tongues, occupations, etc., to ensure that there is demographic diversity involved in the thematic planning process.

A team of representatives for each mother tongue will be selected to assist with translation, in order to effectively implement those languages into the application. After reviewing the information provided by the community, our design team will develop module content, which will follow 15 progressive themes that build upon one another with ascending difficulty. The final product will be presented to the same focus groups to allow us to gather additional input and feedback. Through this careful process of planning and implementation, The Bridge Project will guarantee that community members are engaged with the grade two student literacy curriculum, and more importantly, facilitate the creation of a generation of children in tune with and cognizant of their culture and potential contributions to society.

To that end, *EduBrij*'s learning companion feature will also give grade two students the opportunity to easily form networks with one another to learn the characteristics of other families as exemplified by each learning module. Learning companions are particularly useful in the context of the Vanuatu archipelago, where inter and intra-island travel is difficult. By allowing children to record messages to send to their learning companions, *EduBrij* is able to foster friendships and greater cultural understanding that will have long-lasting positive repercussions. We are proud to say that The Bridge Project respects and celebrates the diversity that is a trademark of Ni-Vanuatu, and at the same time, breaks down the physical barriers that have prevented Ni-Vanuatu from tapping into the rich benefits of that diversity.

3.4 Project Sustainability

3.4.1 Cost-Effectiveness

The Bridge Project is a cost-effective way to address literacy in Vanuatu, and is by nature easily sustainable. Millbug Vuya tablets are inexpensive and durable, and have already been proven since their conception in 2014 to be an effective mechanism for education.³¹ As the tablets were originally developed as a tool to drive development, they are sold at close to production value, and prices have remained and are expected to continue to remain stable. Since the tablet utilizes cutting edge technology and is expected to remain optimal for many more years, each tablet initially purchased can be recycled for the next few cohorts of grade two students, with broken tablets easily replaceable at minimal cost.

We designed *EduBrij* to be easily updated, and user profiles are regularly backed up with cloud technology when students connect with Wi-Fi. Software malfunctions are reported in real-time to our team of app developers to ensure that problems are fixed quickly. After the pilot testing stage, we expect modules to run smoothly, and offer on-the-ground training to students to ensure that they can use *EduBrij* effectively and feel supported by a team of competent professionals. The Molisa Foundation's long-term investors support our sustainability goals through contributions to an internal budget that covers the maintenance costs of projects no longer receiving funding from outside donors. This budget

³¹ n.a. (2014) Millbug Vuya tablet: A Solar-powered Android Tablet developed by 2 South African. *Businessscabal*. Retrieved from <http://businesscabal.com/millbug-vuya-tablet-solar-powered-android-tablet-developed-2-south-african/>

has allowed us to successfully sustain many of our earlier projects beyond their expected timespan, and will be used for The Bridge Project to maintain and update the *EduBrij* software.

3.4.2 Solar Power

Utilizing solar powered tablets for The Bridge Project means that schoolchildren can use the technology daily with no additional infrastructure needed nor additional costs to families. While electricity can be unreliable, particularly in rural areas of Vanuatu, the Millbug Vuya tablet overrides these potential difficulties, making it easy to learn under all weather and financial conditions. The tablets take only eight hours to charge for up to two days of use.³² With each student anticipated to work with *EduBrij* for up to one hour daily, we expect that the tablets will need to be recharged infrequently, making it all the easier for young students to maintain.

In addition to being cost-effective and practical for the Ambrym climate and state of infrastructure, our use of a renewable energy source aligns with the United Nations' Sustainable Development Goal of promoting affordable and clean energy.³³ We will share this message with Ni-Vanuatu stakeholders in order to raise awareness of its importance, and expect it to lead to further use of solar power elsewhere within the Ambrym communities.

3.4.3 Access to Wi-Fi

Crucially, partnering with Google's Project Loon overcomes current internet access issues. The Loon balloons will sufficiently provide to the entire spectrum of *EduBrij* users high speed wireless internet for the full school year. Moreover, as Loon balloons are designed to withstand conditions in the stratosphere, potential poor weather conditions in tropical cyclone-prone Vanuatu will not disrupt the service.³⁴

With Vanuatu's Rural Electrification Project well underway, we believe widespread internet services are forthcoming in the country; however, Project Loon is a highly effective solution in the interim. Vanuatu has pledged under the Universal Access Policy (UAP) to develop telecommunications infrastructure within 25 rural sites. The project is expected to be completed by early 2018 and will be critical to MoET's goal to ensure widespread internet access and ICT in its schools.³⁵ Consequently, we highly recommend The Bridge Project as a means of improving literacy in Vanuatu today, not only because of its widespread capabilities and applications, but also because of its efficacy and sustainability. We have every confidence that it will continue to be a key solution in the future.

³²n.a. (2014) Facilitation crucial to promoting education in Africa. *CNBCAFRICA*. Retrieved from <http://www.cnbcfrica.com/news/resources/2014/09/11/solar-powered-tablet/>

³³ UNDP (n.a.) Sustainable Development Goals. Retrieved from <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-7-affordable-and-clean-energy.html>

³⁴n.a. (n.a.) Project Loon. Retrieved from <https://www.solveforx.com/loon/>

³⁵n.a. (2014) A new dawn in education – ICT enabler. https://moet.gov.vu/docs/press-releases/ministry/A%20new%20dawn%20in%20Education%20ICT%20Enabler_10_2014.pdf

4. Monitoring & Evaluation Introduction

As previously stated, Vanuatu is a linguistically and culturally rich country plagued by low literacy and environmental and infrastructural hurdles. In addition to these issues, a major impediment to quality learning in the Ni-Vanuatu school system is the lack of community and family support. To tackle these two main problems, The Molisa Foundation launches The Bridge Project, a year-long ICT intervention for grade two students on the island of Ambrym. *EduBrij*, the primary tablet application of The Bridge Project, uses learners' mother tongue to scaffold English-learning. *EduBrij* features a series of learning modules with community-sourced curriculum that aligns with Vanuatu's MoET grade two standards.

The Bridge Project's Theory of Change expects improvement in Ni-Vanuatu English reading scores through the supplementary training and community and family engagement opportunities provided by *EduBrij*. Due to inconsistent assessment of children's reading skills at school, children who are at risk of failing to learn at appropriate grade levels are not able to receive early identification and intensive remediation efforts from teachers and community. In this case, *EduBrij* features diverse multimedia learning methods to ensure that different learning preferences and skills are addressed. Culturally-relevant activities embedded in the app encourage students to read, write, and speak in English, which increase their interest level of learning English language and improve their academic performance. The activities prepare students to proceed to the successive school year and graduate on time. In addition, extra-school support in the community and family is an important facilitator in language acquisition and academic success, thus *EduBrij* has embedded features which comprehensively ensure that parents and children spend time on education-related activities together, strengthen student academic performance, and engage the community with the students' academic lives.³⁶ *EduBrij* app developers work directly with parents to co-create content. *EduBrij*'s function to record and share stories builds engagement within the broader community.

The Bridge Project's success depends upon (1) community willingness to engage, and (2) *EduBrij*'s smooth functionality. In order to ensure community willingness to engage, The Bridge Project's marketing strategy includes programs to educate the Ambrym public about the benefits of community and family engagement. Benefits promoted include greater student achievement, more cohesive community, and the endurance of cultural and historical stories and customs. Historical weather data of the region assure us that there is ample sunlight throughout the year to consistently charge *EduBrij* tablets.³⁷ To ensure smooth functionality, The Molisa Foundation has dedicated a team to The Bridge Project to provide timely and professional technical assistance. We also will provide teachers with a phone number by which to reach The Molisa Foundation personnel.

4.1 The Bridge Project Objectives

In order to ensure and determine the extent of The Bridge Project's success, monitoring and evaluation of The Bridge Project is set to take place over 16 months. Monitoring will take place over the 9-month duration of the app's implementation. We will gather baseline data during the pre-implementation period and the early stages of implementation to inform our post-program evaluation. Program evaluation will

³⁶ National Education Association (2008). Parent, Family, Community Involvement in Education (Policy brief). Retrieved from http://www.nea.org/assets/docs/PB11_ParentInvolvement08.pdf.

³⁷ Vanuatu Government. Ministry of Infrastructure and Public Utilities. (2007) Climate of Vanuatu.

occur after the academic year. The Molisa Foundation acts as the central body for monitoring and Crown Agents, an independent firm, is conducting the evaluation. The Molisa Foundation is delegating evaluation to Crown Agents in order to efficiently allocate resources and ensure unbiased evaluation results. The Molisa Foundation's strength lies in its design and upkeep of *EduBrij*'s in-app monitoring and testing mechanism. Rather than training a new team, it makes most economic sense for The Molisa Foundation to seek Crown Agents' expertise. The Bridge Project has established four indicator-based program objectives to guide the overall monitoring and evaluation strategy:

Objective 1a: A statistical increase of 2 standard deviations between the pre- and post-*EduBrij* Literacy Assessments;

Objective 1b: 95% of students achieving full *EduBrij* Unit Completion

The first goal of The Bridge Project is student's increased ability to read in English (Annex 2, Project Outcome 1). In order to measure this increase, we assess the students through end of module tests. We aim for a statistical increase of 2 standard deviations between the pre- and post-assessments of participating students (Objective 1a). Improvement is maximized when a student has completed all fifteen *EduBrij* modules, thus The Bridge Project has a secondary, related objective for 95% of students to achieve full *EduBrij* unit completion (Objective 1b). The modules are considered complete when the student has achieved a 85% accuracy score or above.

Students must complete all fifteen modules in order to participate in the assessment, so we ensure that students' increased use of the ICT results in improvement in their literacy ability (Annex 2, Output 1). The assessments' external validity as measures of reading ability has been verified by consultants from the University of the South Pacific in Port Vila, Vanuatu. Improvement on *EduBrij* literacy assessments after having completing the *EduBrij* modules thus accurately reflects improvement in student reading scores (Annex 2, Project Outcome 1).

Objective 2: Increased family and community engagement

In order to achieve The Bridge Project's goal of greater family and community participation in the students' schooling (Annex 2, Project Outcomes 4 & 5), The Bridge Project has incorporated activities within *EduBrij* which necessitate joint parent-student collaboration. Students and parents record cultural stories, poems, and songs as part of module completion. A diversity of voices from the community is brought into the curriculum creation process, giving community members a stake in their children's education. Students and community members can connect through dialogue about *EduBrij*'s community-created curriculum. Family and community engagement advances The Bridge Project's primary outcome "Improved reading scores for students" (Annex 2, Project Outcome 1) by providing supplementary spaces outside of the school for students to read and by bringing parents and community members whose knowledge and support can offer additional encouragement and motivation. *EduBrij* promotes increased use of the ICT for improved reading (Annex 2, Output 1) through community-sourced culturally-relevant curriculum and joint parent-child activities. Students are more motivated because they can connect the content to their day-to-day lives. The collaborative activities provide a medium for the parent and child to talk about educational topics together, underscoring to the child the importance of education, and the parent can be a source of academic support or make connections to the culture and family to further pique the child's interest.

Objective 3: 90% of students of On-Time Grade Two Completion

The Bridge Project's third goal is to raise student literacy rates, thereby enabling students to be promoted to subsequent grades (Annex 2, Project Outcome 3). It is in the student and community's best interest that students be promoted with the rest of their cohort. Emotional adjustment and self-esteem, among other psychological indicators, are negatively impacted when students are held back.³⁸ *EduBrij*'s objective to assist grade promotion is achieved through the app's activities which bolster students' vocabulary and reading skills (Annex 2, Project Outcome 1). *EduBrij*'s reading and vocabulary activities provide supplementary curriculum so that those students who do not have enough in-classroom assistance and would otherwise be held back due to low literacy competence have the requisite skills be promoted to grade three upon completion of the modules (Annex 2, Output 1).

Objective 4: 50% increase in the number of students comfortable reading in English

The Bridge Project also promotes the student's increased ease and use of English (Annex 2, Project Outcome 7). *EduBrij* scaffolds the student's language learning by using the mother tongue to introduce familiar concepts to the student while also teaching the accompanying English word. *EduBrij*'s (Annex 2, Output 1). Students are not entirely overwhelmed as they would be in an all-English curriculum. Ease in reading English goes hand in hand with improved vocabulary. As students are able to identify and read more English words (Annex 2, Project Outcome 1), they will be more comfortable in the language. As students become more familiar and more comfortable with English, we expect their attitudes towards English to become more positive as well.

4.2 The Bridge Project's Monitoring Measures:

Monitoring Question 4.2.1: How has student literacy improved as a result of EduBrij?

Monitoring Methods: In order to examine whether *EduBrij* affects reading skills, we use quantitative methods to track reading assessment scores. Five milestones are set up at the pre-implementation stage and the end of each academic quarter (Q1 to Q4). Students are tested in the pre-implementation stage before using the app. Their original reading scores are used as baseline data. Student scores are also collected at the end of Q1, Q2, Q3, and Q4 for measuring progress and final outcomes based on *EduBrij* assessments. Future improvement and adjustments are made from analyses of trends and patterns in student performance.

Monitoring Question 4.2.2: Are students completing EduBrij? (Obj. 2)

Monitoring Method: In order to assess module completion, *EduBrij* has an in-app monitoring function to collect data on each student's progress. Four milestones are set up, such that students have completed five modules at the end of every quarter. At the end of Q4, data is collected from the *EduBrij* server on the percentage of students who have completed all 15 modules.

Monitoring Question 4.2.3: How motivated the students are to complete the modules? (Obj. 2)

Monitoring Method: To understand students' motivation for completing the modules, we are collecting survey data from the app and interviewing a random selection of participating students every quarter. A descriptive analysis of the ongoing feedback is conducted to assess students' progress in module

³⁸ Jimerson, S. R. (2001). Meta-analysis of grade retention research: Implications for practice in the 21st century. *School Psychology Review*, 30, 313-330.

completion. If any student reaches Tier 3 in our RTI system (deemed in need of assistance outside of the app), the teacher is notified by program staff to offer additional assistance to the student, and the student is provided easier modules in the app. In order to motivate students to complete the modules on time, *EduBrij* includes 15 in-app games, which can only be accessed after completing each module.

Monitoring Question 4.2.5: Are parents engaged in their child's education? (Obj. 4)

Monitoring Method: In order to ensure parental involvement in their child's education, we require participating students to record and upload the activities completed by parents and student. Voice-recognition technology identifies the voices of parents and their children. These recordings become part of the students' profile. The app automatically tracks the number of uploaded recordings as well as how often each recording is listened to by others. At the end of every quarter, the data is reported to us. *EduBrij* notifies student and parents if they have not completed the joint activities on time. Teachers and additional assistance are provided if student or parents have difficulties completing these activities.

Monitoring Question 4.2.6: What are students' and parents' user experiences when using the app?

Monitoring Method: To understand how participating students, teachers, and parents think about the app, we will form a focus group at the end of every quarter. The focus groups consist of 8-10 members who are randomly selected from the community. They are asked questions such as "how do you like the app?", "which part of the app do you think it's most useless?" Based on their feedback, we will adjust and improve the app.

Monitoring Question 4.2.7: Are students more interested in the English language as a result of EduBrij? (Obj. 5)

Monitoring Method: We are conducting in-app surveys at two time points: before the modules are introduced and after students have completed all 15 modules. The one-question surveys, offered in the child's self-selected language and conducted by audio, ask students to rank three languages (English, Bislama, and their mother tongue, if applicable) in order of most likely to least likely in response to the prompt: "Rank the languages in order of likeliness you read each language in your spare time."

4.3 Evaluation Measures

Crown Agents is in charge of evaluating the following questions, which cover literacy improvement and parent and community engagement measures.

Evaluation Question 4.3.1: Does EduBrij increase student literacy assessment scores? (Obj. 1)

Evaluation Method: In order to examine whether *EduBrij* promotes students' reading skills, Crown Agents use quantitative method to compare students' pre-*EduBrij* Literacy Assessment (baseline data) with their final *EduBrij* Literacy Assessment scores.

Evaluation Question 4.3.3: Does The Bridge Project improve student promotion rates from grade two to grade three? (Obj. 3)

Evaluation Method: Retention and promotion data of The Bridge Project's grade two cohort will be collected based on post-implementation surveys with teachers. The surveys ask teachers for the percentage of students who have attained a literacy competency proficient enough to be promoted to grade three out of those who have completed *EduBrij*. The surveys gather comparison data from teachers

in schools who did not receive *EduBrij* and ask teachers for the percentage of students who have been promoted to grade three based on the teachers' literacy standards. Both surveys are administered at the end of the school year in Q4.

Evaluation Question 4.3.4: Does EduBrij encourage increased parental investment and interest in the child's education? (Obj. 4)

Evaluation Method: Two components of parental investment will be evaluated:

1. The frequency of conversations between the parent and the student about *EduBrij* or the student's school life, as measured by a survey delivered by the app to the student at the end of every term.
2. Parents' attitudes towards their child's education, as measured by Q1 and Q4 surveys, delivered by paper in the language the child had chosen as his/her mother tongue within the app. If the parent is not literate, teachers will administer the surveys. Questions include, "How often do you attend school activities with your child?", "What do you hope your child will obtain through education?", and "How often do you help your child with homework?". Their answers will be coded to determine beliefs and attitudes towards their child's schooling.

The consolidation of the first and second measures will comprise our assessment of change in parent interest and involvement. Both will be measured in Q1 and Q4. The frequency of conversations between parent and student about education-related topics will be monitored at milestones after the first and second school term.

Evaluation Question 4.3.5: Does EduBrij's community curriculum process engage a population that is diverse across age, gender, geography, and language? (Objective 4)

Evaluation Method: During the *EduBrij* curriculum creation process, five focus groups comprising eight to ten people are conducted in the two villages where The Bridge Project is implemented. Our outreach aims to include community participants across age, gender, village, and language. Our comparison standard is the overall population's true demographic spread across the four characteristics. The alignment of real turnout to population demographic are the Monitoring and Evaluation team's measure of diversity engagement success.

5. Organizational Capacity

5.1 About The Molisa Foundation

The Molisa Foundation is a Vanuatu local non-governmental organization that is fully invested in leveraging innovative technology to effectively improve literacy of Ni-Vanuatu children. The foundation was established in 2010 by its current executive director Dr. Vanu Molisa in memory of Madam Grace Mera Molisa, the nation's leading public intellectual and activist, who paved the way for educational equality and human rights in Vanuatu.

The Molisa Foundation recognizes the power of technology in transforming the way of teaching and learning in this digital era and is inspired to infuse the latest ICT across the world with its mission of promoting literacy education for children in Vanuatu. Since its inception, The Molisa Foundation has been continuously developing, innovating and improving its literacy mobile softwares specially tailored to the learning habits, linguistic and cognitive characteristics, and social and cultural background of Ni-Vanuatu children from grades one through six.

The Molisa Foundation has a team of passionate and creative professionals with extensive knowledge and experience in the areas of linguistic and literacy education, human-technology interactive design, learning content development and Ni-Vanuatu indigenous communities and cultures. What makes us unique in the field of literacy technology is our expertise in developing culturally and contextually relevant interactive literacy applications that allow Ni-Vanuatu children to acquire Bislama and English reading, listening and speaking skills in a fun, effective and developmentally appropriate manner. Ni-Vanuatu children, families, teachers, schools and communities are always at the core of our learning content, instruction and user experience design and development. By making available cutting edge technology, culturally-relevant and academically-competent curriculum and innovative strategies to actively engage families and communities in our children's literacy learning experiences, we envision our children becoming powerful readers, writers and thinkers of tomorrow.

The literacy mobile software designed by The Molisa Function has obtained wide-recognition, both nationally and internationally. We are the recipient of the *The Best Innovation Award* in the Pacific ICT Awards organized by the Vanuatu Council of Ministers in 2011, *The Innovative Solution Award* by the Vanuatu MoET in 2014, and *The Most Promising Non-Governmental Organization Award* by the Pacific Islands Association of Non-Governmental Organizations in 2016. Evidence of the value of the literacy learning applications developed by The Molisa Foundation was confirmed by our receipt of a \$30,000 grant from the Vanuatu MoET in 2011 and \$100,000 grant from the U.S. Department of Education's *Investing in Innovation Fund* in 2013. With these prestigious grants and funding from the private sector, The Molisa Foundation has been able to implement, manage and evaluate pioneer projects in several schools and communities across Vanuatu.

Below are the highlights in the proven track records of The Molisa Foundation in promoting English literacy skills of Ni-Vanuatu children via innovative technology solutions:

- *Project Malampa in 2011*

The Molisa Foundation partnered with a well-known NGO in Vanuatu to deploy tablet-based learning in the Ameyao Luvil Primary School in Malampa. A reading literacy learning application based on the national curriculum and VanEGRA was designed for the grade two students. Forty-one grade two students from the school received tablets installed with the apps and a usage data tracker, and were instructed to use the tablets for approximately one hour per day for one school year. A positive and statistically significant average increase of 33% in the students' reading scores as shown by the school

tests were reported, which served as a strong evidence to the success in improving of reading readiness through our reading literacy learning application.

- *Project Sanma in 2013*

The Molisa Foundation continuously made improvements to its reading literacy learning application based on critical evaluations of the past and ongoing projects. In Project Sanma, the team contextualized the idea of engaging families and community members to co-create learning content for their children. Fifty-nine grade two students from St. Therese Primary School and St. Barnabas Primary School, their families and community members participated in the project. The highlight of this project was its successful integration of familial and community knowledge in the content creation and learning activities. All shareholders involved showed great enthusiasm throughout the process. Again, a statistically significant increase in the students' reading scores were reported at an average of 41%, the highest recorded among all prior projects conducted by The Molisa Foundation. We believe that this exceptional outcome can be attributed to our innovative approach of making learning content culturally and contextually relevant.

5.2 The Bridge Project

The Bridge Project is the latest initiative by The Molisa Foundation. It aims to improve the reading competency for grade two students in Ambrym, Vanuatu, via *EduBrij*, the latest in-house developed innovative technology-based literacy and social application that features culturally responsive and community-driven learning content.

EduBrij is designed to supplement children's learning with 15 culturally-themed literacy modules focused on reading and oral comprehension. Learning content co-created by families and community members will be collected and coded into reading passages by our experts to make learning more culturally relevant and fun for Ni-Vanuatu children. The technology powering *EduBrij* is based on the prior editions of literacy learning applications designed and field tested by The Molisa Foundation with the addition of newly developed interactive functionalities, assessment mechanisms and digital tools. Prior to The Bridge Project, *EduBrij* has been vigorously tested internally by the application development team and externally with a convenient sample of grade two children in a neighborhood school. Our content developers and technical experts are ready to provide all types of support to the implementation of *Edubrij* in Ambrym.

5.3 Strategic Partnership

5.3.1 Private Sector Partnership

- Millbug (Pty) Ltd.

We have established a strategic partnership with Millbug (Pty) Ltd., a South African technology company that designs and manufactures low-cost and innovative digital devices. For the Bridge Project, Millbug will provide us with an agreed number of the latest Millbug Vuya Tablet to host the *EduBrij* literacy learning application, work closely with our technical team to ensure seamless compatibility of the software and provide lifelong technical support and warranty of the hardware. The Millbug Vuya tablet has a 7-inch display and runs on Android operating system. It is dually powered by a photovoltaic (solar) power source and a traditional power outlet. The revolutionary solar-powered, low-cost tablet effectively addresses the problem of intermittent or lack of access to electricity supply in rural settings. Millbug Vuya Tablets have been field-tested in several rural settings in South Africa and Sub-Saharan Africa and demonstrated incredible success and garnered positive feedback with regard to its functionality and

affordability.³⁹ We are fully confident that this cutting-edge technology fits the environmental conditions in Vanuatu and can also bypass the environmental issues affecting Vanuatu education. Moreover, as part of our strategic partnership agreement, Millbug will donate one tablet for every tablet that The Molisa Foundation purchase. The Molisa Foundation will advertise the product and collaborate with Millbug on other education-related initiatives in exchange.

- Google's Project Loon

Fast and stable Internet connection is essential for the successful implementation of the Bridge Project mainly in two ways: 1) the collection of data for analysis, e.g. recording of assignments and *EduBrij* assessment results, and 2) the sharing of social profiles by students. To secure internet access at the project implementation sites, we have become one of the pioneer members of the Google's Project Loon, which will provide high-speed and stable internet connection that covers the entire geographical locations of Ambrym, Vanuatu.⁴⁰ We firmly believe that by engaging Google's unprecedented Project Loon in the Molisa Foundation's The Bridge Project, the value that we will be able to obtain goes beyond the mere access of internet, but to extensive media attention and coverage, which will further increase the impact of The Bridge Project, paving ways for securing future sustainability and scalability.

- Crown Agents

The evaluation of The Bridge Project will be conducted by an independent firm, Crown Agents. The Molisa Foundation has collaborated with Crown Agents in many occasions in the past. The strong partnership with Crown Agents enables seamless communication with the firm at all stages of evaluation, ensuring understanding, accuracy and efficiency in the process.

5.3.2 Public Sector Partnership

- Government Agencies and Public Institutions

Because of its extraordinary commitment and achievement in promoting literacy learning through innovative technology for Ni-Vanuatu children, The Molisa Foundation is one of the few social organizations that has gained official acknowledgement and continuous support from the ministries of Vanuatu. Prior to starting the foundation, Dr. Vanu Molisa served as an advisor at the Prime Minister's Office of Vanuatu. Extensive and strong local connections with relevant government and public institutions are at the core of ensuring project success in the Republic of Vanuatu.

- Public Donation Pool

The Molisa Foundation has been maintaining and managing a public donation pool that consists of more than one hundred individual and organizational investors of various sizes from different sectors locally and globally. The primary purpose of the public donation pool is to attract independent fund from people who shares the vision and mission of The Molisa Foundation and are passionate about improving literacy of Ni-Vanuatu children via technology. The public donation pool accepts funding all year round and is specially dedicated to projects that passed the early implementation stage to ensure sustainability. Similarly, funds from the pool will also be activated to support the Bridge Project to maintain and update the *EduBrij* software once the 16-month implementation stage is passed.

³⁹ Sikupela, M. (2014) Millbug Tablet: bringing touch-screen connectivity to rural villages. *Ventureburn*. Retrieved from <http://ventureburn.com/2014/10/millbug-tablet-a-tablet-designed-for-rural-villages/>

⁴⁰ Simonite, T. (2015) Project Loon. *MIT Technology Review*. Retrieved from <https://www.technologyreview.com/s/534986/project-loon/>

6. Full Budget and Notes

The Bridge Project (11/01/2016-01/31/2018)

Total Requested: \$301,302.47

6.1 Salaries (Total \$144,444.36)

In order to achieve the program's goals and objectives, it is anticipated that the following staffing will be needed:

Local Staff (\$144,444.36)

The following local staffing is anticipated:

- 1 full-time Deputy Program Manager whose time is estimated to be evenly divided between each of the five (5) objectives, at \$3,333.33 per month for total 16 months. This rate represents his/her current salary, which is consistent with The Molissa Foundation personnel policies and the rate set for this position.
- 1.5 full-time developers whose time is evenly distributed across objective 1 (literacy), objective 2 (progression) and objective 4 (engagement) at \$2,916.67 per month for total 16 months. This rate represents his/her current salary, which is consistent with the NGO (or sub-grantee) personnel policies and the rate set for this position.
- 0.25 full-time Executive Director whose time is evenly distributed supervising each of the five (5) objectives at \$1,250.00 per month for total 16 months. This rate represents his/her current salary, which is consistent with the NGO (or sub-grantee) personnel policies and the rate set for this position.

Above salary rates are consistent with local norms, prevailing market rates paid under similar projects and positions.

6.2 Fringe Benefits (Total \$38,999.98)

Local Staff (\$38,999.98)

Fringe benefits for Local Staff equivalent to 27% of salaries are required by local labor laws and customs as follows: 4% Social Security (Employer Contribution), 8% Health Insurance, 4% Life Insurance, 5% Retirement, 6% Paid Absence, etc. Total 27% * \$144,444.36 = \$38,999.98

6.3 Travel and Transport (Total \$4,050)

Regional Travel (\$4,050)

An average RT airfare of \$450 has been used for estimating and budgeting purposes based on quoted airfares. Estimated number of trips is 6 for 3 number of consultants/employees * \$450 = \$4050.

6.4 Program Supplies (Total \$2,925)

Millbug Tablets (Objective 1 – Literacy) (\$2,925)

Purchase 75 Millbug tablets valued at \$39/tablet and Millbug will donate the remaining 75 as an in-kind donation.

6.5 Other Direct Costs (ODCs) (Total \$16,360)

Based on actual expenditures incurred under similar projects in this region, quotes received, historical records, etc., and the goals and objectives of the program, it is anticipated that the following ODCs (not otherwise recovered under the NGO's approved NICRA) will be needed, allocated equally to each objective:

- Office Rent (16 months @ \$300 p/month) = \$4,800
- Office Supplies (16 months @ \$70p/m) = \$1,120
- Office Utilities (16 month @ \$30p/m) = \$480
- Communications (16 month @ \$50p/m) = \$800
- Vehicle Fuel (1 x 1,500 km/month x 16 months) = 24,000 km ÷ 10 km/liter = 2,400l x 60¢/l = \$1,440. 1 Vehicle purchased with private funds and owned by The Molisa Foundation will be dedicated evenly to each of the 5 objectives.
- Vehicle Depreciation = \$5,000 Depreciation costs for the cost-shared vehicle divided evenly under the five (5) objectives will be charged as a cost-sharing contribution pursuant to which, the annual amount of depreciation that may be charged is calculated by dividing the purchase price by the estimated useful life. The vehicle was purchased by The Molisa Foundation one year ago at a price of \$30,000, and the estimated useful life of vehicles under The Molisa Foundation established accounting practices is 6 years. Thus, depreciation is calculated as follows: \$30,000/6 years = \$5,000
- Vehicle Maintenance & Spares 1 x 80p/m x 16 months = 1,280 Maintenance and spares for 1 Vehicle will be cost-shared under the five (5) objectives evenly.
- Vehicle Insurance 1 x 90p/m x 16 months = 1,440 Insurance for 1 Vehicle will be cost-shared under the five (5) objectives evenly.

6.6 Training (\$738)

It is anticipated that the following local personnel will need training, as follows:

- 1 Program Manager – *EduBrij* Training of Trainers. Training is estimated at \$738 based on prior similar trainings, actual costs paid under similar projects, quotes received, etc.

6.7. The Bridge Project Branding and Marketing Costs (\$75)

There will be a branded logo placed on each of the tablets. Each label is expected to cost \$0.50 based on supplier quotes and costs will be allocated to Objective 1 (literacy) \$0.50 x 150 = \$75.00

6.8 Contractual/Sub-Awards (\$59,877.00)

There will be one subcontract with a local firm, Crown Agents, to **monitor and evaluate** the program's effectiveness in reaching its objectives. Contract expense expected at \$40,000 (12.34% of program budget) based on obtained quote(s), prior actual amount paid, experience, etc. The subcontract will be awarded competitively. The costs will be allocated 40% to Objective 1, 30% to Objective 2, and 10% each to Objectives 3, 4, and 5.

There will be one subcontract with Google's Project Loon to provide internet to the Ambrym region. Contract expense expected at \$39,754 based on obtained quote and Google has agreed to donate half of the cost (\$19,877) as an in-kind donation. The costs will be allocated evenly across Objectives 1, 3, and 5.

6.9 Indirect Costs (\$33,833.13)

In accordance with The Molisa Foundation's current approved NICRA dated 3, 2007, indirect costs are budgeted at 13.00% of Total Direct Costs excluding equipment and that portion of subcontracts/subgrants in excess of \$25,000 each. Total indirect costs: $13\% * \$270,254.84$ (ODCs – subs) = \$33,833.13. If no approved NICRA, and the applicant proposes indirect costs rate, the applicant must demonstrate the rationale for proposing such rate. i.e., CPA recommended as the attached audit financial statement, rate used under similar Federal awards, etc. Else, the applicant shall consider applying all costs as direct.

6.10 Unallowable Host Country Taxes

Under OMB Circular A-122, host country taxes are only allowable if an organization is not exempt from host country taxation. Under the terms of USG/host government agreements, The Molisa Foundation is eligible for exemption. However, the process for actually obtaining an exemption is quite burdensome and is not believed to be worthwhile or cost-effective. Thus, The Molisa Foundation will absorb these host country taxes. In the budget, they are reflected "below the line" because, under the definition of "cost-sharing," unallowable costs are not eligible for satisfying cost-sharing requirements.

ANNEX 1: Monitoring and Evaluation Plan Template

Annex 1: MONITORING & EVALUATION PLAN TEMPLATE								
The expected Outcome and Output of the ACR...								
#	Indicator Type	Indicator*	Definition & Unit of Measurement	Responsibility	Frequency	Data Sources	Baseline	Target
1	Outcome	% of primary school students (grade two) who demonstrate they can read and understand grade level text	Grade two-level curriculum as defined by the Vanuatu Ministry of Education	The Molisa Foundation	Baseline and End Line	EduBrij Assessment Test	As determined by EduBrij assessment tests	90%
2	Output	% of project stakeholders using EduBrij to improve reading	EduBrij will be the ICT to improve reading	The Molisa Foundation	Baseline and End Line	Observation	0	100% of grade two students in selected schools
3	Outcome	Indicator 2: Individual student reading comprehension and oral competency scores	Student reading comprehension and oral competency scores as defined by the Vanuatu Ministry of Education	The Molisa Foundation	Baseline (Q2), Q3, Q4, End line(Q5)	EduBrij Assessment Test	Q2 individual student baseline as determined by EduBrij assessment tests	2 standard deviation improvement in overall grade two students' reading and oral
4	Output	Indicator 1: Module completion rates	Modules are only considered complete when the student has achieved a 85% accuracy score	The Molisa Foundation	Q2, Q3, Q4, Q5	In-app monitoring function	0	95% of students complete 15 modules
5	Outcome	Indicator 3: % of students who are approved by teachers to have the literacy capacity to move onto grade three	Literacy capacity to move onto grade three as determined by the teacher	Crown Agents	Q5	Online survey	Average completion rate of control group, based on another class of grade two students during intervention year without EduBrij (data for which will be collected Q5)	90% of grade 2 students in the sample are approved to have the literacy capacity of grade 2 and move to grade 3
6	Output	Indicator 4: % amount of app content developed by parents	App content developed by parents is defined by the vocabulary, curriculum, and activities brought up by parents during curriculum planning focus groups in pre-implementation phase which are integrated into EduBrij	The Molisa Foundation	Q1	Focus group notes in comparison to final EduBrij curriculum	N/A	50%
7	Outcome	Indicator 4: Parent's attitude towards engagement in child's education	Engagement is defined as interest, time spent talking to children about education, time spent in education and school-related activities	Crown Agents	Baseline (Q2) and End Line (Q5)	In-person one-on-one interviews	As determined by baseline	Greater parental involvement in children education
8	Output	Indicator 4: Frequency of conversation between parents and their child per week	Relevant conversation between parents and their child is defined as conversation related to schooling. 3 conversations between parents and child per week will be considered as	The Molisa Foundation	Q2, Q3, Q4, Q5	Survey in the app	As determined by baseline	
9	Output	Indicator 4: Frequency with which each recording is listened to	Recordings by students and parents will cover cultural stories, poems, and songs. 3 times per week of listening to others' recording will be considered as	The Molisa Foundation	Q3, Q4, Q5	Survey in the app	N/A	
10	Output	Indicator 5: Diversity of demographic involved in thematic planning focus groups	Diversity is defined as a population which mirrors the overall community's age, gender, locality identification, and native language	Crown Agents	Q1	(1) Census data on the two communities that will be implementing EduBrij (2) Sign-in sheet data on which participants will identify age, gender,	N/A	Demographic breakdown of the overall population
11	Output	Indicator 6: Frequency of communication with penpals	Communication with penpals as facilitated by in-app chat functions and listening to other students' recordings	The Molisa Foundation	Q2, Q3, Q4, Q5	EduBrij in-app monitoring data	0	3 significant events of interaction
12	Outcome	Indicator 7: Student's expressed interest in learning and reading English	Interest is defined by a student's preference for reading English compared to native language and	The Molisa Foundation	Baseline (Q2) and End Line (Q5)	EduBrij in-app monitoring data	As determined by survey	Increase
								*Indicators referenced are based upon the Theory of Change (Annex 2)

ANNEX 2: Theory of Change Chart

	Outputs	Intermediate Objectives	Indicators	Project Outcome		
	What specific activities and milestones will this in produce?	What changes do you expect this project will in the near term? Identify the target audience each objective.	How will you measure progress toward these objectives?	What do you expect this project will achieve in the long term (i.e. beyond the grant period)?		
1a	Increased use of ICT for improved reading: 15 modules of increasing difficulty that respond to successes and failures with scaffolded future literacy tasks	95% of students complete 15 modules	Module completion rates (modules are only considered complete when the student has achieved a 85% accuracy score)	Increase in ability to read in English.	Objective 1b	Indicator 1
1b	App modules incorporate first year literacy learning and prepares them for upcoming concepts in third year.	A statistical increase of 2 standard deviations between the pre and post test.	Student reading comprehension and oral competency scores based on 3 end-of-term EduBrij literacy assessments, as compared with an initial baseline assessment.	Preparedness for successive school years	Objective 1a	Indicator 2
2	Grade 2 relevant vocabulary embedded in the modules	90% of grade 2 students in the sample are considered to have the literacy capacity of grade 2	Teacher approval of child's grade appropriate literacy capacity	Students work towards on-time graduation	Objective 2	Indicator 3
3	- Children are prompted to have topical and recorded conversations with their parents that are added to their social profiles - Parents engaged in developing content through stories and culturally important vocabulary	Increase in proportion of parent's free time spent with child from baseline Increase in number of conversations parents have with child about academics outside of app (at least 2 conversations a week) Increase in time with child using the app	- Amount of app content developed by parents - Frequency of conversation between parents and their child per week - Frequency with which each recording is listened to - Parent's attitudes towards their engagement in child's education	Greater parental involvement in children education	Objective 3 / Monitoring	Indicator 4
4	- 5 focus groups per village - 8-10 people per focus group - Segmented by age categories	Focus groups from the local communities, proportionally represented by age, gender, location and native language	- Diversity of demographic involved in the thematic planning process	Intergenerational connection within community	Objective 3	Indicator 5
5	- Students set up and maintain social profiles - Students actively engage in communicating with their penpals - Penpal communication based on verbal story telling prompted by learning in current module with translating capacity	Students engage in 1 monthly interaction of 3 minutes of recording per student	Frequency of communication with penpals	Greater intercommunity connection among Ambrym	Monitoring	Indicator 6
6	Culturally relevant modules designed by parents and the community and transitioned and translated into English.	50% increase in the number of students who claim to prefer to read in English	- Students' self-reported likelihood of reading English materials in their spare time if given the choice between Bislama, English, and your native tongue.	Students' increased interest level in learning English	Objective 4	Indicator 7

ANNEX 4: Budget Summary

Budget Summary - Stage 2 Technical Proposal					
ACR GCD Round 2 Grant Competition					
Organization: The Molissa Foundation					
Categories	Year 1	Year 2	Total	Funded By	
				Donor	Match
Personnel	\$36,111.09	\$108,333.27	\$144,444.36	\$144,444.36	\$0.00
Allowances and Benefits	\$9,750.00	\$29,249.98	\$38,999.98	\$38,999.98	\$0.00
Travel - Local	\$1,012.50	\$3,073.50	\$4,050.00	\$4,050.00	\$0.00
Travel - International	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equipment	\$5,850.00	\$0.00	\$5,850.00	\$2,925.00	\$2,925.00
Contractual Services	\$39,754.00	\$40,000.00	\$79,754.00	\$59,877.00	\$19,877.00
Branding and Marking	\$75.00	\$0.00	\$75.00	\$75.00	\$0.00
Training	\$738.00	\$0.00	\$738.00	\$738.00	\$0.00
Other Direct Expense	\$4,090.00	\$12,270.00	\$16,360.00	\$16,360.00	\$0.00
Total Indirect Expenses	\$8,458.28	\$25,374.85	\$33,833.13	\$33,833.13	\$0.00
Grand Total	\$105,838.87	\$218,301.60	\$324,104.47	\$301,302.47	\$22,802.00